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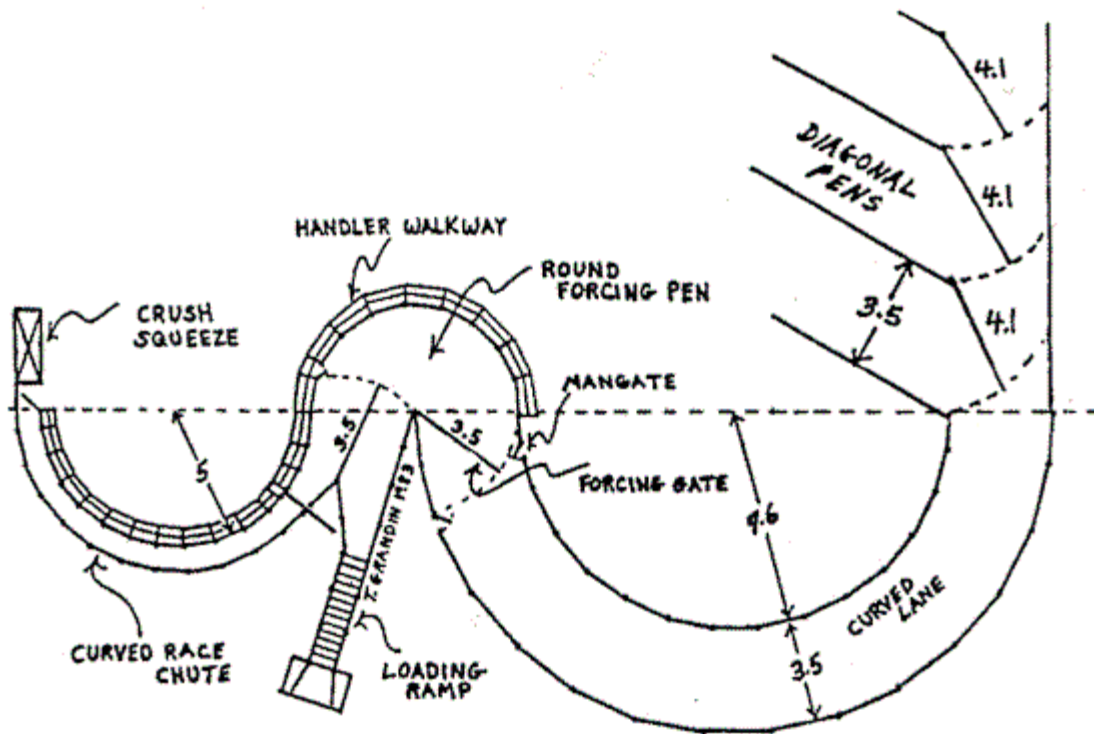
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Temple Grandin, Ph.D.



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To: [[AWIC](#)] [[Top of Document](#)] [[Contents](#)] [[Acknowledgements](#)] [[Introduction](#)] [[How to Use This Document](#)]
[[Articles](#) and [Bibliographies](#)] [[Audiovisuals](#)] [[Internet Resources](#)] [[Organizations](#)] [[Guidelines](#)] [Document Delivery Information]



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Information Resources for Livestock and Poultry Handling and Transport

Contents

[Acknowledgements](#)

[Introduction](#)

[How to Use This Document](#)

[Articles and Bibliographies](#)

- [Assessment of Stress During Handling and Transport](#)
By Temple Grandin, Colorado State University

- [Bibliography](#)
 - [General](#)
 - [Cattle](#)
 - [Exotic and Other Animals](#)
 - [Goats](#)
 - [Horses](#)
 - [Poultry](#)
 - [Ratites](#)
 - [Sheep](#)
 - [Swine](#)

[Audiovisuals](#)

- [General](#)
- [Cattle](#)
- [Goats](#)
- [Horses](#)
- [Llamas](#)
- [Poultry](#)
- [Ratites](#)
- [Sheep](#)
- [Swine](#)

[Internet Resources](#)

- [Individuals and Organizations](#)
- [Electronic Pamphlets and Articles](#)

[Organizations](#)

[Guidelines](#)

[Document Delivery Information](#)

To: [[AWIC](#)] [[Top of Document](#)] [[Contents](#)] [[Acknowledgements](#)] [[Introduction](#)] [[How to Use This Document](#)]
[[Articles and Bibliographies](#)] [[Audiovisuals](#)] [[Internet Resources](#)] [[Organizations](#)] [[Guidelines](#)] [[Document Delivery Information](#)]

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To: [[AWIC](#)] [[Top of Document](#)] [[Contents](#)] [[Acknowledgements](#)] [[Introduction](#)] [[How to Use This Document](#)] [[Articles](#) and [Bibliographies](#)] [[Audiovisuals](#)] [[Internet Resources](#)] [[Organizations](#)] [[Guidelines](#)] [[Document Delivery Information](#)]

Introduction

Information Resources for Livestock and Poultry Handling and Transport was developed by the Animal Welfare Information Center (AWIC) of the U.S. Department of Agriculture (USDA), National Agricultural Library (NAL), in an effort to provide a current guide to the scholarly information available on the handling and transport of farm animals.

Techniques used to move livestock, whether on the home farm, up the loading ramp of a long-distance transport truck, or down a raceway at the packing plant, have tended to be more a matter of habit and tradition than a subject for scientific investigation. In recent years, however, the prime importance of efficient and humane handling practices has become more widely recognized. Researchers in the fields of animal science and applied ethology have built up a substantial body of knowledge in this area, with one general conclusion -- proper handling is essential on both economic and animal welfare grounds.

This guide provides an entrance into that body of knowledge, which includes scientific journals, books, newsletters, conference proceedings, videotapes, the Internet, governmental and institutional guidelines, and the expertise of individuals and organizations.

The staff of the Animal Welfare Information Center hope that you find this publication to be a useful addition to your farm animal resources and welcome any comments for future editions.

To: [[AWIC](#)] [[Top of Document](#)] [[Contents](#)] [[Acknowledgements](#)] [[Introduction](#)] [[How to Use This Document](#)] [[Articles](#) and [Bibliographies](#)] [[Audiovisuals](#)] [[Internet Resources](#)] [[Organizations](#)] [[Guidelines](#)] [[Document Delivery Information](#)]

How to Use This Document

This publication is divided into seven sections: a full-text article bibliographies preceded by a full-text [article](#), audiovisuals, internet resources, organizations, guidelines, and document delivery information for U.S. and foreign patrons.

[Bibliography](#)

This section is preceded by an article written by a recognized authority in the field of livestock handling. Following the article is a comprehensive bibliography containing citations that are arranged alphabetically according to the last name of the primary author. The reference section of the article may or may not overlap with the bibliographies. Each bibliographic entry contains the NAL call number if the particular source is available at the National Agricultural Library.

[Audiovisuals](#)

Livestock handling is a subject for which visual demonstration can be particularly useful. This annotated section

describes the many videos and slide sets available pertaining to this topic. Most of the videos are in the NAL collection.

Internet Resources

This section cites currently available websites containing information pertinent to livestock handling and transport. The section is divided into two parts: webpages of individual and organizations, and full-text on-line documents and pamphlets.

Organizations

A number of organizations have shown an interest in livestock transport and handling issues. Information on how to contact each organization via a variety of electronic means and/or postal address is provided, as well as a brief description of the resources and services each offers.

Guidelines

This section cites some of the regulations and guidelines covering the handling and transport of livestock written by national and regional governments and non-profit and industry groups. It is not a comprehensive list.

Document Delivery Information

The information contained here provides directions on how to obtain copies of articles mentioned in the bibliography. There are separate directions for U.S. patrons and those readers outside the United States. **All patrons are encouraged to use their local resources before contacting the National Agricultural Library.** While the National Agricultural Library provides a variety of services to patrons around the world, videocassettes are not available for loan outside the United States and Canada.

To: [[AWIC](#)] [[Top of Document](#)] [[Contents](#)] [[Acknowledgements](#)] [[Introduction](#)] [[How to Use This Document](#)]
[[Articles](#) and [Bibliographies](#)] [[Audiovisuals](#)] [[Internet Resources](#)] [[Organizations](#)] [[Guidelines](#)] [Document Delivery Information]

Articles and Bibliographies

- ["Assessment of Stress During Handling and Transport"](#)
- [Bibliographies](#)

Assessment of Stress During Handling and Transport

By Temple Grandin

Department of Animal Sciences, Colorado State University, Fort Collins 80523

Contents

- [Abstract](#)
- [Introduction](#)
- [Importance of Fear and Effects of Novelty](#)
- [Effects of Adaptation to Handling on Stress](#)
- [Genetics](#)
- [Fear Pheromones](#)
- [Short-Term Stress Measurements](#)
- [Aversion Tests](#)

Implications

- [Literature Cited](#)

ABSTRACT: Fear is a very strong stressor, and the highly variable results of handling and transportation studies are likely to be due to different levels of psychological stress. Psychological stress is fear stress. Some examples are restraint, contact with people, or exposure to novelty. In many different animals, stimulation of the amygdala with an implanted electrode triggers a complex pattern of behavior and autonomic responses that resemble fear in humans. Both previous experience and genetic factors affecting temperament will interact in complex ways to determine how fearful an animal may become when it is handled or transported. Cattle trained and habituated to a squeeze chute may have baseline cortisol levels and be behaviorally calm, whereas extensively reared animals may have elevated cortisol levels in the same squeeze chute. The squeeze chute is perceived as neutral and non-threatening to one animal; to another animal, the novelty of it may trigger intense fear. Novelty is a strong stressor when an animal is suddenly confronted with it. To accurately assess an animal's reaction, a combination of behavioral and physiological measurements will provide the best overall measurement of animal discomfort.

Key Words: Handling, Restraint, Welfare, Anxiety, Stress, Slaughter

¹ Presented at a symposium titled "Effects of Stress in Farm Animals" at the ASAS 87th Annu. Mtg., Orlando, FL, July 26, 1995

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To: [[Contents of Article](#)]

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Introduction

Studies to determine the amount of stress on farm animals during routine handling and transport often have highly variable results and are difficult to interpret from an animal welfare standpoint. This paper will cover some of the factors that influence how an animal may react during handling. Much of the variability between handling studies is likely to be due to different levels of psychological stress. Animals can be stressed by either psychological stress (restraint, handling, or novelty) or physical stresses (hunger, thirst, fatigue, injury, or thermal extremes). Procedures such as restraint in a squeeze chute do not usually cause significant pain, but fear may be a major psychological stressor in extensively raised cattle. Many apparently conflicting results of different studies may be explained if the varying amounts of psychological stress and physical stress within each study are considered. Fear responses in a particular situation are difficult to predict because they depend on how the animal perceives the handling or transport experience. The animal's reactions will be governed by a complex interaction of genetic factors and previous experiences. For example, animals with previous experiences with rough handling will remember it and may become more stressed when handled in the future than animals that have had previous experiences with gentle handling. Previous handling experiences may interact with genetic factors. Rough handling may be more detrimental and stressful to animals with an excitable temperament compared to animals with a more placid temperament. For example, Brahman-cross cattle had higher cortisol levels when restrained in a squeeze chute than English crosses ([Zavy et al., 1992](#)). An animal's social rank within the group can also affect stress levels. McGlone et al. ([1993](#)) found that subordinate submissive pigs were more stressed by 4 h of transport than dominant pigs. This paper will only address short-term stressors such as handling and transport. The measurement of chronic stress imposed by the environment or different housing systems is much more complex.

To: [[Contents of Article](#)]

Importance of Fear and Effects of Novelty

Fear is a universal emotion in the animal kingdom and motivates animals to avoid predators. All vertebrates can be fear-conditioned ([LeDoux, 1994](#)). The amygdala in the brain is probably the central fear system that is involved in both fear behavior and the acquisition of conditioned fear ([Davis, 1992](#)). Davis ([1992](#)) cited over 20 animal studies from many different laboratories that showed that electrical stimulation of the amygdala with an implanted electrode triggers a complex pattern of behaviors and changes in autonomic responses that resembles fear in humans. In humans, electrical stimulation of the amygdala elicits feelings of fear ([Gloor et al., 1981](#)). Studies have also shown that electrical stimulation of the amygdala will increase plasma corticosterone in cats ([Setckleiv et al., 1961](#); [Matheson et al., 1971](#)) and in rats ([Redgate and Fahringer, 1973](#)). Lesioning of the amygdala will block both unconditioned and conditioned fear responses ([Davis, 1992](#)). Large lesions in the amygdala will reduce emotionality in wild rats as measured by flight distance ([Kemble et al., 1984](#)). Kemble et al. ([1984](#)) also noted that lesioning of the amygdala had a taming effect on wild rats. LeDoux ([1994](#)) explains that fear conditioning takes place in a subcortical pathway and that extinguishing a conditioned fear response is difficult because it requires the animal to suppress the fear memory via an active learning process. A single, very aversive event can produce a strong conditioned fear response, but extinguishing this fear response is much more difficult.

Observations by the author on cattle ranches have shown that to prevent cattle and sheep from becoming averse and fearful of a new squeeze chute or corral system, painful or highly aversive procedures should be avoided the first time the animals enter the facility. The same principle also applies to rats. Rats that receive a strong electrical shock the first time they enter a novel alley will refuse to enter it again ([Miller, 1960](#)). However, if the rat is subjected to a series of shocks of gradually increasing intensity, it will continue to enter the alley to get a food reward. Therefore, Hutson ([1993](#)) recommends that stress in sheep during routine handling could be reduced if the animals were conditioned gradually to handling procedures. Less severe procedures should be done first ([Stephens and Toner, 1975](#); [Dantzer and Mormede, 1983](#)).

Novelty is a very strong stressor ([Stephens and Toner, 1975](#); [Moberg and Wood, 1982](#); [Dantzer and Mormede, 1983](#)). This is especially true when an animal is suddenly confronted with it. In the wild, novelty and strange sights or sounds are often a sign of danger ([Grandin, 1993a](#)). Cattle will balk at shadows or differences in flooring during movement through handling facilities ([Grandin, 1980](#)). Pigs that have been trained to laboratory procedures will respond to deviations in their daily routine with a rise in blood pressure ([Miller and Twohill, 1983](#)). Reid and Mills ([1962](#)) have suggested that livestock can be trained to accept changes in management routines that would cause a significant increase in physiological measurements in animals that had not been trained. Gradual exposure of animals to novel experiences enables them to become accustomed to nonpainful stimuli that had previously evoked a flight reaction. Grandin et al. ([1995b](#)) reported that training nyala antelope to cooperate during blood sampling had to be done very slowly to avoid triggering a massive flight reaction. The animals are very vigilant and will react to any unfamiliar sights and sounds.

There are some situations in which novelty is attractive to animals. Cattle and pigs often approach and manipulate a piece of paper dropped on the ground. The author has observed that the same piece of paper will cause animals to balk and jump away if they are being forced to walk toward it. Therefore, the paper may be perceived as threatening in one situation and non-threatening in another. The author has observed that cattle in the Philippines seldom react to cars, trucks, and other distractions when they graze on the highway median strip. Cars and trucks are no longer novel because they have seen them since birth. In the nyala antelope, animals born after the adults had been trained to blood sampling procedures learned to cooperate more quickly ([Grandin et al., 1995b](#)).

Cattle can become accustomed to repeated nonaversive procedures such as weighing or drawing blood through an indwelling catheter ([Peischel et al., 1980](#); [Alam and Dobson, 1986](#)). Sheep, pigs, and giraffes have been trained to voluntarily enter a restraint device ([Panepinto, 1983](#); [Wienker, 1986](#); [Grandin, 1989](#)).

However, animals do not habituate to procedures that are very aversive ([Hargreaves and Hutson, 1990a](#)). A procedure can be highly aversive without being painful. Full inversion to an upside-down position is extremely aversive to sheep. The time required to drive sheep down a race into a restraint device that inverted them increased the following year ([Hutson, 1985](#)). Cortisol levels did not decrease with experience when cattle were subjected to repeated truck trips

during which they fell down ([Fell and Shutt, 1986](#)). Hargreaves and Hutson ([1990a](#)) found that repeated trials of a sham shearing procedure failed to reduce the stress response. Sheep also did not habituate to 6 h of restraint with their legs tied ([Coppinger et al., 1991](#)).

Apple et al. ([1995](#)) found that in sheep, 6 h of restraint stress caused dark cutting meat and very high (> 110 ng/mL) levels of cortisol. Epidural blockage with lidocaine, which prevents the animals from contracting their muscles and straining against the restraint, failed to inhibit glycogen metabolism. This experiment indicates that psychological stress was probably a significant factor.

Cattle are very sensitive to the relative aversiveness of different parts of handling procedures. When they were handled every 30 d in a squeeze chute and a single animal scale, balking at the scale decreased with successive experience and balking at the squeeze chute increased slightly ([Grandin, 1992](#)). The animals learned that the scale never caused discomfort. Cattle that had been mishandled in a squeeze chute and struck hard on the head by the headgate were more likely to resist entry into the chute in the future ([Grandin et al., 1994](#)) compared with cattle that had never been hit with the headgate.

To: [[Contents of Article](#)]

Effects of Adaptation to Handling on Stress

Tame animals that are accustomed to frequent handling and close contact with people are usually less stressed by restraint and handling than animals that seldom see people. Binstead ([1977](#)), Fordyce et al. ([1985](#)), and Fordyce ([1987](#)) report that training weanling heifer calves produced calmer adult animals that were easier to handle. Training these extensively raised calves involved walking quietly among them, teaching them to follow a lead horseman and quiet walking through chutes. How an animal is handled early in life will have an effect on its physiological response to stressors later in life. Calves on a university experiment station that had become accustomed to petting by visitors had lower cortisol levels after restraint than calves that had less frequent contact with people ([Boandle et al., 1989](#)). Lay et al. ([1992a](#)) found that restraint in a squeeze chute was almost as stressful as hot-iron branding for extensively reared beef cattle. In hand-reared dairy cows, branding was much more stressful than restraint ([Lay et al., 1992b](#)).

Taming may reduce the physiological reactivity of the nervous system. Hastings et al. ([1992](#)) found that hand-reared deer had lower cortisol levels after restraint compared with free-ranging deer. Even though the physiological response to restraint was lower in the tame animals, hand-reared deer struggled just as violently as free-range deer ([Hastings et al., 1992](#)). Associations that animals make seem to be highly specific. Mateo et al. ([1991](#)) found that tame sheep approached a person more quickly, but behavioral measurements of struggling indicated that taming did not generalize to other procedures. Similar findings by Hargreaves and Hutson ([1990a,b](#)) showed that gentling and reduction of the sheep's flight zone failed to reduce aversion to shearing. Tame animals can sometimes have an extreme flight reaction when suddenly confronted with novelty that is perceived as a threat. Reports from ranchers and horse trainers indicate that horses and cattle that are calm and easy to handle at their home farm sometimes become extremely agitated when confronted with the novelty of a livestock show or auction. The animal's behavioral reaction seems to be less likely to generalize to other procedures than its physiological reaction. Moberg and Wood ([1982](#)) found that experiences during rearing greatly affected behavior in an open field test but had little effect on adrenocortical response of lambs. Exposing piglets to novel noises for 20 min increases both heart rate and motor activity. Heart rate habituated to a recording of abattoir sounds more quickly than motor activity ([Spensley et al., 1995](#)).

The effects of previous experience on an animal's fear response may provide one explanation for the often variable results in handling and transport studies. For example, extensively raised animals may have more psychological or fear stress during loading and unloading for transport compared to more intensively reared animals. British researchers have found that loading and unloading of sheep and calves was the most stressful part of the journey ([Trunkfield and Broom, 1990](#); [Knowles, 1995](#)). Kenney and Tarrant ([1987](#)) reported that for Irish cattle, the actual journey was more stressful than loading and unloading. The physical stresses of the trip, such as jiggling, were more stressful than the psychological stresses of loading or unloading. A possible explanation for this discrepancy between these two studies may be the amount of contact the animals had with people. There may be a big difference in the degree of fear stress

between U.S. cattle reared on rangeland where they seldom see people and European pasture-reared cattle. Differences in the degree of psychological stress may explain why too many rest stops during long-distance transport is detrimental to the health of weaner calves raised under U.S. conditions. Cattle feeders have learned from practical experience that 200- to 300-kg calves shipped from the southeast to Texas will have fewer health problems if they are transported non-stop for the entire 32-hour trip. For these extensively reared calves, rest stops may possibly turn into stress stops. Research is needed to conclusively determine what factors cause the rest stops to be stressful. Legislating too many rest stops may be detrimental to welfare. One possibility is fear stress during loading and unloading at rest stops and the second possibility is that the calves become infected with diseases at the rest stop. Many of the calves shipped on these trips are not properly vaccinated. There may be an interaction between rest stops and disease. Frequent rest stops may be more beneficial to fully vaccinated calves.

To: [[Contents of Article](#)]

Genetics

Genetic factors such as temperament interact in complex ways with an animal's previous handling experiences and learning to determine how it will react during a particular handling procedure. Wild species are usually more reactive to novel stimuli than domesticated animals. Price ([1984](#)) maintains that the domestic phenotype have reduced responses to changes in the environment. Domesticated animals are more stress-resistant because they have been selected for a calm attitude toward people ([Parsons, 1988](#)). When deer or antelope are tamed, the flighty temperament is masked until they are confronted with a novel stimulus that is perceived as threatening. A tame deer or antelope can have an explosive reaction to a novel event. A wild species has a more intense flight response because this enables it to flee from predators.

Temperament in cattle is a heritable trait that may affect the animal's reaction to handling ([Le Neindre et al., 1995](#)). There are differences in temperament both between and within cattle breeds. Within the Brahman breed, temperament is heritable ([Hearnshaw et al., 1979](#); [Fordyce et al., 1988](#)). Temperament differences between breeds have also been reported by Stricklin et al. ([1980](#)) and Tulloh ([1961](#)). Genetics also affects an animal's response to stress. Brahmancross cattle had higher cortisol levels while restrained in a squeeze chute compared to English crosses ([Zavy et al., 1992](#)). Recent research by Grandin et al. ([1995a](#)) and replicated by H. Randle (1995, personal communication, University of Plymouth, U.K.) indicated that the spiral hair whorl on a bovine's forehead is an indicator of temperament. Cattle with spiral hair whorls above the eyes became more agitated while restrained than animals with hair whorls below the eyes.

Temperament may be under genetic control in many different animals. Research with rats has shown that they can be selected for either high or low emotionality ([Fujita et al., 1994](#)) or for reduced fear induced aggressiveness toward humans ([Popova et al., 1993](#)). Phenotypic characteristics are also related to temperament. Interestingly, it seems that different genetic factors control fear-induced aggression and intermale aggression. Selection for reduced fear induced aggression had no effect on aggressive behavior toward other male rats.

Temperament is a trait that seems to be stable over time. In European Continental-cross cattle, certain individuals became extremely agitated every time they were handled in a squeeze chute and others were always calm ([Grandin, 1992](#)). The agitated animals failed to adapt to being held in the squeeze chute during four handling sessions spaced 30 d apart. Cattle with a very excitable temperament may have greater difficulty adapting to repeated nonpainful handling procedures than cattle with a calmer temperament. The two types of animals may have differing physiological and behavioral reactions to the same procedure. Animals with a calm temperament may adapt more easily and become less stressed with repeated handling treatments and animals with a very excitable temperament may become increasingly stressed with each repeated handling treatment. Lanier et al. ([1995](#)) found that some pigs habituated to a swimming task and maintained near baseline levels of epinephrine and norepinephrine and other animals failed to habituate and never adapted.

At five slaughter plants in the United States, Holland, and Ireland, the author has observed increasing problems with very excitable pigs and cattle from certain genetic lines that become highly agitated. It is almost impossible to drive them quietly through a high-speed slaughter line. These animals seem to have a much stronger startle reaction to

novelty, are more likely to balk at small distractions such as shadows or reflections in the race, and are more likely to bunch together. Observations at slaughter plants and reports from ranchers also indicate that excitable cattle are more likely to injure themselves when they are confronted with the novel, unfamiliar surroundings of an auction market or slaughter plant. The appearance of greater numbers of more excitable pigs and cattle may possibly be related to the increasing emphasis of the livestock industry on lean beef and pork. In both cattle and pigs, the author has observed that excessive excitability occurs most often in animals bred for leanness that have a slender body shape and fine bones. Cattle and pigs bred for large, bulging lean muscles usually have a calmer temperament. This is an area that needs to be researched. Practical experience indicates that the excitable animal problem needs to be corrected because excessive excitability creates serious animal welfare problems during handling at auction markets and slaughter plants.

Cattle and pig producers need to select animals with a calm temperament, but care must be taken not to over-select for any one particular trait. A good example of overselection for a single trait is the halothane gene in pigs. Pigs with this gene have increased meat production, but the price for this increased production is poor meat quality ([Pommier and Houde, 1993](#)). Over-selection for calm temperament may possibly have detrimental effects on economically important traits, such as maternal ability. Researchers in Russia found that selecting foxes for calmness over 80 yr produced animals that lost their seasonal breeding pattern and had strange piebald black and white colored coats ([Belyaev, 1979](#); [Belyaev and Borodin, 1982](#)). The foxes turned into animals that acted and looked like Border collies.

To: [[Contents of Article](#)]

Fear Pheromones

Another factor that could confound handling stress studies is fear pheromones. Vieville-Thomas and Signoret ([1992](#)) found that urine from a stressed gilt caused other gilts to avoid a feed dispenser and urine from an unstressed animal had no effect. Both the results of this experiment and observations by the author indicate that it takes 10 to 15 min for the fear pheromone to be secreted. Observations by the author indicate that cattle will voluntarily walk into a restraining chute that is covered with blood, but if an animal becomes extremely agitated for several minutes, the other animals refused to enter ([Grandin, 1993b](#)). In a laboratory setting pigs witnessing slaughter had no increases in either beta endorphins or cortisol. These were calm animals fitted with jugular catheters ([Anil et al., 1995](#)). Eibl-Eibesfeldt ([1970](#)) observed that if a rat is instantly killed by a trap, the trap will remain effective and can be used again. Rats will avoid a trap that failed to instantly kill. Research with rats indicates that blood may contain a fear pheromone ([Stevens and Gerzog-Thomas, 1977](#)). Stevens and Saplikoski ([1973](#)) found that blood and muscle tissue from stressed rats was avoided in a choice test, whereas brain tissue and water had no effect. Blood from guinea pigs and people also had little effect ([Hornbuckle and Beall, 1974](#)).

To: [[Contents of Article](#)]

Short-Term Stress Measurements

This discussion will be limited to measuring short-term stress induced by handling procedures such as being held in a squeeze chute. Assessment of stress and discomfort should contain both behavioral and physiological measures. Behavioral indicators of discomfort are attempting to escape, vocalization, kicking, or struggling. Other behavioral measures of how an animal perceives a handling procedure are choice tests and aversion tests. Common physiological measures of stress are cortisol, beta endorphin, and heart rate. Cortisol is a useful indicator of short-term stresses from handling or husbandry procedures such as castration. Researchers must remember that cortisol is a time-dependent measure that takes 10 to 20 min to reach peak values ([Lay et al., 1992a](#)).

A review of many studies indicates that cortisol levels in cattle fall into three categories: 1) baseline, 2) levels that occur during restraint in a headgate, and 3) extreme stress ([Table 1](#)). Cortisol levels are highly variable and absolute comparisons should not be made between studies, but the figures on [Tables 1](#) and [2](#) would make it possible to determine whether a handling or slaughter procedure was either very low stress or very high stress. One could tentatively conclude that a mean value of >70 ng/mL in either steers or cows would possibly be an indicator of either

rough handling or poor equipment, and low values close to the baseline values would indicate that a procedure was either low stress or was very quick. Quick procedures would be completed before cortisol levels could rise. Restraint in a headgate for blood sampling and slaughter produced similar values (Tables 1 and 2). Sexually mature bulls have much lower cortisol levels than steers, cows, or heifers ([Tenessen et al., 1984](#)). In one study, there was an extreme mean of 93 ng/mL for inverting cattle on their backs for 103 s ([Dunn, 1990](#)). This very high figure is not due to differences in assay methods because this same researcher obtained more reasonable values of 45 ng/mL for upright restraint. Properly performed cattle slaughter seems to be no more stressful than farm restraint (Tables 1 and 2).

Less clear cut ranges have been obtained in sheep. Pearson et al. ([1977](#)) found that slaughter in a quiet research abattoir produced lower cortisol levels than slaughter in a noisy commercial plant. The values were 40 vs 61 ng/mL. Values for shearing and other on-farm handling procedures were 73 ng/mL ([Hargreaves and Hutson, 1990c,d](#)) and 72 ng/mL ([Kilgour and de Langen, 1970](#)). Prolonged restraint and isolation for 2 h increased cortisol levels up to 100 ng/mL ([Apple et al., 1993](#)).

Creatine phosphokinase (CPK) and lactate seem to be useful measures for assessing handling stresses in pigs ([Warris et al., 1994](#)). Warris et al. ([1994](#)) found that the sound level of squealing pigs in a commercial abattoir was highly correlated with CPK measurements. White et al. ([1995](#)) also reported that vocalizations in pigs were indicative of stress and were correlated with other measures of acute stress, such as heart rate. Cattle that become behaviorally agitated have higher cortisol levels ([Stahinger et al., 1989](#)). Heart rate in cattle during restraint in a squeeze chute was highly correlated with cortisol levels ([Lay et al., 1992a,b](#)). Stermer et al. ([1981](#)) found that rough handling in poorly designed facilities resulted in greater heart rates than quiet handling in well-designed facilities.

Isolation is also a factor in handling stress. During restraint for routine husbandry procedures, animals are often separated from their conspecific. Stookey et al. ([1994](#)) found that cattle became less behaviorally agitated during weighing on a single animal scale if they could see another animal in the chute less than 1 m away in front of the scale. Agitation was measured electronically by measuring movement and jiggling via the scale load cell system. Numerous studies have shown that isolation from conspecific will raise cortisol and other physiological measures ([Kilgour and deLangen, 1970](#); [Whittlestone et al., 1970](#); [Arave et al., 1974](#)).

Table 1. Mean cortisol values in cattle during handling

Cortisol level, ng/mL	Breed	Sex	Study
Baseline			
.5 to 2	Friesian	Bulls	Tenessen et al., 1984
2	Friesian	Cows	Alam and Dobson, 1986
3	Angus cross	Bull calves	Henricks et al., 1984
6	Angus cross	Heifer calves	Henricks et al., 1984
9	Friesland and Nuguni	Cows	Mitchell et al., 1988
Restraint in headgate			
13	Holstein cows	Hand-reared	Lay et al., 1992a
24 (weaned 2 wk before test)	Unknown British or European	Weanlings, mixed sexes	Crookshank et al., 1979
27	Brahman cross	Steers	Ray et al., 1972

28	Angus x Hereford	Steers	Zavy et al., 1992
30	Simmental x Hereford x Brahman	83% Steers	Lay et al., 1992b
36	Angus x Brahman	Steers	Zavy et al., 1992
46 (weaned day of test)	Unknown British or European	Mixed sexes	Crookshank et al., 1979
63	Brahman x Hereford x Afrikander	Steers and heifers	Mitchell et al., 1988
Extreme value			
93 (inverted on back for 103 a)	Unknown British or European	Mixed	Dunn, 1990

Table 2. Mean cortisol values during slaughter

Cortisol level, ng/mL	Handling methods	Study
Baseline quiet research abattoir		
15	Held in head restraint, shot immediately with captive bolt	Tume and Shaw, 1992
Commercial slaughter plant		
24	Handled quietly in conventional stunning box	Ewbank et al., 1992a
32	Unknown	Mitchell et al., 1988
44	Conventional stunning box	Tume and Shaw, 1992
45	Conventional stunning box	Dunn, 1990a
51	Poorly designed head restraint only 14% of cattle voluntarily entered it	Ewbank et al., 1992a
63 (median)	Electric prod all cattle, 38% animals slipped, conventional stun box	Cockram and Corley, 1991a
Extreme stress		
93	Inverted on back for 103 s	Dunn, 1990^a
^a conducted in either England or Ireland with Bos taurus cattle.		

To: [[Contents of Article](#)]

Aversion Tests

Aversion to a handling procedure can be measured by either choice testing or measuring aversion. One measure of

aversion is the time required to induce an animal to re-enter a chute where it was previously handled ([Rushen, 1986a,b](#), [1995](#)). In a choice test, the animals are allowed to choose between two different that lead to different procedures ([Grandin et al., 1986](#); [Rushen and Congdon, 1986a,b](#)). Another useful measure is the degree of force required to induce an animal to move through a race. In some cases, measuring the degree of force provides a more accurate assessment of aversion than time. Examples of force are the number of pats on the rump or number of electrical prods. Experience and genetic factors can confound aversion tests. Rushen ([1996](#)) warns that to accurately measure aversion in a race, the animal must experience the aversive procedure more than once. Observations by the author indicate that excitable cattle sometimes run through a single file chute quickly in an attempt to escape. Research (in progress by Bridgette Voisinet and the author) reveals that bulls trained to move through a race to a squeeze chute exhibit no aversion in the race after a single noxious treatment. After one aversive treatment, they continued to voluntarily walk through the race into the Squeeze chute, but balking and turning back in the crowd pen at the entrance to the race greatly increased. At this point, the animals may perceive that they may be able to avoid reentering the race. In aversion studies, balking and other behaviors indicative of aversion must be measured in both the single file race and in the pens and alleys that lead up to the entrance of the single file race. This is especially important if the aversive procedure is performed only once. After the animal is forced to enter the chute that leads to the squeeze, it may perceive that it may be able to escape by running quickly through it toward the squeeze chute. Under certain conditions, choice tests may be unreliable for measuring choices between mildly aversive procedures. Research conducted by Grandin et al. ([1994](#)) showed that cattle are reluctant to change a previously learned choice if the two choices in a choice test are only mildly aversive. Other research showed that sheep immediately switched sides to avoid highly aversive electroimmobilization ([Grandin et al., 1986](#)).

To: [[Contents of Article](#)]

Implications

Both researchers and people making decisions about animal welfare must understand that fear during non-painful routine handling and transport can vary greatly. Fear is a very strong stressor. Cattle that have been trained and habituated to a handling procedure may be completely calm and have baseline cortisol and heart rate measurements during handling and restraint. Extensively reared cattle with an excitable disposition may have very high cortisol levels and show extreme behavioral agitation during the same procedure. For one animal, a squeeze chute may be perceived as neutral and non-threatening, but to another it may trigger an extreme fear response. The animal's response will be determined by a complex interaction of genetics and previous experience. Studies to assess animal welfare during handling and transport should contain both behavioral and physiological measurements.

To: [[Contents of Article](#)]

Literature Cited

Alam, M.G.S., and H. Dobson. 1986. Effect of various veterinary procedures on plasma concentrations of cortisol, luteinizing hormone and prostaglandin E2 metabolite in the cow. *Vet. Rec.* 118:7.

Anil, M. H., J. L. McKinstry, M. Field, M. Bracke, and R. G. Rodway. 1995. Assessment of distress experienced by witnessing slaughter in pigs. *Proc. Br. Sec. Anim. Sci.*, paper 190.

Apple, J. K, M. E. Dikeman, J. E. Minton, R. M. McMurphy, M. R. Fedde, D. E. Leith, and J. A. Unruh. 1995. Effects of restraint and isolation stress and epidural blockade on endocrine and blood metabolite status, muscle glycogen depletion, and incidence of dark-cutting longissimus muscle in sheep. *J. Anim. Sci.* 73:2295.

Apple, J. K, J. E. Minton, K M. Parsons, and J. A. Unruh. 1993. Influence of repeated restraint and isolation stress and electrolyte administration on pituitary-adrenal secretions, electrolytes and other blood constituents of sheep. *J. Anim. Sci.* 71:71.

- Arave, C. W., J. L. Albright, and C. L. Sinclair. 1974. Behaviour, milk yield and leucocytes of dairy cows in reduced space and isolation. *J. Dairy Sci.* 59:1497.
- Belyaev, D. K. 1979. Destabilizing selection as a factor in domestication. *J. Hered.* 70:301.
- Belyaev, D. K., and P. M. Borodin. 1982. The influence of stress on variation and its role in evolution. *Biol. Zentbl.* 100:705.
- Binstead, M. 1977. Handling cattle. *Queensland Agric. J.* 103:293.
- Boandle, K. E., J. E. Wohlt, and R. V. Carsia. 1989. Effect of handling, administration of a local anesthetic and electrical dehorning on plasma cortisol in Holstein calves. *J. Dairy Sci.* 72:2193.
- Cockram, M. S., and K.T.T. Corley. 1991. Effect of preslaughter handling on the behavior and blood composition of beef cattle. *Br. Vet. J.* 147:444.
- Coppinger, T. R., J. E. Minton, P. G. Reddy, and F. Blecha. 1991. Repeated restraint and isolation stress in lambs increases pituitary-adrenal secretions and reduces cell-mediated immunity. *J. Anim. Sci.* 69:2808.
- Crookshank, H. R., M. H. Elissalde, R. G. White, D. C. Clanton, and H. E. Smalley. 1979. Effect of transportation and handling of calves upon blood serum composition. *J. Anim. Sci.* 48:430.
- Dantzer, R., and P. Mormede. 1983. Stress in farm animals: A need for reevaluation. *J. Anim. Sci.* 57:6.
- Davis, M. 1992. The role of the amygdala in fear and anxiety. *Annu. Rev. Neurosci.* 15:353.
- Dunn, C. S. 1990. Stress reactions of cattle undergoing ritual slaughter using two methods of restraint. *Vet. Rec.* 126:522.
- Eibl-Eibesfeldt, I. 1970. *Ethology: The Biology of Behavior.* p 236. Holt Rinehart and Winston, New York.
- Ewbank, R., M. J. Parker, and C. W. Mason. 1992. Reactions of cattle to head restraint at stunning: A practical dilemma. *Anim. Welfare* 1:55.
- Fell, L. R., and D. A. Shutt. 1986. Adrenal response of calves to transport stress as measured by salivary cortisol. *Canad. J. Anim. Sci.* 66:637.
- Fordyce, G. 1987. Weaner training. *Queensland Agric. J.* 113:323.
- Fordyce, G., R. M. Dodt, and J. R. Wythes. 1988. Cattle temperaments in extensive herds in northern Queensland. *Aust. J. Exp. Agric.* 28:683.
- Fordyce, G., M. E. Goddard, R. Tyler, C. Williams, and M. A. Toleman. 1985. Temperament and bruising in *Bos indicus* cattle. *Aust. J. Exp. Agric.* 25:283.
- Fujita, O., Y. Annen, and A. Kitaoka. 1994. Tsukuba Highland low emotional strains of rats (*Rattus norvegicus*): An overview. *Behav. Gen.* 24:389.
- Gloor, P., A. Olivier, and L. F. Quesney. 1981. The role of the amygdala in the expression of psychic phenomena in temporal lobe seizures. In: Y. Ben Avi (Ed.) *The Amygdaloid Complex.* Elsevier, New York.
- Grandin, T. 1980. Observations of cattle behavior applied to the design of cattle handling facilities. *Appl. Anim. Ethol.* 6:19.
- Grandin, T. 1989. Voluntary acceptance of restraint by sheep. *Appl. Anim. Behav. Sci.* 23:257.

- Grandin, T. 1992. Behavioral agitation during handling is persistent over time. *Appl. Anim. Behav. Sci.* 36:1.
- Grandin, T. 1993a. Handling facilities and restraint of range cattle. In: T. Grandin (Ed.) *Livestock Handling and Transport*. p 43. CAB International, Wallingford, Oxon, U.K.
- Grandin, T. 1993b. Handling and welfare of livestock in slaughter plants. In: T. Grandin (Ed.) *Livestock Handling and Transport*. p 289. Wallingford, Oxon, U.K.
- Grandin, T., S. E. Curtis, T. M. Widowski, and J. C. Thurmon. 1986. Electro-immobilization versus mechanical restraint in an avoid-avoid choice test for ewes. *J. Anim. Sci.* 62:1469.
- Grandin, T., M. J. Deesing, J. J. Struthers, and A. M. Swinker. 1995a. Cattle with hair whorl patterns above the eyes are more behaviorally agitated during restraint. *Appl. Anim. Behav. Sci.* 46:117.
- Grandin, T., M. B. Rooney, M. Phillips, R. C. Cambre, N. A. Irlbeck, and W. Graffam. 1995b. Conditioning of nyala (*Tragelaphus angasi*) to blood sampling in a crate with positive reinforcement. *Zoo Biol.* 14:261.
- Grandin, T., K. G. Odde, D. N. Schutz, and L. M. Beherns. 1994. The reluctance of cattle to change a learned choice may confound preference tests. *Appl. Anim. Behav. Sci.* 39:21.
- Hargreaves, A. L., and G. D. Hutson. 1990a. Some effects of repeated handling on stress responses in sheep. *Appl. Anim. Behav. Sci.* 26:253.
- Hargreaves, A. L., and G. D. Hutson. 1990b. The effect of gentling on heart rate, flight distance, and aversion of sheep to a handling procedure. *Appl. Anim. Behav. Sci.* 26:243.
- Hargreaves, A. L., and G. D. Hutson. 1990c. The stress response in sheep during routine handling procedures. *Appl. Anim. Behav. Sci.* 26:83.
- Hargreaves, A. L., and G. D. Hutson. 1990d. Changes in heart rate, plasma cortisol and haematocrit of sheep during a shearing procedure. *Appl. Anim. Behav. Sci.* 26:91.
- Hastings, B. E., D. E. Abbott, and L. M. George. 1992. Stress factors influencing plasma cortisol levels and adrenal weights in Chinese water deer (*Hydropotes inermis*). *Res. in Vet. Sci.* 53:375.
- Hearnshaw, H., R. Barlow, and G. Want. 1979. Development of a 'temperament' or handling difficulty score for cattle. *Proc. Aust. Assoc. Anim. Breed. and Genet.* 1:164.
- Henricks, D. M., J. W. Cooper, J. C. Spitzer, and L. W. Grimes. 1984. Sex differences in plasma cortisol and growth in the bovine. *J. Anim. Sci.* 59:376.
- Hornbuckle, P. A., and T. Beall. 1974. Escape reactions to the blood of selected mammals by rats. *Behav. Biol.* 12:573.
- Hutson, G. D. 1985. The influence of barley food rewards on sheep movement through a handling system, *Appl. Anim. Behav. Sci.* 14:263.
- Hutson, G. D. 1993. Behavioral principles of sheep handling. In: T. Grandin (Ed.) *Livestock Handling and Transport*. CAB International, Wallingford, Oxon, U.K.
- Kemble, E. D., D. C. Blanchard, R. J. Blanchard, and R. Takushi. 1984. Taming in wild rates following medial amygdaloid lesions. *Physiol. Behav.* 32:131.
- Kenny, F. J., and P. V. Tarrant. 1987. The physiological and behavioral responses of crossbred steers to short haul transport by road. *Livest. Prod. Sci.* 17:63.
- Kilgour, R., and H. de Langen. 1970. Stress in sheep resulting from management practices, *Proc. N. Z. Soc. of Anim.*

Prod. 30:65.

- Knowles, T. G. 1995. The effects of transport in slaughter weight lambs. Br. Soc. Anim. Sci., Winter Meeting (Summary), Paper 43.
- Lanier, E. K, T. H. Friend, D. M. Bushong, D. A. Knabe, T. H. Champney, and D. G. Lay, Jr. 1995. Swim habituation as a model for eustress and distress in the pig. J. Anim. Sci. 73(Suppl. 1):126 (Abstr.).
- Lay, D. C., Jr., T. H. Friend, C. L. Bowers, K. K. Grissom, and O. C. Jenkins. 1992a. A comparative physiological and behavioral study of freeze and hot-iron branding using dairy cows. J. Anim. Sci. 70:1121.
- Lay, D. C., Jr., T. H. Friend, R. D. Randel, C. L. Bowers, K. K. Grissom, and O. C. Jenkins. 1992b. Behavioral and physiological effects of freeze and hot-iron branding on crossbred cattle. J. Anim. Sci. 70:330.
- LeDoux, J. E. 1994. Emotion, memory and the brain. Sci. Am. 271:50.
- Le Neindre, P., G. Trillet, J. Sapa, F. Ménéssier, J. N. Bonnet, and J. M. Chupin. 1995. Individual differences in docility of Limousin cattle. J. Anim. Sci. 73:2249.
- Mateo, J. M., D. Q. Estep, and J. S. McCann. 1991. Effects of differential handling on the behavior of domestic ewes. Appl. Anim. Behav. Sci. 32:45.
- Matheson, B. K, B. J. Branch, and A. N. Taylor. 1971. Effects of amygdaloid stimulation on pituitary adrenal activity in conscious cats. Brain Res. 32:151.
- McGlone, J. J., J. L. Salak, E. A. Lumpkin, R. L. Nicholson, M. Gibson, and R. L. Norman. 1993. Shipping stress and social status effects on pig performance, plasma cortisol, natural killer cell activity and leukocyte numbers. J. Anim. Sci. 71:888.
- Miller, N. E. 1960. Learning resistance to pain and fear effects of overlearning, exposure, and rewarded exposure in context. J. Exp. Psychol. 60:137.
- Miller, K N., and S. Twohill. 1983. A method for measuring systolic blood pressure in conscious swine (*Sus scrofa*). Lab Anim. 12(6):51.
- Mitchell, G., J. Hattingh, and M. Ganhao. 1988. Stress in cattle assessed after handling, transport and slaughter. Vet. Rec. 123: 201.
- Moberg, G. P., and V. A. Wood. 1982. Effect of differential rearing on the behavioral and adrenocortical response of lambs to a novel environment. Appl. Anim. Ethol. 8:269.
- Panepinto, L. M. 1983. A comfortable minimum stress method of restraint for Yucatan miniature swine. Lab. Anim. Sci. 33:95.
- Parsons, P. A. 1988. Behavioral stress and variability. Behav. Gen. 18:293.
- Pearson, A. J., R. Kilgour, H. de Langen, and E. Payne. 1977. Hormonal responses of lambs to trucking, handling and electric stunning. N.Z. Soc. Anim. Prod. 37:243.
- Peischel, A., R. R. Schalles, and C. E. Owensby. 1980. Effect of stress on calves grazing Kansas flint Hills range. J. Anim. Sci. 51(Suppl. 1):245 (Abstr.).
- Pommier, S. A., and A. Houde. 1993. Effect of genotype for malignant hypothermia as determined by a restriction endonuclease assay on the quality characteristics of commercial pork loins. J. Anim. Sci. 71:420.
- Popova, N. J., E. M. Nikulina, and A. V. Kulikov. 1993. Genetic analysis of different kinds of aggressive behavior.

Behav. Gen. 23:491.

Price, E. O. 1984. Behavioral aspects of domestication. *Q. Rev. Biol.* 59:1.

Ray, D. E., W. J. Hansen, B. Theurer, and G. H. Stott. 1972. Physical stress and corticoid levels in steers. *Proc. West. Sect. Am. Soc. Anim. Sci.* 23:255.

Redgate, E. S., and E. E. Fahringer. 1973. A comparison of pituitary adrenal activity elicited by electrical stimulation of preoptic amygdaloid and hypothalamic sites in the rat brain. *Neuroendocrinology* 12:334.

Reid, R. I., and S. C. Mills. 1962. Studies of carbohydrate metabolism in sheep. XVI. The adrenal response to physiological stress. *Aust. J. Agric. Res.* 13:282.

Rushen, J. 1986a. Aversion of sheep to electro-immobilization and physical restraint. *Appl. Anim. Behav. Sci.* 15:315.

Rushen, J. 1986b. Aversion of sheep for handling treatments: Paired-choice studies. *Appl. Anim. Behav. Sci.* 16:363.

Rushen, J. 1996. Using aversion learning techniques to assess the mental state, suffering, and welfare of farm animals. *J. Anim. Sci.* 74:1990.

Rushen, J., and P. Congdon. 1986a. Relative aversion of sheep to simulated shearing with and without electro-immobilization. *Aust. J. Exp. Agric.* 26:535.

Rushen, J., and P. Congdon. 1986b. Sheep may be more averse to electro-immobilization than to shearing. *Aust. Vet. J.* 63:373.

Setckleiv, J., O. E. Skaug, and B. R. Kaada. 1961. Increase in plasma 17-hydroxycorticosteroids by cerebral cortical and amygdaloid stimulation in the cat. *J. Endocrinol.* 22:119.

Spensley, J. C., C. M. Wathes, N. K. Waran, and J. A. Lines. 1995. Behavioral and physiological responses of piglets to naturally occurring sounds. *Appl. Anim. Behav. Sci.* 44:277 (Abstr.).

Stahringer, R. C., R. D. Randel, and D. A. Neuenforff. 1989. Effect of naloxone on serum luteinizing hormone and cortisol concentration in seasonally anestrous Brahman heifers. *J. Anim. Sci.* 67(Suppl. 1):359 (Abstr.).

Stephens, D. B., and J. N. Toner. 1975. Husbandry influences on some physiological parameters of emotional responses in calves. *Appl. Anim. Ethol.* 1:233.

Stermer, R., T. H. Camp, and D. G. Stevens. 1981. Feeder cattle stress during transportation. Paper No. 81-6001. *Am. Soc. Agric. Eng., St. Joseph, MO.*

Stevens, D. A. and N. J. Saplikoski. 1973. Rats reaction to conspecific muscle and blood evidence for alarm substances. *Behav. Bio.* 8:75.

Stevens, D. A., and D. A. Gerzog-Thomas, 1977. Fright reactions in rats to conspecific tissue. *Physiol. Behav.* 18:47.

Stooky, J. M., T. Nickel, J. Hanson, and S. Vandenbosch. 1994. A movement-measuring-device for objectively measuring temperament in beef cattle and for use in determining factors that influence handling. *J. Anim. Sci.* 72(Suppl. 1):207 (Abstr.).

Stricklin, W. R., C. E. Heisler, and L. L. Wilson. 1980. Heritability of temperament in beef cattle. *J. Anim. Sci.* 51(Suppl. 1):109 (Abstr.).

Tennessee, T., M. A. Price, and R. T. Berg. 1984. Comparative responses of bulls and steers to transportation. *Can. J. Anim. Sci.* 64:333.

- Trunkfield, H. R., and D. M. Broom. 1990. Welfare of calves during handling and transport. *Appl. Anim. Behav. Sci.* 28:135.
- Tulloch, N. M. 1961. Behavior of cattle in yards. II. A study of temperament. *Anim. Behav.* 9:25.
- Tume, R. K., and F. D. Shaw. 1992. Beta-endorphin and cortisol concentrations in plasma of blood samples collected during exsanguination of cattle. *Meat Sci.* 31:211.
- Vieville-Thomas, C., and J. P. Signoret. 1992. Pheromonal transmission of an aversive experience in domestic pigs. *J. Chem. Endocrinol.* 18:1551.
- Warriss, P. D., S. N. Brown, and M. Adams. 1994. Relationships between subjective and objective assessments of stress at slaughter and meat quality in pigs. *Meat Sci.* 38:329.
- White, R. G., J. A. DeShazer, C. J. Tressler, G. M. Borchert, S. Davy, A. Waninge, A. M. Parkhurst, M. J. Milanuk, and E. T. Clemens. 1995. Vocalization and physiological response of pigs during castration with and without a local anesthetic. *J. Anim. Sci.* 73:381.
- Whittlestone, W. G., R. Kilgour, H. de Langen, and G. Duirs. 1970. Behavioral stress and cell count of bovine milk. *J. Milk Food Technol.* 33:217.
- Wienker, W. R. 1986. Giraffe squeeze cage procedures. *Zoo Biol.* 5:371.
- Zavy, M. T., P. E. Juniewicz, W. A. Phillips, and D. L. Von Tungeln. 1992. Effects of initial restraint, weaning and transport stress on baseline and ACTH stimulated cortisol responses in beef calves of different genotypes. *Am. J. Vet. Res.* 53:551.

To: [[AWIC](#)] [[Contents of Article](#)] [[Acknowledgements](#)] [[Introduction](#)] [[How to Use This Document](#)] [[Articles](#) and Bibliographies] [[Audiovisuals](#)] [[Internet Resources](#)] [[Organizations](#)] [[Guidelines](#)] [Document Delivery Information]

Livestock Resources: Bibliography

- [General](#)
- [Cattle](#)
- [Exotic and Other Animals](#)
- [Goats](#)
- [Horses](#)
- [Poultry](#)
- [Ratites](#)
- [Sheep](#)
- [Swine](#)

Bibliography: General

Altenecker, K. (1995). [**Checklist for purchasing a livestock trailer**]. **Checkliste fuer den Kauf eines Viehtransportanhaengers**. *Landwirtschaftliches Wochenblatt. Organ des Landesbauernverbandes in Baden Wuerttemberg. Ausg. WWL* 162(20):26-27.

NAL call number: S232 B24L36

Anderson, R.S. and A.T.B. Edney, eds. (1991). **Practical animal handling**. Oxford, UK: Pergamon Press, 198 p.
NAL call number: SF61 P73 1991

Animal Industry Foundation (1995). **Show animal care & handling guide**. Arlington, Va.: Animal Industry Foundation, 187 p.
NAL call number: SF118 S55 1995

Austin, A.R. (1996). **Travel sickness in pigs and sheep**. *Veterinary Record* 139(23):575.
NAL call number: 41.8 V641

AVMA Animal Welfare Forum: The veterinarian's role in farm animal welfare, Rosemont, Illinois, USA, November 5, 1993. *Journal of the American Veterinary Medical Association* 204(3):363-395.
NAL call number: 41.8 Am3

Balta i Moner, J. (1993). **[Stress of animals during transport]. Stress de los animales durante el transporte**. *Nuestra Cabana* (245):28-31.

Baumgartner, G. (1990). **[Conditions for the keeping and transport of farm animals in conformity with animal welfare requirements]. Tierschutzgerechte haltungs- und transportbedingungen fuer landwirtschaftliche nutztiere**. *Deutsche Tieraerztliche Wochenschrift* 97(4):139-144.
NAL call number: 41.8 D482

Berry, D.J. (1992). **Transport and handling of livestock--January 1981-July 1992**. *Quick Bibliography Series (92-57)*, U.S. Department of Agriculture, National Agricultural Library. Beltsville, Md.: The Library, 40 p. Updates QB 91-143.
NAL call number: aZ5071 N3

Berry, D.J. (1994). **Transport and handling of livestock and poultry: January 1984 - January 1994**. *Quick Bibliography Series (94-32)*, U.S. Department of Agriculture, National Agricultural Library. Beltsville, Md.: The Library, 71 p.
NAL call number: aZ5071 N3

Biller, R.H., J. Brunotte, R. Artmann, and H. Sonnenberg (1996). **[Animal husbandry production methods]. Produktionsverfahren der Tierhaltung**. *Interner Arbeitsbericht 1994-95. Bericht aus dem Institut fuer Betriebstechnik* (225):59-77.

Birchall, A. (1990). **The rough road to slaughter**. *New Scientist* 128(1744):33-36, 38.
NAL call number: 472 N42

Boehm, R. (1994). **[Disinfection of transport vehicles, transport containers and livestock loading ramps]. Desinfektion von fahrzeugen, transportbehaeltern und ladestellen**. *Fleischwirtschaft* 74(9):947-951.
NAL call number: 280.38 F62

Brauner, U. (1994). **Comparison of animal welfare legislation in Germany and Australia, with special reference to farm animals and penalties**. Hannover, Germany, 237 pp.
NAL call number: DISS F1994074

Briese, A., K. von Holleben, and M. von Wenzlawowicz (1995). **[Demands for drive from cattles and pigs for loading on agricultural farm, stockyard and slaughterhouses. Part 3: Proven solutions and unfavorable systems out the practice of cattle driving]. Anforderungen an das Treiben von Rindern und Schweinen zur Verladung am landwirtschaftlichen Betrieb, auf Viehhoefen und in Schlachtbetrieben. Teil 3: Bewaehrte Loesungen und unguenstige Systeme aus der Praxis des Viehtreibens**. *Rundschau fuer Fleischhygiene und Lebensmittelueberwachung* 47(9):195-198.

Broom, D.M. (1993). **Welfare assessment and welfare problem areas during handling and transport**. In: *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 35-42.
NAL call number: SF89 L59 1993

Broucek, J., V. Tancin, and S. Mihina (1993). **Transport of animals and its problems.** *Veterinarstvi* 43(11):425-428.
NAL call number: 41.8 V6439

Butko, M.P. and I.N. Tsarikov (1990). **Suitability of new railway trucks for transporting livestock.** *Veterinariya Moskva* (7):20-25.

Carroll, Jr., D.W. (1990). **Ship agent/broker viewpoint.** In: *Conference proceedings: Animal Transportation Association, April 22-25 1990, 16th International Conference*, Dallas, Tex.: The Association, p. 39-42.
NAL call number: HE9788.4 A55A54 1990

Casper, J., S.E. Heath, and R.D. Linnabary (1993). **Preparing the farm and farm animals for diasters.** *Animal Welfare Information Center Newsletter* 4(4):3-6.
NAL call number: aHV4701 A952

Chapman, H.D. and J.W. Branch, Jr. (1991). **Corral construction and location.** *Publication collection, Virginia Cooperative Extension Service (400-050)*, 4 p.
NAL call number: S544.3 V8V52

Cheffins, R. and D. Hirst (1990). **Self mustering - progress and developments.** *Animal production in Australia. Proceedings of the Australian Society of Animal Production, held in Adelaide, Australia on 8-12 July 1990*, G.J. Judson, ed., 18:172-175.
NAL call number: 49.9 Au72 v.13

Clingerman, K. (1991). **Transport and handling of livestock--January 1979-June 1991.** *Quick Bibliography Series (91-143)*, U.S. Department of Agriculture, National Agricultural Library. Beltsville, Md.: The Library, 27 p. Updates QB 90-39.
NAL call number: aZ5071.N3

Coates, J. (1990). **Challenges facing the livestock freight forwarder in the 1990's.** In: *Conference proceedings: Animal Transportation Association, April 22-25, 1990, 16th International Conference*, Dallas, Tex.: The Association, p. 29-32.
NAL call number: HE9788.4 A55A54 1990

Cockrill, W.R., ed. (1990). **World Association for Transport Animal Welfare and Studies. Inaugural Meeting. Wolfson College Oxford, 12 December 1989. Working animals international.** Oxford, UK, 78 p.

Coppinger, L. and R. Coppinger (1993). **Dogs for herding and guarding livestock.** In: *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 179-196.
NAL call number: SF89 L59 1993

Cortesi, M.L. (1996). **[Income animals. Welfare indicators and "guide lines" for their application in slaughtering]. Animali da reddito. Indicatori di benessere e "linee guida" per la loro applicazione nella macellazione.** *Selezione Veterinaria* (3):173-191.
NAL call number: 241.71 B75

Cross, H. (1995). **Battle over live animal transport.** *Animals International* (51):32-33.
NAL call number: HV4701 A53

English, P., G. Burgess, R.S. Cochran, and J. Dunne (1992). **Stockmanship: Improving the care of the pig and other livestock.** Ipswich, UK: Farming Press, 190 p.
NAL call number: SF71.2 S76 1992

Facilities, handling key to making livestock health programs work (1991). *Georgia Cattleman* 19(5):46.
NAL call number: SF191 G4

Farm Animal Welfare Council (1991). **Report on the European Commission proposals on the transport of animals.** London: MAFF Publications, 31 p.

Fikuart, K. (1992). [Experiences with long-distance transportation of animals -cattle, pigs, deer, rabbits]. **Erfahrungen mit ferntransporten von tieren - rinder, schweine, hirsche, kaninchen.** *Deutsche Tierärztliche Wochenschrift* 99(1):18-20.
NAL call number: 41.8 D482

Florent, L. (1991). [Meat animals transport: physiological, pathological, behavioral and economical aspects]. **Le transport des animaux de boucherie: aspects physiopathologiques, comportementaux et économiques.** Toulouse, France: Ecole Nationale Veterinaire de Toulouse, 1991, 224 p.

Fortbildungsveranstaltung an der Tierärztliche Hochschule Hannover, eds. (1996). **Current problems in animal welfare. Part 1.** *Deutsche Tierärztliche Wochenschrift* 103(2):35-70.
NAL call number: 41.8 D482

Gallo S.C. (1994). [Effect of pre and post slaughtering handling on meat quality]. **Efecto del manejo pre y post faenamamiento en la calidad de la carne.** *Serie Simposios y Compendios Sociedad Chilena de Produccion Animal* (2):27-47.

Gibbens, N. (1996). **Welfare during handling and transport of farm animals.** *State Veterinary Journal* 6(1):7-9.
NAL call number: SF601 S8

Gonyou, H.W. (1993). **Behavioural principles of animal handling and transport.** *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 11-20.
NAL call number: SF89 L59 1993

Goossens, B., S. Osaer, S. Kora, K.J. Chandler, L. Petrie, J.A. Thevasagayam, T. Woolhouse, and J. Anderson (1998). **Abattoir survey of sheep and goats in The Gambia.** *Veterinary Record* 142(11):277-281.

Grandin, T. (1990). **Innovation in pre-slaughter handling.** *Applied Animal Behaviour Science* 26(3):286.
NAL call number: QL750 A6

Grandin, T. (1993). **Handling and welfare of livestock in slaughter plants.** *Livestock handling and transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 289-311.
NAL call number: SF89 L59 1993

Grandin, T.F. and L. Krulisch (1992). **Handling and transport of agricultural animals used in research.** In: *The well being of agricultural animals in biomedical and agricultural research*, J.A. Mench and S.J. Mayer, eds., p. 74-84.
NAL call number: HV4704 W38 1990

Grandin, T. and M. Deesing (1998). **Genetics and behavior during handling, restraint, and herding.** In: *Genetics and the Behavior of Domestic Animals*, T. Grandin, ed., San Diego, Calif.: Academic Press, p. 113-144.
NAL call number: SF756.7 G46 1998

Grandin, T. (1997). **Assessment of stress during handling and transport.** *Journal of Animal Science* 75(1):249-257.
NAL call number: 49 J82

Grandin, T. (1994). **Euthanasia and slaughter of livestock.** *Journal of the American Veterinary Medical Association* 209(9):1354-1360.
NAL call number: 41.8 Am3

Grandin, T. (1994). **Farm animal welfare during handling, transport, and slaughter.** *Journal of the American Veterinary Medical Association* 204(3):372-377.
NAL call number: 41.8 Am3

- Grandin, T. (1993). **Handling and welfare of livestock in slaughter plants.** *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 289-311.
NAL call number: SF89 L59 1993
- Grandin, T. (1993). **Livestock handling and transport.** Wallingford, UK: CAB International, 320 p.
NAL call number: SF89 L59 1993
- Grandin, T. (1994). **Solving livestock handling problems.** *Veterinary Medicine* 89(10):989-998.
NAL call number: 41.8 M69
- Grandin, T. (1993). **Teaching principles of behavior and equipment design for handling livestock.** *Journal of Animal Science* 71(4):1065-1070
NAL call number: 49 J82
- Grandin, T. (1995). **Restraint of livestock.** In: *Animal Behavior and the Design of Livestock and Poultry Systems International Conference* Ithaca, NY: Northeast Regional Agricultural Engineering Service Cooperative Extension, p. 208-223.
NAL call number: S675 N72 no.84
- Grandin, T. (1992). **Livestock trucking guide: livestock management practices that reduce injuries to livestock during transport.** Madison, WI : Livestock Conservation Institute, 16 p.
NAL call number: SF89 G73 1992
- Grandin, T. (1996). **Factors that impede animal movement at slaughter plants.** *Journal of the American Veterinary Medical Association* 209(4):757-759.
NAL call number: 41.8 Am3
- Grandin, T. (1990). **Introduction: Management and economic factors of handling and transport.** *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 1-10.
NAL call number: SF89 L59 1993
- Grandin, T. (1993). **Design of loading facilities and holding pens.** *Applied Animal Behaviour Science* 28(1/2):187-201.
NAL call number: QL750 A6
- Grandin, T. (1993). **The effect of previous experiences on livestock behavior during handling.** *Agri-Practice* 14(4):15-20.
NAL call number: SF601 B6
- Grandin, T. (1993). **Facility design in relation to animal behaviour, stress and bruising.** *Proceedings of the New Zealand Society of Animal Production* 53:175-178.
NAL call number: 49.9 N483
- Grauvogl, A. (1990). **[How to handle horses, cattle, pigs and sheep]. Umgang mit pferd, rind, schwein und schaf.** *Praktische Tierarzt* 71(4):8-13.
NAL call number: 41.8 P882
- Gregory, N.G. (1992). **Developments in livestock transport and slaughter.** *Sustainable livestock farming into the 21st Century*, CAS Paper 25, B.J. Marshall, ed., p. 31-50.
- Gregory, N.G. (1994). **Preslaughter handling, stunning and slaughter.** *Meat Science* 36(1/2): 45-56.
NAL call number: TX373 M4
- Gregory, N.G. (1996). **Welfare and hygiene during preslaughter handling.** *Meat Science* 43(suppl.): S35-S46.
NAL call number: TX373 M4

- Gross, W.B. and P.B. Siegel (1993). **General principles of stress and welfare.** *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 21-34.
NAL call number: SF89 L59 1993
- Guizzardi, F. (1996). [Escort sanitary documentation (for the transport of cattle and swine in Italy)]. **Documentazione sanitaria di scorta (per il trasporto dei bovini e suini in Italia).** *Informatore Agrario* 52(8):55-57.
NAL call number: 281.8 IN32
- Hall, S.J.G. and R.H. Bradshaw (1998). **Welfare aspects of the transport by road of sheep and pigs.** *Journal of Applied Animal Welfare Science* 1(3):235-254.
- Hays, S.M. (1990). **Shipping fever: drive it out.** *Agricultural Research* 38(3):12-13.
NAL call number: 1.98 Ag84
- Hemsworth, P.H. and G.J. Coleman (1998). **Human livestock interactions: the stockperson and the productivity and welfare of intensively farmed animals.** Wallingford, UK: CAB International, 152 p.
- Hemsworth, P.H., E.O. Price, and R. Borgwardt (1996). **Behavioural responses of domestic pigs and cattle to humans and novel stimuli.** *Applied Animal Behaviour Science* 50(1):43-56.
NAL call number: QL750 A6
- Hemsworth, P.H., J.L. Barnett, and G.J. Coleman (1993). **Improving productivity with better stock handling.** *Proceedings of the New Zealand Society of Animal Production* 53:211-314.
NAL call number: 49.9 N483
- Hodge, R.W., K.L. Butler, A.P. Kelly, and P.T. Beers (1990). **Simulated ship transport--the effect of presenting the ration as pellets on the incidence of failure to eat.** *Proceedings of the Australian Society of Animal Production*, Sydney, Australia: Pergamon Press, 18 p.
NAL call number: 49.9 Au72
- House of Commons Agricultural Committee (1990). **Animals in transit. Memoranda.** London: HMSO, 89p.
- Hovell, G.J.R. (1990). **Transport animals promoted.** *British Veterinary Journal* 146(5):385-386.
NAL call number: 41.8 V643
- Hoy, S. (1993). [Transportation of slaughter animals in agreement with prevention of cruelty to animals (cattle, poultry, rabbits)]. **Tierschutzgerechtes Transportieren von Schlachttieren (Rinder, Gefluegel, Kaninchen).** *Fleisch* 47(6):353-354.
NAL call number: 50.8 F622
- Huisinga, G. (1996). [Direct marketing: What should consumers take into account]. **Direktvermarktung: Was Verbraucherinnen und Verbraucher beachten sollten.** *DGS International* (39):10-11.
NAL call number: SF481 D48
- Humane Slaughter Association (1991). **Handling and loading of livestock.** Potters Bar, Hertfordshire, UK: Humane Slaughter Association, 35 p.
NAL call number: SF89 H85 1991
- Humane Slaughter Association (1993). **Captive-bolt stunning of livestock.** South Mimms, Potters Bar, Hertfordshire, UK: Humane Slaughter Association, 23 p.
NAL call number: SF760 A55C37 1993
- Investigation into the condition of livestock markets: hearing before the Committee on Commerce, Science, and Transportation, United States Senate, One Hundred Fourth Congress, second session, June 11, 1996** (1996). United States Senate, Committee on Commerce, Washington, DC: U.S. G.P.O. For sale by the U.S. G.P.O., Supt. of

Docs., Congressional Sales Office, 142 p.

NAL call number: Fiche S 133 Y-4.C-73/7:S.HRG.104-625

Jerabek, J. (1995). **[Regulations on protection of animals during transport]. Smernice o ochrane zvirat behem prepravy.** *Veterinarstvi* 45(11):506-508.

NAL call number: 41.8 V6439

Joyce, J. (1990). **Operations: from an airline viewpoint.** *Conference proceedings: Animal Transportation Association, April 22-25, 1990, 16th International Conference*, Dallas, Tex.: The Association, p. 32-38.

NAL call number: HE9788.4 A55A54 1990

Kidd, R. (1994). **How to corral handling stress: innovative facilities and techniques make working stock a breeze.** *New Farm* 16(6):5-9.

NAL call number: S1 N32

Kieffer, J.P. (1991). **Animal welfare during transport of livestock.** *Bulletin Mensuel de la Societe Veterinaire Pratique de France* 75(6-7):325-330, 332-337.

NAL call number: 41.9 SO12

Koenigs, E. (1993). **[Animal transportation: necessity of action persists]. Tiertransporte: Weiterhin Handlungsbedarf.** *Tierzuechter* 45(10):25-27.

NAL call number: 49 T445

Kokoszka, S. (1994). **Type of farming versus transport requirements and equipment with transport means of family farms.** *Problemy Inzynierii Rolniczej* 2(4):117-123.

Laing, J.A. (1991). **Prevention, management and repair of trauma in transport animals.** In: *World Association for Transport Animal Welfare and Studies, Spring Meeting, 15 May 1991*. Newmarket, UK: Animal Health Trust, 63 p.

Larsen, W.E. and R.E. Short (1993). **Variable-dimension livestock restraining cage.** *Applied Engineering in Agriculture* 9(6):549-552.

NAL call number: S671 A66

le Neindre, P., X. Boivin, and A. Boissy (1996). **Handling of extensively kept animals.** *Applied Animal Behavioural Science* 49(1):73-81.

NAL call number: QL750 A6

Lindkvist, K. (1995). **[Transportation of grazing animals for landscape management]. Foerflytning av betesdjur i landskapsvaardande syfte.** Uppsala, Sweden. 176 p. Summaries in English and Swedish.

Livestock Conservation Institute (1992). **Proper handling techniques for non-ambulatory animals.** Madison, Wis.: The Institute, 19 p.

NAL call number: SF140 S33P76 1992

[Livestock traffic (marketing) regulation altered at high speed]. Viehverkehrs-VO im Eilverfahren geaendert. *Schweinezucht und Schweinemast* 41(2):4.

NAL call number: 46 Z7 Ed.4

Loi, P. (1991). **[With regard to the livestock transports (in Italy)]. A proposito dei trasporti di bestiame (in Italia).** *Eurocarni* 6(9):91-95.

Lorenz, J. (1996). **Transport of animals. Ways of averting stress and losses among cattle and pigs.** *Arbeiten der DLG*, Band 193, 85 pp.

NAL call number: 18 D48

- Mangas, J.M., R. Millan, E. Sanjuan, M. Castelo, and L. Tudela (1997). [**Humane slaughter of animal meat for human consumption**]. **El sacrificio humanitario de los animales de abasto**. *Eurocarne* (53):43-49. Summaries in English and Spanish.
- Manteca, X. and J.L. Ruiz de la Torre (1996). **Transport of extensively farmed animals**. *Applied Animal Behaviour Science* 49(1):89-94.
NAL call number: QL750 A6
- Mason, C.W., J.L. Metheringham, and M.J. Parker (1995). **Slaughter and welfare**. *Meat Focus International* 4(12):495-500.
NAL call number: TS1950 M433
- McGlone, J.J. (1995). **Facility design should correspond to animal behavior**. *Feedstuffs* 67(26):12-16, 21.
NAL call number: 286.81 F322
- Meunier Salaun, M.C. (1991). **Animal behaviour and design of animal housing**. *Bulletin Technique du Machinisme et de l'Equipement Agricoles* (51): 9-15.
NAL call number: 58.9 F842
- Moebius, C. (1997). [**EuroTier further selection: Novelty in the techniques of cleaning and transportation**]. **EuroTier-Nachlese: Neuheiten in der Reinigungs- und Transporttechnik**. *DGS Magazin* (2):26-30.
- Murray, K.C., S. Cullinane, J.C. Eddison, and J.A. Kirk (1996). **The relationship between livestock distribution channels and animal welfare**. In: *Proceedings of the 30th International Congress of the International Society for Applied Ethology, 14-17 August 1996, Guelph, Ontario, Canada*, p. 123.
NAL call number: SF756.7 I57 1996
- National Youth Livestock Program Ethics Symposium: December 1-2, 1995, Bally's Las Vegas, Las Vegas, Nevada. Official proceedings National Youth Livestock Program Ethics Symposium** (1995). Bowling Green, Ky.: Livestock Conservation Institute, 161 p.
NAL call number: HV4757 N38 1995
- Nijskens, J.J.W. (1997). **Two microbiological techniques for evaluating the hygiene of livestock trucks after cleaning and disinfection**. *Tijdschrift voor Diergeneeskunde* 122(7):193-195.
NAL call number: 41.8 T431
- O'Donnell, J.B. (1990). **Port authority point of view**. *Conference proceedings: Animal Transportation Association, April 22-25, 1990, 16th International Conference, Dallas, Tex.*: The Association, p. 42-43.
NAL call number: HE9788.4 A55A54 1990
- Orihuela, J.A. and J.J Solano (1994). **Relationship between order of entry in slaughterhouse raceway and time to traverse raceway**. *Applied Animal Behaviour Science* 40(3-4): 313-317.
NAL call number: QL750 A6
- Panepinto, L.M. and L. Krulisch (1992). **The minimum-stress physical restraint of swine and sheep in the laboratory**. In: *The Well-being of Agricultural Animals in Biomedical and Agricultural Research*, J.A. Mench and S.J. Mayer, eds., p. 85-87.
NAL call number: HV4704.W38 1990
- Perry, G., ed. (1990). **Transport and pre-slaughter handling**. *Applied Animal Behaviour Science* 28(1-2):1-211.
NAL call number: QL750 A6
- Poerstel, T.M. and W.L. Craig (1993). **A guide for livestock exporters**. Washington, D.C.: U.S. Department of Agriculture, Agricultural Marketing Service, Transportation and Marketing Division.
NAL call number: aSF89 P63 1993

Potapov, G.P. (1990). [**Loading-transport vehicles for stock raising**]. **Pogruzochno-transportnye mashiny dlia zhivotnovodstva : spravochnik**. Moscow: Agropromizdat, 238 p.

NAL call number: SF89 P6

Randall, J.M. (1993). **Environmental parameters necessary to define comfort for pigs, cattle and sheep in livestock transporters**. *Animal Production* 57(Pt.2):299-307.

NAL call number: 49 An55

Randall, J.M. and R. Patel (1994). **Thermally induced ventilation of livestock transporters**. *Journal of Agricultural Engineering Research* 57(2):99-107.

NAL call number: 58.8 J82

Reintam, E. (1995). [**Animal welfare and European integration**]. **Euroopa integratsiooni mitmetahulisus**. *Estonian Veterinary Review* (Oct 1995):356-359. Summary in English.

Robinson, G.M. (1990). **Port of export for sea/air user/provider perspectives**. *Conference proceedings: Animal Transportation Association, April 22-25, 1990, 16th International Conference*, Dallas, Tex.: The Association, p. 45-48.

NAL call number: HE9788.4 A55A54 1990

Rushen, J. (1996). **Using aversion learning techniques to assess the mental state, suffering, and welfare of farm animals**. *Journal of Animal Science* 74(8):1990-1995.

NAL call number: 49 J82

Sacht, J.H. (1990). **Animal welfare at transport - lists for checking horse, cattle, sheep and pig transports**.

Rundschau fur Fleischhygiene und Lebensmitteluberwachung 42(11): 203-204.

Sascht, J.H. (1990). **Animal welfare during transport**. *Rundschau fur Fleischhygiene und Lebensmitteluberwachung* 42(10):180-181.

Sato, S. and N. Okamoto (1996). **The effect of presence of a stockperson on behaviour of livestock under distress**. In: *Proceedings of the 30th International Congress of the International Society for Applied Ethology 14-17 August, 1996, Guelph, Ontario, Canada / International Society for Applied Ethology International Congress*, p.53.

NAL call number: SF756.7 I57 1996

Schaefer, A.L., S.D.M. Jones, and R.W. Stanley (1997). **The use of electrolyte solutions for reducing transport stress**. *Journal of Animal Science* 75(1):258-265.

NAL call number: 49 J82

Schneiderova, P. (1993). [**Farm animal handling with respect to welfare conditions - pigs, cattle (Review)**]. **Zasady manipulace s hospodarskymi zviraty z hlediska welfare - prasata, skot (Studijni zprava)**. *Studijni Informace Zivocisna Vyroba*. Prague, Czech Republic: Ustav Zemedelskych a Potravinarskych Informaci, 52 p.

NAL call number: 49.9 C33

Second National Youth Livestock Program Ethics Symposium: December 6-8, 1996, Hyatt Regency DFW Airport, Dallas-Fort Worth, Texas. Official proceedings (1996). Bowling Green, Ky.: Livestock Conservation Institute, 175p.

NAL call number: HV4757 N38 1996

Stafford, K.J. and D.J. Mellor (1993). **Castration, tail docking and dehorning - what are the constraints?** *Proceedings of the New Zealand Society of Animal Production* 53:189-196.

NAL call number: 49.9 N483

Stevenson, P. (1994). **A far cry from Noah**. London: Green Print, 128 p.

NAL call number: HV4733 S74 1994

Tarrant, P.V. (1990). [**The stress by transport in the animal of zootechnical interest**]. **Lo stress da trasporto negli animali di interesse zootecnico**. *Selezione Veterinaria* 31(1):15-21.

NAL call number: 241.71 B75

Texdorf, I. (1994). [**Animal protection at slaughter houses - inspections and problems at discharge**]. **Tierschutz am schlachthof - kontrollen und probleme bei der entladung**. *Rundschau fuer Fleischhygiene und Lebensmittelueberwachung* 46(8):171-172.

Tibau, J. and A. Diestre (1995). [**Genetic and handling factors to take part in carcass and meat quality**]. **Factores geneticos y de manejo que intervienen en la calidad de la canal y de la carne**. *Eurocarne* (35):73-77.

Town, W.K. and J.W. Lapworth (1990). **The use of wind tunnel modelling to improve the transport environment in roadtrains carrying livestock on unsealed roads**. In: *Agricultural engineering conference 1990. Proceedings of a conference held in Toowoomba, Australia, 11-14 November 1990*, National Conference Publication Number 90-13, Institution of Engineers Australia, ed., p. 435-438.

NAL call number: S671.3 A37 1990

[**Transport of livestock**] (1993). **Transport des animaux d'elevage**. In: *Syndicat francais de l'assurance maritime et transports*. Paris, France: Editions l'assurance francaise, 150 p. In French and English.

NAL call number: SF89 T76 1993

[**Transportation of sick or injured animals**] (1994). **Transport von kranken oder verletzten Tieren**. *Landwirtschaftliches Wochenblatt. Organ des Landesbauernverbandes in Baden Wuerttemberg. Ausg. WWL* 161(38):26.

NAL call number: S232 B24L36

Viere, H.P. (1994). **Mobile slaughtering plant. An integrated slaughtering and processing unit of modular construction**. *Fleischwirtschaft* 74(10):1077-1078.

NAL call number: 280.38 F62

Vitzthum, W. (1996). [**Responsibility for care on the part of the stockyard in relation to fitness for transport of livestock**]. **Betreuungspflicht auf dem Viehhof und Transportfaehigkeit**. *Tieraerztliche Umschau* 51(2): 99-100, 105-106.

NAL call number: 41.8 T445

Walsh, P.A., J.W. Lapworth, D. Hall, and L.C. Zeller (1994). **Vibration levels in livestock trailers on Australian roads**. *Agricultural Engineering Australia*, p. 47.

NAL call number: S671 A33

Walter, J. and P. Knief (1993). **Animal friendly houses have five sections**. *DLG Mitteilungen Agrar Inform* 108(3):60-62.

NAL call number: HD1491 G3K6

Warris, P.D. (1992). **Animal welfare. Handling animals before slaughter and the consequences for welfare and product quality**. *Meat Focus International* 1(3):135-138.

NAL call number: TS1950 M433

Warriss, P.D. (1996). **The welfare of animals during transport**. *Veterinary Annual* 36:73-85.

NAL call number: 41.8 V6456

von Wenzlawowicz, M., K. von Holleben, A. Briese, and L. Heuking (1994). [**Animal welfare in slaughterhouses**]. **Tierschutz am Schlachthof**. *Berliner und Muenchener Tieraerztliche Wochenschrift* 107(7):237-244. Summaries in German and English.

NAL call number: 41.8 B45

Wiklund, E., G. Malmfors, and B. Essen Gustavsson (1991). **[Handling of slaughter animals - effects on glycogen depletion and animal welfare]. Glykogenfoerbrukning och stress hos noetkreatur i samband med slakt.** In: *[AGRIA research fund. Projects 1988-1990]. AGRIAs forskningsfond. Ett urval av projekt 1988-1990*, Stockholm, Sweden: AGRIA, p. 63-65.

Winegar, G.O. (1990). **USDA perspective.** In: *Conference proceedings: Animal Transportation Association, April 22-25, 1990, 16th International Conference*, Dallas, Tex.: The Association, p. 44-45.
NAL call number: HE9788.4 A55A54 1990

Winters, R.A. (1993). **Safety for the animal handler.** *Live Animal Trade and Transport Magazine* 5(1):5-9.
NAL call number: HE199.5 L5L58

Zeeb, K., C. Bock, and B. Heinzler (1990). **Control of social stress by consideration of suitable social space.** In: *Social stress in domestic animals*, R. Zayan and R. Dantzer, eds., Boston: Kluwer Academic Publishers, p. 275-281.
NAL call number: SF600 C82 53

Zeeb, K. (1990). **[The ethological basis concerning animal management and handling]. Ethologische Grundlagen im Zusammenhang mit der Haltungstechnik.** *Deutsche Tieraerztliche Wochenschrift* 97(6):220-225.
NAL call number: 41.8 D482

To: [[Main Contents](#)] [[Top of Bibliography section](#)]

Bibliography: Cattle

Agnes, F., P. Sartorelli, B.H. Abdi, and A. Locatelli (1990). **Effect of transport loading or noise on blood biochemical variables in calves.** *American Journal of Veterinary Research* 51(10):1679-1681.
NAL call number: 41.8 Am3A

Albright, J.L. (1993). **Dairy cattle husbandry.** *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International.
NAL call number: SF89 L59 1993

Arnemo, J.M. and N.E. Soli (1993). **Chemical capture of free-ranging cattle: immobilization with xylazine or medetomidine, and reversal with atipamezole.** *Veterinary Research Communications* 17(6):469-477.
NAL call number: SF601 V38

Atkinson, P.J. (1992). **Investigation of the effects of transport and lairage on hydration state and resting behaviour of calves for export.** *Veterinary Record* 130(19):413-416.
NAL call number: 41.8 V641

Becker, B.G. and J.F.P. Lobato (1997). **Effect of gentle handling on the reactivity of zebu crossed calves to humans.** *Applied Animal Behaviour Science* 53(3):219-224.
NAL call number: QL750 A6

Bertoni, G., R. Gennari, M.G. Troglia, and A. Soressi (1992). **Preliminary studies on changes in blood chemistry induced by two stress factors: movement from one farm to another and drying off.** *Atti della Societa Italiana di Buiatria* 24:505-511.

Bickert, W.G. and J.P. Chastain (1998). **Sorting, handling and restraining lactating cows for treatment and other purposes.** In: *Proceedings of the Fourth International Dairy Housing Conference, St. Louis, Missouri, USA, 28-30 January 1998*, St. Joseph, Missouri: American Society of Agricultural Engineers (ASAE), p. 44-50.
NAL call number: SF506 I58 1998

Boissy, A. (1990). **[Emotive reactions in female cattle (*Bos taurus* L.). Quantification and influence of**

environmental and hormonal factors emotional reactivity, social relations, man-animal relations, early handling, social context]. Les reactions emotives chez les bovins domestiques (*Bos taurus* L.). Quantification et variations sous l' influence de facteurs environnementaux et hormonaux reactivite emotionnelle, relations intraspecificques, relations homme-animal, manipulations precoces, contexte social. Paris, France: Université de Paris 13, 280 p.

Boivin, X., P. le Neindre, J.P. Garel, J.M. Chupin, and J.C. Edison (1995). **Long term effects of rearing management before the weaning on the behavioural and physiological responses of cattle to human handling.** In: *Proceedings of the 29th International Congress of the International Society for Applied Ethology: Exeter, UK, 3-5 August, 1995*, S.M. Rutter, J. Rushen, and H.D. Randle, eds., p. 151-152.

NAL call number: SF756.7 I57 1995

Boivin, X., P. le Neindre, J.P. Garel, and J.M. Chupin (1994). **Influence of breed and rearing management on cattle reactions during human handling.** *Applied Animal Behaviour Science* 39(2):115-122.

NAL call number: QL750 A6

Boivin, X., P. le Neindre, and J.M. Chupin (1992). **Establishment of cattle-human relationships.** *Applied Animal Behaviour Science* 32(4):325-335.

NAL call number: QL750 A6

Boivin, X., P. le Neindre, J.M. Chupin, J.P. Garel, and G. Trillat (1992). **Influence of breed and early management on ease of handling and open-field behaviour of cattle.** *Applied Animal Behaviour Science* 32(4):313-323.

NAL call number: QL750 A6

Boivin, X., J.P. Garel, A. Mante, and P. Le Neindre (1998). **Beef calves react differently to different handlers according to the test situation and their previous interactions with their caretaker.** *Applied Animal Behaviour Science* 55(3/4):245-257.

NAL call number: QL750 A6

Borg, R. (1993). **Corrals for handling beef cattle.** Edmonton, Alberta, Canada: Publishing Branch, Alberta Agriculture, Food and Rural Development, 91 p.

NAL call number: SF207 B67 1993

Brearley, J.C., H. Dobson, and R.S. Jones (1990). **Investigations into the effect of two sedatives on the stress response in cattle.** *Journal of Veterinary Pharmacology and Therapeutics* 13(4):367-377.

NAL call number: SF915 J63

Bremner, K.J., L.R. Matthews, D.J. Brears, and A.M. Painting (1992). **The behaviour and welfare of calves during unloading after transportation.** *Proceedings of the New Zealand Society of Animal Production* 52:73-75.

NAL call number: 49.9 N483

Broucek, J., V. Tancin, and S. Mihina (1993). **[Transport of calves and associated problems]. Preprava telat a problemy s tim spojene.** *Veterinarstvi* 43(11):425-428.

NAL call number: 41.8 V6439

Broucek, J., V. Tancin, S. Mihina, L. Botto, P. Tongel, and M. Uhrincat (1994). **[The effect of transport on responses, behaviour and performance of calves]. Vplyv prepravy na reakcie, spravanie a uzitkovost teliat.** *Polnohospodarstvo* 40(7):539-553. Summaries in English and Slovakian.

NAL call number: 19.5 P752

Broucek, Y., S. Mikhina, V. Brestenski, V. Tanchin, and L. Gartsek (1994). **Canadian standards for beef cattle husbandry.** *Naturalium* (3-4):17-20.

Brown, S.N., E.A. Bevis, and P.D. Warriss (1990). **An estimate of the incidence of dark cutting beef [depleted glycogen due to preslaughter stress, identified by pH (more or equal to 6.0)] in the United Kingdom.** *Meat Science* 27(3):249-253.

NAL call number: TX373 M4

Bruce, H.L., C.R. Jones, and R.O. Ball (1990). **Interactive effects of low voltage electrical stimulation and leg restraint on meat quality of Charolais crossbred steer carcasses.** *Canadian Journal of Animal Science* 70(4):1131-1135.

NAL call number: 41.8 C163

Buchner A., W. Baumgartner, C. Carda, C. Holzleithner, and F. Trenti (1994). **Aetiology of mechanical and infectious damage to cattle hides.** In: *Proceedings of the 18th World Buiatrics Congress: 26th Congress of the Italian Association of Buiatrics, Bologna, Italy, August 29-September 2, 1994. Volume 2*, pp. 1301-1305.

NAL call number: IPM960207521

Campero, C.M. **The use of halter chains in cattle.** *Veterinaria Argentina* 12(117):468-469.

NAL call number: SF604 V463

Carrano, J.A. and R. Bucklin (1994). **Automatic cow sorting system.** In: *Dairy systems for the 21st century. Proceedings of the third international dairy housing conference held in Orlando, Florida, USA, 2-5 February 1994*, ASAE Publication 02-94, p. 11-16.

NAL call number: SF206 I58 1994

Castro, M.J., J.M. Sanchez, J.A. Riol, M.E. Alonso, and V.R. Gaudioso (1994). **[Evaluation of the stress reaction produced in fighting cattle by different standard handling procedures]. Evaluacion de la reaccion de estres en animales de raza delidia ante diferentes practicas habituales de manejo.** *Informacion Tecnica Economica Agraria. Produccion Animal* 90(2):104-111. Summaries in English and Spanish.

NAL call number: S15 I8

Cecugiewicz, S. (1992). **[Calf restraining by use of electric impulses]. Badania nad efektami stosowania impulsow elektrycznych do poskramiania cielat.** *Zeszyty Naukowe Akademii Rolniczej w Krakowie, Zootechnika* 28(266):67-71.

NAL call number: SD1 K7

Christoffersen, S.A. (1994). **Statement on cow trainers. From the ethics committee of the Department of Agriculture.** *Norsk Veterinaertidsskrift* 106(4):310-314.

NAL call number: 41.8 N81

Cockram, M.S. (1991). **Resting behaviour of cattle in a slaughterhouse lairage.** *British Veterinary Journal* 147(2):109-119.

NAL call number: 41.8 V643

Cockram, M.S. and K.T.T. Corley (1991). **Effect of pre-slaughter handling on the behaviour and blood composition of beef cattle.** *British Veterinary Journal* 147(5):444-454.

NAL call number: 41.8 V643

Corrier, D.E., C.W. Purdy, and J.R. DeLoach (1990). **Effects of marketing stress on fecal excretion of *Salmonella* spp. in feeder calves.** *American Journal of Veterinary Research* 51(6):866-869.

NAL call number: 41.8 Am3A

Coventry, J. (1995). **Live export (beef) cattle in South East Asia...more deaths in Indonesia.** *Alice Springs Rural Review* 25(5):2.

NAL call number: S478 A84R8

Curtis, S.E. (1995). **Bovine behavior: key to handling cattle.** In: *Proceedings of the Annual Convention of the American Association of Bovine Practitioners, 27th Convention*, p. 18-20.

NAL call number: SF961 A5

- Dirksen, G. and M. Stober (1994). **Evaluation of the suitability for transport of diseased or injured cattle on the basis of clinical criteria.** *Deutsches Tierarzteblatt* 42(3):194-196.
NAL call number: 41.8 D484
- Dumelow, J. and C. Boon (1993). **Simulating the cattle foot/floor interaction to develop improved skid resistant floors.** In: *Livestock Environment IV. Proceedings of a conference held in Coventry, UK, 6-9 July 1993*, E. Collins, ed., p. 173-180.
NAL call number: SF91 L58 1993
- Dunn, C.S. (1990). **Stress reactions of cattle undergoing ritual slaughter using two methods of restraint.** *Veterinary Record* 126(21):522-525.
NAL call number: 41.8 V641
- Edwards, J.F., S.E. Wikse, J.K. Loy, and R.W. Field (1995). **Vertebral fracture associated with trauma during movement and restraint of cattle.** *Journal of the American Veterinary Medical Association* 207(7):934-935.
NAL call number: 41.8 Am3
- Espona, X. (1991). [*Pasteurella haemolytica* in the shipping fever]. **Importancia de *Pasteurella haemolytica* en el SRB (Sistema Respiratorio Bovino).** *Medicina Veterinaria* 8(7-8):433-488.
NAL call number:
- Ewbank, R. (1993). **Handling cattle in intensive systems.** In: *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 59-74.
NAL call number: SF89 L59 1993
- Ewbank, R., M.J. Parker, and C.W. Mason (1992). **Reactions of cattle to head-restraint at stunning: a practical dilemma.** *Animal Welfare* 1(1):55-63. HV4701 A557
NAL call number: HV4701 A557
- Floyd, J. (1995). **Proper preparation of calves for shipment is essential.** *Feedstuffs* 67(20):13, 23.
NAL call number: 286.81 F322
- Fluharty, F.L., S.C. Loerch, D.R. Redman (1992). **Effects of 0, 48 or 72 hours of feed and water deprivation and trucking stress on rumen characteristics and bacterial numbers in newly weaned steers.** *Ohio Beef Cattle Research and Industry Report* (Number 92-1):74-84.
NAL call number: SF207 B442
- Frandsen, K.E. (1994). [**Bullocks droves: Production and export of oxen from Denmark in the mid-1600s**]. **Okser paa vandring: Produktion og eksport af stude fra Danmark i midten af 1600-tallet.** Ebeltoft, Denmark: Skippershoved, 156 p. Summary in English.
- Frank, G.H., R.E. Briggs, R.W. Loan, C.W. Purdy, and E.S. Zehr (1996). **Respiratory tract disease and mucosal colonization by *Pasteurella haemolytica* in transported cattle.** *American Journal of Veterinary Research* 57(9):1317-1320.
NAL call number: 41.8 Am3A
- Friend, T.H., D.C. Lay, R.D. Randel, C.L. Bowers, K.K. Grissom, D.A. Neuendorff, and O.C. Jenkins (1998). **Effects of restricted nursing on physiological and behavioral reactions of Brahman calves to subsequent restraint and weaning.** *Applied Animal Behaviour Science* 56(2/4):109-119.
NAL call number: QL750 A6
- Gortel, K., A.L. Schaefer, B.A. Young, and S.C. Kawamoto (1992). **Effects of transport and electrolyte supplementation on body fluids and weights of bulls.** *Canadian Journal of Animal Science* 72(3):547-553.
NAL call number: 41.8 C163

- Grandin, T. (1997). **The design and construction of facilities for handling cattle.** *Livestock Production Science* 49:103-119.
NAL call number: SF1 L5
- Grandin, T. (1992). **Double rail restrainer system for holding large beef cattle during stunning.** *Proceedings: 38th International Congress of Meat Science and Technology: August 23-28, 1992, Clermont Ferrand, France: Volume 2.,* p. 181-184.
- Grandin, T. (1991). **Double rail restrainer for handling beef cattle.** *Papers of the American Society of Agricultural Engineers*, St. Joseph, Mich.: American Society of Agricultural Engineers, No. 91-5004, 15 p.
NAL call number: 290.9 Am32P
- Grandin, T. (1993). **Behavioral agitation during handling of cattle is persistent over time.** *Applied Animal Behaviour Science* 36(1):1-9.
NAL call number: QL750 A6
- Grandin, T. (1993). **Behavioural principles of cattle handling under extensive conditions.** *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 43-58.
NAL call number: SF89 L59 1993
- Grandin, T. (1991). **Cattle behavior during handling & corral design for beef cow herds.** *Extension Bulletin of the Cooperative Extension Service, Michigan State University (29-96)*, East Lansing, Mich.: The Service, 10 p.
NAL call number: 275.29 M58B
- Grandin, T. (1990). **Design of loading facilities and holding pens.** *Applied Animal Behaviour Science* 28(1/2):187-201.
NAL call number: QL750 A6
- Grandin, T. (1993). **Handling facilities and restraint of range cattle.** In: *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 75-94.
NAL call number: SF89 L59 1993
- Grandin, T. (1992). **Observations of cattle restraint devices for stunning and slaughtering.** *Animal Welfare* 1(2):85-90.
NAL call number: HV4701 A557
- Grandin, T. (1994). **The two major animal welfare problems of the dairy industry: treatment of newborn calves and handling of downed cows.** In: *Humane Innovations and Alternatives*, Washington Grove, MD: Psychologists for the Ethical Treatment of Animals, p. 616-617.
NAL call number: QL55 H8
- Grandin, T. (1998). The feasibility of using vocalization scoring as an indicator of poor welfare during cattle slaughter. *Applied Animal Behaviour Science* 56(2/4):121-128.
NAL call number: QL750 A6
- Grandin, T., M.J. Deesing, J.J. Struthers, and A.M. Swinker (1995). **Cattle with hair whorl patterns above the eyes are more behaviorally agitated during restraint.** *Applied Animal Behaviour Science* 46(1/2):117-123.
NAL call number: QL750 A6
- Grandin, T., K.G. Odde, D.N. Schutz, and L.M. Behrns (1994). **The reluctance of cattle to change a learned choice may confound preference tests.** *Applied Animal Behaviour Science* 39(1):21-28.
NAL call number: QL750 A6
- Graves, R.E. (1991). **Animal handling safety in the milking parlor.** *Papers of the American Society of Agricultural Engineers*, St. Joseph, Mich.: American Society of Agricultural Engineers, No. 91-4571, 8p.
NAL call number: 290.9 Am32P

Gustafson, G.M. and E. Lund Magnussen (1996). **Effect of daily exercise on the getting up and lying down behaviour of tied dairy cows.** *Preventive Veterinary Medicine* 25(1): 27-36.

NAL call number: SF601 P7

Hagenlocher, H. and T. Schroerer (1990). **[Prevention and treatment of skin damage in cattle]. Wirtschaftliche bedeutung, vermeidung und behandlung von hautschaeden beim rind.** *Praktische Tierarzt* 71(12):5-23.

NAL call number: 41.8 P882

Harness, J.K. (1992). **Lifting the bovine fore leg.** *Proceedings of the annual convention of the American Association of Bovine Practitioners* (24):152.

NAL call number: SF961 A5

Hemsworth, P.H., J.L. Barnett, L. Beveridge, and L.R. Matthews (1995). **The welfare of extensively managed dairy cattle: a review.** *Applied Animal Behaviour Science* 42(3):161-182.

NAL call number: QL750 A6

Hoffman, D.E., M.F. Spire, J.R. Schwenke, and J.A. Unruh (1998). **Effect of source of cattle and distance transported to a commercial slaughter facility on carcass bruises in mature beef cows.** *Journal of the American Veterinary Medical Association* 212(5):668-672.

NAL call number: 41.8 Am3

Holmes, R.J. (1991). **Cattle.** In: *Practical animal handling*, R.S. Anderson and A.T.B. Edney, eds., Oxford, UK: Pergamon Press, p. 15-38.

NAL call number: SF61 P73 1991

Honkavaara, M. and P. Kortensniemi (1994). **Effect of long distance transport on cattle stress and meat quality.** *Meat Focus International* 3(10):405-409.

NAL call number: TS1950 M433

Hosokawa, Y. (1990). **A fencing system based on cattle behavior.** *JARQ* 23(4):301-309.

NAL call number: S19 J3

Hucka, M. (1990). **Cattle sheds.** *Mechanizace Zemedelstvi* 40(9):418-422.

NAL call number: 58.8 M467

Jacobson, L.H. and C.J. Cook (1998). **Partitioning psychological and physical sources of transport-related stress in young cattle.** *Veterinary Journal* 155(2):205-208.

Jarvis, A.M., L. Selkirk, and M.S. Cockram (1995). **The influence of source, sex class and pre-slaughter handling on the bruising of cattle at two slaughterhouses.** *Livestock Production Science* 43(3):215-224.

NAL call number: SF1 L5

Jarvis, A.M., D.W.J. Harrington, and M.S. Cockram (1996). **Effect of source and lairage on some behavioural and biochemical measurements of feed restriction and dehydration in cattle at a slaughterhouse.** *Applied Animal Behaviour Science* 50(1):83-94.

NAL call number: QL750 A6

Jarvis, A.M., C.D.A. Messer, and M.S. Cockram (1996). **Handling, bruising and dehydration of cattle at the time of slaughter.** *Animal Welfare* 5(3):259-270.

NAL call number: HV4701 A557

Jubb, T.F., D.S. Pinch, and S.R. Petty (1990). **Treatment with vitamins A, D and E did not reduce weight loss in transported cattle.** *Australian Veterinary Journal* 70(5):171-173.

NAL call number: 41.8 Au72

Kabuga, J.D. and P.A. Appiah (1992). **A note on the ease of handling and flight distance of *Bos indicus*, *Bos taurus* and their crossbreds.** *Animal Production* 54(Pt.2):309-311.

NAL call number: 49 An55

von Kaufmann, R. (1990). **A home-built and portable cattle race.** *Tropicultura* 8(3):142-143.

NAL call number: HD1417 T76

Kelly, M. and G.A.L. Watson (1993). **Cattle handling and penning.** *Farm Building Progress* (111):8-10.

NAL call number: TH4911 F37

Kenny, F.J. and P.V. Tarrant (1990). **The behavioural responses of beef cattle to short haul road transport.** *Applied Animal Behaviour Science* 26(3):292-293.

NAL call number: QL750 A6

Kent, J.E. and R. Ewbank (1990). **The behavioural response of 3-month-old calves to 18 hours road transportation.** *Applied Animal Behaviour Science* 26(3):289.

NAL call number: QL750 A6

Kent, J.E., M.V. Thrusfield, I.S. Robertson, and V. Molony (1996). **Castration of calves: a study of methods used by farmers in the United Kingdom.** *Veterinary Record* 138(16):384-387.

NAL call number: 41.8 V641

Kimmel, E., H. Arkin, and A. Berman (1992). **Evaporative cooling of cattle: transport phenomena and thermovision.** *Papers of the American Society of Agricultural Engineers*. St. Joseph, Mich.: American Society of Agricultural Engineers, 14 p.

NAL call number: 290.9 Am32P

King, M.C., M.T. van Koevering, D.R. Gill, J. Garza, and R.L. Ball (1992). **Effect of Rep-Gel on performance of shipping stressed cattle.** In: *Animal Science Research Report, Agricultural Experiment Station, Oklahoma State University*, p. 307-311.

NAL call number: 100 Ok4 (3) no.135

Knowles, T.G. (1995). **A review of post transport mortality among younger calves.** *Veterinary Record* 137(16):406-407.

NAL call number: 41.8 V641

Knowles, T.G., P.D. Warriss, S.N. Brown, J.E. Edwards, P.E. Watkins, and A.J. Phillips (199). **Effects on calves less than one month old of feeding or not feeding them during road transport of up to 24 hours.** *Veterinary Record* 140(5):116-124.

NAL call number: 41.8 V641

Ko, K.W. and J.Y. Son (1990). **Effects of transportation stress and wearing a nose-ring on the leukograms and serum cortisol concentration in calves.** *Korean Journal of Animal Science* 33(7):368-376.

NAL call number: 49.9 H19

van Koevering, M.T., D.R. Gill, F.N. Owens, and R.L. Ball (1992). **The effects of types and quality of protein on health and performance of shipping-stressed calves.** *Animal Science Research Report, Agricultural Experiment Station, Oklahoma State University*, p. 326-332.

NAL call number: 100 Ok4 (3)

Kreikemeier, K.K., J.A. Unruh, and T.P. Eck (1998). **Factors affecting the occurrence of dark-cutting beef and selected carcass traits in finished beef cattle.** *Journal of Animal Science* 76(2):388-395.

Krohn, C.C. (1996). **The effects of early housing and handling of dairy calves on the subsequent man-animal relationship.** In: *Proceedings of the 30th International Congress of the International Society for Applied Ethology*, 14-

17 August 1996, Guelph, Ontario, Canada, p. 109.

NAL call number: SF756.7 I57 1996

Kyselovic, J. and O. Debrececi (1990). **Variation in biochemical blood serum indices of calves after stress (simulated transport)**. *Acta Zootechnica* 46:53-59.

NAL call number: SF1 A2

Lapworth, J.W. (1990). **Standards for loading and unloading facilities for cattle**. *Applied Animal Behaviour Science* 28(1):203-211.

NAL call number: QL750 A6

Lay, Jr., D.C., R.D. Randel, T.H. Friend, *et al.* (1997). **Effects of prenatal stress on the fetal calf**. *Domestic Animal Endocrinology* 14(2):73-80.

NAL call number: QL868 D6

Lay, Jr., D.C., R.D. Randel, T.H. Friend, *et al.* (1996). **Adrenocorticotrophic hormone dose response and some physiological effects of transportation on pregnant Brahman cattle**. *Journal of Animal Science* 74(8):1806-1811.

NAL call number: 49 J82

Legrand, I., X. Fernandez, and G. Monin (1995). **[Effects of feed withdrawal and of transport duration before slaughter on the quality of veal]. Effets du jeune et de la duree du transport avant l' abattage sur la qualite de la viande de veau**. In: *Rencontres autour des recherches sur les ruminants*. Paris, France: Institut National de la Recherche Agronomique, Institut de l' Elevage, p. 239-242. Summaries in English and French.

NAL call number: SF191.2 R46

Legrand, I. and X. Fernandez (1997). **[The influence of pre-slaughter conditions on the quality of veal carcasses and meats]. Influence des conditions de pre-abattage sur la qualite des carcasses et des viandes de veau**. *Viandes et Produits Carnes* 18(2):105-113.

Lindt, F. and J.W. Blum (1994). **Growth performance, haematological traits, meat variables, and effects of treadmill and transport stress in veal calves supplied different amounts of iron**. *Journal of Veterinary Medicine, Series A* 41(5):333-342.

NAL call number: 41.8 Z5

Linnabary, R.D. and J.C. New, Jr. (1993). **Results of a survey of emergency evacuation of dairy cattle**. *Journal of the American Veterinary Medical Association* 202(8):1238-1242.

NAL call number: 41.8 Am3

Martelli, P. and G. Signorini (1990). **[Evolution of transport syndrome in calves and clinical indicators]. Evoluzione della sindrome da trasporto dei vitelli ed indicatori clinici**. *Obiettivi e Documenti Veterinari* 11(1):51-54.

McDermott, J.J., D.M. Alves, N.G. Anderson, and S.W. Martin (1991). **"Benchmark" - a large observational study of Ontario beef breeding herds: study design and collection of data**. *Canadian Veterinary Journal* 32(7):407-412.

NAL call number: 41.8 R3224

McFarland, D.F. and R. Bucklin (1994). **Designing dairy housing for convenient animal handling, feed delivery, and manure collection**. In: *Dairy systems for the 21st century. Proceedings of the third international dairy housing conference held in Orlando, Florida, USA, 2-5 February 1994*, ASAE Publication 02-94, p. 503-514.

NAL call number: SF206 I58 1994

McNally, P.W. and P.D. Warriss (1997). *Veterinary Record* 140(9):231-232.

NAL call number: 41.8 V641

McNally, P.W. and P.D. Warriss (1996). **Recent bruising in cattle at abattoirs**. *Veterinary Record* 138(6):126-128.

NAL call number: 41.8 V641

Mohan Raj, A.B., B.W. Moss, W.J. McCaughey, W. McLauchlan, D.J. Kilpatrick, and S.J. McGaughey (1991). **Behavioural response to mixing of entire bulls, vasectomised bulls and steers.** *Applied Animal Behaviour Science* 31(3-4):157-168.

NAL call number: QL750 A6

Morisse, J.P., J.P. Cotte, and D. Huonnic (1994). [**Importance of collecting modes in young bulls on dark firm dry meat**]. **Importance des modalites de collecte des taurillons sur les viandes a pH eleves.** In: *Behaviour and adaptation of domestic animals to constraints of modern farming practices: technical basis of animal welfare*. *Comportement et adaptation des animaux domestiques aux contraintes de l' eievage: bases techniques du bien-etre animal*, Paris: Institut National de la Recherche Agronomique, p. 211-216.

Morisse, J.P., J.P. Cotte, and D. Huonnic (1994). [**Physiological and health responses of young calf to aggressions from transportation**]. **Reponses physiologiques et sanitaires du jeune veau aux agressions des circuits d' approvisionnement.** In: *Behaviour and adaptation of domestic animals to constraints of modern farming practices: technical basis of animal welfare*. *Comportement et adaptation des animaux domestiques aux contraintes de l' eievage: bases techniques du bien-etre animal*, Paris: Institut National de la Recherche Agronomique, p. 203-209.

Mudron, P., G. Kovac, V. Bajova, *et al.* (1994). **Effect of vitamin E on some leukocytic parameters and functions in transported calves.** *Deutsche Tierarztliche Wochenschrift* 101(2):47-49.

NAL call number: 41.8 D482

Mudron, P., G. Kovac, P. Bartko, J. Choma, and I. Zezula (1996). **Effect of vitamin E on the cortisol and lactate levels and the acid base equilibrium of calves subjected to transport stress.** *Veterinarni Medicina* 41(3):71-76.

NAL call number: 41.9 C333

Murata, H. and H. Hiroso (1990). **Impairment of lymphocyte blastogenesis in road-transported calves observed with a whole blood culture technique.** *Japanese Journal of Veterinary Science* 52(1):183-185.

NAL call number: 41.8 J27

Nanda, A.S. and H. Dobson (1990). **Relationship between an increase in plasma cortisol during transport-induced stress and failure of oestradiol to induce a luteinising hormone surge in dairy cows.** *Research in Veterinary Science* 49(1):25-28.

NAL call number: 41.8 R312

le Neindre, P., X. Boivin, and G. Trillat (1996). **Reactions of Limousin cattle to handling.** *Comptes Rendus de l'Academie d'Agriculture de France* 82(2):71-80.

Okularczyk, S., T. Novak, and E. Sowula (1996). [**Cows and beef cattle handling costs with different production scale and mechanization levels**]. **Koszty obslugi krow i bydla opasowego w roznej skali produkcji i przy roznych poziomach mechanizacji pracy.** *Zeszyty Naukowe Akademii Rolniczej we Wroclawiu. Konferencje* (291):269-273. Summary in English.

NAL call number: S16 P7Z4

Oliver, J.C. (1991). [**The influence of livestock handling on the yield of a dairy farm**]. **Influencia do manejo no rendimento de uma exploracao leiteira.** *A Vaca Leiteira* (34):8-14.

Opuda Asibo, J., R.A. Robinson, and M.M. Pullen (1990). **Prevalence of Salmonella in healthy calves following transportation to the stockyards and at slaughter.** *Bulletin of Animal Health and Production in Africa* 38(1):101-102.

NAL call number: 41.8 B872

de Passille, A.M., J. Rushen, J. Ladewig, and C. Petherick (1996). **Dairy calves discrimination of people based on previous handling.** *Journal of Animal Science* 74(5):969-974.

NAL call number: 49 J82

Pedroso, M. (1994). **Application of beta-1,3-glucan to prevent shipping fever in imported heifers.** *Archives of Medical Research* 25(2):181.

Pezza, F., E. Bosia, L. Milanese, and M.C. Lopez Moreno (1996). **Health regulations for the transport of cattle.** *Atti della Societa Italiana di Buiatria* 28:133-137.

Phillips, W.A., P.E. Juniewicz, and D.L. VonTungeln (1991). **The effect of fasting, transit plus fasting, and administration of adrenocorticotrophic hormone on the source and amount of weight lost by feeder steers of different ages.** *Journal of Animal Science* 69(6):2342-2348.

NAL call number: 49 J82

Prevalence of carcass bruising and stick-marking in cattle bought from different auction markets (1990). *Applied Animal Behaviour Science* 26(3):293.

NAL call number: QL750 A6

Pritchard, R.H. and J.K. Mendez (1990). **Effects of preconditioning on pre- and post-shipment performance of feeder calves.** *Journal of Animal Science* 68(19):28-34.

NAL call number: 49 J82

Purchas, R.W. (1993). **Pre-slaughter treatment of cattle.** *Meat Focus International* 2(8):357-358.

NAL call number: TS1950 M433

Radunz, B. (1994). **Lead shot [cattle mustering].** *Alice Springs Rural Review* 24(718):6.

NAL call number: S478 A84R8

Redbo, I. (1992). **The influence of restraint on the occurrence of oral stereotypies in dairy cows.** *Applied Animal Behaviour Science* 35(2):115-123.

NAL call number: QL750 A6

Ribble, C.S., A.H. Meek, E.D. Janzen, P.T. Guichon, and G.K. Jin (1995). **Effect of time of year, weather, and the pattern of auction market sales on fatal fibrinous pneumonia (shipping fever) in calves in a large feedlot in Alberta (1985-1988).** *Canadian Journal of Veterinary Research* 59(3):167-172.

NAL call number: SF601 C24

Ribble, C.S., A.H. Meek, G.K. Jim, and P.T. Guichon (1995). **The pattern of fatal fibrinous pneumonia (shipping fever) affecting calves in a large feedlot in Alberta (1985-1988).** *Canadian Veterinary Journal* 36(12):753-757.

NAL call number: 41.8 R3224

Ribble, C.S., A.H. Meek, P.E. Shewen, P.T. Guichon, and G.K. Jim (1995). **Effect of pretransit mixing on fatal fibrinous pneumonia in calves.** *Journal of the American Veterinary Medical Association* 207(5):616-619.

NAL call number: 41.8 Am3

Ribble, C.S., A.H. Meek, P.E. Shewen, G.K. Jim, and P.T. Guichon (1995). **Effect of transportation on fatal fibrinous pneumonia and shrinkage in calves arriving at a large feedlot.** *Journal of the American Veterinary Medical Association* 207(5):612-615.

NAL call number: 41.8 Am3

Rice, D.N. (1991). **Practical cattle working facilities.** *Agri-Practice* 12(6):12-14.

NAL call number: SF601 B6

Rizzitelli, N. and C. Sbrana (1990). **[Truck or train, but be careful to the stress (of cattle)]. Camion o treno, ma attenti allo stress (del bestiame).** *Informatore Zootecnico* 37(24):89-91.

NAL call number: 49 IN3

van Rooyen, C. (1998). **[Handling pen for cattle]. Boer bou kraalkompleks so na sy hart.** *Landbouweekblad* (No.1031):28-30.

Ruiz Romero, A., A.S. de Aluja, and A. Reyes Gomez Llata (1990). **Effect of transport distance on the weight of cattle and pH of meat.** *Veterinaria Mexico* 21(3):241-245.
NAL call number: SF604 V485

Rushen, J., L. Munksgaard, A.M.B. de Passille, M.B. Jensen, K. Thodberg, and J.C. Eddison (1995). **Location of handling and dairy cows' ability to discriminate between gentle and aversive handlers.** In: *Proceedings of the 29th International Congress of the International Society for Applied Ethology: Exeter, UK, 3-5 August 1995.* S.M. Rutter, J. Rushen, and H.D. Randle, eds., p. 219.
NAL call number: SF756.7 I57 1995

Rushen, J., L. Munksgaard, A.M.B. de Passille, M.B. Jensen, and K. Thodberg (1998). **Location of handling and dairy cows' responses to people.** *Applied Animal Behaviour Science* 55(3/4):259-267.
NAL call number: QL750 A6

Sartorelli, P., S. Dominoni, and F. Agnes (1992). **Influence of duration of simulated transport on plasma stress markers in the calf.** *Journal of Veterinary Medicine, Series A* 39(6): 401-403.
NAL call number: 41.8 Z5

Schaefer, A.L., R.W. Stanley, A.K.W. Tong, and S.D.M. Jones (1994). **Effect of transport and handling stress on vascular ions in cattle: Response to electrolyte therapy.** In: *8th International Symposium on Ruminant Physiology, Willingen, Germany, 25-30 September 1994,* p. 229.

Schaefer, A.L., S.D.M. Jones, A.K.W. Tong, and B.A. Young (1990). **Effects of transport and electrolyte supplementation on ion concentrations, carcass yield and quality in bulls.** *Canadian Journal of Animal Science* 70(1):107-119.
NAL call number: 41.8 C163

Schaefer, A.L., S.D.M. Jones, A.K.W. Tong, B.A. Young, N.L. Murray, and P. Lepage (1992). **Effects of post-transport electrolyte supplementation on tissue electrolytes, hematology, urine osmolality and weight loss in beef bulls.** *Livestock Production Science* 30(4):333-346.
NAL call number: SF1 L5

Schrama, J.W., M.J.W. Heetkamp, M.W.A. Verstegen, W.G.P. Schouten, F. van der Veen, and F.A. Helmond (1996). **Responses of young calves, on two levels of feeding, to transportation.** *Animal Science* 63(Pt.1):79-89.
NAL call number: SF1 A56

Schuetz, F. (1991). **Analysis of slaughtering techniques. On-the-rail slaughter of cattle as related to hygiene requirements.** *Fleischwirtschaft* 71(3):306-308.
NAL call number: 280.38 F62

Sconberg, S., C.F. Nockels, B.W. Bennett, W. Bruynickx, A.M.B. Blancquaert, and A.M. Craig (1993). **Effects of shipping, handling, adrenocorticotrophic hormone, and epinephrine on alpha-tocopherol content of bovine blood.** *American Journal of Veterinary Research* 54(8):1287-1293.
NAL call number: 41.8 Am3A

Spada, G. (1995). **[Animal welfare is human welfare (bovine transport)]. Il benessere degli animali e quello degli uomini (trasporto di bovini).** *Terra e Vita* 36(15):33-34.
NAL call number: S9 T4

Spruzh, Y.Y. and V.V. Igaune (1991). **Use of diludin to reduce the body weight loss in young fattening cattle during transport to the meat-packing plant.** *Trudy Latviiskoi Sel'skokhozyaistvennoi Akademii* (270):60-68.

NAL call number: 106 L352

Standing Committee on Agriculture, Australia (1991). **Farm cattle handling**. Victoria, Australia: CSIRO Publications, 95 p.

NAL call number: SF197 F37 1991

Stark, D.A. (1995). **A review of the veterinarian's role in the handling of down/disabled cattle**. *Bovine Practitioner* (29):125-127.

NAL call number: SF779.5 A1B6

Tagawa, M., S. Okano, T. Sako, H. Orima, and E.P. Steffey (1994). **Effect of change in body position on cardiopulmonary function and plasma cortisol in cattle**. *Journal of Veterinary Medical Science* 56(1):131-134.

NAL call number: SF604 J342

Tarrant, P.V. (1990). **Transportation of cattle by road**. *Applied Animal Behaviour Science* 28(1/2):153-170.

NAL call number: QL750 A6

Tarrant, P.V., F.J. Kenny, D. Harrington, and M. Murphy (1992). **Long distance transportation of steers to slaughter: effect of stocking density on physiology, behaviour and carcass quality**. *Livestock Production Science* 30(3):223-238.

NAL call number: SF1 L5

Tarrant, V. and T. Grandin (1993). **Cattle transport**. *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 109-126.

NAL call number: SF89 L59 1993

Thrift, F.A. (1992). **Beef cattle handling facilities**. *Animal Agriculture Update Newsletter* 7(6):5.

NAL call number: SF13 M3A5

Trunkfield, H.R. (1990). **The welfare of calves during handling and transport**. *Applied Animal Behaviour Science* 28(1/2):135-152.

NAL call number: QL750 A6

Trunkfield, H.R., D.M. Broom, K. Maatje, H.K. Wierenga, E. Lambooi, and J. Kooijman (1991). **Effects of housing on responses of veal calves to handling and transport**. In: *New trends in veal calf production. Proceedings of the international symposium on veal calf production, Wageningen, Netherlands, 14-16 March 1990*, J.H.M. Metz and C.M. Groenestein, eds., p. 40-43.

NAL call number: 49.9 Eu7 no.52

Trunkfield, H.R. and D.M. Broom (1990). **The welfare of calves during handling and transport**. *Applied Animal Behaviour Science* 28(1/2):135-152.

NAL call number: QL750 A6

Uetake, K., K. Yayou, O. Sasaki, T. Okamoto, and J.C. Eddison (1995). **Relationships between heart rate in response to videotaped handling scenes, temperament and weight gain in Holstein calves**. *Proceedings of the 29th International Congress of the International Society for Applied Ethology: Exeter, UK, 3-5 August 1995*, S.M. Rutter, J. Rushen, and H.D. Randle, eds., p. 243-244.

NAL call number: SF756.7 I57 1995

Verkerk, G.A., A.M. Phipps, J.F. Carragher, L.R. Matthews, and K. Stelwagen (1998). **Characterization of milk cortisol concentrations as a measure of short-term stress responses in lactating dairy cows**. *Animal Welfare* 7(1):77-86.

NAL call number: HV4701 A557

Warriss, P.D. (1990). **The handling of cattle pre-slaughter and its effects on carcass and meat quality**. *Applied*

Animal Behaviour Science 28(1/2):171-186.

NAL call number: QL750 A6

Warriss, P.D., S.N. Brown, T.G. Knowles, S.C. Kestin, J.E. Edwards, S.K. Dolan, and A.J. Phillips (1995). **Effects on cattle of transport by road for up to 15 hours.** *Veterinary Record* 136(13):319-323.

NAL call number: 41.8 V641

Wilson, W.D. (1997). **Travel (sea) sickness in cattle.** *Veterinary Record* 140(3):76.

NAL call number: 41.8 V641

Wohlt, J. E., M.E. Allyn, P.K. Zajac, and L.S. Katz (1994). **Cortisol increases in plasma of Holstein heifer calves from handling and method of electrical dehorning.** *Journal of Dairy Science* 77(12):3725-3729.

NAL call number: 44.8 J822

Wray, C., N. Todd, I.M. McLaren, and Y.E. Beedell (1991). **The epidemiology of salmonella in calves: the role of markets and vehicles.** *Epidemiology and Infection* 107(3):521-525.

NAL call number: RA651 A1E74

Yavas, Y., D.M. de Avila, and J.J. Reeves (1996). **Trucking stress at breeding does not lower conception rate of beef heifers.** *Theriogenology* 45(3):623-632.

NAL call number: QP251 A1T5

Yuldashev, F. (1994). **How they milk agitated cows in Sweden.** *Mezhdunarodnyi Sel'skokhozyaistvennyi Zhurnal.* (3):55-57.

NAL call number: S13 M137

Zacchetti, A. (1991). **[Cattle beef. Control - transportation - sales]. Carni bovine. Controllate -- trasportate - vendute.** *Largo Consumo* 11(1):180-182.

Zavy, M.T., P.E. Juniewicz, W.A. Phillips, and D.L. VonTungeln (1992). **Effect of initial restraint, weaning, and transport stress on baseline and ACTH-stimulated cortisol responses in beef calves of different genotypes.**

American Journal of Veterinary Research 53(4):551-557.

NAL call number: 41.8 Am3A

Zdunczyk, S., T. Janowski, A. Ras, and A. Zebracki (1991). **The effect of transporting cows in late pregnancy on steroid hormone and the subsequent course of pregnancy.** *Tierarztliche Umschau* 46(12):729-730, 735-736.

NAL call number: 41.8 T445

To: [[Main Contents](#)] [[Top of Bibliography section](#)]

Bibliography: Exotic and Other Animals

Forhead, A.J., D. Smart, R.F. Smith, and H. Dobson (1994). **Endocrine and metabolic responses to transportation in periparturient donkeys.** *Animal Reproduction Science* 36(3-4):315-327.

NAL call number: QP251 A5

Forhead, A.J., D. Smart, R.F. Smith, and H. Dobson (1995). **Transport-induced stress responses in fed and fasted donkeys.** *Research in Veterinary Science* 58(2):144-151.

NAL call number: 41.8 R312

Fowler, J. (1991). **Donkeys and mules.** In: *Practical animal handling*, R.S. Anderson and A.T.B. Edney, eds., Oxford: Pergamon Press, p. 113-118.

NAL call number: SF61 P73 1991

Gardi, C. (1992). [**Rabbits: also at one day old they can fly (the transport by air)**]. **Conigli: anche ad un giorno possono volare (il trasporto aereo)**. *Rivista di Coniglicoltura* 29(11):33-35.

NAL call number: SF451 R5

Goddard, P.J., I.J. Gordon, and W.J. Hamilton (1996). **The effect of post-capture management strategy on the welfare and productivity of wild red deer (*Cervus elaphus*) hinds introduced to farming systems**. *Animal Science* 63(pt.2):315-327.

NAL call number: SF1 A56

Kalra, I.S., P.S. Dhaliwal, and P.D. Juyal (1992). **Acute trypanosomiasis in a buffalo associated with transportation stress**. *Indian Journal of Veterinary Medicine* 12(2):59.

NAL call number: SF703 I54

Lemcke, B., G. Beere, and N.T. Darwin (1995). **Water buffalo handling: property to abattoir, 1. General principles**. Australia: Northern Territory Department of Primary Industry and Fisheries, 2 p.

Lemcke, B., G. Beere, and N.T. Darwin (1995). **Water buffalo handling: property to abattoir, 2. On farm considerations**. Australia: Northern Territory Department of Primary Industry and Fisheries, 4 p.

Matthews, L.R. (1993). **Deer handling and transport**. In: *Livestock Handling and Transport* T. Grandin, ed., Wallingford, UK: CAB International, pp. 253-272.

NAL call Number: SF89 L59 1993

Mazur, C.F. and G.K. Iwama (1993). **Effect of handling and stocking density on hematocrit, plasma cortisol, and survival in wild and hatchery-reared chinook salmon (*Oncorhynchus tshawytscha*)**. *Aquaculture* 112(4):291-299.

NAL call number: SH1 A6

To: [[Main Contents](#)] [[Top of Bibliography section](#)]

Bibliography: Goats

Boivin, X. and B.O. Braastad (1996). **Effects of handling during temporary isolation after early weaning on goat kids' later response to humans**. *Applied Animal Behavioural Science* 48(1/2):61-71.

NAL call number: QL750 A6

Cote, S.D., M. Festa-Bianchet, and F. Fournier (1998). **Life-history effects of chemical immobilization and radiocollars on mountain goats**. *Journal of Wildlife Management* 62(2):745-752.

NAL call number: 410 J827

Gherardi, S.G. and T.J. Johnson (1995). **Feeding of feral goats before live export by ship**. *Australian Veterinary Journal* 72(11):429-430.

NAL call number: 41.8 Au72

Greenwood, P.L. and D.A. Shutt (1992). **Salivary and plasma cortisol as an index of stress in goats**. *Australian Veterinary Journal* 69(7):161-163.

NAL call number: 41.8 Au72

Mews, A.R. and A. Mowlem (1991). **Goats**. In: *Practical Animal Handling*. R.S. Anderson and A.T.B. Edney, eds., Oxford: Pergamon Press, p. 51-55.

NAL call number: SF61 P73 1991

Nwe, T.M., E. Hori, Y. Nakanishi, M. Manda, and S. Watanabe (1995). **The effects of simulated transportation on plasma levels of catecholamines, cortisol and glucose and eosinophil count in the goat**. *Animal Science and Technology* 66(10):841-848.

NAL call Number: 49 N62

Nwe, T.M., E. Hori, Y. Nakanishi, M. Manda, and S. Watanabe (1994). **Initiation of the simulate and real transportation stress in the goat.** *Animal Science and Technology* 65(11):1008-1017.

NAL call Number: 49 N62

Nwe, T.M., E. Hori, M. Manda, and S. Watanabe (1996). **Significance of catecholamines and cortisol levels in blood during transportation stress in goats.** *Small Ruminant Research* 20(2):129-135.

NAL call number: SF380 I52

Nwe, Y., Tsukahara, M. Manda, S. Watanabe, and A. Sukmawati (1994). **Neuroendocrine aspects of the stress in model transportation in goats.** In: *Sustainable animal production and the environment, Volume 2 A*. Djajanegara, ed., p. 415-416.

Sanhoury, A.A., R.S. Jones, and H. Dobson (1992). **Azaperone, pimozide and bromocryptine and the stress response to transport in male goats: a preliminary study.** *Journal of Veterinary Pharmacology and Therapeutics* 15(1):107-111.

NAL call Number: SF 915 J63

Sanhoury, A.A., R.S. Jones, and H. Dobson (1991). **Prazosin and propranolol and the stress response to transport in male goats; a preliminary study.** *Journal of Veterinary Pharmacology and Therapeutics* 14(4):421-425.

NAL call Number: SF 915 J63

Sanhoury, A.A., R.S. Jones, and H. Dobson (1991). **Phenobarbitone inhibits the stress response to transport in male goats.** *British Veterinary Journal* 147(1):42-48.

NAL call number: 41.8 V643

Sanhoury, A.A., R.S. Jones, and H. Dobson (1991). **Preliminary results on the effects of diazepam on physiological responses to transport in male goats.** *British Veterinary Journal* 147(4):388-389.

NAL call number: 41.8 V643

Simon, I. (1996). [Effects of the "Viehverkehrsordnung" livestock transport regulations on goat breeding and husbandry]. **Auswirkungen der Viehverkehrsordnung auf die Ziegenzucht und Ziegenhaltung.** *Ziegenzuechter* 12(2):6-9.

Williams, C.S.F. (1990). **Routine sheep and goat procedures.** *Veterinary Clinics of North America, Food Animal Practice* 6(3):737-758.

NAL call Number: SF 601 V535

To: [[Main Contents](#)] [[Top of Bibliography section](#)]

Bibliography: Horses

Appel, G., A. Briese, K. von Holleben, G. von Mickwitz, and M. von Wenzlawowicz (1995). **Fatal accident of a horse caused by a low transverse beam over a stable door.** *Deutsche Tierärztliche Wochenschrift* 102(6):233-234.

NAL call number: 41.8 D482

Atock, M.A. and R.B. Williams (1994). [Welfare of competition horses (medication, passport)]. **Bien-etre des chevaux de concours (medication, passeport).** *Revue Scientifique et Technique de l'OIE* 13(1):217-232. Summaries in English, French and Spanish.

NAL call number: SF781 R4

Baucus, K.L., S.L. Ralston, C.F. Nockels, A.O. McKinnon, and E.L. Squires (1990). **Effects of transportation on early embryonic death in mares.** *Journal of Animal Science* 68(2):345-351.

NAL call number: 49 J82

Baucus, K.L., E.L. Squires, S.L. Ralston, A.O. McKinnon, and T.M. Nett (1990). **Effect of transportation on the estrous cycle and concentrations of hormones in mares.** *Journal of Animal Science* 68(2):419-426.

NAL call number: 49 J82

Bowman, K.F. (1995). **Slinging horses.** *Journal of Equine Veterinary Science* 15(4):152-154.

NAL call number: SF951 J65

Breukink, H.J. (1991). **[Transport stress in the horse - causes, consequences, prophylaxis]. Transportstress beim Pferd. Ursachen, Folgen, Vorbeugung.** *Praktische Tierarzt* 72(5):406-410.

NAL call number: 41.8 P882

Brzuski, P., J. Szarek, E. Brzeski, J. Dziewiecki, and J. Tomala (1991). **Estimation of body weight loss and its causes during transport of horses abroad.** *Zeszyty Naukowe Akademii Rolniczej im H. Kollataja w Krakowie, Zootechnika* 27(242):179-187.

NAL call number: SD1 K7

Burwash, L. (1992). **Crossing the Canada/U.S. border with horses.** Alberta, Canada: Alberta Agriculture, Horse Industry Branch.

NAL call number: KF390.5 H6B87 1992

Bush, K. (1991). **Problem horse: an owner's guide.** Ramsbury, Marlborough, UK: Crowood Press, 160 p.

NAL call number: SF281 B87 1992

Campbell, C.T. and S.R. Nusbaum (1991). **Epidemiologic importance of interstate transport of equids infected with equine infectious anemia virus.** *Journal of the American Veterinary Medical Association* 198(8):1332-1333.

NAL call number: 41.8 Am3

Cirelli, A. (1991). **Evaluate your horse for hauling.** *Fact Sheet of the College of Agriculture, University of Nevada, Reno, Nevada Cooperative Extension, Reno, Nev.: The College, 2 p.*

NAL call number: S544.3 N3C66

Cirelli, Jr., A. (1991). **Horse behavior: handling the new foal.** *Fact Sheet of the College of Agriculture, University of Nevada, Reno, Nevada Cooperative Extension, Reno, Nev.: The College, 2 p.*

NAL call number: S544.3 N3C66

Clark, D.K., T.H. Friend, and G. Dellmeier (1993). **The effect of orientation during trailer transport on heart rate, cortisol and balance in horses.** *Applied Animal Behaviour Science* 38(3-4):179-189.

NAL call number: QL750 A6

Conference de la Commission Regionale de l'OIE pour l'Europe (1992). **[Transport of sport horses in Portugal]. Transport des chevaux destines aux sports equestres au Portugal.** In: *Transport of sport horses in Europe, spongiform encephalopathy, abattoirs inspection, sanitary status. 14. Conference of the OIE (Office International des Epizooties) Regional Commission for Europe. Sophia (Bulgarie), 2-5 October 1990, Paris: OIE, p. 30-33.*

Coulon, J. and D. Fau (1992). **Restraint of horses.** *Bulletin des G.T.V.* (1):87-96.

NAL call number: SF602 G7

Crisman, M.V., D.R. Hodgson, W.M. Bayly, and H.D. Liggitt (1992). **Effects of transport on constituents of bronchoalveolar lavage fluid from horses.** *Cornell Veterinarian* 82(3):233-246.

NAL call number: 41.8 C81

Cudd, T.A. (1990). **Neonatal transport.** In: *Equine Clinical Neonatology*, A.M. Koterba, W.H. Drummond, and P.C. Kosch, eds., p. 763-768.

NAL call number: SF959 N45E6

Debrosse, F. and C. Scicluna (1991). **Standing chemical restraint in horses.** *Pratique Veterinaire Equine* 23(2):33-52.
NAL call number: SF957 P7

Doyle, K.A. (1993). **Import of horses from Europe: an insect-proof container.** *Australian Veterinary Journal* 70(7):277-278.
NAL call number: 41.8 Au72

Doyle, K.A. (1994). **Importation of horses for special events.** *Australian Veterinary Journal* 71(3):93.
NAL call number: 41.8 Au72

Erichsen, C. and V. Rootwelt (1994). **Transport stress in horses with various methods of transport.** *Norsk Veterinaertidsskrift* 106(7):561-564.
NAL call number: 41.8 N81

Foreman, J.H. and A. Ferlazzo (1996). **Physiological responses to stress in the horse.** *Pferdeheilkunde* 12(4):401-404.

Foreman, J.H., L.L. Hungerford, S.D. Folz, and J.F. Wade (1992). **Transport stress-induced pneumonia: a model in young horses.** W. Plowright and P.D. Rosedale, eds., *Equine Infectious Diseases VI: Proceedings of the Sixth International Conference, 7-11 July 1991*, p. 313.

Foss, M.A. and A. Lindner (1996). **Effects of trailer transport duration on body weight and blood biochemical variables of horses.** *Pferdeheilkunde* 12(4):435-437.

Franzky, A. (1991). **[Study of minimum requirements for transportation of workhorses and horses for slaughter, with special consideration given to international road freight in transit through Germany (Poland - Germany - France)]. Untersuchungen zu Mindestanforderungen an Pferdetransporte (Nutz- und Schlachtpferde) mit besonderer Beruecksichtigung des internationalen LKW-Verkehrs im Transit durch die Bundesrepublik Deutschland (Polen-Bundesrepublik Deutschland- Frankreich).** Freie Universitaet Berlin, Fachbereich Veterinaermedizin, Berlin, Germany, 194 p.

Geiser, D.R. (1990). **Chemical restraint and general anesthesia in the draft horse.** *Proceedings of the Annual Convention of the American Association of Equine Practitioners* 35:461-472.
NAL call number: SF601 A46

Geiser, D.R. (1990). **Chemical restraint and analgesia in the horse.** *Veterinary Clinics of North America, Equine Practice* 6(3):495-512.
NAL call number: SF951 V47

Gerring, E.L. (1990). **Simple restraint of the horse.** *Equine Veterinary Education* 2(1):53.
NAL call number: SF951 E67

Glowka, S. (1994). **"They shoot horses, don't they?"** *Zycie Weterynaryjne* 69(11):397-398.
NAL call number: SF604 Z9

[Guidelines on the evaluation of husbandry of horses with reference to animal welfare] (1996).
Sachverständigengruppe tierschutzgerechte Pferdehaltung. *Pferdeheilkunde* 12(1):17-24.

Harper, F. (1993). **Transporting broodmares.** *Journal of Equine Veterinary Science* 13(6):329-330.
NAL call number: SF951 J65

Hayakawa, Y., H. Komae, H. Ide, H. Nakagawa, Y. Yoshida, M. Kamada, Y. Kataoka, and M. Nakazawa (1993). **An occurrence of equine transport pneumonia caused by mixed infection with *Pasteurella caballi*, *Streptococcus suis* and *Streptococcus zooepidemicus*.** *Journal of Veterinary Medical Science* 55(3):455-456.

NAL call number: SF604 J342

[Higher safety during horse transportation] (1994). **Groessere Sicherheit beim Transport von Pferden.** *Reiterjournal* 15(1):114-115.

Hobo, S., A. Kuwano, and M. Oikawa (1995). **Respiratory changes in horses during automobile transportation.** *Journal of Equine Science* 6(4):135-139.
NAL call number: SF277 J37

Hofmeister, S. (1993). Road transport of slaughter horses across frontiers. 134 p.

Houpt, K.A. and S. Lieb (1993). **Horse handling and transport.** *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 233-252.
NAL call number: SF89 L59 1993

Hubbell, J.A.E., W.W. Muir (1994). **Emergency analgesia and chemical restraint in the horse.** In: *Emergency treatment in the adult horse*, p. 503-516.
NAL call number: SF951 V47 v.10 no. 3

Humane Slaughter Association (1995). **Head restraint at slaughter: A report on work carried out by the Humane Slaughter Association between April 1992 and July 1994.** South Mimms, Hertfordshire, United Kingdom: Humane Slaughter Association, 45 p.

Hungerford, L.L., J.H. Foreman, S.D. Folz, and J.F. Wade (1992). **Risk factors for respiratory disease associated with transport in horses.** In: *Equine Infectious Diseases VI: Proceedings of the Sixth International Conference, 7-11 July 1991*, W. Plowright and P.D. Rossdale, ed., p. 317.

Hydbring, E., S. Nyman, and K. Dahlborn (1996). **Changes in plasma cortisol, plasma beta-endorphin, heart rate, haematocrit and plasma protein concentration in horses during restraint and use of naso-gastric tube.** *Pferdeheilkunde* 12(4):423-427.

Importation of horses into Western Australia (1992). *Australian Equine Veterinarian* 10(4):186-187.
NAL call number: SF604 A97

International Organization for Standardization (1991). **Air cargo equipment. Unit load devices for transportation of horses.** *International Standard*. No. ISO 9469, 5 p.
NAL call number: 44.9 In83

Ito, S., Y. Fujii, T. Uchiyama, and M. Kaneko (1992). **Four cases of rhabdomyolysis in the thoroughbred during transportation.** *Bulletin of Equine Research Institute* (29):1-5.
NAL call number: SF321 N5

Jackowski, M. and J. Petkowski (1990). **Possibilities to reduce losses during horses transport. Mozliwosci ograniczenia strat transportowych koni.** *Biuletyn Informacyjny Instytutu Zootechniki* 28(1-2):57-65.
NAL call number: SF1 K7

Jansson, N. (1997). **[First aid treatment and transportation of the equine fracture patient]. Frakturer hos hest: foerstehjaelp og transport til hestehospital.** *Dansk Veterinaertidsskrift* 80(9):390-395. Summaries Danish and English.
NAL call number: 41.9 D23

Jeffcott, L. (1996). **Recommendations for horses going to the 1996 Atlanta Olympic Games.** *Equine Athlete* 9(3):19-20, 22-23, 25.
NAL call number: SF956 E68

- Jones, W.E. (1991). **Handling injuries on the racetrack.** *Journal of Equine Veterinary Science* 11(2):127-128.
NAL call number: SF951 J65
- Kameya, T. (1992). **Update on the subject of the horse nose twitch.** *Japanese Journal of Veterinary History* (28):20-21.
- Kelley, B. (1997). **Chemical restraint in the standing horse.** *Equine Athlete* 10(3):30-31.
NAL call number: SF956 E68
- Kiley Worthington, M. (1991). **Behaviour, handling and training of equines for appropriate work.** *Donkeys, Mules and Horses in Tropical Agricultural Development. Proceedings of a Colloquium Organized by the Edinburgh School of Agriculture and the Center for Tropical Veterinary Medicine of the University of Edinburgh and held in Edinburgh, Scotland, 3rd-6th Sept 1990.* Edinburgh: Centre for Tropical Veterinary Medicine, p. 203-210.
NAL call number: SF170 D66 1991
- King, J.M. (1992). **Shipping fever in horses.** *Veterinary Medicine* 87(3):185.
NAL call number: 41.8 M69
- Knowles, Jr., D. (1996). **Equine babesiosis (Piroplasmosis): a problem in the international movement of horses.** *British Veterinary Journal* 152(2):123-126.
NAL call number: 41.8 V643
- Kusunose, R. and K. Torikai (1996). **Behavior of untethered horses during vehicle transport.** *Journal of Equine Science* 7(2):21-26.
NAL call number: SF277 J37
- Leadon, D., C. Frank, and A. Atock (1990). **Recommendations on the transport of horses - FEI April 1990.** *Australian Equine Veterinarian* 8(2):73-75.
NAL call number: SF604 A97
- Leadon, D.P. (1995). **Transport stress and the equine athlete.** *Equine Veterinary Education* 7(5):253-255.
NAL call number: SF951 E67
- Leadon, D.P. (1991). **Equine transit stress: environmental changes experienced by horses during a long distance flight.** *Live Animal Trade and Transport Magazine* 3(1):30-32.
NAL call number: HE199.5 L5L58
- Leadon, D. (1994). **Studies of the effects of transporting horses: better to arrive than to travel.** *Equine Veterinary Journal* 26(5):346-347.
NAL call number: SF955 E6
- Leadon, D., J. Daykin, W. Backhouse, C. Frank, and M.A. Atock. (1990). **Environmental, hematological and blood biochemical changes in equine transit stress.** In: *Proceedings of the Annual Convention of the American Association of equine Practitioners*, p. 485-490.
NAL call number: SF601 A46
- Leadon, D. (1990). **Equine transit stress. Environmental changes experienced by horses during a long distance flight.** In: *Proceedings of the International Conference on Equine Sports Medicine, Stockholm, Sweden, July 21-22, 1990*, Kallings, ed., Stockholm: Sveriges Veterinaermedicinska Saellska, p. 89-92.
- LeBlanc, H. (1991). **Chemical restraint for surgery in the standing horse.** *Veterinary Clinics of North America, Equine Practitioner* 7(3):521-533.
NAL call number: SF951 V47
- Lemarquis, J. (1994). **[Horse transportation]. Transport de chevaux.** In: *[Behaviour and adaptation of domestic*

animals to constraints of modern farming practices: technical basis of animal welfare]. Comportement et adaptation des animaux domestiques aux contraintes de l' élevage: bases techniques du bien-etre animal. Paris: Institut National de la Recherche Agronomique, p. 217-219.

NAL call number: SF756.7 C65 1994

Lindner, A. (1996). **Practical aspects of transporting riding, breeding and sport horses.** *Tierarztliche Umschau* 51(10):628-633.

NAL call number: 41.8 T445

Linnabary, R.D., J.C. New, B.M. Vogt, C. Griffith Davies, and L. Williams (1993). **Emergency evacuation of horses - a Madison County, Kentucky survey.** *Journal of Equine Veterinary Science* 13(3):153-158.

NAL call number: SF951 J65

Longanecker, D. (1993). **Trailer-loading success : a step-by-step guide for training horses to load.** Yakima, Wash.: Roustabout Press, 103 p.

NAL call number: SF287 L82 1993

Losson, B. (1994). [**Equine piroplasmosis : a restraint to the free circulation of the horses. The case of the Olympic Games at Atlanta (USA)]. La piroplasmose equine : un frein a la libre circulation des chevaux : a propos des jeux olympiquesd' Atlanta.** *Annales de Medecine Veterinaire* 138(5):357-359.

NAL call number: 41.8 AN78

Madigan, J. (1993). **Evaluation of a new sling support device for horses.** *Journal of Equine Veterinary Science* 13(5):260-261.

NAL call number: SF951 J65

Madigan, J.E. (1993). **Stress, shock, chemical restraint and problems of immobilization and restraint of the equine rescue patient.** *Journal of Equine Veterinary Science* 13(5): 262-263.

NAL call number: SF951 J65

Madigan, J.E. and B. Moore (1995). **Helicopter rescue of horses.** *Journal of Equine Veterinary Science* 15(4):155-157.

NAL call number: SF951 J65

Mal, M.E., T.H. Friend, D.C. Lay, S.G. Vogelsang, and O.C. Jenkins (1991). **Behavioral responses of mares to short-term confinement and social isolation.** *Applied Animal Behaviour Science* 31(1):13-24.

NAL call number: QL750 A6

Mal, M.E., C.A. McCall, K.A. Cummins, and M.C. Newland (1994). **Influence of preweaning handling methods on post-weaning learning ability and manageability of foals.** *Applied Animal Behaviour Science* 40(3-4):187-195.

NAL call number: QL750 A6

Mansmann, R.A., B. McCurdy, K. O'Conner, T. Collins, C. Beckstead, and M. Allen (1992). **Disaster planning model for an equine assistance and evacuation team** *Journal of Equine Veterinary Science* 12(5):268-271.

NAL call number: SF951 J65

Mansmann, R.A. and B. Woodie (1995). **Equine transportation problems and some preventives: a review.** *Journal of Equine Veterinary Science* 15(4):141-144.

NAL call number: SF951 J65

Mansmann, R.A. and T. Collins (1993). **Maintenance of an equine assistance and evacuation team.** *Journal of Equine Veterinary Science* 13(5):284-286.

NAL call number: SF951 J65

Marks, D. (1993). **International shipping of competition horses.** *Journal of Veterinary Equine Science* 13(11):609, 612-614.

NAL call number: SF951 J65

Mars, L.A., H.E. Kiesling, T.T. Ross, J.B. Armstrong, and L. Murray (1992). **Water acceptance and intake in horses under shipping stress.** *Journal of Veterinary Equine Science* 12(1):17-20.

NAL call number: SF951 J65

Marshall, K., R. Sahara, J. Samuels, B. Norman, and R. Schumacher (1993). **The California veterinary medical association disaster response resource guide.** *Journal of Equine Veterinary Science* 13(5):282-283.

NAL call number: SF951 J65

McBane, S. (1992). **Understanding your horse.** London: Ward Lock, distributed in the U.S. by Sterling Publishing Co., New York, NY, 96 p.

NAL call number: SF285.3 M43 1992

McCall, J. (1995). **The stallion: a breeding guide for owners and handlers. 1st ed.** New York: Howell Book House, 228 p.

NAL call number: SF291 M38 1995

McCarthy, R., L. Jeffcott, I. Clarke, J. Funder, I. Smith, and C.A. Wallace (1991). **Evaluation of stress in horses.** *Australian Equine Veterinarian* 9(1):34.

NAL call number: SF604 A97

McClintock, S.A. and A.P. Begg (1990). **Suspected salmonellosis in seven broodmares after transportation.** *Australian Veterinary Journal* 67(7):265-267.

NAL call number: 41.8 Au72

Meyer Gerbaulet, H. (1990). **[Passport for horse: a means for sanitary control for horses transport in European Community]. Le passeport pour chevaux: un moyen de controle sanitaire des déplacements de chevaux dans la Communauté européenne.** In: *Transport of sport horses in Europe, spongiform encephalopathy, abattoirs inspection, sanitary status. 14th Conference of the OIE Regional Commission for Europe. Sophia, Bulgarie, 2-5 October 1990*, Paris: Office International des Epizooties, p. 22-30.

NAL call number: SF780.9 I57 1990

Miller, R.M. (1996). **Behavior of the horse.** *Journal of Equine Veterinary Science* 16(1):4-7.

NAL call number: SF951 J65

Miller, R.M. (1997). **The revolution in horsemanship.** *Journal of Equine Veterinary Science* 17(3):126-128.

NAL call number: SF951 J65

Miller, R.M. (1996). **How we can quickly assume the role of horse herd leader: making horses compliant and willing subjects.** *Journal of Equine Veterinary Science* 16(1):4-7.

NAL call number: SF951 J65

Miller, R.M. (1995). **Behavior of the horse: flight.** *Journal of Veterinary Equine Science* 15(2):55-56.

NAL call number: SF951 J65

Miller, R.M. (1996). **Behavior of the horse: restraint.** *Journal of Equine Veterinary Science* 16(9): 366-371.

NAL call number: SF951 J65

Miller, R.M. (1992). **Submissive behavior associated with flight deprivation in the horse.** *Proceedings of the Annual Convention of the American Association of Equine Practitioners* (37):405-407.

NAL call number: SF601 A46

Mills, P.C. and D.J. Marlin (1996). **Plasma iron in elite horses at rest and after transport.** *Veterinary Record* 139(9):215-217.

NAL call number: 41.8 V641

Muir, W.W. (1991). **Common complications associated with equine chemical restraint and anesthesia.** *Proceedings of the Thirty-Sixth Annual Convention of the American Association of Equine Practitioners, Lexington, Kentucky, December 2-5, 1990*, p. 259-266.

Munroe, G. and L. Young (1991). **Standing chemical restraint in the horse.** *In Practice* 13(4):163-166.
NAL call number: SF601 I4

Nestved, A. (1996). **Evaluation of an immunostimulant in preventing shipping stress related respiratory disease.** *Journal of Equine Veterinary Science* 16(2):78-82.
NAL call number: SF951 J65

Nyman, S., E. Hydbring, and K. Dahlborn (1996). **Is vasopressin a "stress hormone" in the horse?** *Pferdeheilkunde* 12(4):419-422.

Oger, Y. (1990). **Military veterinarians and sea transport of horses around 1860.** *Sciences Veterinaires Medecine Comparee* 92(5-6):237-244.
NAL call number: SF1 B84

Okonski, J. (1998). **[Horse transport regulations.] Przepisy dotyczace transportu koni.** *Zycie Weternaryjne* 73(3):88-90.
NAL call number: SF604 Z9

Oikawa, M.A. and R. Kusunose (1995). **Some epidemiological aspects of equine respiratory disease associated with transport.** *Journal of Equine Science* 6(1):25-29.
NAL call number: SF277 J37

Oikawa, M., M. Kamada, Y. Yoshikawa, and T. Yoshikawa (1994). **Pathology of equine pneumonia associated with transport and isolation of *Streptococcus equi* subs. *zooepidemicus*.** *Journal of Comparative Pathology* 111(2):205-212.
NAL call number: 41.8 J82

Oikawa, M., S. Takagi, R. Anzai, H. Yoshikawa, and T. Yoshikawa (1995). **Pathology of equine respiratory disease occurring in association with transport.** *Journal of Comparative Pathology* 113(1):29-43.
NAL call number: 41.8 J82

Ouragh, L., J.P. Braun, A.G. Rico, and J.P. Thouvenot (1990). **Effects of transportation on serum biochemical parameters of the horse.** In: *Proceedings of the IVth Congress of the International Society for Animal Clinical Biochemistry, University of California, Davis, USA, July 18-21, 1990*.
NAL call number: SF769.3 P76 1990

Pauli, H., U. Schatzmann, and J. Schaffer (1994). **Historical review of ways of slinging horses.** *Pferdeheilkunde* 10(5):325-333.

Pilkington, M. and G. Wilson (1991). **Welfare of horses being transported.** *Australian Equine Veterinarian* 9(3):94-95.
NAL call number: SF604 A97

Plath, B. and A. Schuette (1990). **[A study of the withers height to determine the minimum internal width of horse transporters]. Ein Beitrag zur Festsetzung von Mindestanforderungen zum tierschutzgerechten Transport von Pferden.** *Tieraerztliche Umschau* 45(12):853-859.
NAL call number: 41.8 T445

Racklyeft, D.J. and D.N. Love (1990). **Influence of head posture on the respiratory tract of healthy horses.**

Australian Veterinary Journal 67(11):402-405.

NAL call number: 41.8 Au72

Sacht, J.H. (1990). **Welfare and transport of animals: transport of horses. The most important faults and the minimum requirements (illustrated report).** *RFL, Rundschau für Fleischhygiene und Lebensmittelüberwachung* 42(2):24-25.

Schiesaro, G. (1990). **Transport of sports horses. Cases in which the veterinary regulations are inapplicable and discussion on aspects of enforcement.** *Nuovo Progresso Veterinario* 46(15-16):526-529.

Schwabe, A. (1991). **Horses and ponies.** *Practical animal handling*, R.S. Anderson and A.T.B. Edney, eds., p. 89-110.

NAL call number: SF61 P73 1991

Scicluna, C. (1995). **Restraint of the horse.** *Recueil de Medecine Veterinaire* 171(10-11):633-642.

NAL call number: 41.8 R24

Seed, V. (1992). **The importation of horses into New Zealand.** *Newsletter of the Equine Branch, New Zealand Veterinary Association* March 23-28.

Senate Select Committee on Animal Welfare, Australia (1991). **Equine welfare in competitive events other than racing. Recommendations and major conclusions.** *Australian Equine Veterinarian* 9(4):137-140.

NAL call number: SF604 A97

Smith, B.L., J.H. Jones, G.P. Carlson, J.R. Pascoe, and P.W. Cain (1991). **Minimizing transport stress in horses.** *Equine Athlete* 4(6):16-20.

NAL call number: SF956 E68

Smith, B.L. (1992). **Minimizing transport stress in horses.** *Live Animal Trade and Transport Magazine* 4(1):64-67.

NAL call number: HE199.5 L5L58

Smith, B.L., J.H. Jones, G. Carlson, and J.R. Pascoe (1994). **Effect of body direction on heart rate in trailered horses.** *American Journal of Veterinary Research* 55(7):1007-1011.

NAL call number: 41.8 Am3A

Smith, B.L., J.H. Jones, G. Carlson, and J.R. Pascoe (1994). **Body position and direction preferences in horses during road transport.** *Equine Veterinary Journal* 26(5):374-377.

NAL call number: SF955 E6

Smith, B.L., J.H. Jones, W.J. Hornof, J.A. Miles, K.E. Longworth, and N.H. Willits (1996). **Effects of road transport on indices of stress in horses.** *Equine Veterinary Journal* 28(6):446-454.

NAL call number: SF955 E6

Smith, B.L., J.A. Miles, J.H. Jones, and N.H. Willits (1996). **Influence of suspension, tires, and shock absorbers on vibration in a two-horse trailer.** *Transactions of the American Society of Agricultural Engineers* 39(3):1083-1092.

NAL call number: 290.9 Am32

Spurlock, S.L. (1993). **Nursing care and transportation of the foal.** *Equine Practice* 15(1):23-25.

NAL call number: SF951 E62

Steffens, B. (1996). **[Contribution to the feeding and handling of military horses in the 18th and 19th centuries.] Ein Beitrag zur Fütterung und Haltung von Militärpferden im 18. und 19. Jahrhundert.** Thesis (doctoral)--

Tierärztlichen Hochschule Hannover, 252 p.

NAL call number: DISS F1996162

Templeton, R.S., R.P. Boswell, and T.J. Lane (1993). **Equine ambulatory rescue and field hospital after Hurricane**

Andrew. *Journal of Equine Veterinary Science* 13(5):286-289.
NAL call number: SF951 J65

Thompson, A. (1997). **Surviving a road wreck.** *Equine Athlete* 10(1): 35-37.
NAL call number: SF956 E68

Timoney, P.J. and W.H. McCollom (1993). **Equine viral arteritis in perspective in relation to international trade.** *Journal of Equine Veterinary Science* 13(1):50-52.
NAL call number: SF951 J65

Trailing horses (1996). *Equine Practice* 18(7):35-38.
NAL call number: SF951 E62

Vogel, C. (1995). **RSPCA complete horse care manual.** 192 pp.
NAL call number: SF285.3 V64 1995

Wagener, A. (1996). **[Review of the effects of transport on horses]. Uebersicht ueber die Wirkung des Transportes auf Pferde.** *Tieraerztliche Umschau* 51(10):633-641. Summaries in German and English.
NAL call number: 41.8 T445

Waran, N.K., N. Singh, V. Robertson, D. Cuddeford, and D. Marlin (1993). **Effects of transport on the behaviour and heart rates of Thoroughbred horses.** *Applied Animal Behaviour Science* 38(1):76-77.
NAL call number: QL750 A6

Waran, N.K., V. Robertson, D. Cuddeford, A. Kokoszko, and D.J. Marlin (1996). **Effects of transporting horses facing either forwards or backwards on their behaviour and heart rate.** *Veterinary Record* 139(1):7-11.
NAL call number: 41.8 V641

White, A., A. Reyes, A. Godoy, and R. Martinez (1991). **Effects of transport and racing on ionic changes in Thoroughbred race horses.** *Comparative Biochemistry and Physiology. A, Comparative Physiology* 99(3):343-346.
NAL call number: QP1 C6

Young, J.F. and B.B. Norman (1993). **Emergency preparedness - command and control.** *Journal of Equine Veterinary Science* 13(5):255-257.
NAL call number: SF951 J65

To: [[Main Contents](#)] [[Top of Bibliography section](#)]

Bibliography: Poultry

Alami, M.A. (1993). **Aversion of broiler chickens to horizontal vibration using passive avoidance technique.** In: *United Kingdom informal group meeting on human response to vibration. Proceedings of a conference held in Farnborough, UK, 20-22 September 1993,* 7 pp.

Animal and Plant Health Inspection Service (1994). **National poultry improvement plan and auxiliary provisions.** Animal and Plant Health Inspection Service: Hyattsville, MD, 94 p.
NAL call number: aSF601 A1U5

Baker, C.J. (1994). **Aerodynamics of poultry transporters: implications for environmental control.** *World's Poultry Science Journal* 50(1):62-63.
NAL call number: 47.8 W89

Baker, C.J., S. Dalley, X. Yang, P. Kettlewell, and R. Hoxey (1996). **An investigation of the aerodynamic and ventilation characteristics of poultry transport vehicles. 2. Wind tunnel experiments.** *Journal of Agricultural*

Engineering Research 65(2):97-113.
NAL call number: 58.8 J82

Barbut, S., S.A. McEwen, and R.J. Julian (1990). **Turkey downgrading: Effect of truck cage location and unloading.** *Poultry Science* 69(8):1410-1413.
NAL call number: 47.8 Am33P

Barnett, J.L. and E.A. Newman (1997). **Review of welfare research in the laying hen and the research and management implications for the Australian egg industry.** *Australian Journal of Agricultural Research* 48(4):385-402.
NAL call number: 23 Au783

Bayliss, P A. and M.H. Hinton (1990). **Transportation of broilers with special reference to mortality rates.** *Applied Animal Behaviour Science* 28(1):93-118.
NAL call number: QL750 A6

Behrends, J.I., J.M. Randall, M.A. Stiles, J.A. Lines, and P.J. Kettlewell (1996). **Noise and vibration on a poultry transporter.** In: *Proceedings of the 30th International Congress of the International Society for Applied Ethology, 14-17 August, 1996, Guelph, Ontario, Canada*, p.76.
NAL call number: SF756.7 I57 1996

Biro, R. (1990). **Baby chicks.** In: *Conference proceedings: Animal Transportation Association, April 22-25, 1990, 16th Annual Conference*, p. 25-26.
NAL call number: HE9788.4 A55A54 1990

Broom, D.M. (1990). **Effects of handling and transport on laying hens.** *World's Poultry Science Journal* 46(1):48-50.
NAL call number: 47.8 W89

Campo, J.L. and C. Carnicer (1994). **Effects of several "stressors" on tonic immobility reaction of chickens.** *Archiv fur Geflugelzucht und Kleintierkunde* 58(2):75-78.
NAL call number: 47.8 AR22

Curtis, P.E. (1991). **Chickens, turkeys, ducks and geese.** In: *Practical animal handling* R.S. Anderson and A.T.B. Edney, eds., Pergamon Press: Oxford, UK, p. 77-87.
NAL call number: SF61 P73 1991

Dalley, S., C.J. Baker, X. Yang, P. Kettlewell, and R. Hoxey (1996). **An investigation of the aerodynamic and ventilation characteristics of poultry transport vehicles. 3. Internal flow field calculations.** *Journal of Agricultural Engineering Research* 65(2):115-127.
NAL call number: 58.8 J82

Duggan, J.A. and J.M. Randall (1994). **Aversion of broilers to whole-body vertical vibration.** In: *Proceedings of the 9th European Poultry Conference, Glasgow, UK, 7-12 August 1994: Volume 2. Symposia papers*, p. 415-418.
NAL call number: IPM951010914

Duggan, J.A., J.M. Randall, and C.J. Nicol (1996). **Behavioural responses of broiler chickens to whole-body vertical vibration.** In: *Proceedings of the 30th International Congress of the International Society for Applied Ethology 14-17 August, 1996, Guelph, Ontario, Canada*, p. 89.
NAL call number: SF756.7 I57 1996

Duggan, J.A. (1993). **Indicators for the assessment of broiler welfare in response to whole-body vertical vibration.** In: *United Kingdom informal group meeting on human response to vibration. Proceedings of a conference held in Farnborough, UK, 20-22 September 1993*, 12pp.

Ekstrand, C. (1998). **An observational study of the effects of catching method on carcass rejection rates in**

broilers. *Animal Welfare* 7(1):87-96.

NAL call number: HV4701 A557

El Assaad, F.G., L.E. Stewart, E.T. Mallinson, L.E. Carr, S.W. Joseph, and G. Berney (1993). **Decontamination of poultry transport cages.** In: *Paper / American Society of Agricultural Engineers*, American Society of Agricultural Engineers: St. Joseph, MI, 26pp.

NAL call number: 290.9 Am32P

El Assaad, F.G., L.E. Stewart, E.T. Mallinson, L.E. Carr, S.W. Joseph, and G.E. Berney (1995). **Decontamination of poultry transport cages.** *Transactions of the American Society of Agricultural Engineers* 38(4):1213-1220.

NAL call number: 290.9 Am32T

El Assaad, F.G., L.E. Stewart, E.T. Mallinson, L.E. Carr, S.W. Joseph, and G.E. Berney (1993). **Prediction of residual chlorine in a poultry transport cage disinfection system.** In: *Paper / American Society of Agricultural Engineers*, American Society of Agricultural Engineers: St. Joseph, MI, 20 pp.

NAL call number: 290.9 Am32P

El Assaad, F.G. (1992). **A laboratory system for evaluating poultry transport crate disinfection.** University of Maryland at College Park, Department of Agricultural Engineering. Thesis research directed by the Department of Agricultural Engineering.

NAL call number: MdU LD3231.M70d-El-Assaad,-F.G.

El Assaad, F.G. and L.E. Stewart (1990.) **Reducing salmonella contamination in broiler transport cages.** In: *The Maryland Poultryman*, Cooperative Extension Service, University of Maryland, p. 11-12.

NAL call number: 275.28 M36

El Assaad, F.G., L.E. Stewart, and L.E. Carr (1990). **Disinfection of poultry transport cages.** In: *Paper / American Society of Agricultural Engineers*, American Society of Agricultural Engineers: St. Joseph, MI, 35 pp.

NAL call number: 290.9 Am32P

Erhardt, W., H. Gehra, M. Schafer, T. Brill, and J. Henke (1996). **CO₂-stunning of turkeys.** *Deutsche Tierärztliche Wochenschrift* 103(2):62-64.

NAL call number: 41.8 D482

Fernandez, C.R., G.J. Hernandez, G. Polanco, P. Taboada, and J.A. Garcia (1991). **[Weight losses in broilers during transport to the abattoir]. Mermas durante la transportacion de broilers hacia el matadero.** *Revista Cubana de Ciencia Avicola* 18(2): 162-167.

NAL call number: SF481 R48

Fitko, R., K. Jakubowski, H. Zielinski, and I. Potrzuska (1993). **The level of corticosterone, adrenaline and noradrenaline and activity of blood neutrophils in chickens under an acute immobilization stress.** *Medycyna Weterynaryjna* 49(1):37-38.

NAL call number: 41.8 M463

Gancic, M. and I. Rajic (1998). **[Production of Japanese quails (*Coturnix coturnix japonica*). 7. Transport of eggs, chicks and adult quails.] Gajenje japanskih prepelica (*Coturnix coturnix japonica*). 7. Pakovanje i transport jaja, mladunaca i odraslih prepelica.** *Zivinarstvo* 33(1):23-24.

NAL call number: SF487 K68 1968

Gilbert, J. (1996). **Jerry Stone on catching and hauling.** *Small Farm Today* 13(5):43-44.

NAL call number: S1 M57

Gorssen, J. and P. Koene (1997). **Behaviour and thermogenesis of racing pigeons housed under transport conditions.** *Animal Welfare* 6(2):153-168.

NAL call number: HV4701 A557

Grattan, D.A.P. (1993). **Causes of trauma in broilers.** *Veterinary Record* 132(2):48.

NAL call number: 41.8 V641

Gregory, N.G. and S.D. Austin (1992). **Causes of trauma in broilers arriving dead at poultry processing plants.** *Veterinary Record* 131(22):501-503.

NAL call number: 41.8 V641

Gregory, N.G., L.J. Wilkins, D.M. Alvey, and S.A. Tucker (1993). **Effect of catching method and lighting intensity on the prevalence of broken bones and on the ease of handling of end-of-lay hens.** *Veterinary Record* 132(6):127-129.

NAL call number: 41.8 V641

Gregory, N.G. (1994). **Pathology and handling of poultry at the slaughterhouse.** *World's Poultry Science Journal* 50(1):66-67.

NAL call number: 47.8 W89

Gregory, N.G., L.J. Wilkins, S.D. Austin, C.G. Belyavin, D.M. Alvey, and S.A. Tucker (199). **Effect of catching method on the prevalence of broken bones in end of lay hens.** *Avian Pathology* 21(4):717-722.

NAL call number: SF995.A1A9

Grigor, P.N., B.O. Hughes, and M.C. Appleby (1995). **Effects of regular handling and exposure to an outside area on subsequent fearfulness and dispersal in domestic hens.** *Applied Animal Behaviour Science* 44(1):47-55.

NAL call number: QL750 A6

Gurer, C., I. Erbas, and S. Ozdemir (1991). **Effects of litter, transport and live weight on broiler carcass quality and the localization and classification of carcass damage.** *Doga, Turk Veterinerlik ve Hayvancilik Dergisi* 15(3):320-327.

NAL call number: SF1 D57

Hemsworth, P.H., G.J. Coleman, J.L. Barnett, and R.B. Jones (1994). **Behavioural responses to humans and the productivity of commercial broiler chickens.** *Applied Animal Behaviour Science* 41(1/2):101-114.

NAL call number: QL750 A6

Hillebrand, S.J.W., E. Lambooi, and C.H. Veerkamp (1996). **The effects of alternative electrical and mechanical stunning methods on hemorrhaging and meat quality of broiler breast and thigh muscles.** *Poultry Science* 75(5):664-671.

NAL call number: 47.8 Am33P

Hoxey, R.P., P.J. Kettlewell, A.M. Meehan, C.J. Baker, and X. Yang (1996). **An investigation of the aerodynamic and ventilation characteristics of poultry transport vehicles. I. Full-scale measurements.** *Journal of Agricultural Engineering Research* 65(1):77-83.

NAL call number: 58.8 J82

Jakob, H.P., R. Morgenstern, P. Albicker, and R.K. Hoop (1998). **[Reasons for rejecting slaughtered broilers from two major Swiss producers.] Konfiskationsursachen bei geschlachteten Broilern aus zwei grossen schweizerischen Mastorganisationen.** *Schweizer Archiv fur Tierheilkunde* 140(2):60-64. Summaries in English, French, and Italian.

NAL call number: 41.8 SCH9

Jones, R.B. and D. Waddington (1993). **Attenuation of the domestic chick's fear of human beings via regular handling: In search of a sensitive period.** *Applied Animal Behaviour Science* 36(2/3):185-195.

NAL call number: QL750 A6

Jones, R.B. and D.G. Satterlee (1996). **Hoods, shackles, and struggling broilers.** *Misset World Poultry* 12(4):56-57.

NAL call number: SF481 M54

Jones, R.B. (1994). **Regular handling and the domestic chick's fear of human beings: generalisation of response.** *Applied Animal Behaviour Science* 42(2):129-143.

NAL call number: QL750 A6

Jones, R.B. (1992). **The nature of handling immediately prior to test affects tonic immobility fear reactions in laying hens and broilers.** *Applied Animal Behaviour Science* 34(3):247-254.

NAL call number: QL750 A6

Jones, R.B. (1993). **The handling phenomenon and fear reduction: Strategic relevance for the domestic fowl?** *Applied Animal Behaviour Science* 38(1):77-78.

NAL call number: QL750 A6

Jones, R.B., T.K. Hagedorn, and D.G. Satterlee (1998). **Adoption of immobility by shackled broiler chickens: effects of light intensity and diverse hooding devices.** *Applied Animal Behaviour Science* 55(3/4):327-335.

NAL call number: QL750 A6

Juul Kristensen, B. and H. Christensen (1993). **Chasing of chickens - energy expenditure and musculoskeletal work load.** In: *Advances in industrial ergonomics and safety V. Proceedings of the annual international industrial ergonomics and safety conference* Copenhagen, Denmark, R. Nielsen, ed., p.85-292.

Kannan, G. and J.A. Mench (1996). **Influence of different handling methods and crating periods on plasma corticosterone concentrations in broilers.** *British Poultry Science* 37(1): 21-31.

NAL call number: 47.8 B77

Kannan, G. and J.A. Mench (1997). **Prior handling does not significantly reduce the stress response to pre-slaughter handling in broiler chickens.** *Applied Animal Behaviour Science* 51(1/2):87-99.

NAL call number: QL750 A6

Kettlewell, P.J. and M.A. Mitchell (1994). **Catching, handling and loading of poultry for road transportation.** *World's Poultry Science Journal* 50(1):54-56.

NAL call number: 47.8 W89

Kettlewell, P.J. and P. Moran (1992). **A study of heat production and heat loss in crated broiler chickens: a mathematical model for a single bird.** *British Poultry Science* 33(2):239-252.

NAL call number: 47.8 B77

Kettlewell, P.J., M.A. Mitchell, and C. Boon (1993). **The thermal environment on poultry transport vehicles.** In: *Livestock Environment IV. Proceedings of a conference held in Coventry, UK, 6-9 July 1993*, E. Collins, ed., pp. 552-559.

NAL call number: SF91 L58 1993

Kettlewell, P., M. Mitchell, and A. Meehan (1993). **The distribution of thermal loads within poultry transport vehicles.** *Agricultural Engineer* 48(1):26-30.

NAL call number: 58.9 In7

Knowles, T.G., R.C. Ball, P.D. Warriss, and J.E. Edwards (1996). **A survey to investigate potential dehydration in slaughtered broiler chickens.** *British Veterinary Journal* 152(3):307-314.

NAL call number: 41.8 V643

Knowles, T.G. and D.M. Broom (1990). **The handling and transport of broilers and spent hens.** *Applied Animal Behaviour Science* 28(1/2):75-91.

NAL call number: QL750 A6

Knowles, T.G. (1994). **Handling and transport of spent hens.** *World's Poultry Science Journal* 50(1):60-61.

NAL call number: 47.8 W89

Le Maho, Y., H. Karmann, D. Briot, Y. Handrich, J.P. Robin, E. Mioskowski, Y. Cherel, and J. Farni (1992). **Stress in birds due to routine handling and a technique to avoid it.** *American Journal of Physiology* 263(4, Pt.2):R775-R781.

Leonard, M.L. and R.W. Fairfull (1992). **Effect of early handling on growth, mortality and feed efficiency in White Leghorns.** *Applied Animal Behaviour Science* 34(1/2):121-128.
NAL call number: QL750 A6

Lyon, C.E. and B.G. Lyon (1994). **The location of wing restraints and the incidence of residual blood in broiler breast meat.** *Journal of Applied Poultry Research* 3(4):359-361.
NAL call number: SF481 J68

Macasek, P. (1992). **[Cleaning and disinfection of transport cages for live poultry]. Cistenie a dezinfekcia prepravnych klietok zivej hydiny.** *Prumysl Potraviny* 43(1):25-28.
NAL call number: TP368.P7

McEwen, S.A. and S. Barbut (1992). **Survey of turkey downgrading at slaughter: carcass defects and associations with transport, toenail trimming, and type of bird.** *Poultry Science* 71(7):1107-1115.
NAL call number: 47.8 Am33P

Mench, J.A. (1992). **The welfare of poultry in modern production systems.** *Poultry Science Reviews* 4(2):107-128.

Mengert, U. and K. Fehlhaber (1996). **Investigations on the influence of preslaughter stress on the endogenic microbial contamination in broiler carcasses.** *Berliner und Munchener Tierarztliche Wochenschrift* 109(1):28-31.
NAL call number: 41.8 B45

Metheringham, J. and R. Hubrecht (1996). **Poultry in transit--a cause for concern.** *British Veterinary Journal* 152(3):247-250.
NAL call number: 41.8 V643

Mielnik, M. and N. Kolstad (1991). **The influence of transportation time on the quality of broiler meat.** *Norwegian Journal of Agricultural Sciences* 5(3):245-251.
NAL call number: S3 N672

Mills, D.S. and C.J. Nicol (1990). **Tonic immobility in spent hens after catching and transport.** *Veterinary Record* 126(9):201-212.
NAL call number: 41.8 V641

Mitchell, M.A., P.J. Kettlewell, and M.H. Maxwell (1994). **Physiological stress in broiler chickens during transport.** In: *Proceedings 9th European poultry conference, Glasgow, UK, 7-12, August, 1994: Volume 2. Symposia papers.* Andover, UK: WPSA, United Kingdom Branch, p. 423-426.

Mitchell, M.A. and P.J. Kettlewell (1994). **Road transportation of broiler chickens: Induction of physiological stress.** *World's Poultry Science Journal* 50(1): p.57-59.
NAL call number: 47.8 W89

Mitchell, M.A., P.J. Kettlewell, and M.H. Maxwell (1992). **Indicators of physiological stress in broiler chickens during road transportation.** *Animal Welfare* 1(2):91-103.
NAL call number: HV4701 A557

Moran, E.T. and M.C. Todd (1994). **Continuous submarginal phosphorus with broilers and the effect of preslaughter transportation: Carcass defects, further-processing yields, and tibia-femur integrity.** *Poultry Science* 73(9):1448-1457.
NAL call number: 47.8 Am33P

Moran, P., B. Whetlor, and P. Berry (1993). **A conveyor system for handling laying hens.** *Agricultural Engineer*

48(4):120-122.

Moran, P., G.B. Scott, and C. Boon (1993). **Welfare of hens on conveyor systems.** In: *Livestock Environment IV. Proceedings of a conference held in Coventry, UK, 6-9 July 1993*, E. Collins, ed., pp. 236-243.
NAL call number: SF91 L58 1993

Moran, Jr., E.T. (1994). **Carcass quality after broiler livehaul and influence of withdrawal feed nutrition.** In: *Proceedings of the Maryland Nutrition Conference for Feed Manufacturers*, p. 30-38.

Moran, Jr., E.T. and S.F. Bilgili (1995). **Influence of broiler livehaul on carcass quality and further-processing yields.** *The Journal of Applied Poultry Research* 4(1):13-22.
NAL call number: SF481 J68

Muelnik, M. (1990). **[Duration of transport and quality of slaughter chickens].** *Transporttid og kvalitet paa slaktekylling. Fjoerfe* 107(3):129.
NAL call number: 47.8 T432

Mulder, R. (1996). **Impact of transport on the incidence of human pathogens in poultry.** *Misset World Poultry* 12(9):18-19.
NAL call number: SF481 M54

Newberry, R.C. and R. Blair (1993). **Behavioral responses of broiler chickens to handling: Effects of dietary tryptophan and two lighting regimens.** *Poultry Science* 72(7):1237-1244.
NAL call number: 47.8 Am33P

Nicol, C.J. (1992). **Effects of environmental enrichment and gentle handling on behaviour and fear responses of transported broilers.** *Applied Animal Behaviour Science* 33(4):367-380.
NAL call number: QL750 A6

Nicol, C. and C. Saville-Weeks (1993). **Poultry handling and transport.** In: *Livestock Handling and Transport* T. Grandin, ed., CAB International: Wallingford, UK, pp.
NAL call number: SF89 L59 1993

Nicol, C.J. and G.B. Scott (1990). Pre-slaughter handling and transport of broiler chickens. *Applied Animal Behaviour Science* 28(1/2):57-73.
NAL call number: QL750 A6

Piazza, V. and S. Govoni (1991). **[Transport - slaughtering and hygienical quality of poultry].** *Trasporto - macellazione e qualita igienica del pollame. Rivista di Avicoltura* 60(5):15-18.
NAL call number: 47.8 R523

Pietras, M., E. Herbut, and M. Jastrzebski (1990). **[Effect of transport of one-day old chickens on some physiological parameters in relation to incubation period].** *Wplyw transportu jednodniowych pisklat brojlerow na wybrane wskaźniki fizjologiczne z uwzględnieniem czasu trwania inkubacji. Roczniki Naukowe Zootechniki* 17(1-2):147-156.
NAL call number: SF1 R63

Quan, B.Z., Y. Shao, R. Huang, *et al.* (1995). **Study on the effects of shipping stress on commercial broilers. Experimental observation of some haematological values.** *Chinese Journal of Veterinary Medicine* 21(12):17.
NAL call number: SF604 C485

Raj, A.B.M. (1994). **An investigation into the batch killing of turkeys in their transport containers using mixtures of gases.** *Research in Veterinary Science* 56(3):325-331.
NAL call number: 41.8 R312

Randall, J.H. and D.G. Poggenpoel (1993). **Distracting laying hens with a 'toy': Does it work?** *South African Journal of Animal Science* 23(5/6):192-195.

NAL call number:

Randall, J.M., W.V. Streader, and A.M. Meehan (1993). **Vibration on poultry transporters.** *British Poultry Science* 34(4):635-642.

NAL call number: 47.8 B77

Randall, J.M., M.T. Cove, and R.P. White (1996). **Resonant frequencies of broiler chickens.** *Animal Science* 62(Pt.2):369-374.

NAL call number: SF1 A56

Randall, J.M., W.V. Streader, and A.M. Meehan (1994). **Vibration on poultry transporters.** *World's Poultry Science Journal* 50(1):64-65.

NAL call number: 47.8 W89

Roberts, D.H. (1990). [Transport by air of one day-old chicks. Warning and precautions]. **Trasporto aereo di pulcini di 1 gior. Avvertenze e precauzioni.** *Selezione Veterinaria* 31(2):211-212.

NAL call number: 241.71 B75

Rutter, S.M. and J.M. Randall (1993). **Aversion of domestic fowl to whole-body vibratory motion.** *Applied Animal Behaviour Science* 37(1):69-73.

NAL call number: QL750 A6

Rutter, S.M., G.B. Scott, and P. Moran (1993). **Aversiveness of mechanical conveying to laying hens.** *British Poultry Science* 34(2):279-285.

NAL call number: 47.8 B77

Sacht, J.H. (1990). **Animal welfare during transportation: Poultry transport.** *Rundschau fur Fleischhygiene und Lebensmitteluberwachung* 42(1):4-6.

Scholtyssek, S. and F. Ehinger (1991). **Effects of transportation on broilers and broiler carcasses.** Translation -- AFRC-Institute-of-Engineering-Research. Number 24, 18 pp.; Translation from German of 'Transporteinflusse auf Broiler und deren Schlachtkorper', *Archiv fur Geflugelkunde* 1978 40(1). Available from Publications Unit, Silsoe Research Institute, Wrest Park, Silsoe, Bedford MK45 4HS, UK.

Schoorlemmer, I. (1997). [Testing a British broiler catching machine: First uses in Germany]. **Britische Haehnchenfangmaschine im Test: Erste Einsaetze in Deutschland.** *DGS Magazin* (2):22-25.

Schroeder, G., E. Rieger, and D. Ehlert (1992). [Transport of broilers according to animal welfare requirements]. **Tierschutzgerechter Transport von Broilern.** *Deutsche Geflugelwirtschaft und Schweineproduktion* 44(24):690-694.

NAL call number: SF481 D48

Scott, G.B. and P. Moran (1992). **Behavioural responses of laying hens to carriage on horizontal and inclined conveyors.** *Animal Welfare* 1(4):269-277.

NAL call number: HV4701 A557

Scott, G.B. (1994). **Catching and handling of broiler chickens.** In: *Proceedings 9th European Poultry Conference, Glasgow, UK, 7-12 August, 1994: Volume 2. Symposia papers.* Andover, UK: World's Poultry Science Association, United Kingdom Branch, p. 411-414.

NAL call number: SF481.2 E97 1994

Scott, G.B. and P. Moran (1993). **Effects of visual stimuli and noise on fear levels in laying hens.** *Applied Animal Behaviour Science* 37(4):321-329.

NAL call number: QL750 A6

Scott, G.B. (1994). **Effects of short-term whole body vibration on animals with particular reference to poultry.**

World's Poultry Science Journal 50(1):25-38.

NAL call number: 47.8 W89

Scott, G.B. and P. Moran (1993). **Fear levels in laying hens carried by hand and by mechanical conveyors.** *Applied*

Animal Behaviour Science 36(4):337-345.

NAL call number: QL750 A6

Scott, G.B. (1993). **Poultry handling: A review of mechanical devices and their effect on bird welfare.** *World's*

Poultry Science Journal 49: 44-57.

NAL call number: 47.8 W89

Severini, M., M. Trevisani, and A.R. Loschi (1995). **Effects of stress on poultry meat quality.** *Folia Veterinaria* 39(1-2):37-39.

NAL call number: 41.8 F712

Sherwin, C.M., S.C. Kestin, C.J. Nicol, T.G. Knowles, S.N. Brown, H.J. Reed, and P.D. Warriss (1993). **Variation in behavioural indices of fearfulness and fatigue in transported broilers.** *British Veterinary Journal* 149(6):571-578.

NAL call number: 41.8 V643

Snizek, J. (1994). **Principles of housing, handling and transporting farm animals from the welfare aspect: poultry. (A review).** *Studijni Informace Zivocisna Vyroba* (2), 44 pp.

NAL call number: S13 V43

Sparrey, J.M., P.J. Kettlewell, and C. Boon (1993). **Design of shackles for the conveyance of live poultry.** In:

Livestock Environment IV. Proceedings of a conference held in Coventry, UK, 6-9 July 1993, E. Collins, ed., pp. 188-194.

NAL call number: SF91 L58 1993

Sowinska, J., K. Filus, S. Gierczynski, and A. Wojcik (1995). **Corticosterone level in blood of meat turkeys after application - before pre-slaughter handling - of vitamin E and selenium.** *Acta Academiae Agriculturae ac Technicae Olstenensis, Zootechnica* (44):55-60.

Sundermann, F. (1993). **[The solution? Loading machines for turkeys]. Die Loesung? Verlademaschinen fuer Puten.** *Deutsche Gefluegelwirtschaft und Schweineproduktion* 45(36):6-8.

NAL call number: SF481 D48

Thomas, E. (1990). **Design of water bath stunners in broiler plants. [Correspondence].** *Veterinary Record*

127(19):483.

NAL call number: 41.8 V641

Tison, J. (1997). **Ventilation rates for day-old chicks for use in transport trucks.** *Poultry Bulletin* p. 65, 72.

AVAILABILITY: Directorate of Agricultural Information, Ministry of Agriculture, Priv. Bag X114, Pretoria 0001

Tison, J. (1994). **Ventilation of day-old chick transporters.** *Poultry Bulletin* p.353. AVAILABILITY: Directorate of

Agricultural Information, Ministry of Agriculture, Priv. Bag X114, Pretoria 0001

Vilafranca, M. (1993). **[Transport and slaughtering of poultry]. Transporte y sacrificio de las aves de corral.**

Nuestra Cabana (247):28-30.

Waran, N.K. and D. Cuddeford (1995). **Effects of loading and transport on the heart rate and behaviour of horses.**

Applied Animal Behaviour Science 43(2):71-81.

NAL call number: QL750 A6

- Warriss, P.D., S.N. Brown, T.G. Knowles, J.E. Edwards, and J.A. Duggan (1997). **Potential effect of vibration during transport on glycogen reserves in broiler chickens.** *British Veterinary Journal* 153(2):215-219.
NAL call number: 41.8 V643
- Warriss, P.D., E.A. Bevis, S.N. Brown, and J.E. Edwards (1992). **Longer journeys to processing plants are associated with higher mortality in broiler chickens.** *British Poultry Science* 33(1):201-206.
NAL call number: 47.8 B77
- Warriss, P.D., E.A. Bevis, and S.N. Brown (1990). **Time spent by broiler chickens in transit to processing plants.** *Veterinary Record* 127(25/26):617-619.
NAL call number: 41.8 V641
- Warriss, P.D. and S.N. Brown (1996). **Time spent by turkeys in transit to processing plants.** *Veterinary Record* 139(3):72-73.
NAL call number: 41.8 V641
- Warriss, P.D., S.C. Kestin, S.N. Brown, T.G. Knowles, J. Wilkins, J.E. Edwards, S.D. Austin, and C.J. Nicol (1993). **The depletion of glycogen stores and indices of dehydration in transported broilers.** *British Veterinary Journal* 149(4):391-398.
NAL call number: 41.8 V643
- Webster, A.J.F. (1994). **Welfare research - husbandry systems.** In: *Proceedings 9th European poultry conference, Glasgow, UK, 7-12 August 1994: Volume 2. Symposia papers*, Andover, UK: World's Poultry Science Association (United Kingdom Branch), p. 228-229.
NAL call number: SF481.2 E97 1994
- Webster, A.J.F., A. Tuddenham, C.A. Saville, and G.B. Scott (1993). **Thermal stress on chickens in transit.** *British Poultry Science* 34(2):267-277.
NAL call number: 47.8 B77
- Weeks, C.A. and H.M. Wyld (1994). **Quantifying thermal stress in transit using a model hen.** In: *Proceedings of the 9th European poultry conference, Glasgow, UK, 7-12, August, 1994: Volume 2. Symposia papers*. Andover, UK: WPSA (United Kingdom Branch), p. 419-422.
NAL call number: SF481.2 E97 1994
- Xie, R.B. (1993). **Long-distance transport of chicks.** *Poultry Husbandry and Disease Control* (3):19-20.
NAL call number: SF481.75 C6Y35
- Xin, H. and S.R. Rieger (1995). **Physical conditions and mortalities associated with international air transport of young chicks.** *Transactions of the American Society of Agricultural Engineers* 38(6):1863-1867.
NAL call number: 290.9 Am32T
- Xin, H. and J.D. Harmon (1996). **Responses of group-housed neonatal chicks to posthatch holding environment.** *Transactions of the American Society of Agricultural Engineers* 39(6):2249-2254.
NAL call number: 290.9 Am32T
- Xin, H. and K. Lee (1996). **Use of Aqua-Jel and feed for nutrient supply during long journey air transport of baby chicks.** *Transactions of the American Society of Agricultural Engineers* 39(3):1123-1126.
NAL call number: 290.9 Am32T

To: [[Main Contents](#)] [[Top of Bibliography section](#)]

Bibliography: Ratites

Boyd, K.L. and T.K. Day (1996). **Evaluation of intramuscular xylazine-ketamine and telazol-ketamine-xylazine in adult emus.** *Veterinary Surgery* 25(2):179.

NAL call number: SF911 V43

Hancock, R. (1994). **Air transport of adult ostriches.** *State Veterinary Journal* 4(2):1-3.

NAL call number: SF601 S8

Kimminau, K.M. (1993). **Introducing the ostrich.** *Veterinary Technician* 14(8):459-467.

NAL call number: SF406 A5

Mouser, D. (1996). **Restraint and handling of the emu.** In: *Ratite management, medicine, and surgery*. Malabar, Fla.: Krieger Publishing Co., p. 41-45.

NAL call number: SF995.5 R37 1996

Payne, H. (1993). **Welfare of ostriches and other ratites during transport.** *State Veterinary Journal* 3(4):8-12.

NAL call number: SF601 S8

Wade, J.R. (1996). **Restraint and handling of the ostrich.** In: *Ratite management, medicine, and surgery*. Malabar, Fla.: Krieger Publishing Co., p. 37-40.

NAL call number: SF995.5 R37 1996

To: [[Main Contents](#)] [[Top of Bibliography section](#)]

Bibliography: Sheep

Apple, J.K., J.E. Minton, K.M. Parsons, and J.A. Unruh (1993). **Influence of repeated restraint and isolation stress and electrolyte administration on pituitary-adrenal secretions, electrolytes, and other blood constituents of sheep.** *Journal of Animal Science* 71(1):71-77.

NAL call number: 49 J82

Bailey, A.N. and J.A. Fortune (1992). **The response of Merino wethers to feedlotting and subsequent sea transport.** *Applied Animal Behaviour Science* 35(2):167-180.

NAL call number: QL750 A6

Baldock, N.M. and R.M. Sibly (1990). **Effects of handling and transportation on the heart rate and behaviour of sheep.** *Applied Animal Behaviour Science* 28(1):15-39.

NAL call number: QL750 A6

Barber, A. and R.B. Freeman (1993). **Design of sheep yards and shearing sheds.** In: *Livestock Handling and Transport*, T. Grandin, ed., CAB International: Wallingford, UK, pp. 147-157.

NAL call number: SF89 L59 1993

Black, H., L.R. Matthews, and K.J. Bremner (1991). **The welfare of sheep during sea transport.** *Proceedings of the New Zealand Society of Animal Production 51st Conference, Otago University, 11-15 February 1991*, 51:41-42.

NAL call number: 49.9 N483

Black, H., L.R. Matthews, and K.J. Bremner (1994). **The behaviour of male lambs transported by sea from New Zealand to Saudi Arabia.** *New Zealand Veterinary Journal* 42(1):16-23.

NAL call number: 41.8 N483

Black, H. (1995). **The behaviour and welfare of male lambs transported by sea from New Zealand to Saudi Arabia.** *Surveillance Wellington* 22(4):14-15.

NAL call number: SF604.63 N45 S87

- Black, H. (1996). **Inanition, stress and immunity in the expression of salmonellosis in the live sheep export industry.** *New Zealand Veterinary Journal* 44(2):77-78.
NAL call number: 41.8 N483
- Boutillier, Y. (1994). **Restraint, accidents, anaesthesia, surgery, obstetrics in sheep.** *Bulletin des Groupement Techniques Veterinaires* (3):13-17.
NAL call number: SF602 G7
- Broom, D.M., J.A. Goode, S.J.G. Hall, D.M. Lloyd, and R.F. Parrott (1996). **Hormonal and physiological effects of a 15 hour road journey in sheep: comparison with the responses to loading, handling and penning in the absence of transport.** *British Veterinary Journal* 152(5):593-604.
NAL call number: 41.8 V643
- Cavanagh, R. (1990). **Australian sheep dogs: Training & handling: Including a complete guide to commands.** Whittlesea, Victoria, Australia: R. Cavanagh, 111p.
NAL call number: SF428.6 C38
- Cockram, M.S. and R.A. Lee (1991). **Some preslaughter factors affecting the occurrence of bruising in sheep.** *British Veterinary Journal* 147(2):120-125.
NAL call number: 41.8 V643
- Cockram, M.S., J.E. Kent, N.K. Waran, and P.J. Goddard (1996). **Effects of journey length, space allowance during transport, and lairage during and after road transport on the behaviour of sheep.** In: *Proceedings of the 30th International Congress of the International Society for Applied Ethology, 14-17 August, 1996, Guelph, Ontario, Canada*, p. 86.
NAL call number: SF756.7 I57 1996
- Cockram, M.S., J.E. Kent, P.J. Goddard, N.K. Waran, I.M. McGilp, R.E. Jackson, G.M. Muwanga, and S. Prytherch (1996). **Effect of space allowance during transport on the behavioural and physiological responses of lambs during and after transport.** *Animal Science* 62(Pt. 3):461-477.
NAL call number: SF1 A56
- Conroy, F. and P. Hanrahan (1994). **Sheepyard and shearing shed design.** East Melbourne, Victoria, Australia: Agmedia, 74p.
NAL call number: SF379 S53 1994
- Cottle, D.J. (1991). **Australian sheep and wool handbook.** Melbourne: Inkata Press, 499p.
NAL call number: SF375.5 A8A87
- Davis, G.B. (1995). **The export of live sheep for slaughter from New Zealand.** *Surveillance Wellington* 22(2):26-28.
NAL call number: SF604.63 N45 S87
- Douglas Hudson, C. and N. Waran (1993). **Do sheep find transport aversive? An assessment using direct and indirect measures.** *Applied Animal Behaviour Science* 38(1):78- 79.
NAL call number: QL750 A6
- Edwards, J. (1990). **Shipping requirements for the carriage overseas of live sheep for slaughter.** MAF (Wellington) Policy Paper 110, 43pp.
- Ewbank, R. and J.E. Kent (1990). **The behaviour of road-transported sheep.** *Applied Animal Behaviour Science* 26(3):294.
NAL call number: QL750 A6
- Fabo, J. (1990). **[Equipment for sheep shearing and for the processing of wool after shearing]. Linka na strihanie oviec a postrihovu upravu vlny.** *Vedecke Prace Vyskumneho Ustavu Ovcarskeho v Trencine* (15):133-141.

NAL call number: 45.9 T72

Gudev, D., A. Kolev, I. Madzharov, and S.B. Selskostopanska (1994). [**Adaptation period of rams after transportation and environment changes**]. **Vliyanie na transporta i promyanata na obstanovkata v'rkhу prod"lzhitelnostta na adaptatsionniya period pri kochove**. *Zhivotnov"dni-Nauki* 31(1-4):227-228. Summaries in English and Russian.

Hall, S.J.G. and M. Clarkson (1995). **Transport of sheep**. *Proceedings of the Sheep Veterinary Society* 18:117-119.
NAL call number: SF968 I58 1993

Hall, S.J.G., B. Schmidt, and D.M. Broom (1997). **Feeding behaviour and the intake of food and water by sheep after a period of deprivation lasting 14 h**. *Animal Science* 64(Pt.1):105-110.
NAL call number: SF1 A56

Hall, S.J.G., M.L. Forsling, and D.M. Broom (1998). **Stress responses of sheep to routine procedures: changes in plasma concentrations of vasopressin, oxytocin and cortisol**. *Veterinary Record* 142(4):91-93.
NAL call number: 41.8 V641

Hamilton, G.R. and J.H. Stanton (1990). **Sheep yard design - a survey of performance**. In: *Agricultural Engineering Conference 1990. Proceedings of a conference held in Toowoomba, Australia, 11-14 November 1990*, p. 407-410, National Conference Publication Number 90-13.
NAL call number: S671.3 A37 1990

Haresign, W., R.J. Williams, M. Khalid, and R. Rodway (1995). **Heart rate responses and plasma cortisol and beta-endorphin concentrations in ewes subjected to laparoscopy and its associated handling procedures**. *Animal Science* 61(1):77-83.
NAL call number: 41.8 V643

Hargreaves, A.L. and G.D. Hutson (1990). **Some effects of repeated handling on stress responses in sheep**. *Applied Animal Behaviour Science* 26(3):253-265.
NAL call number: QL750 A6

Hargreaves, A.L. and G.D. Hutson (1990). The effect of gentling on heart rate, flight distance and aversion of sheep to a handling procedure. *Applied Animal Behaviour Science* 26(3):243-252.
NAL call number: QL750 A6

Hargreaves, A.L. and G.D. Hutson (1990). **The stress response in sheep during routine handling procedures**. *Applied Animal Behaviour Science* 26(1):83-90.
NAL call number: QL750 A6

Higgs, A.R.B., R.T. Norris, and R.B. Richards (1993). **Epidemiology of salmonellosis in the live sheep export industry**. *Australian Veterinary Journal* 70(9):330-335.
NAL call number: 41.8 Au72

Higgs, A.R.B., R.T. Norris, and R.B. Richards (1991). **Season, age and adiposity influence death rates in sheep exported by sea**. *Australian Journal of Agricultural Research* 42(2):205-214.
NAL call number: 23 Au783

Higgs, A.R.B., R.T. Norris, N.J. Campbell, S. Koh, and R.B. Richards (1996). **Contagious ecthyma in the live sheep export industry**. *Australian Veterinary Journal* 74(3):215-220.
NAL call number: 41.8 Au72

Holmes, R.J. (1991). **Sheep**. In: *Practical animal handling* R.S. Anderson and A.T.B. Edney, eds., Pergamon Press: Oxford, UK, pp. 39-49.
NAL call number: SF61 P73 1991

Horton, G.M.J., J.A. Baldwin, S.M. Emanuele, J.E. Woht, and L.R. McDowell (1996). **Performance and blood chemistry in lambs following fasting and transport.** *Animal Science* 62(Pt.1):49-56.

NAL call number: SF1 A56

Hutson, G.D. (1993). **Behavioural principles of sheep handling.** *Livestock Handling and Transport*, T. Grandin, ed., CAB International: Wallingford, UK, pp. 127-146.

NAL call Number: SF89 L59 1993

Jarvis, A.M. and M.S. Cockram (1995). **Some factors affecting resting behaviour of sheep in slaughterhouse lairages after transport from farms.** *Animal Welfare* 4(1):53-60.

NAL call number: HV4701 A557

Jarvis, A.M. and M.S. Cockram (1995). **Handling of sheep at markets and the incidence of bruising.** *Veterinary Record* 136(23):582-585.

NAL call number: 41.8 V641

Jarvis, A.M. and M.S. Cockram (1994). **Effects of handling and transport on bruising of sheep sent directly from farms to slaughter.** *Veterinary Record* 135(22):523-527.

NAL call number: 41.8 V641

Jarvis, A.M., M.S. Cockram, and I.M. McGlip (1996). **Bruising and biochemical measures of stress, dehydration and injury determined at slaughter in sheep transported from farms or markets.** *British Veterinary Journal* 152(6):719-722.

NAL call number: 41.8 V643

Jephcott, E.H., R.D. Lynn, G.D. Thorburn, and I.C. McMillen (1990). **Effects of electro-immobilisation on blood gas and pH status in sheep.** *Research in Veterinary Science* 48(3):314-320.

NAL call Number: 41.8 R312

Khalid, M., W. Haresign, and D.G. Bradley (1998). **Heart rate responses and plasma cortisol concentrations in ewes: comparison between cervical and laparoscopic intrauterine insemination and their associated handling procedures.** *Animal Science* 66(2):383-387.

NAL call number: SF1 A56

Kim, F.B. and M.S. Cockram (1993). **The resting behaviour of sheep in a slaughterhouse lairage after transportation.** *Applied Animal Behaviour Science* 38(1):78.

NAL call number: QL750 A6

Kim, F.B., R.E. Jackson, G.D.H. Gordon, and M.S. Cockram (1994). **Resting behaviour of sheep in a slaughterhouse lairage.** *Applied Animal Behaviour Science* 40(1):45-54.

NAL call number: QL750 A6

Knowles, T.G., S.N. Brown, P.D. Warriss, A.J. Phillips, S.K. Dolan, P. Hunt, J.E. Ford, J.E. Edwards, and P.E. Watkins (1995). **Effects on sheep of transport by road for up to 24 hours.** *Veterinary Record* 136(17):431-438.

NAL call number: 41.8 V641

Knowles, T.G., D.H.L. Maunder, P.D. Warriss, and T.W.H. Hones (1994). **Factors affecting the mortality of lambs in transit to or in lairage at a slaughterhouse, and reasons for carcass condemnations.** *Veterinary Record* 135(5):109-111.

NAL call number: 41.8 V641

Knowles, T.G., D.H.L. Maunder, and P.D. Warriss (1994). **Factors affecting the incidence of bruising in lambs arriving at one slaughterhouse.** *Veterinary Record* 134(2):44-45.

NAL call number: 41.8 V641

Knowles, T.G., P.D. Warriss, S.N. Brown, S.C. Kestin, S.M. Rhind, J.E. Edwards, M.H. Anil, and S.K. Dolan (1993). **Long distance transport of lambs and the time needed for subsequent recovery.** *Veterinary Record* 133(12):286-293.

NAL call number: 41.8 V641

Knowles, T.G., P.D. Warriss, S.N. Brown, S.C. Kestin, J.E. Edwards, A.M. Perry, P.E. Watkins, and A.J. Phillips (1996). **Effects of feeding, watering and resting intervals on lambs transported by road and ferry to France.** *Veterinary Record* 139(14):335-339.

NAL call number: 41.8 V641

Knowles, T.G., P.D. Warriss, S.N. Brown, and S.C. Kestin (1993). **Long distance transport of lambs.** *Applied Animal Behaviour Science* 38(1):75.

NAL call number: QL750 A6

Knowles, T.G., P.D. Warriss, S.N. Brown, and S.C. Kestin (1994). **Long distance transport of export lambs.** *Veterinary Record* 134(5):107-110.

NAL call number: 41.8 V641

Lester, S.J., D.J. Mellor, and R.N. Ward (1991). **Effects of repeated handling on the cortisol responses of young lambs castrated and tailed surgically.** *New Zealand Veterinary Journal* 39(4):147-149.

NAL call number: 41.8 N483

Mateo, J.M., D.Q. Estep, and J.S. McCann (1991). **Effects of differential handling on the behaviour of domestic ewes (*Ovis aries*).** *Applied Animal Behaviour Science* 32(1):45-54.

NAL call number: QL750 A6

McDonald, C.L., J.B. Rowe, and S.P. Gittins (1994). **Feeds and feeding methods for assembly of sheep before export.** *Australian Journal of Experimental Agriculture* 34(5):589-594. NAL call number: 23 Au792

McDonald, C.L. B.E. Warren, R.B. Richards, S.P. Gittins, C.J. Bunny, and J. Fry (1990). **Feeding level to maintain liveweight of Merino wethers under simulated shipping.** *Proceedings of the Australian Society of Animal Production* 18:522.

NAL call number: 49.9 Au72

Murray, K.C., J.C. Eddison, S.L. Cullinane, P.H. Brooks, and J.A. Kirk (1996). **The effect of origin, pre-slaughter handling and time from farm to slaughter on the welfare and meat quality of lamb.** In: *Proceedings of the 30th International Congress of the International Society for Applied Ethology 14-17 August, 1996, Guelph, Ontario, Canada*, p. 124.

NAL call No.: SF756 7 I57 1996

Norris, R.T., C.L. McDonald, R.B. Richards, M.W. Hyder, S.P. Gittins, and G.J. Norman (1990). **Management of inappetent sheep during export by sea.** *Australian Veterinary Journal* 67(7):244-247.

NAL call number: 41.8 Au72

Norris, R.T., R.B. Richards, and T. Higgs (1990). **The live sheep export industry.** *Journal of Agriculture, Western Australia* 31(4):131-148.

NAL call number: 23 W52J

Norris, R.T., R.B. Richards, and T. Higgs (1990). **Minimising sheep deaths aboard ship.** *Journal of Agriculture, Western Australia* 31(4):144-145.

NAL call number: 23 W52J

Norris, R.T., R.B. Richards, and T. Higgs (1990). **Importance of live sheep exports.** *Journal of Agriculture, Western Australia* 31(4):132-133.

NAL call number: 23 W52J

- Norris, R.T., R.B. Richards, and T. Higgs (1990). **Deaths of sheep during the phases of export.** *Journal of Agriculture, Western Australia* 31(4):134-135.
NAL call number: 23 W52J
- Norris, R.T., R.B. Richards, and T. Higgs (1990). **Causes of sheep death during sea transport.** *Journal of Agriculture, Western Australia* 31(4):136-138.
NAL call number: 23 W52J
- Norris, R.T., R.B. Richards, and T. Higgs (1990). **Predisposing causes of sheep deaths aboard ship.** *Journal of Agriculture, Western Australia* 31(4):139-143.
NAL call number: 23 W52J
- Norris, R.T., R.B. Richards, and G.J. Norman (1992). **The duration of lot-feeding of sheep before sea transport.** *Australian Veterinary Journal* 69(1):8-10.
NAL call number: 41.8 Au72
- Osorio, J.C., C. Sanudo, I. Sierra, M.T. Osorio, J. Guerriero, and P. Santolaria (1992). **Effect of transport on body weight loss in sheep.** In: *Actas de las XVI Jornadas Cientificas, Sociedad Espanola de Ovinotecnia y Caprinotecnia, Pamplona, Spain, September 1991*, pp. 480-486.
- Parrott, R.F., B.H. Misson, and C.F. De La Riva (1994). **Differential stressor effects on the concentrations of cortisol, prolactin and catecholamines in the blood of sheep.** *Research in Veterinary Science* 56(2):234-239.
NAL call number: 41.8 R312
- Parrott, R.F., D.M. Lloyd, and J.A. Goode (1996). **Stress hormone responses of sheep to food and water deprivation at high and low ambient temperatures.** *Animal Welfare* 5(1): 45-56.
NAL call number: HV4701 A557
- Parrott, R.F., S.J.G. Hall, D.M. Lloyd, J.A. Goode, and D.M. Broom (1998). Effects of a maximum permissible journey time (31 h) on physiological responses of fleeced and shorn sheep transport, with observations on behaviour during a short (1 h) rest-stop. *Animal Science* 66(Pt.1):197-207.
NAL call number: SF1 A56
- Richards, R.B., M.W. Hyder, J. Fry, N.D. Costa, R.T. Norris, and A.R.B. Higgs (1991). **Seasonal metabolic factors may be responsible for deaths in sheep exported by sea.** *Australian Journal of Agricultural Research* 42(2):215-226.
NAL call number: 23 Au783
- Rushen, J. (1990). **Use of aversion-learning techniques to measure distress in sheep.** *Applied Animal Behaviour Science* 28(1-2):3-14.
NAL call number: QL750 A6
- Simon, J.L. (1994). **The environment and diseases of sheep.** *Bulletin des Groupement Techniques Veterinaires* (3):3-11.
NAL call number: SF602 G7
- Slade, C.F.R. and L. Stubbings (1994). **Sheep housing.** In: *Livestock Housing*, C.M. Wathes and D.R. Charles, eds., CAB International: Wallingford, UK, p. 359-378.
NAL call number: SF91 L59 1994
- Smart, D., A.J. Forhead, R.F. Smith, and H. Dobson (1994). **Transport stress delays the oestradiol-induced LH surge by a non-opioidergic mechanism in the early postpartum ewe.** *Journal of Endocrinology* 142(3):447-451.
NAL call number: 448.8 J8293
- Thomas, K.W., A.P. Kelly, P.T. Beers, and R.G. Brennan (1990). **Thiamine deficiency in sheep exported live by sea.** *Australian Veterinary Journal* 67(6):215-218.

NAL call number: 41.8 Au72

Waghorn, G.C., G.B. Davis, and M.J. Harcombe (1995). **Specification of pen rail spacing and trough heights to prevent escape and enable good access to feed by sheep during sea shipments from New Zealand.** *New Zealand Veterinary Journal* 43(6):219-224.

NAL call number: 41.8 N483

Warriss, P.D., E.A. Bevis, and C.S. Young (1990). **Transport and lairage times of lambs slaughtered commercially in the south of England.** *Veterinary Record* 127(1):5-8.

NAL call number: 41.8 V641

Warriss, P.D., S.C. Kestin, C.S. Young, E.A. Bevis, and S.N. Brown (1990). **Effect of preslaughter transport on carcass yield and indices of meat quality in sheep.** *Journal of the Science of Food and Agriculture* 51(4):517-523.

NAL call number: 382 So12

Watson, G.A.L. (1994). **Sheep dipping and handling facilities: safety and maintenance.** *Farm Building Progress* (115): 36-38.

NAL call number: TH4911 F37

Williams, H.L. (1993). **Facilities for handling intensively managed sheep.** In: *Livestock Handling and Transport* T. Grandin, ed., CAB International: Wallingford, UK, pp. 159-178.

NAL call number: SF89 L59 1993

Williams, C.S.F. (1990). **Routine sheep and goat procedures.** *Veterinary Clinics of North America, Food Animal Practice* 6(3):737-758.

NAL call Number: SF 601 V535

To: [[Main Contents](#)] [[Top of Bibliography section](#)]

Bibliography: Swine

Aalhus, J.L., C. Garipey, A.C. Murray, S.D.M. Jones, and A.K.W. Tong (1991). **Stunning and shackling influences on quality of porcine longissimus dorsi and semimembranosus muscles.** *Meat Science* 29(4):323-334.

NAL call number: TX373 M4

Abbott, T.A. and E.J. Hunter (1994). **The effect of routine handling on the ease of moving and loading of pigs.** *Applied Animal Behaviour Science* 41(3-4):269.

NAL call number: QL750 A6

Abbott, T.A., H.J. Guise, E.J. Hunter, R.H.C. Penny, P.J. Baynes, and C. Easby (1995). **Factors influencing pig deaths during transit: an analysis of drivers' reports.** *Animal Welfare* 4(1):29-40.

NAL call number: HV4701 A557

Anil, M.H., J.L. McKinstry, M. Field, and R.G. Rodway (1997). **Lack of evidence for stress being caused to pigs by witnessing the slaughter of conspecifics.** *Animal Welfare* 6(1):3-8.

NAL call number: HV4701 A557

Baldi, A., V. Bontempo, F. Cheli, C. Corino, and F. Polidori (1994). **Hormonal and metabolic responses to the stress of transport and slaughterhouse procedures in clenbuterol-fed pigs.** *Journal of Veterinary Medicine, Series A* 41(3):189-196.

NAL call number: 41.8 Z5

de Barrio, A.S., J.W. Schrama, W. van der Hel, H.M. Beltman, and M.W.A. Verstegen (1993). **Energy metabolism of growing pigs after transportation, regrouping, and exposure to new housing conditions as affected by feeding**

level. *Journal of Animal Science* 71(7):1754-1760.

NAL call number: 49 J82

Barton Gade, P., P.D. Warriss, S.N. Brown, and B. Lambooij (1996). **Methods of improving pig welfare and meat quality by reducing stress and discomfort before slaughter - Methods of assessing meat quality.** In: *Proceedings of the EU Seminar. New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode, Germany, p. 23-36.

NAL call number: 18 L2353 Suppl.166

Barton Gade, P., L. Christensen, S.N. Brown, and P.D. Warriss (1996). **Effect of tier and ventilation during transport on blood parameters and meat quality in slaughter pigs.** In: *Proceedings of the EU Seminar. New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode, Germany, p. 101-116.

NAL call number: 18 L2353 Suppl.166

Barton-Gade, P. and L. Christensen (1998). **Effect of different stocking densities during transport on welfare and meat quality in Danish slaughter pigs.** *Meat Science* 48(3/4):237-247.

NAL call number: TX373 M4

Beattie, V.E., N. Walker, and I.A. Sneddon (1995). **Effect of rearing environment and change of environment on the behaviour of gilts.** *Applied Animal Behaviour Science* 46(1/2):57-65.

NAL call number: QL750 A6

Berends, B.R., H.A.P. Urlings, J.M.A. Snijders, and F. Knapen (1996). **Identification and quantification of risk factors in animal management and transport regarding *Salmonella* spp. in pigs.** *International Journal of Food Microbiology* 30(1/2):37-53.

NAL call number: QR115 I57

Bjurstrom, S., J. Carlsten, K. Thoren Tolling, and L. Jonsson (1995). **Distribution and morphology of skeletal muscle lesions after experimental restraint stress in normal and stress-susceptible pigs.** *Journal of Veterinary Medicine, Series A* 42(9):575-587.

NAL call number: 41.8 Z5

Borman, A., D. Wrona, M. Kamyczek, W. Stojek, M. Czyzowski, and J. Tokarski (1992). **Prolonged changes in lymphocyte population under repeated immobilization (physical restraint). I. Halothane-susceptible pigs.** *Animal Science Papers and Reports, Polish Academy of Sciences, Institute of Genetics and Animal Breeding, Jastrzebiec* (10):35-45.

NAL call number: SF1 A53

Bradshaw, R.H. and S.J.G. Hall (1996). **Incidence of travel sickness in pigs.** *Veterinary Record* 139(20):503.

NAL call number: 41.8 V641

Bradshaw, R.H., S.J.G. Hall, and D.M. Broom (1996). **Behavioural and cortisol response of pigs and sheep during transport.** *Veterinary Record* 138(10):233-234.

NAL call number: 41.8 V641

Bradshaw, R.H., R.F. Parrott, M.L. Forsling, J.A. Goode, D.M. Lloyd, R.G. Rodway, and D.M. Broom (1996). **Stress and travel sickness in pigs: effects of road transport on plasma concentrations of cortisol, beta-endorphin and lysine vasopressin.** *Animal Science* 63(Pt.3):507-516.

NAL call number: SF1 A56

Bradshaw, R.H., R.F. Parrott, J.A. Goode, D.M. Lloyd, R.G. Rodway, and D.M. Broom (1996). **Behavioural and hormonal responses of pigs during transport: effect of mixing and duration of journey.** *Animal Science* 62(Pt.3):547-554.

NAL call number: SF1 A56

- Bradshaw, R.H., R.F. Parrott, J.A. Goode, D.M. Lloyd, R.G. Rodway, and D.M. Broom (1996). **Effects of using and duration of journey on the welfare of pigs during transport.** In: *Proceedings of the EU Seminar. New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode, Germany, p. 95-100.
NAL call number: 18 L2353 Suppl.166
- Broom, D.M. (1995). **Pig welfare. Quantifying pigs' welfare during transport using physiological measures.** *Meat Focus International* 4(11):457-460.
NAL call number: TS1950 M433
- Bulla, J., A. Kolataj, J. Rafay, M. Bullova, and L. Holko (1991). [The effect of transport on some glycolytic enzyme activity in liver, kidneys and muscles in pigs of various genotypes]. *Vplyv transportu na aktivitu niekorych glykolytickych enzymov v peceni, oblickach a svaloch osipanych roznych genotypov. Vedecke Prace Vyskumneho Ustavu Zivocisnej Vyroby v Nitre* (24):137-142.
NAL call number: 49.9 N633
- Cabadaj, R., J. Legath, J. Pleva, D. Mate, P. Turek, L. Lohajova, J. Nagy, and P. Mala (1993). **Activity of some enzymatic parameters in halothane positive and negative pigs during their fattening and after transport to the slaughter- house.** *Folia Veterinaria* 37(1-2):23-26.
NAL call number: 41.8 F712
- Chatillon, G. (1994). **Transport mortality has its origin in stress: how to get pigs to their destination in good condition.** *Porc Magazine* (265):37-41.
NAL call number: 7 B872
- Chen, C.F. and C.C. Chen (1994). **A study of weight loss in pigs during transport.** *Taiwan Agriculture* 30(6):67-71.
NAL call number: S19 T3
- Chen, C.F., S.W. Roan, J.C. Chen, and Y.F. Kao (1995). **The shrinkage of pigs during transport in Taichung meat market.** *Journal of Agriculture and Forestry* 44(1):49-56.
NAL call number: 22.5 J823
- Chen, M.C., C.F.Huang, S.Y. Wang, *et al.*(1995). **Effects of transportation conditions on live weight loss and carcass quality of pigs.** *Journal of the Chinese Society of Animal Science* 24(3):329-344.
NAL call number: SF1.C48
- Christensen, L. and P. Barton Gade (1996). **Design of experimental vehicle for transport of pigs and some preliminary results of environmental measurements.** In: *Proceedings of the EU Seminar. New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode, Germany, p. 47-67.
NAL call number: 18 L2353 Suppl.166
- Clausen, M. (1995). [Handling of fattening pigs when loading for transport to the abattoir - a study based on literature, visits on the farm and interviews with the farmers]. *Hantering av slaktsvin i samband med lastning paa gaarden. En studie baserad paa litteratur, gaardsbesoek och intervjuer.* Uppsala, Sweden, 52 p. Summaries in English and Swedish.
- Cronin, G.M., J.A. Smith, F.M. Hodge, and P.H. Hemsworth (1994). **The behaviour of primiparous sows around farrowing in response to restraint and straw bedding.** *Applied Animal Behaviour Science* 39(3/4):269-280.
NAL call number: QL750 A6
- Curtis, S.E. (1990). **The influence of environment, facilities, and equipment on swine welfare and performance.** *The Compendium on Continuing Education for the Practicing Veterinarian* 12(3):443-444, 446.

D' Souza, D.N., G.A. Eldridge, R.D. Warner, B.J. Leury, F.R. Dunshea, H.M. Knowles, D.P. Hennessy (ed.), and P.D. Cranwell (1995). **The effects of adverse handling of pigs on farm and at the abattoir on meat quality.** *Manipulating pig production 5. Proceedings of the Fifth Biennial Conference of the Australasian Pig Science Association (APSA) held in Canberra, ACT on November 26-29, 1995.* 258 p.

Dzierzynska Cybulko, B., E. Pospiech, E. Bruska, E. Czechowska, and S. Jaroszewski (1992). **[Influence of transportation of pigs and resting period prior to slaughter on selected changes in their blood and muscles]. Wplyw transportu i odpoczynku przedubojowego na niektore zmiany zachodzace we krwi i miesniach swin.** *Roczniki Akademii Rolniczej w Poznaniu. Technologia Zywosci* 17(233):3-12.

NAL call number: 106.2 P872

Egle, P. and P. Weissweiler (1995). **[A gentle pig transport spares money]. Ein schonender Schweinetransport schont auch den Geldbeutel.** *Landwirtschaftliches Wochenblatt. Organ des Landesbauernverbandes in Baden Wuerttemberg* 162(40):19-20.

NAL call number: S232 B24L36

Ekkel, E.D., C.E.A. van Doorn, M.J.C. Hessing, M.J.M. Tielen (1995). **The specific-stress-free housing system has positive effects on productivity, health, and welfare of pigs.** *Journal of Animal Science* 73(6):1544-1551.

NAL call number: 49 J82

Fernandez, X., M. Maagaard, and E. Tornberg (1990). **The variation in pig muscle glycogen content during pre-slaughter handling - an intra vitam study.** In: *[Meat quality in slaughter animals. NJF Seminar Number 183]. Koettkvalitet hos vaara slaktdjur. NJF seminarium nr 183*, K. Lundstroem and G. Malmfors, eds., Uppsala, Sweden: Sveriges Lantbruksuniv, p. 53-62.

Freitag, D. (1994). **Electrical stunning of restrained slaughter pigs: beneficial effect of synchronous application of electric current to the brain and heart on the stunning process and on meat quality.** 118 pp.

NAL call number: 49 An55

Gao, D.Y., B. Han, Q.L. Wang (1996). **Changes in the blood chemistry of pigs as a result of transportation stress.** *Chinese Journal of Veterinary Science* 16(3):285-289. Summaries in English and Chinese.

NAL call number: SF604 C485

Geers, R.A. (1995). **The modulating effect of beta-endorphin on pigs' coping strategies during transport.** *Physiology and Behavior* 57(6):1057-1060.

NAL call number: QP1.P4

Geers, R., E. Bleus, T. von Schie, H. Gerard, S. Janssens, G. Nackaerts, E. Decuypere, and J. Jourquin (1994). **Transport of pigs different with respect to the halothane gene: stress assessment.** *Journal of Animal Science* 72(10):2552-2558.

NAL call number: 49 J82

Geers, R., B. Puers, and V. Goedseels (1997). **Electronic identification and monitoring of pigs during housing and transport.** *Computers and Electronics in Agriculture* 17(2):205-215.

NAL call number: S494.5 D3C652

Geers, R., G. Janssens, H. Ville, E. Bleus, H. Gerard, S. Janssens, and J. Jourquin (1995). **Effect of human contact on heart rate of pigs.** *Animal Welfare* 4(4):351-359.

NAL call number: HV4701 A557

Geers, R., B. Puers, K. Goossens, M. de Cooman, H. Ville, P. Wouters, S. Janssens, and V. Goedseels (1992). **Telemetric measurement of pigs' body temperature during group transport.** In: *12th International Conference on Agriculture Engineering, Uppsala, Sweden, 1-4 June 1992*, Uppsala, Sweden: Jordbrukstekniska Inst., p. 389.

Geverink, N.A., R.H. Bradshaw, E. Lambooij, and D.M. Broom (1996). **Handling of slaughter pigs in lairage:**

behavioural and physiological effects. In: *Proceedings of the EU Seminar. New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode, Germany, p. 207-212.

NAL call number: 18 L2353 Suppl.166

Geverink, N.A., B. Engel, E. Lambooi, and V.M. Wiegant (1996). **Observations on behaviour and skin damage of slaughter pigs and treatment during lairage.** *Applied Animal Behaviour Science* 50(1):1-13.

NAL call number: QL750 A6

Gispert, M., M.D. Guardia, and A. Diestre (1996). **[Death rate during transportation and pre-slaughter waiting periods in pig]. La mortalidad durante el transporte y la espera en porcinos destinados al sacrificio.** *Eurocarne* (45):73-79.

Gispert, M., M.D. Guardia, and A. Diestre (1996). **[Death rate of swine from the farm to the abattoir]. La mortalidad de los cerdos desde la granja al matadero.** *Irtacarne* (18):6-8.

Goossens, K., H. Ville, R. Geers, E. Bleus, S. Janssens, V. Goedseels, C. Boon (1993). **Body temperature and ECG parameters during transport of piglets.** In: *Livestock Environment IV. Proceedings of a conference held in Coventry, UK, 6-9 July 1993*, E. Collins, ed., p. 543-546.

NAL call number: SF91 L58 1993

Grandin, T. (1992). **Effect of genetics on handling and CO₂ stunning of pigs.** *Meat Focus International* 1(3):124-125.

NAL call number: TS1950 M433

Grandin, T. (1992). **Handling pigs: handling practices and facility designs to assure efficient swine handling and to reduce injuries and stress to pigs.** Madison, Wis.: Livestock Conservation Institute, 12 p.

NAL call number: SF395 H365 1992

Grauvogl, A. (1990). **[Transport of pigs, national and international]. Transport von Schweinen, national und international.** *Praktische Tierarzt Germany Spec. Number: Collegium veterinarium* 71 p. 46-47.

NAL call number: 41.8 P882

Grauvogl, A. and I. Stuhec (1993). **[Transport and slaughter of pigs]. Transport in klanje prasicev.** *Sodobno kmetijstvo* 26(2):84-88.

NAL call number: S13 S62

Guardia, M.D., M. Gispert, and A. Diestre (1996). **Mortality rates during transport and lairage in pigs for slaughter.** *Meat Focus International* 5(10):362-365.

NAL call number: TS1950 M433

Guardia, M.D., Gispert, M., Diestre, A. (1996). **[The mortality during transport and lairage in pigs in commercial abattoirs]. La mortalidad del ganado porcino durante el periodo previo al sacrificio en mataderos comerciales.** *Investigacion Agraria. Produccion y Sanidad Animales* 11(2):171-179. Summaries in English and Spanish.

Guise, H.J., T.A. Abbott, and R.H.C. Penny (1994). **Drivers' observations on trends in pig transit deaths.** *Pig Journal* 32:117-122.

NAL call number: SF971 P5

Guise, H.J. and R.H.C. Penny (1996). **Transport of pigs. [Correspondence].** *Veterinary Record* 138(14):339.

NAL call number: 41.8 V641

Guise, H.J. and E.J. Hunter (1998). **Environmental effects on pig handling behaviour and carcass quality.** In: *Progress in pig science*, Thrumpton, UK: Nottingham University Press, p. 421-427.

NAL call number: SF395.P76-1998

Han, B., D.Y. Gao, and Q.L. Wang (1995). **Study on the mechanism of controlling stress, induced in the Chinese miniature pig during transport at high temperature, with supplementary sodium chloride powder.** *Acta Veterinaria et Zootechnica Sinica* 26(3):261-267.

NAL call number: 41.8 AC86

Heeney, M.W. (1991). **Colorado 4-H swine project : member's manual.** Fort Collins, Colo.: Colorado State University Cooperative Extension, 10 p.

NAL call number: SF395.8 C6H33 1991

Heetkamp, M.J.W., J.W. Schrama, L. de Jong, G.M. Swinkels, W.G.P. Schouten, M.W. Bosch (1995). **Energy metabolism in young pigs as affected by mixing.** *Journal of Animal Science* 73(12):3562-3569.

NAL call number: 49 J82

Hemsworth, P.H., G.J. Coleman, M. Cox, and J.L. Barnett (1994). **Stimulus generalization: the inability of pigs to discriminate between humans on the basis of their previous handling experience.** *Applied Animal Behaviour Science* 40(2):129-142.

NAL call number: QL750 A6

Hemsworth, P.H. and J.L. Barnett (1992). **The effects of early contact with humans on the subsequent level of fear of human in pigs.** *Applied Animal Behaviour Science* 35(1):83-90.

NAL call number: QL750 A6

Hemsworth, P.H., J. Verge, and G.J. Coleman (1996). **Conditioned approach-avoidance responses to humans: the ability of pigs to associate feeding and aversive social experiences in the presence of humans with humans.** *Applied Animal Behaviour Science* 50(1):71-82.

NAL call number: QL750 A6

Hesse, D. and G. Groh (1990). [Series: **Avoiding accidents with farm animals. Safer handling of fattening pigs.** Serie: **Unfaelle mit Nutztieren vermeiden. Sicherer Umgang mit Mastschweinen.** *Schwaebischer Bauer* (4):30.

Hessing, M.J.C., W.G.P. Schouten, P.R. Wiepkema, and M.J.M. Tielen (1994). **Implications of individual behavioural characteristics on performance in pigs.** *Livestock Production Science* 40(2):187-196.

NAL call number: SF1 L5

Hevia, M.L., A. Quiles, and A. Ramirez (1995). [Animal protection and welfare of swine during transport]. **Proteccion y bienestar animal del ganado porcino durante el transporte.** *Anaporc* (No. 150, Part 1):101-108.

Hemsworth, P.H. (1993). **Behavioural principles of pig handling.** *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 197-212.

NAL call number: SF89 L59 1993

Hemsworth, P.H. and J.L. Barnett (1991). **The effects of aversively handling pigs, either individually or in groups, on their behaviour, growth and corticosteroids.** *Applied Animal Behaviour Science* 30(1/2):61-72.

NAL call number: QL750 A6

Hinrichs, R. (1991). **Comparison of some macroscopic cardiac parameters in normally slaughtered pigs, stall deaths and transport deaths.** *Wissenschaftliche Zeitschrift der Humboldt Universitat zu Berlin. Reihe Agrarwissenschaften* 40(1):47-55.

NAL call number: 509 B453

Honkavaara, M. (1990). **Pre-slaughter treatment of pigs - effect on pork quality.** In: [Meat quality in slaughter animals. *NJF Seminar Number 183*]. *Koettkvalitet hos vaara Slaktdjur. NJF Seminarium nr 183 (Nordiska Jordbruksforskarens Foerening)*, K. Lundstroem and G. Malmfors, eds., Uppsala, Sweden: Sveriges Lantbruksuniv, p. 103-108.

Horstmeyer, A. and A. Vallbracht (1990). **Appropriate pig husbandry - a model.** *Tierhaltung* (20):134.
NAL call number: SF105 T5

Hoy, S. (1993). **[Requirements of pig transportation under the aspect of animal protection]. Anforderungen an den Transport von Schweinen unter Tierschutzaspekten.** *Fleisch* 47(5):275-278.
NAL call number: 50.8 F622

Hunter, E.J., C.M. Weeding, H.J. Guise, T.A. Abbott, and R.H.C. Penny (1994). **The effect of season and stocking density on pig welfare during transport.** *Applied Animal Behaviour Science* 41(3-4):274.
NAL call number: QL750 A6

Hunter, E.J., C.M. Weeding, H.J. Guise, T.A. Abbott, and R.H.C. Penny (1994). **Pig welfare and carcass quality: a comparison of the influence of slaughter handling systems at two abattoirs.** *Veterinary Record* 135(18):423-425.
NAL call number: 41.8 V641

Hunter, E.J., H.L. Riches, H.J. Guise, R.H.C. Penny (1997). **The behaviour of pigs in lairage in relation to their post-weaning management: results of a postal survey.** *Animal Welfare* 6(2):139-144.
NAL call number: HV4701 A557

Klusek, J. and A. Kolataj (1991). **Effect of lorry transport on the concentration of cholesterol and triglycerides in the liver, kidney and MLD of pigs.** *Animal Science Papers and Reports* (7):73-77.

Kortz, J., T. Karamucki, W. Kubasik, and W. Natalczyk Szymkowska (1992). **[Effect of market handling on pig slaughter value and pork quality in relation to post-transport period]. Wplyw procedury skupu na wartosc rzezna i jakosc miesa u tucznikow ubijanych w roznym czasie po transporcie.** *Acta Academiae Agriculturae ac Technicae Olstenensis, Zootechnica* (35):101-112.

Jesse, G.W., C.N. Weiss, H.F. Mayes, and G.M. Zinn (1990). **Effect of marketing treatments and transportation on feeder pig performance.** *Journal of Animal Science* 68(3):611-617.
NAL call number: 49 J82

Lambooj, B., G. Merkus, and I. Hulsegge (1992). **A band restrainer for slaughter pigs.** *Fleischwirtschaft* 72(9):1271-1272, in German pp. 1315-1317.
NAL call number: 280.38 F62

Lambooj, E. and G. van Putten (1993). **Transport of pigs.** In: *Livestock Handling and Transport*, T. Grandin, ed., Wallingford, UK: CAB International, p. 213-232.
NAL call number: SF89 L59 1993

Lambooj, E., N.A. Geverink, D.M. Broom, and R.H. Bradshaw (1996). **Quantification of pig welfare by behavioural parameters.** In: *Proceedings of the EU Seminar. New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode, Germany, p. 13-22.
NAL call number: 18 L2353 Suppl.166

Lambooj, E. and B. Engel (1991). **Transport of slaughter pigs by truck over a long distance: some aspects of loading density and ventilation.** *Livestock Production Science* 28(2): 163-174.
NAL call number: SF1 L5

Lambooj, E., N.A. Geverink, D.M. Broom, and R.H. Bradshaw (1995). **Pig welfare. Quantifying pigs' welfare using behavioural parameters.** *Meat Focus International* 4(11):453-456.
NAL call number: TS1950 M433

Laube, R.B. and B. Schulze (1990). **Development of resting state in slaughter pigs after transport.** *Wissenschaftliche Zeitschrift der Humboldt Universitat zu Berlin. Reihe Mathematik Naturwissenschaften* 39(4):356-360.
NAL call number: 509 B453

Lawrence, A.B., E.M.C. Terlouw, and A.W. Illius (1991). **Individual differences in behavioural responses of pigs exposed to non-social and social challenges.** *Applied Animal Behaviour Science* 30(1/2):73-86.

NAL call number: QL750 A6

Lighty, Jr., G.W., R.S. Spear, M.C. Karatay, C.L. Hare, and R.J. Carlson (1992). **Swine models for cardiovascular research: a low stress transport and restraint system for large swine.** *Cornell Veterinarian* 82(2):131-140.

NAL call number: 41.8 C81

Martoccia, L., G. Brambilla, A. Macri, G. Moccia, and E. Cosentino (1995). **The effect of transport on some metabolic parameters and meat quality in pigs.** *Meat Science* 40(2):271-277.

NAL call number: TX373 M4

Massfeller, M. (1994). **[Alternative husbandry systems in the Netherlands: Scharrel pigs]. Alternative Haltungssysteme in den Niederlanden: Scharrelschweine.** *Deutsche Gefluegelwirtschaft und Schweineproduktion* 46(2):25-28.

NAL call number: SF481 D48

Matzke, P., A. Holzer, and E. Littmann (1991). **[Influences of the slaughter house on pork qualities: pigs set great store on good manner]. Schlachthofeinflusse auf die fleischbeschaffenheit: auch schweine legen wert auf gute umgangsformen.** *Deutsche Gefluegelwirtschaft und Schweineproduktion* 43(50):1520-1524.

NAL call number: SF481 D48

Meller, Z. (1992). **[Effect of transport stress on meat quality in pigs]. Wplyw stresu wywolanego transportem na jakosc miesa tucznikow.** *Acta Academiae Agriculturae ac Technicae Olstenensis, Zootechnica* (35):91-99.

Meunier Salaun, M.C. and R. Dantzer (199). **[Relationship behaviour-environment in swine: importance of piggery design and handling system in intensive production]. Relacion comportamiento medio-ambiente en cerdos: importancia del diseno de los alojamientos y del sistema de manejo en produccion intensiva.** *Anaporc* (109):52-64.

von Mickwitz, G. and L. Heuking (1990). **[Minimum requirements for the handling of slaughter pigs during loading, transport, lairage and stunning from the aspects of animal welfare and meat quality]. Mindestanforderungen an den Umgang mit Schlachtschweinen von der Verladung-Transport-Ausruhezeit bis zur Betaebung aus der Sicht des Tierschutzes und der Fleischqualitaet.** *Deutsche Tieraerztliche Wochenschrift* 97(1):28-30.

NAL call number: 41.8 D482

Miura, A., H. Tanida, T. Tanaka, and T. Yoshimoto (1996). **The influence of human posture and movement on the approach and escape behaviour of weanling pigs.** *Applied Animal Behaviour Science* 49(3):247-256.

NAL call number: QL750 A6

Miura, A., H. Tanida, T. Tanaka, and T. Yoshimoto (1996). **Behavioral response to humans of weanling pigs exposed to a short period of individual handling.** *Animal Science and Technology* 67(8):693-701.

Moje, M. (1995). **[Don't forget the needs of pigs]. Die Beduerfnisse der Schweine nicht aus den Augen verlieren.** *Landwirtschaftliches Wochenblatt. Organ des Landesbauern-verbandes in Baden Wuerttemberg* 162(40):20, 21-24.

NAL call number: S232 B24L36

Nanni Costa, L., D.P. lo Fiego, A. di Grossi, and V. Russo (1996). **Effect of loading method, stocking density and temperature on carcass and meat quality in heavy pigs.** In: *Proceedings of the EU Seminar. New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode, Germany, p. 83-93.

NAL call number: 18 L2353 Suppl.166

Neubert, E., H. Gurtler, and G. Vallentin (1996). **Effects of snare restraint on plasma levels of catecholamines,**

cortisol, insulin and metabolic parameters in growing pigs. *Berliner und Munchener Tierarztliche Wochenschrift* 109(11-12):409-413.

Noonan, G.J., J.S. Rand, J. Priest, J. Ainscow, and J.K. Blackshaw (1994). **Behavioural observations of piglets undergoing tail docking, teeth clipping and ear notching.** *Applied Animal Behaviour Science* 39(3/4):203-213.
NAL call number: QL750 A6

Palacio, J., S. Garcia Belenguer, and M.C. Acena (1997). **[Swine mortality during transport to abattoir in Aragon [Spain]: determinant factors]. Mortalidad porcina durante el transporte al matadero en Aragon: factores determinantes.** *Agricultura (777)*:333-334.
NAL call number: HD1872 B72

Palacio, J., S. Garcia Berenguer, F.M. Gascon, F. Liste, C. Ortega, B. Lobera, I. Martin Maestro, J.A. Angel, J.C. Lles, and F. Bayo (1996). **[Mortality in slaughter pigs during transport]. Mortalidad durante el transporte a un matadero en ganado porci.** *Investigacion Agraria. Produccion y Sanidad Animales* 11(2):159-16. Summaries in English and Spanish.

Parrott, R.F. and D.M. Lloyd (1995). **Restraint, but not frustration, induces prostaglandin-mediated hyperthermia in pigs.** *Physiology and Behavior* 57(6):1051-1055.

Parrot, R.F., B.H. Misson, and B.A. Baldwin (1990). **Salivary cortisol in pigs after adrenocorticotrophin, food and water deprivation, handling, transport simulation and mixing.** *Applied Animal Behaviour Science* 26(3):291.
NAL call number: QL750 A6

Paterson, A.M. and G.P. Pearce (1992). **Growth, response to humans and corticosteroids in male pigs housed individually and subjected to pleasant, unpleasant or minimal handling during rearing.** *Applied Animal Behaviour Science* 34(4):315-328.
NAL call number: QL750 A6

Pedersen, V., J.L. Barnett, P.H. Hemsworth, *et al.* (1995). **The effects of positive, negative and minimal handling on behavioural and physiological responses to being tethered in pregnant pigs.** In: *Proceedings of the 29th International Congress of the International Society for Applied Ethology, Exeter, UK, 3-5 August 1995*, p. 209-210.
NAL call number: SF756.7 I57 1995

Pedersen, V., J.L. Barnett, P.H. Hemsworth, E.A. Newman, and B. Schirmer (1998). **The effects of handling on behavioural and physiological responses to housing in tether-stalls among pregnant pigs.** *Animal Welfare* 7(2):137-150.
NAL call number: HV4701 A557

Pedersen, R. (199?). **[EU membership a threat to swine health?]. EU-medlemskap - en fara foer svensk svinhaelsa. Foerdjupningsarbete.** *Svensk Veterinaertidning* 46(6):289-296. Summaries in English and Swedish.
NAL call number: 41.9 SV23

Perremans, S., J. Randall, H. Ville, M. Stiles, W. Duchateau, and R. Geers (1996). **Quantification of pig response to vibration during vertical motion.** In: *Proceedings of the EU Seminar. New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode, Germany.
NAL call number: 18 L2353 Suppl.166

Perremans, S. and R. Geers (1997). **[Effect of transport on quality of pig meat]. Invloed van transport op kwaliteit van varkensvlees.** *Vlaams Diergeneeskundig Tijdschrift* 66(1):2-7. Summaries in English and Dutch.
NAL call number: 41.8 V84

Perremans, S. and R. Geers (1996). **[Effect of transport on some welfare characteristics of slaughter pigs]. Invloed van transport op welzijnskenmerken van vleesvarkens.** *Vlaams Diergeneeskundig Tijdschrift* 65(6):310-317.

Summaries in English and Dutch.

NAL call number: 41.8 V84

Pichou, D., P. le Foll, and J.P. Runavot (1991). **Conditions of transport and reception of young breeding pigs.** *Techni Porc* 14(5):39-47.

[**Pig handling from birth until twenty kilos of weight**]. **Manejo de los cerdos desde el nacimiento hasta los veinte kilos de peso** (1991). *Anaporc* (103):25-36.

Proceedings of the EU Seminar New Information on Welfare and Meat Quality of Pigs as Related to Handling, Transport and Lairage Conditions, EC-AIR3-Project CT92-0262 : methods of improving pig welfare and meat quality by reducing stress and discomfort before slaughter (1996). Braunschweig : Bundesforschungsanstalt für Landwirtschaft Braunschweig-Volkenrode, 242 pp.
NAL call number: 18 L2353 Suppl.166

Provaznik, L. and J. Valenta (1994). **The effect of transport and resting time of pigs before slaughter on meat quality.** *Zivocisna Vyroba* 39(12):1063-1072.

Randall, J.M. and R.H. Bradshaw (1998). **Vehicle motion and motion sickness in pigs.** *Animal Science* 66(1):239-245.
NAL call number: 41.8 C163

Randall, J.M. and A.M. Meehan (1993). **Vibration on a pig transporter.** *United Kingdom informal group meeting on human response to vibration. Proceedings of a conference held in Farnborough, UK, 20-22 September 1993.*

Randall, J.M., M.A. Stiles, R. Geers, A. Schuette, L. Christensen, and R.H. Bradshaw (1996). **Vibration on pig transporters: implication for reducing stress.** In: *New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode: Germany, p. 143-160.
NAL call number: 18 L2353 Suppl.166

Randall, J.M. (1996). **Environmental conditions during transport and lairage: Methodologies.** In: *Proceedings of the EU Seminar. New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode, Germany, p. 37-46.,
NAL call number: 18 L2353 Suppl.166

Rasmussen, A.A. (1991). **Behavioural reaction of individual pigs raised in different environments to a novel object and to handling at slaughter in relation to measurements of the adrenal cortex.** *Applied Animal Behaviour Science* 30(1-2):176.
NAL call number: QL750 A6

Riches, H.G., J. Guise, and R. Penny (1996). **Preliminary investigation of frequency of vomiting by pigs in transport.** *Veterinary Record* 139(17):428.
NAL call number: 41.8 V641

Robinson, J. (1996). **The South African Pig Welfare Code.** *Porcus* 11(4):28.

Roozen, A.W.M., V.T. Tsuma, and U. Magnusson (1995). **Effects of short-term restraint stress on plasma concentrations of catecholamines, beta-endorphin, and cortisol in gilts.** *American Journal of Veterinary Research* 56(9):1225-1227.
NAL call number: 41.8 Am3A

Roztocil, V. and Z. Pokorny (1990). **An electromechanically-operated restraint cage for pigs, used for foot care of breeding pigs.** *Monatshefte für Veterinarmedizin* 45(7):237-239.
NAL call number: 41.8 M742

Rushen, J. and J. Ladewig (1991). **Stress-induced hypoalgesia and opioid inhibition of pigs' responses to restraint.**

Physiology and Behavior 50(6):1093-1096.

NAL call number: QP1 P4

Russo, V., D.P. lo Fiego, and L. Nanni Costa (1996). **Efficiency and welfare. Regulations for transport of pigs to the abattoir.** *Rivista di Suinicoltura* 37(2):35-41.

NAL call number: 46.8 SU3

Sakaguchi, M., R. Nishimura, N. Sasaki, T. Ishiguro, H. Tamura, and A. Takeuchi (1995). **Chemical restraint by medetomidine-ketamine and its cardiopulmonary effects in pigs.** *Journal of Veterinary Medicine, Series A* 42(5):293-299.

NAL call number: 41.8 Z5

Sather, A.P., S.D.M. Jones, E.J. Squires, A.L. Schaefer, W.M. Robertson, A.K.W. Tong, and S. Zawadski (1995). **Antemortem handling effects on the behaviour, carcass yield and meat quality of market weight entire male pigs.** *Canadian Journal of Animal Science* 75(1):45-56.

NAL call number: 41.8 C163

Schuette, A., A. Mergens, U. Pott, and S. Venthien (1996). **Effect of transport conditions (straw, stoppage) and unloading procedures on physiological and meat quality parameters.** In: *Proceedings of the EU Seminar. New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode, Germany, p. 117-132.

NAL call number: 18 L2353 Suppl.166

Schuette, A., D.M. Broom, and E. Lambooj (1996). **Standard methods of estimating physiological parameters during pig handling and transport.** In: *Proceedings of the EU Seminar. New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode, Germany, p. 69-80.

NAL call number: 18 L2353 Suppl.166

Schuette, A., M. von Wenzlawowicz, and G. von Mickwitz (1994). **[Animal transport and meat quality in pigs]. Tiertransport und Fleischqualitaet bei Schweinen.** *Fleischwirtschaft* 72(2): 126-132, 134. Summaries in German and English.

NAL call number: 280.38 F62

Schulze Dorfkoenig, A. (1995). **[A simple, self-constructed pig twitch]. Schweinebremse in Eigenkonstruktion.** *Praktische Tierarzt* 76(7):617.

NAL call number: 41.8 P882

Siksa, J., R. Cabadaj, and J. Nagy (1993). **[Effect of the transport of slaughter pigs on pH and water binding in meat]. Vplyv transportu jatocnych osipanych na pH a vaznost vody v mase.** *Veterinarstvi* 43(12):472-473.

NAL call number: 41.8 V6439

Simko, S. (1990). **Economic losses caused by death of slaughter pigs during transport or at the abattoir before slaughter.** *Veterinarstvi* 40(6):274-275.

NAL call number: 41.8 V6439

Simko S. (1991). **Mortality in slaughter pigs before slaughter in central Slovakia.** *Veterinarstvi* 41(11-12):266-267.

NAL call number: 41.8 V6439

Singleton, W.L., W.L. Flowers, D.E. Reeves, and L.H. Thompson (199). **Management of the boar.** In: *Extension Bulletin of the Cooperative Extension Service, Michigan State University*. East Lansing, Mich.: Michigan State University, Cooperative Extension Service, 6 p. In subseries: Pork Industry Handbook: Reproduction.

NAL call number: 275.29 M58B

Spencer, G.S.G. (1995). **Quantitative indicators of stress in stress-susceptible and stress-resistant breeds of pigs.**

Proceedings of the New Zealand Society of Animal Production 55:187-189.

NAL call number: 49.9 N483

Stein, M. (1990). **[Pork quality and slaughtering: PSE - correlated with slaughtering methods as well]. Fleischqualitaet und Schlachtung: PSE - auch schlachttechnisch bedingt.** *Schweineproduzent* 21(4):91-95.

Steinhardt, M., H.H.Thielscher, N. Schwarze and D. Smidt (1994). **Lactate concentrations in central venous blood in growing pigs before and after stress induced by repeated moderate restraint.** *Tierarztliche Umschau* 49(3):178-181.

NAL call number: 41.8 T445

Stephens, D.B. and G.C. Perry (1990). **The effects of restraint, handling, simulated and real transport in the pig (with reference to man and other species).** *Applied Animal Behaviour Science* 28(1/2):41-55.

NAL call number: QL750 A6

Stuhec, I. (1995). **[Influence of procedures with pigs on meat quality]. Verfahren mit Schweinen und deren Einfluss auf Fleischqualitaet.** *Zbornik Biotehniske Fakultete Univerze v Ljubljani. Suplement - Kmetijstvo (Zootehnika)*. Supplement 22:183-189. Summaries in German, English and Slovakian.

NAL call number: 21.5 Z15

Szazados, I. (1992). **Study on the incomplete bleeding in pigs emergency-slaughtered during transportation to, or housing at, the abattoirs and in diseased pigs transported to emergency slaughter houses.** *Magyar Allatorvosok Lapja* 47(6):275-281.

NAL call number: 41.8 V644

Tanida, H., A. Miura, T. Tanaka, and T. Yoshimoto (1994). **The role of handling in communication between humans and weanling pigs.** *Applied Animal Behaviour Science* 40(3/4):219-228.

NAL call number: QL750 A6

Tanida, H., A. Miura, T. Tanaka, and T. Yoshimoto (1995). **Behavioral response to humans in individually handled weanling pigs.** *Applied Animal Behaviour Science* 42(4): 249-259.

NAL call number: QL750 A6

Tanida, H. and Y. Nagono (1996). **The ability of miniature pigs to distinguish between people based on previous handling.** In: *Proceedings of the 30th International Congress of the International Society for Applied Ethology*, International Society for Applied Ethology International Congress: [?], p.143.

NAL call number: SF756.7 I57 1996

Tanida, H. and Y. Nagano (1998). **The ability of miniature pigs to discriminate between a stranger and their familiar handler.** *Applied Animal Behaviour Science* 56(2/4):149-159.

NAL call number: QL750 A6

Tanida, H., A. Miura, T. Tanaka, and T. Yoshimoto (1996). **Behavioral responses of piglets to darkness and shadows.** *Applied Animal Behaviour Science* 49(2):173-183.

NAL call number: QL750 A6

Tarocco, C. and S. Luca (1992). **[Quick post-mortem method to underline the stress caused by handling and slaughter in pigs]. Metodo rapido per evidenziare post-mortem lo stress da movimentazione ed abbattimento nei suini.** *Rivista di Suinicoltura* 33(7):77-80.

NAL call number: 46.8 SU3

Valenta, J. and L. Provaznik (1995). **[Determination of PSE defects in the pig meat using the electric conductivity in slaughter pigs with respect to the length of their transport and resting time before the slaughter]. Stanoveni vady veproveho masa PSE pomoci elektricke vodivosti u jatecnych prasat s ohledem na delku jejich prepravy a dobu odpocinku pred porazkou.** *Zivocisna Vyroba UZPI* 40(11):513-518. Summaries in Czech and English.

Valenta, J. (1995). **Stress in pigs.** *Veterinarstvi* 45(2):57-59.
NAL call number: 41.8 V6439

Ville, H., S. Bertels, R. Geers, *et al.* **Electrocardiogram parameters of piglets during housing, handling and transport.** *Animal Production* 56(Pt.2):211-216.
NAL call number: 49.9 B772

Wallgren, P. (1996). **The effects of stress and infections on immune functions and productivity of pigs.** In: *Research and development for animal health*, Uppsala, Sweden: Statens Veterinaermedicinska Anstalt, p. 32-33.

Walton, J.R. (1991). **Pigs.** In: *Practical animal handling*, R.S. Anderson and A.T.B. Edney, eds., p. 67-75.
NAL call number: SF61 P73 1991

Warriss, P.D., E.A. Bevis, J.E. Edwards, S.N. Brown, and T.G. Knowles (1991). **Effect of the angle of slope on the ease with which pigs negotiate loading ramps.** *Veterinary Record* 128(18):419-421.
NAL call number: 41.8 V641

Warriss, P.D. (1996). **Guidelines for the handling of pigs ante mortem - Interim conclusions from EC-AIR3-project CT920262.** In: *Proceedings of the EU Seminar. New information on welfare and meat quality of pigs as related to handling, transport and lairage conditions*, A. Schuette, ed., Braunschweig-Voelkenrode, Germany, p. 217-225.
NAL call number: 18 L2353 Suppl.166

Warriss, P.D., S.N. Brown, E.A. Bevis, and S.C. Kestin (1990). **The influence of pre-slaughter transport and lairage on meat quality in pigs of two genotypes.** *Animal Production* 50(1):165-172.
NAL call number: 49.9 B772

Warris, P.D., S.N. Brown, J.E. Edwards, M.H. Anil, and D.P. Fordham (1992). **Time in lairage needed by pigs to recover from the stress of transport.** *Veterinary Record* 131(9):194-196.
NAL call number: 41.8 V641

Warriss, P.D., S.N. Brown, T.G. Knowles, and J.E. Edwards (1992). **Influence of width and bends on the ease of movement of pigs along races.** *Veterinary Record* 130(10):202-204.
NAL call number: 41.8 V641

Warriss, P.D. and S.N. Brown (1994). **A survey of mortality in slaughter pigs during transport and lairage.** *Veterinary Record* 134(20):513-515.
NAL call number: 41.8 V641

Weeding, C.M., E.J. Hunter, H.J. Guise, and R.H.C. Penny (1993). **The effect of ease of handling on the welfare of slaughter pigs.** *Applied Animal Behaviour Science* 38(1):79.
NAL call number: QL750 A6

Weeding, C.M., E.J. Hunter, H.J. Guise, and R.H.C. Penny (1993). **Effects of abattoir and slaughter handling systems on stress indicators in pig blood.** *Veterinary Record* 133(1):10-13.
NAL call number: 41.8 V641

Wiesner, E. (1994). **[Handling of gilt and adult sow during service time]. Handling zur Bedeckungszeit der Jung- und Altsau.** *Deutsch Gefluegelwirtschaft und Schweineproduktion* 46(8):23-26.

von Wenzlawowicz, M., A. Briese, K. von Holleben, and G. von Mickwitz (1996). **Restraint of pigs for electrical stunning. New equipment ("Piglift") for humane handling.** *Fleischwirtschaft* 76(11):1108-1115, English summary p. 1150.
NAL call number: 280.38 F62

Wittmann, M., G. Laky, L. Radnai, O. Kozma, and F. Guba (1991). **Effects of transport distance and duration of**

lairage on meat quality of pigs slaughtered at large abattoirs. *Allattenyesztes es Takarmanyozas* 40(4):329-339.
NAL call number: SF15 H8A44

Wyss, R. (1995). [The transport of swine to the abattoir]. **Il trasporto dei suini al macello.** *Selezione Veterinaria* 36(11-12):1009-1010.
NAL call number: 241.71 B75

Yang, J.H., K.L. Chen, K.J. Lin, Y.I. Lee, and T.F. Tseng (1993). **Studies on electrical stunning of pigs in Taiwan area VIII. Survey on the effect of pig breeds, transportation, slaughtering practices on pigmeat quality.** *Journal of the Chinese Society of Animal Science* 22(1):69-78.

Ziecik, A.J. and A. Zieminska (1995). **Effect of transport stress and hydrocortisone on the oestrogen-induced luteinizing hormone surge in pigs.** *Animal Reproduction Science* 37(3-4):337-347.
NAL call number: QP251 A5

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Audiovisuals: General

An Introduction to Zoonoses [videocassette]. Manhattan, KS: Kansas State University, College of Medicine; 1991; 1/2" VHS, 18 min.

Keyword: Zoonoses, Q fever, Psittacosis, preventive measures.

Note: Defines zoonoses and illustrates transmission vectors. Q fever from dairy cows and Psittacosis from birds are given as examples of zoonotic diseases with symptoms exhibited by humans. Preventive measures of disease avoidance are discussed.

NAL call number: Videocassette No. 1661.

Animal Handling in Meat Plants [videocassette]. Fort Collins, CO: Grandin Livestock Handling Systems; 1998; 1/2" VHS, 60 min.

Keyword: Slaughter, stunning, packing plants, behavior, sheep, cattle, swine.

Note: This video lecture, delivered by Temple Grandin, Ph.D., covers design and improvement of chutes, races, and holding pens; proper stunning methods, behavioral principles underlying stress-free movement of animals, evaluation of welfare standards in slaughter plants; and effect of animal handling on meat quality.

Farm Animal Behavior Research [videocassette]. Beltsville, MD: National Program Staff, Agricultural Research Service, USDA; 1990; 1/2" VHS, 100 min.

Keyword: Animal behavior, swine behavior, animal welfare, behavioral research.

Note: A videotaping of a seminar given by Dr. Stanley Curtis. Discusses current research in farm animal behavior, with emphasis on swine behavioral research. Addresses issues such as farm animal welfare, psychological well-being, and

animal awareness.

NAL call number: Videocassette No. 906.

Farm Animals with Care [videocassette]. England: Datascope Communications (produced for Glaxo Group Research in association with the Institute of Animal Technology); 1991; 1/2" VHS, 2 videocassettes, 65 min.

Keyword: Animal welfare, animal health, livestock, housing.

Note: A two volume series that illustrates regimes for housing and care of sheep, goats, pigs, cattle, and poultry, and provides breeding information and demonstrations of routine health care procedures and blood sampling techniques.

NAL call number: Videocassette No. 1359.

Handling Livestock Naturally [videocassette]. Kansas City, MO: AgriBase, Inc. and the Livestock Marketing Association; 1989; 1/2" VHS, 15 min.

Keyword: Livestock handling, animal welfare, behavior, transport, feeding and watering in markets, moving animals.

Note: Discusses viewing the world through the animal's eyes when handling them on the farm, for transport and at markets. Covers how to transport with gentleness; understanding of the animal's field of vision, point of balance, flight zone, and blind spot; how to feed and water animals at markets; how to move animals without hitting, yelling, or electric shock; how to deal with medical problems; and design of facilities to reduce injuries.

NAL call number: Videocassette No. 1334.

Livestock in Transit - Handle with Care [videocassette]. Potters Bar, UK: Humane Slaughter Association; 1989; 1/2" VHS, 27 min.

Keyword: Transportation, humane slaughter, animal welfare.

Note: This production discusses and demonstrates humane and safe methods for loading, transporting, and unloading livestock.

NAL call number: Videocassette No. 1306.

Normal and Abnormal Behavior in Domestic Livestock Used for Research [videocassette]. Beltsville, MD: Animal Welfare Information Center, National Agricultural Library; West Lafayette, IN: Purdue University, 1993?; 1/2" VHS, 42 min. Includes 1 script.

Keyword: Livestock behavior, cattle, horses, pigs, stereotypic behaviors.

Note: Examines normal and abnormal behavior in livestock used for research, helping the viewer distinguish between apparently pointless behavior and the possibility of physiological reasons behind behavior such as parasites, injury, genetic problems, or nutritional deficiency.

NAL call number: Videocassette No. 1542.

The Down Side of Livestock Marketing [videocassette]. Watkins Glen, NY: Farm Sanctuary; 1991; 1/2" VHS, 19 min.

Keyword: Livestock marketing, non-ambulatory livestock, animal welfare, stockyards.

Note: Discusses why weak, sick animals are ignored and left to die by stockyards and auction markets and how farmers, livestock truckers, profit margins, and low livestock prices combine to create pressures to overcrowd animals for transport and not to pay for veterinary services when the animals arrive sick at the stockyards or markets.

NAL call number: Videocassette No. 1285.

Understanding Farm Animal Behavior [videocassette]. Minneapolis, MN: University of Minnesota; 1986; 1/2" VHS, 45 min.

Keyword: Cattle, pigs, farm animals, behavior, animal welfare.

Note: Dr. William Hall, Professor of Veterinary Medicine at the University of Illinois, and Dr. William Rempel, Professor of Animal Science at the University of Minnesota, discuss and explain aspects of farm animal behavior. The panelists field questions from the moderator and the audience. The discussion touches on factory farming and animal rights.

NAL call number: Videocassette No. 367.

To: [[Main Contents](#)] [[Top of Audiovisuals section](#)]

Audiovisuals: Cattle

Basic Herding [videocassette]. Kamuela, HI: Graziers Hui; 1993; 1/2" VHS, 50 min. Includes manual and booklet.

Keyword: Cattle, herding, handling.

Note: Burt Smith discusses stockmanship, herding, and handling of cattle. The video includes practice sessions and practical exercises.

NAL call number: Videocassette No. 2166.

Beef Management Practices I [videocassette]. College Station, TX: Texas A&M University; 1987; 1/2" VHS, 24 min.

Includes a summary, quizzes, and answers.

Keyword: Beef cattle, handling, restraint, branding, dehorning, techniques.

Note: This instructional video covers handling and restraint techniques and facilities, branding and other identification, vaccination techniques, growth stimulant implantation, and dehorning.

Beef Management Practices II [videocassette]. College Station, TX: Texas A&M University; 1987; 1/2" VHS, 46 min.

Includes a summary, quizzes, and answers.

Keyword: Beef cattle, handling, techniques.

Note: This instructional video covers castration, treatment for parasites, palpation, and artificial insemination.

Bovine Restraint [videocassette]. East Lansing, MI: Michigan State University; 1976; 1/2" VHS, 12 min.

Keyword: Cattle, handling, restraint.

Note: Demonstrates a number of ways to restrain cows including the use of the rope halter, nose lead, and burley casting methods.

NAL call No.: Videocassette No. 2042.

Calving Management [videocassette]. AG-COM Productions, 40 min. (available from Prairie Farm Report Video Library)

Calving Time Management/Equipment [videocassette]. Ames, IA: Iowa State University Cooperative Extension Service and WOI-TV. Distributed by RMI Media Productions, Shawnee Mission, KS; 1980?; 1/2" VHS, 24 min.

Keyword: Cattle parturition, birthing.

Note: Basic management of the calving process. Describes needed equipment and discusses basic techniques.

NAL call number: Videocassette No. 1440.

Cattle Handling [videocassette]. Alberta Agriculture, Food, and Rural Development, 1993, 19 min.

Keyword: Cattle, handling, behavior, facility design.

Note: Explains connection between safe, efficient handling and an understanding of cattle behavior. Examines effectiveness of cattle handling facilities from the cattle's point of view.

NAL call number: Videocassette No. 2607.

Cattle Handling #1 [videocassette]. AG-COM Productions, 60 min. (available from Prairie Farm Report Video Library)

Cattle Handling #2 [videocassette]. AG-COM Productions, 55 min. (available from Prairie Farm Report Video Library)

Cattle Handling Principles to Reduce Stress [videocassette]. Fort Collins, CO: Grandin Livestock Handling Systems; 1998; 1/2" VHS, 60 min.

Keyword: Cattle, handling, stress, moving cattle, facility design.

Note: In this video lecture, Dr. Temple Grandin explains how to use behavioral principles and facility design for low stress cattle movement. Design of efficient chutes, the flight zone and point of balance, temperament selection, and basic ways to reduce stress are discussed.

Cattle Handling and Transportation [videocassette]. Amarillo, TX: Livestock Conservation Institute; 1988; 1/2" VHS, 18 min. Includes 2 booklets.

Keyword: Beef cattle, behavior, handling, transport, loading, moving cattle.

Note: This training video explains the basics of cattle behavior as it relates to moving and transporting livestock efficiently and humanely. Vision, reaction to noise, flight zone, natural circling, and following behavior are discussed. Other topics include overcrowding in pens, use of squeeze chutes, loading and unloading trucks, truck-driving techniques, and temperature stress during transportation.

NAL call number: Videocassette No. 422.

Cattle Handling and Transportation [videocassette]. San Luis Obispo, CA: Visual Education Productions, California Polytechnic State University; 1988; 30 min. Includes one copy each of Livestock Handling Guide and Livestock Trucking Guide.

Keyword: Cattle, handling, transport, moving cattle, behavior.

Note: Covers principles of cattle behavior upon which good handling and transportation practices are based.

Cattle Management [videocassette]. AG-COM Productions, 60 min. (available from Prairie Farm Report Video Library)

Cattle Restraint with the Ropes [videocassette]. Knoxville, TN (?): University of Tennessee Agricultural Engineering Department (?), 1990, 22 min.

Keyword: Cattle, restraint, halter, handling.

Note: Explains techniques of cattle restraint using bare hands and ropes.

Cow Handling [videocassette]. Davis, CA: University of California; 1980; U-Matic 3/4", 19 min. (Vol. 1), 40 min. (Vol. 2).

Keyword: Cows, restraint, handling, veterinary medicine, biomedical techniques.

Note: Volume 1 demonstrates techniques for manually restraining the cow. The tape illustrates the use of the halter, nose ring, nose lead, and hobbles, and demonstrates techniques for manipulating the tail and preventing kicks. Volume 2 demonstrates the following biomedical procedures: blood collection, vein location, bone marrow biopsy, injections, drenching, minor teat surgery, treatment of displaced abomasum and carcinoma of the eye, and use of the stomach tube, dose syringe, balling gun, and speculum.

NAL call number: Videocassette No. 227.

Dairy Production and Management [videocassette]. (MSU?) Pennsylvania State University Ag, 1983, 35 min. (available for loan from Penn State Audiovisual Services, also from Purdue University)

Keyword: Dairy cattle, handling, restraint, behavior, animal health.

Note: Identifies healthy and unhealthy dairy cattle by observation. Covers correct handling and restraint procedures, young stock management, and normal movement and body positions of dairy cows.

Dairy Safety: It's No Accident [videocassette]. San Luis Obispo, CA: Vocational Education Productions, California Polytechnic State University; 1991; 1/2" VHS, 26 min.

Keyword: Dairy cattle, handling, dairy farming, safety.

Note: Covers safe animal handling practices for dairy farms during milking, calving, and routine management procedures such as castration and de-horning. Also discusses general farm safety.

NAL call number: Videocassette No. 2537.

Dehorning Cattle [videocassette]. San Luis Obispo, CA: Da-Nel Productions and Vocational Education Productions; 1985; 1/2" VHS, 25 min.

Keyword: Dehorning, cattle, techniques, horns, physiology, purpose, animal welfare.

Note: Discusses why and when cattle are dehorned. Provides information on horn growth and its physiology. Gives techniques used and at what age. Demonstrates several methods of dehorning. Discusses restraint and veterinary care needs.

NAL call number: Videocassette No. 844.

Footcare in Cattle [videocassette]. Ipswich, UK: Farming Press Videos. Distributed in N. America by Diamond Farm Enterprises, Alexandria Bay, NY; 1992; 1/2" VHS, 55 min.

Keyword: Cattle, footcare, hoof trimming.

Note: Roger Blowey demonstrates hoof structure and hoof trimming of cattle.

NAL call number: Videocassette No. 2493.

Freeze Branding & Hot Branding Cattle [videocassette]. San Antonio, TX: International Brangus Breeders Association; 1988; 1/2" VHS, 19 min.

Keyword: Cattle, branding.

Note: Demonstrates equipment and procedures used to freeze brand and hot brand cattle.

NAL call number: Videocassette No. 2683.

Improve Cattle Handling for Greater Profits [slide]. Madison, WI: Livestock Conservation Institute; 1980; 68 slides and one 12 min. audiocassette.

Keyword: Cattle, handling.

Note: Temple Grandin presents principles of cattle handling that reduce injuries and bruising.

NAL call number: Slide No. 252.

Tattooing & Grooming Cattle for Show [videocassette]. San Antonio, TX: International Brangus Breeders Association; 1986; 1/2" VHS, 13 min.

Keyword: Cattle, show animals, handling.

Note: Demonstrates equipment and procedures needed to tattoo and groom show cattle.

NAL call number: Videocassette No. 2682.

The Feedyard [videocassette]. Lubbock, TX: Creative Educational Video; 1994; 1/2" VHS, 30 min.

Keyword: Beef cattle, feedlot, handling, facility design, techniques, animal health.

Note: Provides a comprehensive look at modern feedlot operation. Covers design, construction, and financial management of facilities; correct cattle processing techniques; feeding; and treatment procedures for sick or injured cattle.

NAL call number: Videocassette No. 2576.

Understanding Dairy Cattle Behavior to Improve Handling and Production [videocassette]. Madison, WI: Livestock Conservation Institute; 1992; 1/2" VHS, 24 min.

Keyword: Dairy farming, dairy cows, behavior, handling, milk production.

Note: Provides insight into dairy cattle behavior for handlers and herders. Gives suggestions to reduce handling stress which can result in improved milk production.

NAL call number: Videocassette No. 2036.

Youth and Dairy Cattle: A Safe Partnership [videocassette]. Bowling Green, KY: Livestock Conservation Institute; 1/2" VHS, 16 min. Includes five instructional guides.

Keyword: Dairy cows, behavior, handling, youth, halter, show animals.

Note: Aimed at young people working with dairy cattle, this video explains halter training, leading, loading, and transporting. Information about dairy cattle behavior is provided.

NAL call number: Videocassette No. 2483.

To: [[Main Contents](#)] [[Top of Audiovisuals section](#)]

Audiovisuals: Goats

Dairy Goat: Applying Health Care Practices / Beyond the Pail: Modern Milking Practices [videocassette].

Pennsylvania State University Ag; 1982; 1/2" VHS, 41 min. (available for loan from Penn State Audiovisual Services)

Keyword: Goats, health, milk production.

Note: Part 1 covers health care practices. Part 2 demonstrates how to handle the doe during milking for maximum milk production.

Goat Breeding and Kid Rearing [videocassette]. Ipswich, UK: Farming Press Videos; Distributed in N. America by Diamond Farm Enterprises of Alexandria Bay, NY; 1995; 1/2" VHS, 63 min.

Keyword: Goats, breeding, husbandry.

Note: Part 1 of a two-part series by goat breeder Hilary Matthews aimed at domestic goatkeepers. Covers breeding management, care of the pregnant goat, assisted and unassisted births, and care of the newborn.

NAL call number: Videocassette No. 2665.

Goat Husbandry and Health [videocassette]. Ipswich, UK: Farming Press Videos; Distributed in N. America by Diamond Farm Enterprises of Alexandria Bay, NY; 1996; 1/2" VHS, 48 min.

Keyword: Goats, husbandry, animal health.

Note: Part 2 of Hilary Matthews' series on domestic goatkeeping.

Maintaining Herd Health and Milking Management [videocassette]. Winrock; 1982; 1/2" VHS, 41 min. (available from Purdue Instructional Media Center)

Keyword: Goats, health, handling, milk production.

Note: Describes proper use of health care equipment to maintain goat herd health. Identifies proper procedures for handling the doe while milking to maximize milk production.

To: [[Main Contents](#)] [[Top of Audiovisuals section](#)]

Audiovisuals: Horses

A Guide to Foal Handling [videocassette]. Clovis, CA: The Discovery Trail. Distributed by Betsy Beineke, Powder Springs, GA; 1990; 1/2" VHS, 34 min.

Keyword: Foals, handling, imprinting.

Note: Betsy Beineke presents her methods of foal handling. This involves imprinting the foal's nervous system and bonding with the foal.

NAL call number: Videocassette No. 2053.

Advanced Training of the Western Horse [videocassette]. Alberta, Canada: Alberta Agriculture, Food, and Rural Development; 1984; 1/2" VHS, 15 min.

Keyword: Horse training, western show horses.

Note: Third in a series on training western show horses. Top Canadian riders present their techniques for quarter-horse training for various purposes, including show and ranch work.

NAL call number: Videocassette No. 2680.

Barn Construction [videocassette]. Lexington, KY: Blood-Horse Productions; 1984; 1/2" VHS, ca. 30 min.

Keyword: Stables, design, barn, construction, costs.

Note: Tours of several horse barns demonstrate factors such as fire safety, appearance, durability, function, and cost which influence barn design.

NAL call number: Videocassette No. 1896.

Basic Horse Care [videocassette]. Omaha, NE: Farnam Companies; 1986; 1/2" VHS, 80 min.

Keyword: Horses, care, training, handling, behavior, loading.

Note: An introduction to horse care covering feeding, grooming, safety, medications, loading, trailering, horse psychology, and handling.

NAL call number: Videocassette No. 2594.

Basic Horse Training [videocassette]. Alberta, Canada: Alberta Agriculture, Food, and Rural Development; 1981; 1/2" VHS, 15 min.

Keyword: Horse training.

Note: Techniques for training pleasure horses explained by horse trainer Bill Collins.

NAL call number: Videocassette No. 2678.

Basic Horseshoeing Principles [videocassette]. LaPorte, CO: Butler Publishing and Tools; 1992; 1/2" VHS, 55 min.

Keyword: Horseshoeing, hoof trimming, cold shoeing.

Note: Dr. Doug Butler demonstrates cold shoeing and hoof trimming techniques that are used in shoeing horses.
NAL call No.: Videocassette No. 1904.

Beating Muscle Injuries in Horses [videocassette]. West Bath, ME: Diamond Video

Productions; 1981; 1/2" VHS, 72 min.

Keyword: Wounds and injuries, physiological aspects.

Note: Care and prevention of equine muscle injuries is detailed by author Jack Meagher.

NAL call number: Videocassette No. 1934.

Breaking Yearlings [videocassette]. Lexington, KY: Blood-Horse Productions; 1985; 1/2" VHS, 38 min.

Keyword: Horses, yearlings, breaking, training for racing.

Note: Shows step by step procedures that professionals have found successful in breaking yearlings and developing race horse potential.

NAL call number: Videocassette No. 1895.

Broodmare Management [videocassette]. Lexington, KY: Blood-Horse Productions; 1984; 1/2" VHS, 32 min.

Keyword: Thoroughbred horse breeding, mares, management.

Note: Describes a management program for the breeding of thoroughbred horses, with emphasis on the care and preparation of the mare. Discusses the use of artificial lighting, a teasing program, rectal palpation, use of hormones, diagnostic ultra-sound examination, endoscopic examination, clinics for infertile mares, breeding sheds, and the shipping of foaling mares. The intended audience for this program is thoroughbred horse breeders.

NAL call number: Videocassette No. 1891.

Conformation [videocassette]. Lexington, KY: Blood-Horse Productions; 1985; 1/2" VHS, ca. 40 min.

Keyword: Horses, conformation, training, defects.

Note: Illustrates good horse conformation and examples of conformation defects, some of which may be acceptable to trainers and some not acceptable.

NAL call number: Videocassette No. 1894.

Early Learning: The Complete Training of the Newborn Foal During Its Imprinting & Critical Learning Periods [videocassette]. Virginia City, NV: Video Velocity, 1995, 120 min.

Keyword: Horse training, foal, imprinting.

Note: Veterinarian Robert Miller demonstrates how techniques used during the first 24 hours of a foal's life results in a horse which reacts well to grooming, hoof-trimming, vet exams, and trailer loading.

NAL call number: Videocassette No. 2593.

Educating Your Foal [videocassette]. La Jolla, CA: Lawlor Productions; 1987; 1/2" VHS, 54 min.

Keyword: Foals, handling, behavior.

Note: T.E.A.M. (Tellington-Jones Equine Awareness Method) solutions are discussed for preparing a foal for future training by awakening its thinking, focus, and hoof-eye coordination.

NAL call number: Videocassette No. 2140.

Emergency Care [videocassette]. Lexington, KY: Blood-Horse Productions; 1984; 1/2" VHS, 32 min.

Keyword: Horses, diseases, injuries, veterinary care, diagnosis, physical examination.

Note: A veterinarian demonstrates a routine physical examination which could be performed by a farm manager when faced with a sick or injured horse.

NAL call number: Videocassette No. 1898.

Facility Considerations for Horse Farms [videocassette]. 37 min., VT-189 (available from Oklahoma State University Cooperative Extension)

Keyword: Facility design, horses.

Note: Discusses objectives, placement, materials, design, and engineering of horse farm sites and buildings.

Fancy Footwork: Horseowner's Guide to Sound Shoeing Practices [videocassette]. Equalign; 1992; 1/2" VHS, 60 min.

Keyword: Horseshoeing.

Note: Meredith Clarke explains the intricate relationship between the structure and function of the foot and demonstrates correct shoeing procedures.

NAL call number: Videocassette No. 1903.

Foal Management [videocassette]. Lexington, KY: Blood-Horse Productions; 1984; 1/2" VHS, ca. 30 min.

Keyword: Horse breeding, foals, handling, horse diseases.

Note: Visits to several horse breeding farms afford an insight into the importance of early handling, vaccination and feeding programs, illnesses common to the young horse, and proper hoof care.

NAL call number: Videocassette No. 1892.

Foaling [videocassette]. Lexington, KY: Blood-Horse Productions; 1984; 1/2" VHS, 28 min.

Keyword: Horses, mares, birth management, foaling.

Note: Discusses the preparations for producing a healthy foal and the proper procedures for handling the birth.

NAL call number: Videocassette No. 1893.

Foaling Fundamentals: A Video Handbook for Healthy Foaling [videocassette]. Virginia City, NV: VideoVelocity; 1989; 1/2" VHS, 52 min. Includes a guide book.

Keyword: Foals, birth, postnatal care, mares, reproduction.

Note: Covers care of pregnant mare, foaling equipment and facilities, and all aspects of postnatal care.

NAL call number: Videocassette No. 2011.

Foaling Your Mare [videocassette]. Cuba, NY: Hemlock Brook Farm; 1988. 1/2" VHS, 50 min.

Keyword: Mares, foals, reproductive cycle, birth process, normal and abnormal delivery.

Note: The video illustrates the reproductive cycle in the mare from conception to foaling to weaning. See the birth of several foals, including hard deliveries, and learn what to look for in case of trouble and how to help your mare deliver a healthy live foal.

NAL call number: Videocassette No. 1939.

Ground Handling Horses Safely [videocassette]. University of Idaho; 1995; 18 min. (available on loan from Penn State Audiovisual Services)

Keyword: Horses, handling.

Haltering a Foal without Trauma with T.E.A.M. [videocassette]. La Jolla, CA: Lawlor Productions; 1987; 1/2" VHS, 42 min.

Keyword: Foals, handling, halter.

Note: T.E.A.M. (Tellington-Jones Equine Awareness Method) solutions are discussed for teaching your foal to halter and lead without the fear and emotional shock of traditional methods.

NAL call number: Videocassette No. 2138.

Hands-on Horse Care [videocassette]. Santa Rosa, CA: Hands-on Animal Care; 1992, 1/2" VHS, over 60 min.

Keyword: Horses, handling, stress reduction, massage.

Note: Diana Thompson demonstrates the use of massage and acupressure to treat colic, shock, nervousness, fatigue, and stress in the horse. Also explains how to read a horse's body language.

NAL call number: Videocassette No. 2622.

Health Programs for Horse Farms [videocassette]. 41 min., VT-190 (available from Oklahoma State University Cooperative Extension)

Keyword: Horse health, biomedical techniques.

Note: Demonstrates common health procedures and first aid techniques used on horse farms, including checks of heart rate, blood pressure, temperature, and respiration, and injection, vaccination, and de-worming.

Horse Safety [videocassette]. Alberta, Canada: Alberta Agriculture, Food, and Rural Development; 1/2" VHS, 24 min.

Keyword: Horse handling, safety.

Note: Demonstrates proper handling techniques to use in potentially dangerous situations.

Horse Sense for Kids [videocassette]. Stillwater, OK: Department of Agricultural Communications, Oklahoma State University, and Oklahoma Cooperative Extension Service; 1992; 1/2" VHS, 21 min.

Keyword: Horse handling, safety, children.

Note: Presents safety tips to children for handling horses.

NAL call number: Videocassette No. 2424.

Imprint Training the Foal [videocassette]. Thousand Oaks, CA: Palomine Productions. Distributed by Miller's, East Rutherford, NJ; 1985; 1/2" VHS, 60 min.

Keyword: Foals, training, imprinting, horse behavior.

Note: Robert Miller covers the training of foals from the time of birth through their first months to gentle them, prepare them for future schooling, and minimize injury to handlers.

NAL call number: Videocassette No. 1902.

Intermediate Horse Training [videocassette]. Alberta, Canada: Alberta Agriculture, Food, and Rural Development; 1983, 1/2" VHS, 15 min.

Keyword: Horse training.

Note: Second video in a series (the first is "Basic Horse Training") on training the western pleasure horse. Bill Collins describes how to use mechanical aids and perform basic maneuvers.

NAL call number: Videocassette No. 2679.

Loading and Trailing Horses [videocassette]. Alberta, Canada: Alberta Agriculture, Food, and Rural Development; 1/2" VHS, 26 min.

Keyword: Horse handling, loading, transport, safety.

Note: Bill Collins discusses how to select appropriate equipment and how to drive, how to load horses safely, and how to handle young and problem horses.

Powell Breaking Technique: Teaching by Asking [videocassette]. 1/2" VHS, 120 min., VT-96 (available from Oklahoma State University Cooperative Extension)

Keyword: Horse training.

Note: Horse trainer Sam Powell demonstrates how to break a young horse to ride.

Safely Handling Breeding Stallions and Mares with T.E.A.M. [videocassette]. La Jolla, CA: Lawlor Productions; 1987; 1/2" VHS, 71 min.

Keyword: Horses, breeding stock, handling.

Note: T.E.A.M. (Tellington-Jones Equine Awareness Method) solutions are discussed for training horses without anxiety and overexcitation, to improve the breeding process and attitudes and performance.

NAL call number: Videocassette No. 2139.

Shoeing the Horse [videocassette]. Florida: Edmar Video Productions; 1985; 1/2" VHS, 29 min.

Keyword: Horseshoeing.

Note: Licensed farrier Todd Parmenter demonstrates the fundamentals of horseshoeing.

NAL call number: Videocassette No. 2609.

Showmanship - The Basics [videocassette]. JPI & Associates; 1991; 1/2" VHS, 29 min. 30 sec. (available from New Mexico State University)

Keyword: Handling, show horses, care.

Note: Demonstrates how to handle a horse in the show arena and provides basic horse care information.

NAL call number: IPM970904650.

Stallion Management [videocassette]. Lexington, KY: Blood-Horse Productions; 1984; 1/2" VHS, 30 min.

Keyword: Horse breeding, stallions, management.

Note: Discusses how to maintain stallions that have the best possible chance to get the mares in foal.

NAL call number: Videocassette No. 1897.

Starting a Young Horse [videocassette]. Omaha, NE: Farnam Companies, Inc.; 1986; 1/2" VHS, 90 min.

Keyword: Horses, training methods, training the horse for riding.

Note: The video will take you through the basic steps for preparing a horse for riding. Tellington-Jones demonstrates the body work and ground exercises including using a whip as a "wand", how to use driving reins, preparation for lunging, preparing the horse to accept a bit, the first steps of saddling, plus much more. All of these exercises and techniques will result in a smooth transition to the final goal of riding the horse.

NAL call number: Videocassette No. 1969.

T Touch for Horses [videocassette]. La Quinta, CA: Thane Marketing International; 1994; 1/2" VHS, 47 min.

Keyword: Horses, training, pain, behavior, stress.

Note: Linda Tellington-Jones demonstrates how touches can be used to change a horse's behavior and also to ease pain and stress associated with old age, injuries, or surgery.

NAL call number: Videocassette No. 2355.

Teaching the Yearling [videocassette]. Powder Springs, GA: Betsy Beineke; 1992; 1/2" VHS, 45 min.

Keyword: Training horses, yearlings, positive interaction techniques.

Note: Useful for those handling their first yearling as well as for those breeders and trainers who have had difficult yearlings in the past, this program gives clear and useful information about how to use the yearling year to develop a positive interaction between horse and trainer.

NAL call number: Videocassette No. 1900.

T.E.A.M. Learning Exercises, Part 1: Awareness Movements [videocassette]. La Jolla, CA: Lawlor Productions; 1988; 1/2" VHS, 68 min.

Keyword: Horses, training, behavior.

Note: These balancing exercises for horse and rider can improve problems such as nervousness, lack of coordination, and lack of concentration by working from the ground instead of the saddle.

NAL call number: Videocassette No. 2141.

T.E.A.M. Learning Exercises, Part 2: Obstacles and Groundwork [videocassette]. La Jolla, CA: Lawlor Productions; 1988; 1/2" VHS, 62 min.

Keyword: Horses, training, behavior.

Note: Linda Tellington-Jones demonstrates how to apply her methods to such problems as nervousness, whirling, poor balance, lack of coordination, stubbornness, and shying.

NAL call number: Videocassette No. 2142.

The Physical Exam [videocassette]. Merritt Island, FL: K-F Equine Video Production, Inc.; 1987; 1/2" VHS, 70 min.

Keyword: Horses, buying stock, basic anatomy, common diseases, scoring condition.

Note: Dr. Floyd D. Kirby teaches the prospective buyer how to examine a horse with a view toward what conditions might be present and how serious these conditions are. Problem areas covered include: eyes, mouth, ears, skin, lameness, locomotion and internal problems.

NAL call No.: Videocassette No. 1935

The Principles of Horseshoeing: The Sound Horse [videocassette]. LaPorte, CO: Butler Publishing and Tools; 1987; 1/2" VHS, 55 min.

Keyword: Horseshoeing, normal conditions.

Note: Describes machine-made shaping, cold shoeing, handmade shoeing and hot shoeing for the sound horse.

NAL call number: Videocassette No. 1938.

The T Touch That Teaches, Part I: Head and Neck [videocassette]. La Jolla, CA: Lawlor Productions; 1988; 1/2" VHS, 60 min.

Keyword: Horses, training, pain, injury, nervous system, behavior.

Note: Linda Tellington-Jones explains and demonstrates how sore muscles, tender spots and behavioral problems of horses can be overcome by the use of touches and body awareness, described as the Tellington-Jones Equine Awareness Method. These techniques can be easily learned and used by the novice or professional.

NAL call number: Videocassette No. 1319.

The T Touch That Teaches, Part II: Body, Legs, and Tail [videocassette]. La Jolla, CA: Lawlor Productions; 1988; 1/2" VHS, 70 min.

Keyword: Horses, training, pain, injury, nervous system, behavior.

Note: Part II of this series further demonstrates the use of the Tellington Touch to locate and relieve areas of pain, tension, and discomfort. Through T.E.A.M. (Tellington-Jones Equine Awareness Method), the horse becomes more aware of its body and movement, thus improving performance.

NAL call number: Videocassette No. 1320.

Think Like a Horse [videocassette]. Richmond, CA: Communication Arts; 1992; 1/2" VHS, 37 min.

Keyword: Wild horses, handling, behavior, care.

Note: In this video aimed at adopters of wild horses, Mary Ann Simonds describes wild horse handling and care. She also discusses how the wild horse's feelings and behavior affect training.

NAL call number: Videocassette No. 2636.

Tips for Safe Horse Handling [videocassette]. Belleview, FL: Dillon Video Productions;

1990; 1/2" VHS, 24 min.

Keyword: Horses, foals, handling, restraint.

Note: Illustrates safe handling methods/practices for horses and foals.

NAL call number: Videocassette No. 1946.

Weaning [videocassette]. Lexington, KY: Blood Horse Productions; 1984; 1/2" VHS, ca. 32 min.

Keyword: Weaning, horses.

Note: Weaning programs at four horse farms are discussed.

NAL call number: Videocassette No. 1899.

When Should I Call the Vet? [videocassette]. La Jolla, CA: Lawlor Productions; 1988; 1/2" VHS, 104 min.

Keyword: Horses, diseases, normal behavior, diagnosis, colic, injuries, hoof problems, veterinary care.

Note: This set of two videocassettes is part of the Equestrian Horse Video Series. Pam Lawlor discusses the various indicators and conditions that can affect a horse and when you should seek veterinary help. In Part 1, *Finding the norm for your horse*, there is a discussion of normal behaviors and activities for a horse. Part 2, *Colic, wounds and hoof ailments*, addresses the symptoms and seriousness of those conditions that require veterinary care.

NAL call No.: Videocassette No. 1910.

To: [[Main Contents](#)] [[Top of Audiovisuals section](#)]

Audiovisuals: Llamas

All About Llamas [videocassette series]. Bozeman, MT: Taylor/Gavin Communications; 1986; 1/2" VHS, 45 min. (each video).

Keyword: Llamas, care, handling, management, history, uses, behavior, breeding, birthing, packing, hiking.

Note: This series consists of three videotapes. Tape #1 - *Llama Basics* discusses the history, care, and handling of llamas. Tape #2 - *Breeding, Birthing, and Newborn Care* covers the basics of breeding, natural delivery, delivery assisting, and newborn care. Tape #3 - *Let's Go Packing* discusses the use of llamas as pack animals for hiking and outdoor adventures.

NAL call number: Videocassette No. 1330.

Basic T.E.A.M. with Llamas [videocassette]. Olympia, WA: Juniper Ridge Press; 1990; 1/2" VHS, 112 min.

Keyword: Llamas, training, techniques.

Note: Presents the basics of Tellington-Jones Equine Awareness Method (T.E.A.M.) as a way to train llamas.

NAL call number: Videocassette No. 1770.

Llama Reproduction: A Neonatal Clinic [videocassette]. Olympia, WA: Juniper Ridge Press; 1989; 2 videocassettes, 1/2" VHS, 3 hr., 34 min. Includes one booklet.

Keyword: Llamas, reproduction, assisted delivery.

Note: Through lecture, slides, and live footage, Dr. LaRue Johnson presents his clinic covering llama reproductive anatomy, breeding, fetal development, birth, and newborn care. He also covers the delivery of crias in a variety of positions, using plastic uteruses and stillborn crias.

NAL call number: Videocassette No. 2356.

Llama Training with Bobra Goldsmith: What Every Llama Should Know [videocassette]. Ashland, OR: Juniper Ridge Press; 1986; 1/2" VHS, 114 min.

Keyword: Llamas, training, care, maintenance, handling.

Note: Bobra Goldsmith narrates and demonstrates techniques for the training of llamas. These techniques are taught in order to allow proper and stress-free handling, care, and management of your llama.

NAL call number: Videocassette No. 1358.

To: [[Main Contents](#)] [[Top of Audiovisuals section](#)]

Audiovisuals: Poultry

Handling Live Birds [videocassette]. University Park, PA: Pennsylvania State University Ag; 1988; 1/2" VHS, 20 min. (available for loan from Penn State Audiovisual Services)

Keyword: Hens, handling.

Note: Demonstrates correct method for holding hens to examine for behavioral and physical characteristics related to health and performance.

Poultry at Home [videocassette]. Ipswich, UK: Farming Press Videos. Distributed in N. America by Diamond Farm Enterprises, Alexandria Bay, NY; 1993; 1/2" VHS, 77 min.

Keyword: Raising chickens, basic management, health.

Note: A beginner's guide to poultry health and management. Victoria Roberts and Julie Musk use over 50 pure breeds to illustrate the various points. Topics include: choosing your breed, housing, handling, predators, feed and digestion, diseases and parasites, breeding, sexing, candling eggs, and rearing chicks.

NAL call number: Videocassette No. 1914.

Poultry Heat Stress [videocassette]. 1 hr., TC-33 (available from Oklahoma State University Cooperative Extension)

Keyword: Chickens, heat stress, management.

Note: Techniques to alleviate heat stress of poultry during hot weather.

Restraint and Handling of the Bird [videocassette]. Davis, CA: School of Veterinary Medicine, University of California at Davis; 1978; 1/2" VHS, 12 min.

Keyword: Birds, handling, restraint.

Note: Discusses common anatomical characteristics of all birds. Common physical and chemical restraint techniques used on most birds are demonstrated.

NAL call number: Videocassette No. 1907.

To: [[Main Contents](#)] [[Top of Audiovisuals section](#)]

Audiovisuals: Ratites

Emu: Handling, Banding, Transport, and Sexing [videocassette]. Lampasas, TX: Janice Castleberry; 1997; 1/2" VHS.

Keyword: Emu, handling, transport.

NAL call number: IPM970905655.

Emu: Pen Facilities, Feeding, Breeding, and Hatching [videocassette]. Lampasas, TX: Janice Castleberry; 1997; 1/2" VHS.

Keyword: Emu, facilities, breeding.

NAL call number: IPM970905654.

Emu Management and Production [videocassette]. College Station, TX: Wildlife and Exotic Teleconsultants; 1997; 1/2" VHS.

Keyword: Emu, husbandry.

NAL call number: IPM970904654.

Ostrich Management and Production [videocassette]. College Station, TX: Wildlife and Exotic Teleconsultants; 1993; 1/2" VHS.

Keyword: Ostrich, husbandry.

NAL call number: IPM970904633.

Raising Emu and Rhea [videocassette]. Kerrville, TX: Sportsmen on Film; 1993; 1/2" VHS, 60 min.

Keyword: Emu, rhea, husbandry.

NAL call number: Videocassette No. 2584.

Ratite Management in a Nutshell, Part I [videocassette]. Lawton, OK: Fergus Video Productions; 1992; 1/2" VHS, 2 hrs., 30 min.

Keyword: Ratites, care, facilities, transport.

Note: Covers facilities, bird selection, transportation, and incubation of ratites.

NAL call number: IPM970904630.

Ratite Management in a Nutshell, Part II [videocassette]. Lawton, OK: Fergus Video Productions; 1992; 1/2" VHS, 2 hrs., 30 min.

Keyword: Ratites, care, health.

Note: Covers chick and yearling management and flock health.

NAL call number: IPM970904630.

Rhea Intensive Farming [videocassette]. Utopia, TX: Hosman/Ramsey Rheas; 1993; 1/2" VHS, 45 min.

Keyword: Rhea, husbandry.

NAL call number: Videocassette No. 2664.

To: [[Main Contents](#)] [[Top of Audiovisuals section](#)]

Audiovisuals: Sheep

Care and Maintenance of Shearing Equipment [videocassette]. Colso (?); 1975; 1/2" VHS, 30 min. (available from Purdue University Instructional Media Center)

Keyword: Sheep, shearing, equipment.

Note: Shearing expert Charles Swaim demonstrates the proper way to prepare and care for shearing equipment to prevent cutting the sheep's skin and how to position the blades for the best direction of movement.

Lamb Evaluation: Ewe Evaluation [videocassette]. Ames, IA: Iowa State University Cooperative Extension Service. Distributed by RMI Media Productions, Shawnee Mission, KS; 198?; 1/2" VHS, 27 min.

Keyword: Sheep, lambs, ewes, visual and tactile evaluation, marketing.

Note: How to evaluate market lambs using hands and eyes. How to judge breeding ewes.

NAL call number: Videocassette No. 1350.

Lamb Survival [videocassette]. Ipswich, UK: Farming Press Videos. Distributed in N. America by Diamond Farm Enterprises, Alexandria Bay, NY; 1993; 1/2" VHS, 84 min.

Keyword: Lambs, post natal care.

Note: David Henderson presents techniques to help lambs survive their first few days of life.

NAL call number: Videocassette No. 1937.

Planning a Working Facility for Sheep [videocassette]. University Park, PA: Pennsylvania State University Ag; 1979; 16 min. (available for loan from Penn State Audiovisual Services)

Keyword: Sheep, facility design, handling.

Note: Explains the design and construction of efficient sheep handling facilities and the uses of the different pieces of equipment.

Sheep Handling and Feed Equipment [videocassette]. Winrock; 1982; 1/2" VHS, 22 min. (available from <http://elroy.nmsu.edu/WebCatalog/Web> [New Mexico State University, Department of Agricultural Communications])

Keyword: Sheep, handling, feeding.

Note: Describes equipment and techniques used in handling and feeding the sheep flock.

NAL call number: IPM970904649.

Sheep Management Practices I [videocassette]. Lubbock, TX: Creative Educational Video; 1989; 1/2" VHS, 54 min.

Keyword: Sheep, management, handling, restraint.

Note: This instructional video covers characteristics of sheep, housing and facilities, handling and restraint, lambing, tail docking, and castration. Includes a summary with quizzes and answers.

NAL call number: Videocassette No. 2580.

Sheep Management Practices II [videocassette]. Lubbock, TX: Creative Educational Video; 1989; 1/2" VHS, 43 min.

Keyword: Sheep, management, parasites, shearing.

Note: This instructional video covers identification, parasite control, foot care, and shearing. Includes a summary with quizzes and answers.

NAL call number: Videocassette No. 2581.

To: [[Main Contents](#)] [[Top of Audiovisuals section](#)]

Audiovisuals: Swine

Animal Handling Workshop: Temple Grandin, Pork N.S. [2 videocassettes]. (available from Nova Scotia Agricultural College)

Artificial Insemination in Swine [videocassette]. East Lansing, MI: Instructional Media Center, Michigan State University; 1981; 1/2" VHS, 15 min. 50 sec.

Keyword: Swine, artificial insemination, breeding, methods, equipment.

Note: Demonstrates the current methods and equipment for artificially inseminating swine.

NAL call number: Videocassette No. 1726.

Human/Pig Behaviour [videocassette]. Owatonna, MN: PigWorld, Inc; 199?, 1/2" VHS, 20 min.

Keyword: Pigs, behavior, handling, facilities, human/animal interaction.

Note: Discusses human/pig interaction, pig handling facilities and techniques, and the perceptions and behavior of pigs.

NAL call number: Videocassette No. 2601.

Injection Techniques for Swine [videocassette]. Des Moines, IA: National Pork Producers Council; Pork Quality Assurance Video Series - #1; 1996; 1/2" VHS, 17 min. Includes booklet, guide, and quiz.

Keyword: Swine, techniques, injection, restraint.

Note: Covers medication types, injection sites, routes of administration, restraint methods, and needle size and gauge.

NAL call number: Videocassette No. 2359.

Managing Difficult Farrowing [videocassette]. Purdue University School of Veterinary Medicine; 1984; 1/2" VHS, 30 min. (available from Purdue Instructional Media Center)

Keyword: Swine, farrowing.

Note: Lewis Runnels, DVM, discusses proper methods for aiding a sow during a difficult farrowing. Stresses the importance of gentleness, sanitation, and lubrication in order to avoid complications and damage with examinations and manual pig deliveries. Looks at exam techniques, delivery procedures, use of medical instruments, reasons for problems in delivery, and post-partum care.

Practical Outdoor Pig Production [videocassette]. Ipswich, UK: Farming Press Videos.

Distributed in N. America by Diamond Farm Enterprises, Alexandria Bay, NY; 1993; 1/2" VHS, 40 min.

Keyword: Swine breeding, housing, record keeping.

Note: Features examples of breeding units showing basic requirements, essential services, housing and equipment, records, and integration with other farming enterprises.

NAL call number: Videocassette No. 1912.

Processing Techniques for Baby Pigs [videocassette]. University Park, PA: Pennsylvania State University Ag; 1988; 1/2" VHS, 16 min. (available for loan from Penn State Audiovisual Services)

Keyword: Piglets, techniques, injection, sow handling.

Note: Demonstrates techniques used on newborn pigs including tooth clipping, tail docking, ear notching, ear tattooing, intramuscular and subcutaneous injections, and castration. Sow injections and handling in the farrowing house are covered as well.

Proper Pig Handling for Markets & Packers [videocassette]. Bowling Green, KY: Livestock Conservation Institute; 1997; 1/2" VHS

Keyword: Swine, handling, livestock markets, packing plants, loading.

Note: This video demonstrates how to handle pigs at livestock markets and at the packing plant in order to increase pork quality. Provides information on product consistency, understanding and concern for animals, stress reduction, flight zone, range of vision, point of balance, handling equipment maintenance, loading and unloading, lighting, handling stressed pigs, and handling prior to stunning. The video is bilingual (English and Spanish).

NAL call number: Videocassette No. 2673.

Restraining/Injecting [videocassette]. Owatonna, MN: PigWorld; 199-?, 1/2" VHS, 20 min.

Keyword: Pigs, techniques, injection, restraint, snares.

Note: Demonstrates injection sites and techniques for pigs of all ages and describes use of various types of snares.

NAL call number: Videocassette No. 2600.

Surgical Procedures on Swine [videocassette]. Manchester, NH: Group Five Communications; 1989; 1/2" VHS, 36 min.

Keyword: Swine surgery, blood sampling, neck region and medial thigh.

Note: Topics covered include blood sampling, preanesthetic administration, and surgical approaches to the trachea, carotid sheath, external jugular vein, and the vessels of the medial thigh. This video was also produced by Charles River Laboratories.

NAL call No.: Videocassette No. 1612.

Swine Handling and Transportation [videocassette]. Madison, WI: Livestock Conservation Institute; 1989?; 1/2" VHS, 21 min.

Keyword: Swine, handling transport, behavior.

Note: Dr. Temple Grandin describes basic principles of pig behavior including vision, flight zone, reaction to noise, and following behavior. Shows various handling and transportation practices that reduce bruises, decrease injuries, and increase efficiency.

NAL call number: Videocassette No. 1593.

Swine Handling for Pork Producers [videocassette]. Des Moines, IA: National Pork Producers Council; Pork Quality Assurance Video Series - #3; 1996; 1/2" VHS, 15 min. Includes a manual and quiz.

Keyword: Swine, handling, behavior, loading, meat quality, facility design.

Note: Describes the effect of proper handling on meat quality, methods of handling based on pig behavior and human contact, facility design, and loading for transport.

NAL call number: Videocassette No. 2332.

Swine Handling for Transporters [videocassette]. Des Moines, IA: National Pork Producers Council; Pork Quality Assurance Video Series - #4; 1996; 1/2" VHS, 17 min. Includes manual, guide, quiz, and laminated adverse weather chart.

Keyword: Swine, handling, meat quality, loading, transport, weather.

Note: Covers effect of proper handling during loading and transport on meat quality. Provides transport guidelines for adverse weather conditions.

NAL call number: Videocassette No. 2333.

Swine Health Care [filmstrip]. San Luis Obispo, CA: Vocational Educational Productions; 1981; audio cassette, guide. Keyword: Management, care, husbandry, diseases.

Note: This program discusses the importance of prevention in combating diseases and parasites of swine, and gives an overview of common diseases and parasites of swine. Recommended practices for prevention and/or treatment are also covered.

NAL call number: Filmstrip No. 209.

Swine Management Practices I [videocassette]. Lubbock, TX: Creatice Educational Video; 1995; 1/2" VHS, 18 min.

Keyword: Swine, management, housing, farrowing.

Note: Covers swine characteristics, housing, management of sows and piglets during farrowing. Includes a summary, quizzes, and answers.

NAL call number: Videocassette No. 2578.

Swine Management Practices II [videocassette]. Lubbock, TX: Creative Educational Video; 1995; 1/2" VHS, 19 min.

Keyword: Swine, management, techniques.

Note: Covers techniques for processing baby pigs including tooth clipping, tail docking, iron injections, ear notching, and castration. Also discusses weaning, feeding/finishing, and paint branding. Includes summary, quizzes, and answers.

NAL call number: Videocassette No. 2579.

Swine Respiratory Disease [videocassette]. Ames, IA: Iowa State University Cooperative Extension Service in cooperation with WOI-TV. Distributed by RMI Media Productions, Shawnee Mission, KS; 1986; 1/2" VHS, 120 min.

Keyword: Swine diseases, pneumonia.

Note: This is a set of four videos on swine respiratory disease. It was originally broadcast on Iowa Public Television Network between February 3-24, 1986. Part 1 is an introduction to swine pneumonia. Part 2 addresses atrophic rhinitis. Part 3 is a description of various bacterial pneumonia. Part 4 discusses mycoplasma viruses.

NAL call number: Videocassette No. 1422.

Working Safely with Swine [slide presentation]. West Lafayette, IN: Purdue University Audiovisual Productions; 1980; 8 min., 55 slides and 1 audiocassette.

Keyword: Swine, handling, safety.

Note: Points out potential hazards in handling swine and how to avoid them.

To: [[AWIC](#)] [[Top of Document](#)] [[Contents](#)] [[Acknowledgements](#)] [[Introduction](#)] [[How to Use This Document](#)]
[[Articles](#) and [Bibliographies](#)] [[Audiovisuals](#)] [[Internet Resources](#)] [[Organizations](#)] [[Guidelines](#)] [[Document Delivery Information](#)]

Internet Resources

An effort has been made to cite sources in a consistent style and to ensure accurate Uniform Resource Locator (URL) addresses. However, given the variable nature of information available on the Internet, citations may vary in their format, and URL addresses may be subject to change.

- [Individuals and Organizations](#)
- [Electronic Pamphlets and Articles](#)

Individuals and Organizations

Dr. Temple Grandin

<http://www.grandin.com>

An extremely relevant and useful site developed by Temple Grandin, Ph.D., an expert in livestock behavior, design of animal handling facilities, and humane slaughter. Includes extensive information on livestock behavior, humane slaughter, recommended handling and stunning practices, design of facilities, ritual slaughter, stress and meat quality, a survey of stunning and handling in federally inspected slaughter plants, and abstracts of over 30 articles by Dr. Grandin.

Animal Welfare Information Center

<http://www.nal.usda.gov/awic/>

Provides bibliographies and information resource publications on livestock handling and transportation, as well as several newsletter articles on transport and welfare of agricultural animals. Links to the collections of the National Agricultural Library, which can be searched on-line.

National Institute for Animal Agriculture

<http://www.animalagriculture.org/>

A source for several educational videos focusing on animal handling in production facilities. Pamphlets on handling, transport, and non-ambulatory animals are also available here.

Farm Sanctuary

<http://www.farmsanctuary.org/>

Provides information on humane handling of farm animal species including cattle, chickens, turkeys, pigs, sheep, rabbits, ducks, geese, and goats. Mostly applicable to those caring for a small number of animals. Video documentaries of poultry slaughter and the marketing of non-ambulatory livestock are available as well.

International Air Transport Association

https://www.iataonline.com/Store/Products/Product+Detail.htm?cs_id=9105%2D29&cs_catalog=Publications&ops_mode=0

Contains information about transport of all types of animals by aircraft. Source for *IATA Live Animals Regulations*, published annually in October. Also provides information about training courses run by IATA for those handling live animals during the shipping process.

Tim Harris, Consultant

<http://www.tim-harris.co.uk>

Source for ordering the Animal Transport Association's *Manual for the Transport of Live Animals by Road* (Tim Harris is the editor), which covers regulations and legislation pertaining to the transport of livestock worldwide. Mr. Harris is a consultant specializing in livestock transport issues.

University of California, Davis, Veterinary Medicine Extension

<http://www.vetmed.ucdavis.edu/vetext/home.html>

Provides series of on-line booklets dealing with agricultural animal care, including behavior, handling, and

transport. Beef cattle, broiler chickens, dairy cattle, laying hens, sheep, swine, and turkeys are covered. An article on the transport of horses is available at this site as well.

National Agricultural Safety Database

<http://www.nasdonline.org/>

This site, set up by the Centers for Disease Control, provides the full text of many documents on safe handling of farm animals. Information about related videos is also available.

To: [[Main Contents](#)] [[Top of Internet Resources section](#)]

Electronic Pamphlets and Articles

Livestock Handler's Safety

<http://www.ext.colostate.edu/PUBS/LIVESTK/01813.html>

Mac Legault, Ann Swinker, and Temple Grandin, Colorado State University. Discusses livestock handling and transport in the context of avoiding injuries to human handlers. Applies principles of animal behavior to handling practices and facility design.

Livestock Injured in Transport Accidents

<http://www.agric.nsw.gov.au/reader/2778>

Animal Welfare Unit, New South Wales Agriculture. Instructions for livestock transporters on how to humanely handle animals injured in transport vehicle accidents.

Physiology, Balance, and Management of Horses During Transportation

http://www.vetmed.ucdavis.edu/vetext/INF-AN/INF-AN_HORSTRANSPT.HTML

Carolyn L. Stull, Ph.D., Extension Specialist, Animal Welfare Program, School of Veterinary Medicine, University of California, Davis. A paper presented at the 1997 Horse Breeders and Owners Conference. Provides a detailed look at the causes of stress experienced by horses during transport, the effects of that stress, and how to properly transport horses to minimize stress and injuries.

Recommended Animal Handling Guidelines for Meatpackers

<http://www.meatami.com>

Temple Grandin, Ph.D., for the American Meat Institute. An extensive publication covering handling of livestock during the slaughter process. Detailed discussion of livestock behavior and how to apply it to handling, stunning practices, and handling of non-ambulatory livestock.

Transporting Poultry in a Humane Manner

<http://pubs.ext.vt.edu/2902/2902-1088/2902-1088.html>

Phillip J. Clauer, Poultry Extension Specialist, Virginia Cooperative Extension. A factsheet which provides recommendations for the safe transport of poultry. Mainly directed at small flock owners, but applicable to transport of large numbers of birds.

To: [[AWIC](#)] [[Top of Document](#)] [[Contents](#)] [[Acknowledgements](#)] [[Introduction](#)] [[How to Use This Document](#)]
[[Articles](#) and [Bibliographies](#)] [[Audiovisuals](#)] [[Internet Resources](#)] [[Organizations](#)] [[Guidelines](#)] [[Document Delivery Information](#)]

Organizations

Agriculture and AgriFood Canada

Sir John Carling Building
930 Carling Avenue
Ottawa, Ontario
K1A 0C7 Canada

TELEPHONE: (800) 410-7104; in Ottawa (613) 759-7959

WORLD WIDE WEB: <http://www.agr.ca> or http://aceis.agr.ca/index_e.phtml

RESOURCES/SERVICES: ACEIS, Agri-Food Canada's electronic information service, provides list of available brochures and codes of practice for care and handling of livestock and poultry. Public information request service can be reached at (613) 759-1000 or by email at pirs@em.agr.ca. Website provides links to provincial AAFC websites.

American Meat Institute

P.O. Box 3556
Washington, DC 20007, USA

TELEPHONE: (703) 841-2400

FAX: (703) 527-0938

WORLD WIDE WEB: <http://www.meatami.org>

RESOURCES/SERVICES: Publishes resource materials for the meat industry including videos, handbooks, Recommended Animal Handling Guidelines for Meat Packers, and Good Management Practices for Animal Handling and Stunning.

Animal Transportation Association (AATA)

P.O. Box 251 Redhill
Surrey RH1 5FU
England

TELEPHONE: 44 (01737) 822249

FAX: 44 (01737) 822954

EMAIL: 100257.1720@compuserv.com

RESOURCES/SERVICES: Publishes the *AATA Manual for the Transportation of Live Animals by Road* -- particularly applicable to those moving animals into and out of the EU countries. Includes government regulations; inspection posts; animal behavior; animal handling; container, space, documentation, and vehicle requirements; CITES information; and transport guidelines by species. Also publishes a quarterly newsletter.

Animal Welfare Information Center

Agricultural Research Service
National Agricultural Library
10301 Baltimore Ave.
Beltsville, MD 20705-2351, USA

TELEPHONE: (301) 504-6212

FAX: (301) 504-7125

EMAIL: <http://awic.nal.usda.gov/contact-us>

WORLD WIDE WEB: <http://www.nal.usda.gov/awic/>

RESOURCES/SERVICES: Vast collection of serials, monographs and audiovisuals within the National Agricultural Library (NAL). Documents may be borrowed through an interlibrary loan. For more information on document delivery, contact (301) 504-5755. The Center performs brief complimentary searches of AGRICOLA and other relevant databases. The Center produces several bibliographies on livestock and poultry handling, transport and welfare.

Grandin Livestock Handling Systems, Inc.

2918 Silver Plume Dr., Unit C3
Fort Collins, CO 80526, USA

TELEPHONE: (970) 229-0703

EMAIL: grandin@lamar.colostate.edu

WORLD WIDE WEB: <http://www.grandin.com>

RESOURCES/SERVICES: Website with extensive collection of full-text articles on livestock handling, transport, slaughter methods, design of facilities, livestock behavior and stress and meat quality, as well as surveys of handling practices at packing plants and markets. Consults with the livestock industry on facility design, livestock handling, and animal welfare.

Humane Slaughter Association

34 Blanche Ln.
South Mimms, Potters Bar, Herts EN6 3PA
United Kingdom

TELEPHONE: 01-707-659040

FAX: 01-707-649279

RESOURCES/SERVICES: Provides information on slaughter methods and handling of livestock at abattoirs.

International Air Transport Association

2000 Peel Street
Montreal, Quebec
Canada H3A 2R4

WORLD WIDE WEB: <http://www.iata.org/>

RESOURCES/SERVICES: Publishes *IATA Live Animals Regulations*, the international standard for transporting live animals by air. A new edition appears annually. Runs training courses for live animal cargo handlers.

National Broiler Council

1015 15th St., NW, Suite 930
Washington, DC 20005-2605, USA

TELEPHONE: (202) 296-2622

FAX: (202) 293-4005

WORLD WIDE WEB: <http://www.eatchicken.com>

RESOURCES/SERVICES: Provides information and research to member companies on an individual basis. As of September 1998, NBC is in the process of finalizing animal care and well-being guidelines for the broiler industry.

Kondinin Group

P.O. Box 913
Cloverdale, WA, 6105 Australia

TELEPHONE: (08) 9478 3343

FAX: (08) 9478 3353

RESOURCES/SERVICES: Source of Australian information on handling. Produced a manual on cattle-handling equipment entitled *Handling the Herd*. Produces serials and manuals based on surveys of the needs of Australian farmers.

National Institute for Animal Agriculture

1910 Lyda Dr.
Bowling Green, KY 42104-5809, USA

TELEPHONE: (502) 782-9798

FAX: (502) 782-0188

WORLD WIDE WEB: <http://www.animalagriculture.org>

RESOURCES/SERVICES: Provides educational resources for livestock handlers, including a library of handling videos, brochures, and written guidelines.

Livestock Marketing Association

7509 Tiffany Springs Parkway
Kansas City, MO 64153, USA

TELEPHONE: 1 (800) 821-2048

FAX: (816) 891-7926

RESOURCES/SERVICES: Provides educational information on livestock handling to auction markets, commission firms, dealers, order buyers, and related businesses. Materials include a code of handling practices, a laminated poster entitled "Recommended Livestock Handling Practices for Livestock Markets," and a video. LMA also distributes information about training programs to its members.

Department for Environment, Food and Rural Affairs

Animal Welfare Division,
Customer Contact Unit
Eastbury House, 30 - 34 Albert Embankment
London, SE1 7TL
England

WORLD WIDE WEB: <http://www.defra.gov.uk/foodfarm/farmanimal/welfare/index.htm>

RESOURCES/SERVICES: Provides guidance on new laws pertaining to livestock handling. Publishes guidelines on handling of all species of livestock and poultry. MAFF/IB International Report 1998 (available on website) has a chapter on policies covering farm animal welfare on the farm, in transit, at market, and at slaughter.

National Pork Producers Council

Mailing address: P.O. Box 10383
Des Moines, IA 50306, USA
Street address: 1776 NW 114th St.
Clive, IA 50325, USA

TELEPHONE: (515) 223-2600

FAX: (515) 223-2646

WORLD WIDE WEB: <http://www.nppc.org>

RESOURCES/SERVICES: Has website with section on educational materials for producers, including handling videos and a CD-ROM. A catalog of materials can be ordered from above mailing address. Also conducts training conferences for swine producers.

**United States Department of Agriculture
Agricultural Marketing Service**

Transportation and Marketing Division
P.O. Box 96456
Washington, DC 20250, USA

CONTACT: Thomas M. Poerstel, Marketing Specialist

TELEPHONE: (202) 690-1323

FAX: (202) 690-1340

CONTACT: William L. Craig, Jr., Agricultural Marketing Specialist

TELEPHONE: (202) 720-8272

FAX: (202) 690-1340

WORLD WIDE WEB: <http://www.ams.usda.gov/tmd/>

RESOURCES/SERVICES: Published *A Guide for Livestock Exporters* -- guidelines for exporting livestock and poultry

(includes handling, space requirements, health, safety, feeding and watering, reducing stress prior to shipment, drugs and equipment needed for journey), comparison of types of transport, list of carriers and services, addresses of livestock export inspection facilities, and insurance. Also provides technical services and research on transportation problems for livestock exporters as well as information on transport equipment, recommended handling methods, carrier services and livestock export tip sheets.

United States Department of Agriculture
Animal and Plant Health Inspection Service
Import-Export Operations Staff
Room 765 - Federal Center Building
6505 Belcrest Rd.
Hyattsville, MD 20782, USA

TELEPHONE: (301) 436-8383

WORLD WIDE WEB: <http://aphisweb.aphis.usda.gov>

RESOURCES/SERVICES: Provides specific information on health and test requirements for export livestock.
Publishes an annual list of registered animal carriers.

To: [[AWIC](#)] [[Top of Document](#)] [[Contents](#)] [[Acknowledgements](#)] [[Introduction](#)] [[How to Use This Document](#)]
[[Articles](#) and [Bibliographies](#)] [[Audiovisuals](#)] [[Internet Resources](#)] [[Organizations](#)] [Guidelines] [Document Delivery Information]

Guidelines

- 9 C.F.R. § 313.2 (1993). The Humane Slaughter Act of 1978.
- 49 U.S.C. § 80502 (1995). **The Twenty-Eight Hour Law of 1877**, repealed and reenacted in amended form in 1994. United States Code.
- **Animal Protection Act. Statutes of Alberta, 1988, Chapter A-42.1 with amendments in force as of October 1, 1989** (1989). Province of Alberta, Canada, Office of Consolidation, 6 pp. Available from Animal Welfare Information Center, 10301 Baltimore Blvd., Beltsville, MD 20705.
- Animal Transportation Association. **ATAA Manual for the Transportation of Live Animals by Road**. Available from Silesia Companies, P.O. Box 441110, Ft. Washington, MD, 20749 USA.
- Canadian Federation of Humane Societies, Coordinator (1990). **Recommended code of practice for the care and handling of poultry from hatchery to processing plant**. Ottawa, Ontario, Canada: Agriculture Canada, Publication 1757/E, 54 pp.
NAL call number: 7 C16Pu 1757/E
- Colorado State University Cooperative Extension (1993). **4-H humane animal care guidelines**. Fort Collins, CO: Colorado State University Cooperative Extension. NAL call number: SF65.2 A15 1993
- Consortium for developing a guide for the care and use of agricultural animal in agricultural research and teaching (1988, first revised edition January 1999). **Guide for the care and use of agricultural animals in agricultural research and teaching**. Savoy, IL: Federation of Animal Science Societies (FASS): 90p. Available from FASS, 1111 North Dunlap Avenue, Savoy, IL 61874
Telephone 217-356-3182 or e-mail fass@assoqh.org
- Council of Europe 1991. **Council Directive of 18 November on Stunning of Animals Before Slaughter (74/577/EEC)**. Official Journal of the European Communities, No. L 316, 26 November 1991, p. 10-11.

- Grandin, T. (1988). **Livestock handling guide: management practices that reduce livestock bruises and injuries and improve handling efficiency.** Madison, WI: Livestock Conservation Institute, 16 p.
NAL call number: SF77 G72 1988
- Grandin, T. (1991). **Recommended animal handling guidelines for meat packers.** Washington, DC: American Meat Institute, 21 p. Available on-line at <http://www.grandin.com> and <http://www.meatami.org>.
NAL call number: TS1960 G73 1991
- Grandin, T. (1997). **Good manufacturing practices for animal handling and stunning.** Washington, DC: American Meat Institute. Available on-line at <http://www.grandin.com> and <http://www.meatami.org>.
- Huntington, P. and F. Cleland (1992). **Horse sense. The Australian guide to horse husbandry.** East Melbourne, Victoria, Australia: Rhône-Poulenc Animal Nutrition Pty. Ltd., Australian Horse Council, and the Victoria Department of Food and Agriculture, 310 pp.
NAL call number: SF285 H86 1992
- Hurnik, F. (1991). **Recommended code of practice for the care and handling of farm animals: beef cattle.** Ottawa, Ontario, Canada: Agriculture Canada, Publication 1870/E, 46 pp.
NAL call number: 7 C16Pu no. 1870/E
- International Air Transport Association. **IATA Live Animals Regulations.** Available from Silesia Companies, P.O. Box 441110, Ft. Washington, MD, 20749 USA.
- Manitoba PMU Study Committee (1990). **Recommended code of practice for the care and handling of horses in PMU operations.** Winnipeg, Manitoba, Canada: Manitoba Agriculture, 13 pp.
- Ministry of Agriculture and Fisheries (1992). **Code of recommendations and minimum standards for the welfare of animals used in rodeo events.** Wellington, New Zealand: Animal Welfare Advisory Committee, Ministry of Agriculture and Fisheries, 9 pp.
NAL call number: HV4890.4 A3C63
- Ministry of Agriculture and Fisheries (1993). **Code of recommendations and minimum standards for the welfare of bobby calves.** Wellington, New Zealand: Animal Welfare Advisory Committee, Ministry of Agriculture and Fisheries, 11 pp.
NAL call number: HV4890.4 A3C63
- Ministry of Agriculture and Fisheries (1993). **Code of recommendations and minimum standards for the welfare of horses.** Wellington, New Zealand: Animal Welfare Advisory Committee, Ministry of Agriculture and Fisheries, 43 pp.
NAL call number: HV4890.4 A3C63
- Ministry of Agriculture and Fisheries (1994). **Code of recommendation and minimum standards for the welfare of animals transported within New Zealand.** Wellington, New Zealand: Animal Welfare Advisory Committee, Ministry of Agriculture and Fisheries, 52 pp. Available from Animal Welfare Information Center, 10301 Baltimore Blvd., Beltsville, MD 20705.
- Ministry of Agriculture and Fisheries (1994). **Code of recommendations and minimum standards for the welfare of animals at the time of slaughter at licensed and approved premises.** Wellington, New Zealand: Animal Welfare Advisory Committee, Ministry of Agriculture and Fisheries, 17 pp. Available from Animal Welfare Information Center, 10301 Baltimore Blvd., Beltsville, MD 20705.
- Ministry of Agriculture, Fisheries and Food (1993). **Guidance on the transport of casualty farm animals.** HMSO.

- Ministry of Agriculture, Fisheries and Food (1994). **The Welfare of Livestock Regulations 1994 (SI 1994/2126)**. HMSO.
- Ministry of Agriculture, Fisheries and Food (1995). **The Welfare of Animals (Slaughter or Killing) Regulations 1995**. HMSO.
- Ministry of Agriculture, Fisheries and Food (1997). **The Welfare of Animals (Transport) Order 1997 (SI No. 1480)**. HMSO.
- Ministry of Agriculture, Fisheries and Food (various). **Codes of recommendation for the welfare of livestock**. Includes: **Cattle** (1983), **Domestic fowls** (1987), **Ducks** (1987), **Farmed deer** (1989), **Goats** (1989), **Pigs** (1983), **Rabbits** (1987), **Sheep** (1989), **Turkeys** (1987). HMSO.
- RSPCA Australia (1996). **Guidelines for the humane road transport of livestock**. Available on-line at <http://www.rspca.org.au/>.
- RSPCA Australia (1996). **Guidelines for the transport of drought-affected livestock**. Available on-line at <http://www.rspca.org.au/>.
- RSPCA Australia (1996). **Guidelines for the welfare of bobby calves at calf-scales and pick-up points**. Available on-line at <http://www.rspca.org.au/>.
- RSPCA Australia (1996). **Guidelines for the welfare of livestock at saleyards**. Available on-line at <http://www.rspca.org.au/>.
- RSPCA Australia (1996). **Guidelines on long distance haulage of horses**. Available on-line at <http://www.rspca.org.au/>.
- RSPCA Australia (1996). **Handling of drought-affected livestock in abattoirs, slaughterhouses and knackeries**. Available on-line at <http://www.rspca.org.au/>.
- U.S.C. §§ 1901-1906 (1988). **The Humane Slaughter Act**. United States Code.

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[[Articles](#) and [Bibliographies](#)] [[Audiovisuals](#)] [[Internet Resources](#)] [[Organizations](#)] [[Guidelines](#)] [Document Delivery Information]

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NOTE: *Information Resources for Livestock and Poultry Handling and Transport* may be viewed as one complete publication file [lvstfull.htm, 385 kb], or as individual chapter files [lvstchap.htm 10 kb to 65 kb].



The Animal Welfare Information Center, <http://awic.nal.usda.gov/contact-us>
<http://www.nal.usda.gov/awic/pubs/livestock/lvstfull.htm>, Updated October 18, 2001