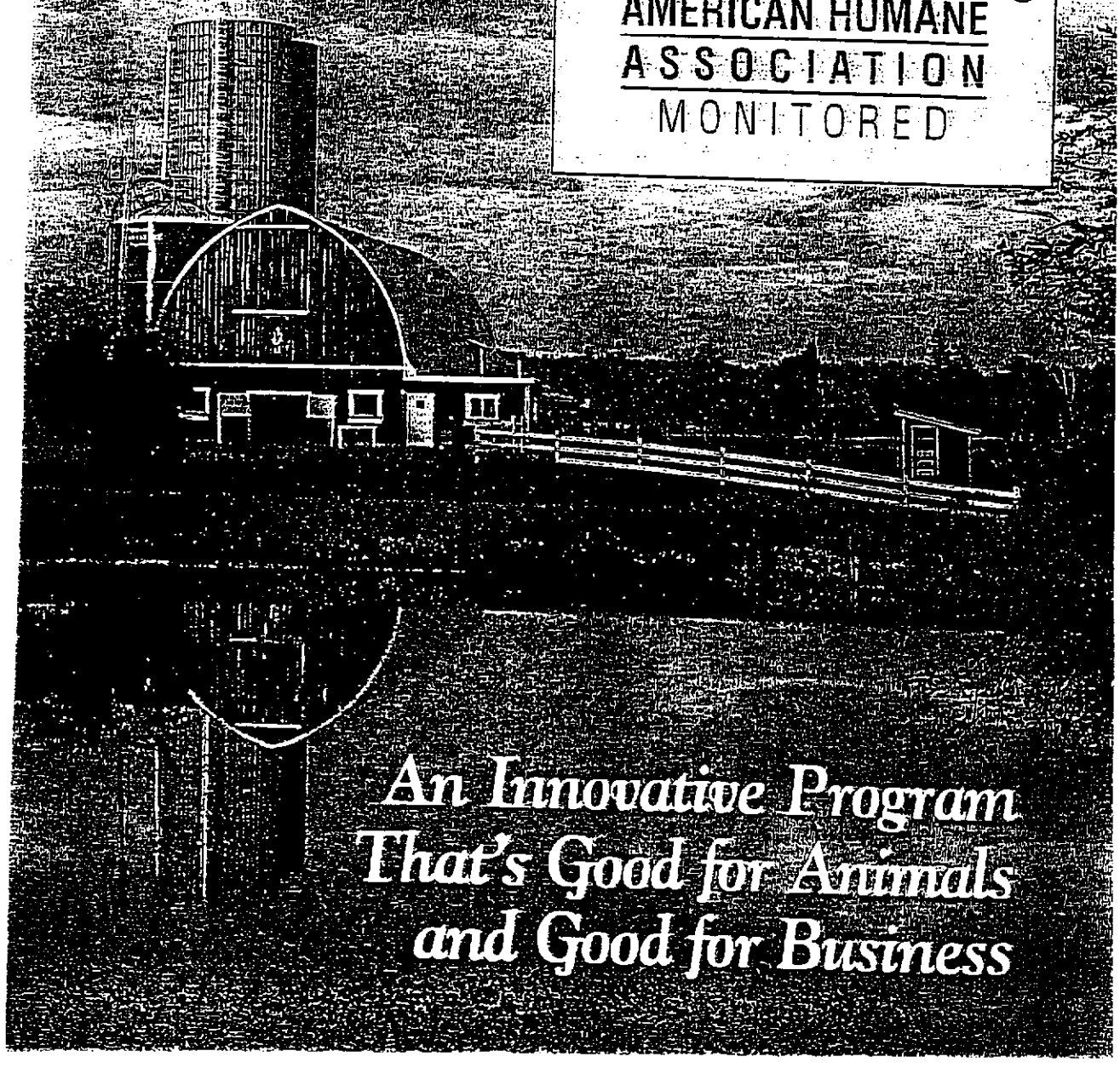
ANNEXE 1 :

STANDARDS DE BIEN-ÊTRE POUR LES PORCS DU PROGRAMME FREE FARMED FOODS

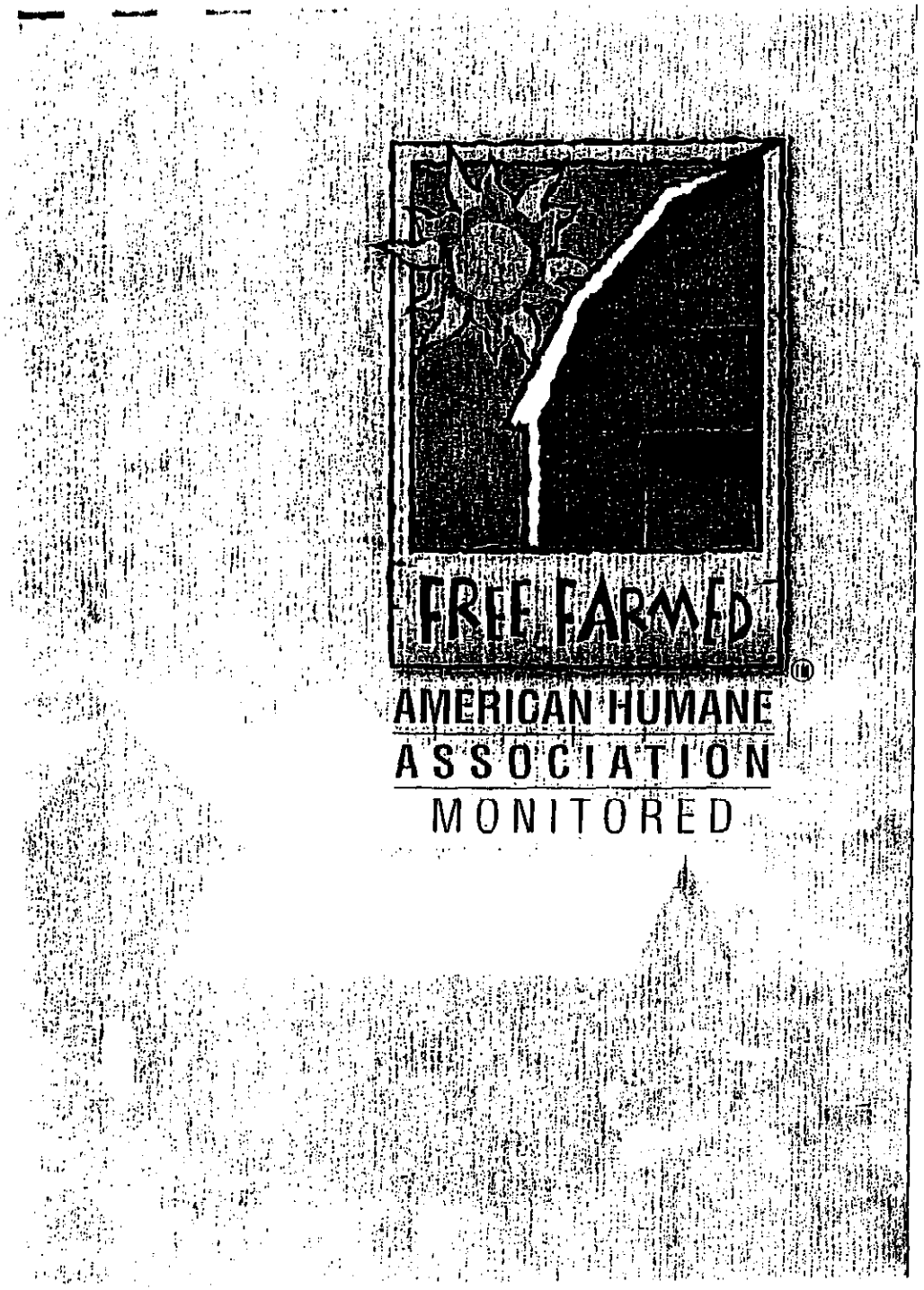
Free Farmed Foods



FREE FARMED™

AMERICAN HUMANE ASSOCIATION MONITORED

An Innovative Program That's Good for Animals and Good for Business



The evidence is clear. *Consumers are demanding more and more healthy alternatives in the supermarket. Witness the explosive growth in the organic foods sector, one of the fastest growing segments of the U.S. food industry. And that demand is not confined to the aisles of up-market health food emporiums. Natural foods are big business.*

As you know, *your growth and your success are due, in part, to how well you anticipate market demand and segmentation; it's a challenge you grapple with every day. We can help. The American Humane Association (AHA) and its affiliate nonprofit Farm Animal Services (FAS) has instituted an exciting program that will help you differentiate your product and further establish yourself as a leader in your industry:*

The Free Farmed Program.

On the Leading Edge

Humanely produced farm animal products are the next significant market niche in the food industry. Consumers view humanely treated farm animals as producing healthier food products. Increasingly, consumers want to be assured that the meat, dairy, eggs, and poultry they're consuming was produced under humane conditions, and they are willing to pay more if need be for that peace of mind.

A 1999 survey by the distinguished Animal Industry Foundation found that 44% of consumers would pay 5% more for meat and poultry products labeled as "humanely raised." Moreover, a similar program launched in the mid 1990s in England has already gained rapid consumer acceptance and market penetration, boasting a roster of 4,000

That translates to 19 million plus farm animals in the U.K. benefiting from improved standards.

The Free Farmed Program is dedicated to using the marketplace to improve the lives of farm animals. When you become a participant in the program, you're telling consumers that you are compassionate and caring, a message they want to hear . . . from you, backed by a credible, independent body.

Why the American Humane Association?

The American Humane Association is the oldest, most prestigious national humane organization in the United States. Founded in 1877, we are the only national charity dedicated to

Over those many decades, we have developed considerable experience and expertise working with both industry and government to improve the lives of animals. Importantly, we understand the real-world, practical concerns and considerations you face as a business person. And, we work hard to meet your needs, as well as the needs of the animals. Our goal is to work with you to improve the lives of farm animals and, at the same time, improve your bottom line.

How? In close collaboration with veterinarians, animal scientists, and producers like you, the AHA has set standards of practice that guide the humane treatment of farm animals. FAS administers those standards and certifies producers, processors, and related product handlers that meet AHA's guidelines. Certification takes the form of a Free Farmed label that program participants may use on their farm animal products—a label that tells consumers that this product was reared, cared for, and slaughtered in the most humane way possible. The Free Farmed Program certification process is verified by the U.S. Department of Agriculture/ Agricultural Marketing Service.

In addition, we work hard to publicize the Free Farmed Program so that consumers will look for the label and use it to guide their purchasing decisions in the grocery aisle.

Free Farmed at a Glance

The Free Farmed labeling program establishes a traceable supply chain of inspected and accredited producers and processors backed by a trusted organization, empowered by a message that has universal appeal. In short, it is a program built upon credibility and consumer confidence.

Free Farmed certification currently encompasses producers. Standards are being developed for processors, packers, slaughterhouses, and trucking companies—in short, any industry segment handling farm animals. In order to be certified Free Farmed, they must have passed inspection by our trained personnel, and to stay certified pass periodic follow-up inspections. Free Farmed status is lost when the animals and their products fall outside the certified chain of supply.

Putting the Free in Free Farmed

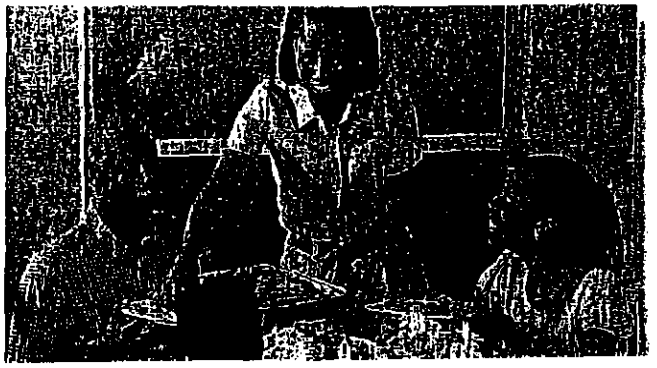
It is our goal that this program provide farm animals with lives that are:

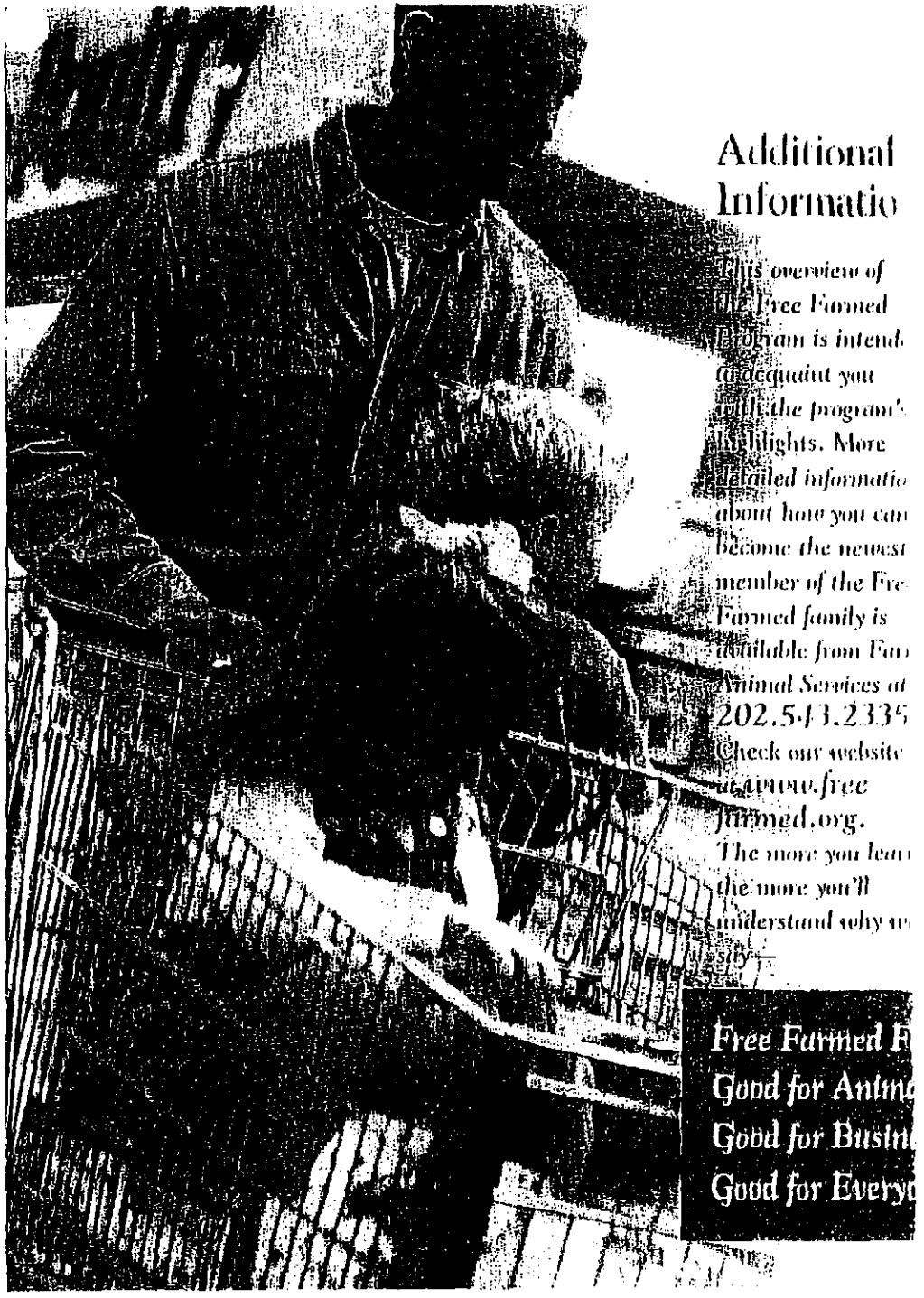
- FREE from unnecessary fear and distress, by ensuring conditions and care that limit stress;
- FREE from unnecessary pain, injury, and disease, by prevention of disease through rapid diagnoses and treatment;
- FREE from hunger and thirst, by ready access to fresh water and a diet that maintains full health and vigor; and
- FREE from unnecessary discomfort, by providing an appropriate environment including shelter and a comfortable resting area, by enabling the expression of normal behaviors, and by providing sufficient space, proper facilities, and company of the animals' own kind.

Tapping a Win-Win Market

The Free Farmed Program is a value-added proposition. Consider this: In the last five years, sales of organic foods (most closely related in public perception to Free Farmed foods) have gone from $3 billion per year to $7 billion. A 1998 survey by Lake, Sossin, Snell, Perry and Associates reports that 31% of food purchasers bought organic food at least once or twice a month. The consumer demand is there. The potential market is enormous.

This program is a way to establish yourself as an industry leader in this fast emerging market of health-conscious, conscientious consumers who want to buy your products and feel good about consuming them. Farm animals win. You win. Consumers win.





Additional Informatio

This overview of the Free Farmed Program is intend to acquaint you with the program's highlights. More detailed information about how you can become the newest member of the Fre Farmed family is available from Farm Animal Services at 202.543.2335. *Check our website at www.free farmed.org.*

The more you learn the more you'll understand why w

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Good for Anim
Good for Busin
Good for Everyo

American Humane Association

Welfare Standards For

Pigs

FEBRUARY 2001

AMERICAN HUMANE ASSOCIATION

In Swine Production

INTRODUCTION

The American Humane Association (AHA) Welfare Standards for Pigs have been developed to provide the only AHA approved program for the rearing, handling, transport, and slaughter of pigs. These standards incorporate scientific research, veterinary advice, and the practical experience of the farming industry. The standards are based upon the Royal Society for the Prevention of Cruelty to Animals (RSPCA) Guidelines and the Federation of Animal Science Societies Guide (1999) and other practical standards and guidelines recognized for the proper care of pigs.

Proper Welfare Standards for Pigs must include the following:

- **Caring and responsible planning and management**
- **Skilled, knowledgeable and conscientious animal care**
- **Appropriate environmental design**
- **Considerate handling and transport**
- **Adequate nutrition**
- **Humane Slaughter**

Free Farmed Foods

The Free Farmed certification program, in conjunction with the AHA, was formed to implement accredited farms adhering to these standards. Upon satisfactory application and inspection, farmers and ranchers may subscribe to the program and receive the Free Farmed label, which carries with it the AHA seal of approval. Program participants are assessed by Free Farmed. Program fees cover expenses related to application, inspection, administration, and marketing costs. In addition, Free Farmed will contribute to funding research to improve farm animal care and welfare.

GUIDE TO THE USE OF THE WELFARE STANDARDS

- The broad objectives of the standards are described at the end of each section.
- The numbered requirements are the standards, all of which must be complied with.
- Boxed sections provide additional information or may highlight areas where the standards will be reviewed in the future.
- Producers are required to have a thorough knowledge of the AHA Welfare Standards and any and all local or federal laws that address production, environment and food safety issues.

These standards are written to cover facilities in varying geographic and temperature regions and facilities utilizing different systems. Therefore, not all sections in these standards will apply to each facility.

FOOD AND WATER

Livestock must have freedom from hunger, thirst, and malnutrition by ready access to fresh water and a diet designed to maintain full health and promote a positive state of well-being. Feed and water must be distributed in such a way that livestock can eat and drink without undue competition.

Food

Feeders and waterers should be checked twice daily to be sure they are functional. Feeders and waterers should allow easy access by swine with minimal waste of feed. Feeders or feeding places should be free from manure, urine, and other contaminants.

FW1
Pigs should be fed to meet or exceed nutrient requirements as determined by the NRC (1988). Pigs must be fed a wholesome diet which is appropriate to their species and which is fed to them in sufficient quantity to maintain them in good health, and to satisfy their nutritional needs.

FW2
Pigs must have access to food each day, except when withholding of feed is required by the attending veterinarian.

FW3
Producers must have a written record of the nutrient content of compound feeds and feed supplements, and make it available to the Free Farmed Assessor.

FW4
No feedstuffs containing mammalian derived protein are permitted, with the exception of milk and milk products. The use of sub-therapeutic antibiotics is prohibited. Antibiotics can be used for disease treatment for individual pigs.

FW5
Sows must be fed so that their body condition is likely to sustain full health and normal reproductive capacity over their maximum foreseeable life span. Body condition change in sows must be carefully planned and maintained according to the stage of production cycle. As a general rule, no animal must, at any time, have a body condition score less than 2 and they must have a score of at least 3 by the 7th day of pregnancy.

FW6
Efforts must be made to avoid sudden changes in the type and quantity of food.

All pigs, which are fed a restricted diet (i.e., not allowed to feed to satiety at least once per day) must have access to straw or other suitable foraging medium such as wood chips or sawdust. This foraging substrate must be topped up regularly (at least every 3 days). A plan must be in place to supplement the diet or environment for animals on a restricted feeding program. This may consist of adding bulk to the diet or suitable rooting material (peat, straw, sawdust, wood chips, stones, branches, leaves). For outdoor-housed pigs forage can also fulfill this requirements.
FW7

Sows must be fed in ways that avoid bullying. Pigs may be fed from the floor as long as the surface is dry and clean and individual feed consumption is not limited by social competition.

FW8
For ration feeding pigs in a trough, there must be enough feeding space (1.1 times shoulder width) for all pigs to feed simultaneously. A feed place is described as space required by a single pig while eating.

For ad lib feeding there must be no more than:

- 6 pigs per feeding place when using a dry feeder with no full head barriers between each feeding place
- 10 pigs per feeding place where there are full head barriers
- 14 pigs per feeding place where there is the opportunity to mix water with the feed (wet and dry feeders).

If wet feeding of sows indoors is employed, head and shoulder barriers must be erected between each feeding place.

FW9
Where pigs are not fed on the ground or floor, the feeders must be kept clean.

FW10
In order to reduce contamination by bird feces and vermin, all feed hoppers/bins used for storage must be covered.

FW11
Piglets must not be weaned from the sow before 3 weeks of age, unless a veterinarian confirms that the welfare or health of the sow or piglets would otherwise be adversely affected.

Water

FW12
All pigs must have continuous access to an adequate supply of clean, fresh drinking water each day, except when required by the attending veterinarian.

FW13
One drinking place must be provided per 10 pigs. A drinking place is defined as the space required by a single pig while drinking. Special care should be taken to ensure that waterers are adjusted (height and flow rate) to ensure that water is accessible for every pig.

FW14
Where wet and dry feeders are used (i.e. both the feeder and drinker are within a single pig place), an additional drinker must be supplied in the pen.

FW15
Drinking bowls must be kept clean. Also, if nipple waters are used they must be regularly checked to see that they are working and not clogged.

FW16
Drinkers used by lactating sows must have a minimum flow rate of 750 ml per minute, or .75 qts./minute.

FW17
Provisions must be made to ensure an emergency supply of suitable drinking water in case normal supplies fail, for instance due to freezing, drought, etc.

ENVIRONMENT

The environment in which livestock are kept must take into account their welfare needs and be designed to protect them from physical and thermal discomfort, fear and distress, and allow them to perform their natural behavior.

Buildings

E1
For all accommodations, the key points relating to welfare must be recorded in the farm log book or on the farm site plan, and if practical, be displayed at or near to the entrance to each building and be amended accordingly. This must include:

1. total floor area;
2. building volume available to pigs;
3. number of pigs in relation to age, weight, feeding and drinking, and bedding space.

E2
There must be no physical features of their environment that cause recurring injuries to the pigs. The interior of any building, including the floor and all internal fixings/surfaces to which livestock have access must be designed, constructed, maintained, and regularly inspected to ensure that there are no sharp edges or protrusions likely to cause injury or distress to the animal.

E3
In both indoor and outdoor systems, there must be no recurrent injuries on the pigs attributable to physical features of their environment (injury is defined as damaged severe enough for the formation of granular scar tissue and to an extent significantly greater than would be in accidental bumps and scratches).

E4
Except where preservatives with an insecticidal role are used, pigs must not come into contact with toxic fumes or surfaces from paint, wood preservatives or disinfectants.

E5
All electrical installations must be inaccessible to pigs, well insulated, safeguarded from rodents, properly grounded and regularly tested.

E6
Internal surfaces of housing and pens must be made of materials which can be readily cleaned and disinfected or be easily replaced when necessary.

Thermal environment & ventilation

E7
The thermal environment must not be so hot or so cold as to significantly affect production or cause distress. Recommended thermal conditions for swine are:

Weight		Temperature Range	
Lbs	Kg	°F	°C
7-33	3-15	79-90	26-32
33-77	15-35	64-79	18-26
77-154	35-70	59-77	15-25
154-220	70-100	50-77	10-25
>220	>100	50-77	10-25
Nursing sow		59-79	15-26
Litter		90	32

E8
Effective ventilation of buildings to avoid high humidity, condensation and drafts is essential as pigs can be susceptible to respiratory diseases.

Properly designed ventilation will permit the free circulation of air above pig height and avoid drafts at pig level.

E9
Provisions must be made to ensure that, when pigs are housed, aerial contaminants do not reach a level at which they are noticeably unpleasant to a human observer, (as specified by OSHA regulation.

Inhalable dust must not exceed 10mg/m3 (PM 10 or less) and ammonia not exceed 25ppm (averaged over an 8 hour period).

E10
For summer conditions, provisions must be made to protect pigs from heat stress. Wallows, shade, evaporative coolers, drippers, cooling mats, misters and fans are all acceptable.

Lying Area/Floors

E12
Pigs kept indoors must be kept on, or have access at all times to, a lying area (see E15) of solid construction (i.e. not perforated), bedded to a sufficient extent to avoid discomfort

and either sloped to provide drainage or bedded to a sufficient extent to provide a dry lying area. It must be of sufficient size to accommodate all pigs together lying on their sides.

E13
In service pens, the whole floor area must be kept dry or sufficient bedding provided to give an adequate grip during service, and the pens must be large enough to allow courtship and mating.

Space allowances

E14
Pigs must always be provided with a total floor space no less than 1.5 times the (thermoneutral) lying area.

E15
The minimum bedded space allowances for growing pigs are as follows:

Live weight (kg)	(lbs)	Lying area (m^2)	(ft^2)	Total area (m^2)	(ft^2)
10	22	0.10	1.1	0.15	1.6
20	44	0.15	1.6	0.22	2.4
30	66	0.20	2.2	0.30	3.2
40	88	0.26	2.8	0.40	4.3
50	110	0.31	3.3	0.47	5.0
60	132	0.36	3.9	0.55	5.9
70	154	0.41	4.4	0.61	6.6
80	176	0.45	4.8	0.67	7.2
90	198	0.47	5.0	0.71	7.6
100	220	0.50	5.4	0.75	8.1

As a guide, sows should be given a minimum total floor space of 37.6ft^2 (3.5m^2)/sow for mature adults, and 28.9ft^2 (2.5m^2) /sow for first and second parity animals, though this may be fractionally altered by exception with the agreement of the Freedom Food Assessor. Lying area should be at least equal to the square of the length of the pig, which roughly equates to a minimum of 5.4ft^2 (.5m^2) for each adult sow.

E16
Adult boar pens must be of such dimensions so as to enable animals to turn around easily and lie fully stretched. Service pens must be large enough to allow for the complete expression of courtship behavior.

E17
Extra space may be required to allow pigs to lie apart in hot conditions, together with systems of ventilation or other heat remediation (drippers, misters, cooling mats, evaporative coolers, wallows) to maintain the pigs' temperatures below upper critical levels.

E18
The pig must be free to turn around without difficulty at all times.

Free Farmed does not allow individual stalls (except for hospital pens) or tethers for pigs and producers will not be accepted in the Program until they have alternative housing systems.

E19
Pigs must not be closely confined or restrained except in the following circumstances, and even then only for the shortest period of time necessary:

1. For the duration of any examination, routine test, blood sampling, treatment or operation carried out for veterinary purposes.

2. While they are being fed on any particular occasion.

3. For the purpose of marking, washing or weighing.

4. While accommodation is being cleaned.

5. During artificial insemination.

6. While they are awaiting loading for transportation.

E20
Pigs must be kept in stable groups with as little mixing as possible. However, subdivision is permitted as pigs grow.

E21
Where sows and gilts are kept indoors, aggressiveness can present a severe problem. Facilities in which animals can feed without undue interference from other animals must be provided.

E22
If pigs have fought to the extent that injury has resulted, a plan must be devised, written in the Veterinary Health Plan (see H1) and implemented to change environmental factors in order to prevent injury. Environmental enrichment, reduction in stocking density or changes in feeding regime will normally prevent injury due to fighting. Particular care must be taken with sows and gilts kept in groups.

Farrowing Systems

E23
A sow must be housed in a farrowing environment that is bedded and allows her to turn around. Farrowing crates are not permitted. Established farrowing systems such as the turn-around crate, slopped farrowing pen and outdoor pastures with huts are all acceptable substitutes for the farrowing crate. Farrowing Pens should be at least (5 x 7 ft) 1.5 x 2.1m. 10ft x 10ft, 3 x 3 m is better but a pen of this size must have at least $8ft^2$ ($.8m^2$) of protected area for piglets (zone heated).

E24
Sows must be kept in the farrowing area for at least 21 days after farrowing.

E25
Sows must be settled into clean, comfortable farrowing quarters before the piglets are due to be born. Caretakers must be experienced and competent in the techniques of farrowing.

E26
Farrowing quarters must have some form of protection for piglets. A temperature suitable for piglets must be maintained by provision of supplementary heating.

> The earlier the weaning age of the piglets, the greater the chance of them suffering from welfare problems; therefore, a more careful system is required with respect to management and nutrition of piglets.

Environmental Enrichment

E27
Pigs are naturally inquisitive and must, at all times, have access to straw or other suitable media such as wood chips or sawdust for the expression of rooting, pawing, mouthing and chewing behavior.

E28
Where pigs develop stereotypical behavior or abnormal behaviors that injure other pigs, eg. tail, flank, ear, or vulva biting, they must immediately be given additional stimuli to encourage foraging. When such incidents occur the caretaker must seek ways of avoiding/eliminating the problem. Each incident must be recorded, together with action taken, in the farm Log Book.

Avoidance/reduction of stereotypic or abnormal behavior may be aided by topping up foraging substrate daily, by scattering whole grain or feed pellets not less than twice weekly, or by otherwise sustaining foraging behavior in order to channel the animals' motivations away from abnormal behavior. Adding bulk to diets may also reduce abnormal behaviors near feeding time in limit fed animals.

E29
If abnormal behaviors develop repeatedly in any particular pen a program of modification and enrichment must be agreed with the veterinarian and the Free Farmed Assessor, implemented promptly, and pursued until the problem is overcome.

E30
Pens must not be sited or constructed in such a way as to isolate any pig from the sight, sound or odor (expect for quarantine) of other pigs. Sick or injured pigs may be isolated temporarily for treatment or consultation with the veterinarian.

Lighting

E31
Where pigs are housed, adequate lighting, whether fixed or portable, must be available to enable them to be thoroughly inspected at any time.

E32
Housed pigs must have access for the normal period of daylight hours to an area designed to be lit to a level of at least 50 lux at pig eye level (50 lux is bright enough to allow a person of normal eyesight to read standard newsprint without difficulty).

Outdoor Housing

E33
For extensively kept pigs during winter, a windproof and waterproof shelter must be accessible which has sufficient space to provide a lying area for all pigs and a sufficient supply of dry bedding material.

E34
For summer conditions, a shaded area must be accessible which has sufficient space to allow all pigs to lie down simultaneously and to lie apart from each other if they wish to. Wallows, drips or sprinklers must be provided. Consideration of local and state environmental regulations must be undertaken to determine location of outdoor units and animal stocking densities.

MANAGEMENT

A high degree of caring and responsible management and stockmanship is vital to ensure good animal welfare. Managers must be thoroughly trained, skilled and competent in animal husbandry and welfare, and have a good working knowledge of their system and the livestock under their care. A predictable daily management routine must be provided to pigs.

Managers

M1
Managers must ensure that all caretakers have a copy of the AHA Guidelines for Swine and are familiar with, and understand the content

M2
Managers must:

1. Develop and implement a suitable training program for caretakers with regular updates and opportunities for continuing professional development.

2. Develop and implement plans and precautions to cope with emergencies such as fire, flood, or interruption of supplies.

3. Provide an Emergency Action Board adjacent to a telephone highlighting the procedures to be followed by those discovering an emergency such as fire, flood, or power failure.

4. Ensure that the Veterinary Health Plan (see H1) is implemented and regularly updated, and that the required data is recorded appropriately.

5. Maintain and make available to the Free Farmed Assessor, records of production data and use of medication. These records must include documentation on all incoming and outgoing stock on the farm as well as types and quantities of medicines used.

6. Develop and implement a transport plan which includes a method of identification of animals (see H11) and minimizes waiting time and regrouping of pigs.

7. Develop a plan for emergency euthanasia of any casualty pig.

Caretakers

M3
Caretakers must understand the times and circumstances in which pigs are prone to welfare problems in their own unit and must be able to demonstrate their competence in recognizing and dealing with these problems.

M4
Prior to being given responsibility for the welfare of livestock, caretakers must be given proper training for their specific area of responsibility. All caretakers must be able to:

1. Recognize signs of normal behavior, abnormal behavior and fear.
2. Recognize signs of common disease and understand their prevention and control, and know when to seek veterinary help.
3. Have a knowledge of body condition scoring.
4. Understand the functional anatomy of the normal foot, its care and treatment.
5. Have knowledge of farrowing and the care of the newborn piglet.
6. Have knowledge of humane methods of handling and loading.

M5
Caretakers must be able to demonstrate competence in handling animals in a positive and compassionate manner. Caretakers must also be able to demonstrate their proficiency in procedures which have the potential to cause suffering e.g. injections, clipping the tips of incisor teeth, tail docking, ear notching, and castration.

Handling

M6
Pigs must be frequently and considerately handled by the caretakers, in order to reduce fear and improved welfare and management in general terms.

M7
Pigs must be handled quietly and firmly, with care to avoid unnecessary pain or distress. They must not be pulled or dragged by the tail, ears or limbs. Use of electric prods is prohibited except where animal and human safety is in jeopardy and is the means of last resort. Pig paddles and sorting boards can be used in an appropriate manner.

Identification

M8
Where it is necessary to mark pigs for permanent identification, ear notching, ear tagging, slap marking and tattooing are permissible. These operations must be carried out by a trained, competent caretaker, using properly maintained instruments. Ear notching must be done before piglets are 5 days of age.

Equipment

M9
When equipment is installed which affects animal welfare, stock-keepers must be able to:

1. demonstrate an ability to operate the equipment;
2. demonstrate the ability to carry out routine maintenance;
3. recognize common signs of malfunction;
4. demonstrate knowledge of action to be carried out in event of a failure;
5. understand and use (OSHA) protective equipment as needed.

M10
All automatic equipment must be thoroughly inspected by a caretaker, or other competent person, not less than once each day to check that there is no defect in it. Where a defect is found in the automatic equipment:

1. the defect must be rectified immediately; or
2. if this is impracticable, such measures must immediately be taken (and must be maintained until the defect is rectified) as are required to safeguard the livestock from suffering unnecessary pain or distress as a result of the defect.

M11
Where the automatic equipment includes a ventilation system, the system must contain:

1. an alarm which will give adequate warning of the failure of that system to function properly (and will operate even if the principal electricity supply to it has failed);

2. additional equipment or means of ventilation (whether automatic or not) which, in the event of such a failure of the ventilation system, will provide adequate ventilation so as to prevent the livestock from suffering unnecessary distress as a result of the failure; or

Inspection

M13
Caretakers must inspect their livestock and the equipment upon which such stock depend at least twice daily and record observations and action taken.

HEALTH

Livestock must be protected from pain, injury and disease. The environment in which livestock are housed must be conducive to good health. All producers must develop a health plan in consultation with their veterinarian.

H1
All pig units must have a written Health Plan that is regularly updated by the attending veterinarian, and must be available for examinations by the Free Farmed Assessor.

H2
All units must enroll in trichinae and toxoplasmosis certified health status as it becomes available and be certified as pseudorabies- and brucellosis-free.

H3
All sudden deaths, disease outbreaks, and pigs humanely killed as unfit, must be recorded and reported to the veterinarian, investigated appropriately, and the outcome and action recorded.

H4
Herd performance data must be continuously monitored for signs of disease or production disorders. If any herd performance parameters fall below the tolerance limits identified in the Health Program, the veterinarian must be informed and the Health Program revised to try to remedy the problem.

H5
Replacement animals brought in from other sources must be quarantined and/or appropriately treated before integration. Animals must be tested negative for Porcine Reproductive and Respiratory Syndrome (PRRS), brucellosis, and pseudorabies.

H6
Provisions must be made for the segregation and care of sick and injured animals. Any injured, ailing or distressed pig must be segregated, treated without delay and veterinary advice sought when needed or, if necessary, such animals must be humanely killed according to NPPC euthanasia guide.

Urine and dung from hospital pens for sick and injured animals must be disposed of separately without the risk of spreading infection to other stock. Pens must be constructed to facilitate effective cleaning and disinfection of surfaces and the possible removal of a carcass from the box.

H7
If abnormal behavioral activities develop repeatedly in any particular pen, a program of modification and enrichment must be agreed together with the attending veterinarian and the Freedom Food Assessor and pursued until the problem is overcome.

All federal and state health and disease monitoring regulations must be complied with.

H8
All practical measures must be taken to prevent or control external and internal parasitic infestation.

H9
Close attention must be given to the condition of the feet, which must be regularly inspected for signs of abnormal wear, excessive growth or infection. An action plan for dealing with lameness and foot problems should be included in the Health Plan.

H10
The only potentially injurious husbandry procedures which are allowed under the AHA Welfare Standards, are as follows (except those done for therapeutic reasons by a veterinarian):

1. Needle teeth of newborn pigs may be trimmed, as early as possible within the first 48 hours of life, or in the case of weak or sick piglets, within 3 days of birth. This must only be carried out by a trained and competent person. No more than the first third of the tooth should be removed.

2. Ear notching, ear tagging, slapmarking and tattooing are permissible. Ear notching must be done within the first five days after birth.

3. Tail docking is permitted.

Tail docking is against the principles of The AHA Standards. However, at the present time it is accepted that it may be necessary to alleviate the pain and suffering caused by tail biting. As soon as enough information is available regarding husbandry methods which prevent tail-biting outbreaks, the practice of tail docking for preventative reasons will not be permitted within the Free Farmed Program.

5. Castration of pigs is permitted but must be done before pigs are 7 days of age. Castration must be done by a trained and competent persons using sanitized equipment.

6. The trimming of tusks in boars may be undertaken by the attending veterinarian, or other competent person, in order to ensure the safeguarding of other animals and the caretakers from injury.

All of these practices must only be performed in a way which minimizes suffering and by trained and competent caretakers.

H11
Nose rings are prohibited.

Casualty animals

H12
Each farm must have provisions for humane slaughter or euthanasia without delay, of casualty pigs, either by on-farm methods carried out by a named, trained, competent staff member, or a licensed veterinarian. Acceptable procedures are those listed in the NPPC Euthanasia Guide; these procedures should be posted in each building that houses animals.

If there is any doubt as to how to proceed, the veterinarian must be called at an early stage to advise whether treatment is possible or whether humane slaughter is required to prevent suffering. If an animal is in severe pain that is uncontrollable, then the animal must be promptly and humanely euthanized.

H13
Pigs must have water up to the point of transport. Pre-transport fasting is recommended to prevent vomiting during transit. Food must be withdrawn at least 4 hours before loading onto transport, but fasting must not exceed 18 hours prior to slaughter.

H14
All carcasses must be disposed of through a USDA inspected facility or a state licensed rendering facility or must be buried or burned. A record must be kept of the name of the outlet through which all such carcasses are disposed, unless they are disposed of on farm. All local, state and federal environmental regulations must be followed for on farm burial.

The aim of the Free Farmed Program is to adopt a birth to slaughter policy. AHA recognizes that at the present time this is not always possible, but will continue to work towards this objective.

ANNEXE 2 :

STANDARDS POUR L'ÉLEVAGE ET LA MANIPULATION DES PORCS DU PROGRAMME FREEDOM FARMED (SPCA CERTIFIED)

BC SPCA

FREEDOM FARMED

STANDARDS FOR THE RAISING AND HANDLING OF PIGS

Prepared by Laura Mowbray, BC SPCA – Farm Animal Standards Coordinator

SPCA CERTIFIED

freedomfarmed.com

TABLE OF CONTENTS

1.0 INTRODUCTION

The BC SPCA Freedom Farmed Program is a niche marketing program aimed at promoting the development and implementation of alternative animal production systems that have enhanced animal welfare standards, in all facets of the agricultural industry, while providing a marketing system that benefits BC producers.

The program standards are based on the "Five Freedoms" used by Freedom Food Ltd. in the U.K., which maintains that animals should have:

1. Freedom from hunger and thirst
2. Freedom from discomfort
3. Freedom from pain, injury or disease
4. Freedom from fear and distress
5. Freedom to express normal behaviour

Animal products produced under the BC SPCA's Freedom Farmed Program are certified to be from animals raised, handled, transported and slaughtered according to enhanced animal welfare standards. These standards will be continuously updated and amended by the Species Advisory Committees as new scientific information and improved husbandry practices are developed and proven to improve animal welfare.

The key components of the program for swine are:

- Sufficient space and adequate environment to move freely and exhibit natural behaviours
- Environment enrichment plan
- Herd Health Plan
- Feed and water are free of all unnecessary additives
- On-Farm HACCP Plan

The following standard is intended to **complement** Agriculture and Agri-Food Canada and the Canadian Agri-Foods Research Council's *Recommended Code of Practice for the Care and Handling of Farm Animals - Pigs*. All participants involved in the Freedom Farmed Program are expected to have a thorough understanding of and adhere to the *Recommended Code of Practice* and the standard set out in this document.

The BC SPCA Standard for the Raising and Handling of Pigs has been written in consultation with specialists in the fields of animal science, welfare and production, agriculture, ethology, and veterinary medicine. However, no endorsement by the members or their respective organizations is implied.

2.0 FEED and WATER

2.1 Feed

a) Feed must be nutritionally complete and provided each day in sufficient quantity to maintain hea and vigour of each group of animals (Refer to current NRC requirements as guideline).

b) Sudden changes in type and quantity of feed should be avoided.

c) Ingredient breakdown and nutrient analysis of feedstuffs for each group of animals (i.e. weaners, growers, sows) must be made available to the Program Assessor or Program Monitor.

d) A list of any feed supplements or additives used (other than vitamin/mineral mixes) must be presented to the Program Validators/Auditors.

e) All pigs that are fed a restricted diet must have continuous access to straw or other suitable roughage.

f) Feeders must be kept clean of manure, mouldy feed and other contaminants.

g) For restricted feeding, enough feeding space must be provided to allow all pigs to feed simultaneously.

h) For ad lib feeding there is to be a maximum of:

6 pigs per feed place - when using a dry feeder with no full head barriers between feeding places

10 pigs per feed place - where there are full head barriers

12 pigs per feed place - where there is the opportunity to mix water with the feed (wet/dry feeders)

*A **feed place** is described as space required by a single pig while eating. (1.1 times shoulder width)

2.2 Water

a) Fresh clean water must be provided at all times.

Box#1: Newly weaned sows housed in an unsatisfactory facility may over-consume water out of boredom or frustration. Modifying and enhancing their environment helps reduce this behaviour. See Section 5.1 for possibl solutions. If appropriate measures have been taken and newly weaned sows still exhibit this behaviour, water supply may be restricted to set intervals during the day.

b) Water containers and nipple drinkers must be checked daily to ensure they are clean and working properly.

c) A list of any additives to drinking water must be presented to the Program Validators/Auditors.

d) Water bowl/trough space must be adequate to avoid competition and to allow 1 place per 10 pigs.

3.0 ENVIRONMENT

3.1 General Housing

a) Housing in both indoor and outdoor systems must be constructed and maintained, ensuring there are no areas likely to cause sickness, injury, or distress to the animals.

b) Tie stalls, crates and other types of **confined housing*** systems are prohibited (except for farrowing and nursing sows).

c) All pigs must have access to well maintained and well drained bedding – fully slatted floors are **NOT** sufficient.

d) For group-housed animals, it is recommended that specific areas be provided into which bullied animals might escape.

*** confined housing**: any housing system that prevents an animal from freedom of movement (i.e. turning around, stretching, standing and lying comfortably)

3.2 Sow Housing

a) During farrowing, sows must be provided with a non-slip, hygienic floor surface that does not cause injury to the sow or her piglets. It is preferable that bedding or carpet be added to any solid floor surfaces of the farrowing facility.

b) Sows must not be confined in crates for more than 28 days after farrowing.

c) Farrowing crates must be long enough to allow the sows to lie in a fully outstretched comfortable position.

d) Any crossbar at the top of a crate must be a minimum of 15 cm (6 in) above the back of a sow when standing in the normal position.

e) Farrowing crate width at the top must not touch either sides of the sow when standing in a normal position while the bottom must allow for comfortable nursing space.

Box#3: The use of farrowing crates goes against the principles of Freedom Farmed standards; therefore, the BC SPCA is in favour of and encourages commercial trials of less-confining farrowing systems. When alternatives to farrowing crates have been commercially proven, members of the Program will be required to phase out conventional crates.

f) As a guide, sows (when not farrowing) should be given a minimum total floor space of 3.5 m^2 (37 sq ft) /mature adult and lying area should be at least equal to the square of the length of the pig. (Minimum 1.5m^2 (16 sq ft) /sow).

3.3 Piglet Housing

a) Farrowing quarters must have some form of protection from the sow for the piglets.

b) Each farrowing area must contain creep areas with sufficient surface area to allow all piglets to lie together in the protected area and move around without difficulty.

c) An easily accessible, separate water source must be provided to piglets in the creep areas.

d) Creep areas must be provided with supplementary heating to ensure a thermally comfortable environment.

3.4 Ventilation and Temperature

a) All pigs must have access to a thermally comfortable environment at all times. See *Recommended Codes of Practice - Pigs* p.9 for more details.

b) For summer conditions, cooling systems must be provided.

c) Ensure effective ventilation rates in buildings to avoid high humidity, accumulation of noxious gases, condensation and draughts, as pigs can be susceptible to respiratory diseases and chilling, especially when young.

d) Aerial contaminants must not reach a level at which they are noticeably unpleasant to a human observer. Specifically, at pig eye level:

Inhalable dust must not exceed **10mg/m3**

Ammonia must not exceed **25 ppm**

3.5 Lighting

a) Lighting must be adequate in housing facilities to allow for thorough inspection of stock at any tim (100 lux at pig level).

b) Provision of natural light is recommended.

c) Light must not be provided for longer than 16 hours or the prevailing outdoor day length; which ever is longer.

3.6 Space Allowances

a) All animals must have sufficient space and freedom to lie down, stand up, stretch their limbs and turn around freely (except sows during farrowing/nursing).

b) Adequate space must be provided for all pigs to lie down and rest comfortably in bedded areas at tl same time.

c) Indoor space allowances must consider the group size, age, sex, weight, and behavioural needs (e.g. expression of courtship and mating for mature and maturing animals) plus allowances for feed bunk and water trough.

Minimum space allowances per growing pig are as follows:

	Live weight		Total area	
	kg	lb	m^2	ft^2
Weaners	22 - 35	48 - 77	0.5	5.0
Growers	35 - 70	77 - 154	0.75	8.0
Finishers	70+	154 +	1	10

*All minimum standards are based on at least 10 pigs per pen. Where there are fewer than 10 pigs per pen, add 10% more space per pig.

d) Where partial slats are used, the total area should be increased to allow all pigs to lie comfortably in the resting area at the same time.

e) Pigs may require more space during warm weather conditions.

3.7 Outdoor Paddocks/Range

a) During winter, a windproof and waterproof shelter must be provided and accessible to provide lying space for all pigs.

b) For summer conditions, a shaded area must be accessible which has sufficient space to allow pigs to lie down simultaneously and to lie apart from each other if they wish to. Wallows, drips or sprinklers must be provided.

c) Steel pipe, smooth wire and electric fencing are the preferred types of field fencing.

d) Electrified barbed wire fencing is prohibited.

e) For ranges, sustainable range management practices, such as rotational grazing, must be employed.

4.0 HEALTH and SANITATION

4.1 Herd Health Plan

a) A **Herd Health Plan*** must be implemented and regularly updated by a veterinarian.

b) All pigs must be vaccinated as required by law and as appropriate to each farm.

c) Routine lab testing for diseases and parasites should be performed

d) Complete and accurate health and breeding records must be kept for each animal.

e) All deaths, disease and euthanized pigs must be recorded. Increased levels of disease or mortali must be reported to the veterinarian, investigated appropriately and the outcome and action recorded.

f) Complete and accurate records must be kept of all vaccines, drugs, and treatments bought and u:

g) Herd must be monitored frequently (minimum 2 times/day) for prompt removal of injured or sic animals for treatment.

h) Provisions must be made for the segregation and care of sick and injured animals. Pens must be constructed to facilitate effective cleaning and disinfection of surfaces.

i) Pharmaceutical products may only be used to treat specific illnesses or conditions.

j) Administration of pharmaceutical products to enhance growth or production is prohibited.

* **Herd Health Plan**: the procedures that are followed on-farm:
- to ensure good herd health and
- to address incidences of disease.

4.2 Sanitation

a) Bedding, water, and feed containers must be clean and well maintained.

b) Barns and alleyways must be cleaned regularly and adequately.

c) Hospital pens and farrowing and nursery pens and crates must be sanitized between litters or gro

4.3 Canadian Quality Assurance Program – An On-Farm HACCP Program (*)

(HACCP is an internationally recognized approach to food safety)

a) An On-Farm HACCP (Hazard Analysis Critical Control Point) based program has been develope by the Canadian Pork Council and must be implemented for certification. The seven principles a

1. Conduct a hazard analysis. Identify the hazards and prepare a list of steps in the process whe significant hazards occur and describe the preventive measures.
2. Identify the Critical Control Points (CCPs) – the points or steps – in the production process tl can be controlled to prevent, eliminate or reduce the hazards.
3. Establish the critical limits, which must be met to ensure that the CCP is under control.
4. Establish a system of regularly scheduled observations or tests to monitor each CCP.
5. Establish corrective action to be taken when monitoring indicates that a particular CCP is not under control.
6. Establish procedures for verifying that the HACCP system is working correctly.
7. Establish effective record keeping procedures that document the HACCP system.

b) The keys to a food safety program (as stated in "An Introduction to On-Farm Food Safety Practices") are:

1. A thorough knowledge of the hazards and risks present on our farms.

2. A good understanding of the Good Management Practices (GMPs) recommended for our commodity and for our type of operation.
3. An effective plan, tailored to our unique operation.

Box #4: Currently, On-Farm Food Safety Practices are being developed across various agricultural commodities. Until they are complete, producers are expected to be aware of HACCP concepts but are not required to implement a HACCP plan until the details are determined.

*From "An Introduction to On-Farm Safety Practices," Agriculture and Agri-Food Canada, 1999.

5.0 MANAGEMENT

5.1 General

a) All farm records must be kept up to date. See Appendix A for a list of all record keeping requirements.

b) Environmental enrichment to avoid/reduce stereotypic or abnormal behaviour must be provided.

Recommendations:

- Provision of material for oral manipulation (e.g. scattering feed throughout pen)
- Topping up bedding/foraging substrate regularly

c) Constancy of individuals in groups with mixing kept to a minimum is recommended. Splitting of groups is acceptable as pigs grow.

d) When farrowing assistance is required, acceptable veterinary practices must be observed.

e) Use of pharmaceuticals for induction of farrowing is permitted only for benefit to the animal and must only be done under the advice of a veterinarian.

f) All equipment used to raise and handle Freedom Farmed livestock must certified under the program.

Box #5: Recognizing that Biotechnology may have positive and negative impacts on animal welfare and agriculture, the BC SPCA will approve or disapprove individual technologies once sufficient testing has occurred.

5.2 Piglet Management

a) Piglets must not be weaned from the sow before 3 weeks of age, unless the welfare or health of the sow or piglets would otherwise be adversely affected.

b) In the case where a sow is unable to nurse all or any of her litter, a practical cross-fostering program should be adopted.

Box#6: Fostering should occur within the first 6 to 24 hours after farrowing to minimize disruptions to an established teat order. In the event where a sow is unable to nurse a litter for the minimum 3 weeks, all piglets in the litter could be fostered to a sow that is weaning her own litter provided she has an adequate milk supply liquid milk replacer could be used to feed the piglets or a Segregated Early Weaning (SEW) procedure could be adopted.

c) If castration is performed, it must be done no later than 14 days old using acceptable procedures a techniques.

d) Needle teeth trimming is permitted but must be done as early as possible within the first 24 hours life by a trained and competent person.

Box#7: Some suggestions for needle teeth trimming include:

1) Leaving the needle teeth of the smallest piglets (1 or 2) in a litter intact offering an advantage in establishing teat order.

2) Trimming the distal 1/3 to 1/2 of the tooth is sufficient to provide protection and leaves the tooth less susceptible to infection compared to trimming the tooth down to the gum line.

3) It may not be necessary to trim the teeth of small litters (<10 piglets).

e) Tail docking goes against the principles of Freedom Farmed standards and is not permitted unless every precaution that has been taken to avoid tail biting fails. At the present time it is accepted th tail docking may be necessary to prevent further pain and suffering caused by tail biting.

Box#8: Requests for permission to tail dock, together with reasons, must be submitted in writing to the BC SPCA, who will contact you to discuss the circumstances and may visit the unit.

5.3 Sow Management

a) Head and shoulder barriers or individual feeder stalls are recommended for group-housed sows.

b) See Section 5.1 General Management for other recommended management practices.

5.4 Boar Management

a) Boars must be housed so that they can turn around easily and lie fully stretched.

Total lying area must be at least $7.5m^2$ (80 sq ft).

Service area must be at least $10.5m^2$ (113 sq ft).

b) Boars must be fed an adequate and appropriate diet according to their nutritional and performance requirements.

c) Boars must be tested for venereal and other diseases prior to purchase.

5.5 Cull Animal Management

a) All cull animals must be adequately cared for right up until slaughter, shipping or euthanasia.

b) Animals too sick or injured to be transported must be humanely slaughtered on-site and disposed of appropriately (see Section 9.2).

5.6 Staff

a) All farm staff must have access to a copy of the BC SPCA's Freedom Farmed Program *Standards for the Raising and Handling Pigs* and the *Recommended Code of Practice for the Care and Handling of Farm Animals – Pigs:*

b) All farm staff with responsibilities for pigs must be knowledgeable of the normal and abnormal behaviours, common diseases, and biological and psychological needs of pigs, as well as appropriate management techniques, and skills in handling pigs and performing common procedures.

c) An on-farm training program must equip farm staff with knowledge and skills essential to perform their job and provide access to new information on animal husbandry methods and welfare issues.

5.7 Equipment and Emergency Preparedness

a) All equipment used to maintain the herd must be checked daily and cleaned regularly and any defect or malfunction corrected in a timely manner.

b) **Emergency back-up systems* and plans**** must be maintained up to date and tested regularly, especially for ventilation, feeding and watering equipment.

c) All fire prevention and detection devices and plans must be maintained up to date and tested regularly.

d) Emergency provisions for suitable drinking water and feed must be available in the case of a natural disaster.

e) Regular maintenance of waste storage facilities is essential so as to prevent groundwater, stream contamination and other such environmental disasters in the event of flooding.

* **Emergency back-up systems**: back up generators, and any other equipment used in the event of a power failure.
****Emergency back-up plans**: procedures to be followed in the event of a disaster, power or other mechanical failure.

5.8 Animal Identification

a) All pigs must be identified before leaving the farm.

b) Ear-tags (metal and plastic), tattoos (slap marking), and microchips are acceptable methods of identification.

c) Ear notching is prohibited.

5.9 Pests and Predators

a) Humane methods must be used to control pests.
b) Proper management techniques must be used to control fly populations in indoor and outdoor settings.
c) Biological and physical methods of fly control are encouraged wherever possible (e.g. parasitic wasps, provision of swallow and bat nests).
d) Animals must be protected from predators and rodents in barns and on range.

Box#9: Humane methods of pest control include devices or systems that minimize suffering and/or cause a quick death. Methods of pest control that prolong suffering (starvation, hypothermia, or excessive discomfort) are unacceptable as are those that endanger non-pest animals. Glue boards for controlling rodent populations are strictly prohibited.

6.0 WASTE MANAGEMENT

6.1 Manure and soiled bedding must be removed regularly from all types of housing facilities (indoor a outdoor).

6.2 All pig by-products such as manure, bedding, and carcasses must be managed and disposed of in accordance with the criteria described in the *BC Code of Agricultural Practice for Waste Managem* under the *Waste Management* and *Health Acts* (see also *BC Agricultural Composting Handbook*).

7.0 TRANSPORT and HANDLING

7.1 Pigs that are visibly injured before loading must not be transported but humanely slaughtered or treated immediately (See Section 9.2).

7.2 If an animal becomes unfit for travel during transit, it must be treated immediately or humanely slaughtered at the nearest possible location or immediately on site. (See Section 9.2).

7.3 If possible, pigs should be transported directly from farm to final destination, not through sale yards auctions.

7.4 Animals must be collected and handled with care and in a manner that imposes the minimum possibl stress on the animals.

7.5 Producers, haulers, and slaughterhouse personnel must be familiar with the *Health of Animals Act a Regulations*, which regulate humane handling and transport of animals.

7.6 Transit time must not exceed 24 hours unless a minimum 5-hour rest period is provided (*Health of Animals Regulation* states that the rest period must be at least 5 hours, more if not all animals have had the opportunity to satisfy their feed and water requirements).

7.7 Pigs must be transported by BC SPCA approved haulers. See Box#11.

7.8 Use of electric prods is prohibited (except in an emergency situation where animal and human safety is in jeopardy and it is a means of last resort).

7.9 Pigs must have access to water up to the point of loading for transport.

7.10 Food can be withdrawn prior to transport for a maximum of 10 hours if transport time does not exceed 8 hours.

7.11 Shelter from wind and extremes of weather must be provided for pigs during transport.

Box #10: The Canadian Agri-Food Research Council has is developed a Transport Code - *Recommended Codes of Practice for the Care and Handling of Farm Animals – Transportation.* Livestock transporters are expected to follow them when transporting animals for the BC SPCA Freedom Farmed Program.

Box#11: The program recognizes the difficulty in finding approved haulers and processors. Initially, a producer will not be required to achieve this for certification. However, producers must ensure haulers handle animals according to the standards and do their best to ensure responsible transportation, understanding that approved haulers and processors will be required in the future.

8.0 HOLDING FACILITIES

8.1 Shelter from direct sunlight and adverse weather conditions must be provided.

8.2 Upon arrival at destination all animals must have immediate and adequate access to water (and feed if appropriate).

8.3 Adequate space must be provided for each group of animals.

8.4 See *Recommended Code of Practice for the Care and Handling of Farm Animals – Pigs* for more guidelines p.42/3.

9.0 SLAUGHTER and PROCESSING

9.1 Animals must be slaughtered at BC SPCA approved processing plant. See Box#11.

9.2 Appropriate on-site slaughter methods are lethal injection by a veterinarian or shooting with a firearm. The site of the shooting is where a line drawn from the left ear to the right eye intercepts a line drawn from the right ear to the left eye.

9.3 Animals must be treated humanely during shipping, holding, handling, and slaughter. See Box#10.

9.4 Processing facilities must develop a production plan that includes a clear audit trail for the receipt of the animals to the release of product showing:

- All inputs
- All steps in handling animals
- Decontamination processes and monitoring
- Sanitation practices
- Packaging
- Storage
- Product identification as defined and required by the appropriate certification and regulatory agencies

9.5 It is highly recommended that processing plants implement a HACCP program.

9.6 See *Recommended Code of Practice for the Care and Handling of Farm Animals – Pigs* for more details p.43/4.

9.7 Processing facilities should appoint at least one employee as a specially trained animal welfare office:

10.0 BIOSECURITY

10.1 Farms must have a biosecurity plan to minimize risk of introducing disease to herd developed with th assistance of a veterinarian.

10.2 At minimum, all guests, personnel, monitors, and assessors must sign in, are prohibited from visiting more than one pig farm on the same day and should wear appropriate footwear and clothing (i.e. plastic booties or disinfected rubber boots, clean cover-alls, etc.) and follow protocols described in th biosecurity plan.

11.0REFERENCE MATERIAL

The following Publications can be obtained from national commodity group and/or specialized provincial organizations:

Recommended Code of Practice for the Care and Handling of Farm Animals – PIGS
and
CARC Transport Code 2000
Developed and updated by Canadian Agri-Food Research Council.
CARC
Building 60, Heritage House, Central Experiment Farm, Ottawa, ON K1A 0C6
Phone: 613-234-2325
Fax: 613-234-2330
Can also be obtained from national commodity group and/or specialized provincial organizations.
Visit website: www.carc-crac.ca for more information.

Health of Animals Act
Available through Canadian Food Inspection Agency (CFIA)
Online at: www.cfia-acia.agr.ca/english/reg

Code of Agricultural Practice for Waste Management
and
BC Agricultural Composting Handbook
Order forms available from BC MAFF Resource Management Branch
1767 Angus Campbell Road, Abbotsford, BC V3G 2M3
Phone: 604-556-3100
Fax: 604-556-309

Canadian Quality Assurance (CQA) – On-Farm HACCP Based Program for Pig Producers
Application forms available from BC Pork Producers Association
2010 Abbotsford Way, Abbotsford, BC V2S 6X8
Phone: 604-853-9461
Fax: 604-853-0764

BC Certified Organic Production Operation Policies and Farm Management Standards
Paper copies of the standards are available from COABC Office:
#8-A 100 Kalamalka Lake Road, Vernon, BC V1T 9G1
Phone: 250 260-4429
Fax. 250 260-4436
E-mail: coabc @bcgrizzly.com
Copies may also be obtained by contacting local member associations or from the BCMAFF website.
Online at: www.agf.gov.bc.ca/foodind/organic/orgtoc.htm

Also consulted were:

RSPCA Freedom Food - Welfare standards for pigs

Freedom Food Ltd
The Manor House
Causeway, Horsham, West Sussex RH12 1HG
Phone: 01403 223154
Fax: 01403 211514

Appendix A

On-farm records must illustrate:

a. The **Farm System Design Plan** *,
b. The Herd Health Management Plan,
c. The Farm HACCP Plan,
d. A complete audit trail from farm to final sale,
e. Sources of all purchases and sales of pigs,
f. Breed and number of all stock,
g. Feed suppliers, feed ingredients and supplement records,
h. Health care records and mortalities,
i. Year-end inventories of pigs,
j. Medication inventories and purchases. Receipts may be adequate.

2. A notice containing the following information must be displayed and made available to the Program Monitors and Assessors at or near the entrance to all buildings housing livestock:

a) Total number of animals and/or space provided per animal
b) Drinker and feeder space provided

* A **Farm System Design Plan** is a map of the farm illustrating all areas (indoor and outdoor), exits, emergency equipment and evacuation routes.

Using the recording keeping forms that are provided with this manual is optional. It is acceptable to use the Quality Assurance forms provided with HACCP Guides and/or any record keeping forms that have already been developed for the operation. Applicants that do not have a consistent record keeping system are encouraged to use and implement the Freedom Farmed forms upon receiving them in the application package.

Upon obtaining certification, Members will be expected to retain all records between one Annual Assessment and the next (minimum one year).

Appendix C

Conversion Table

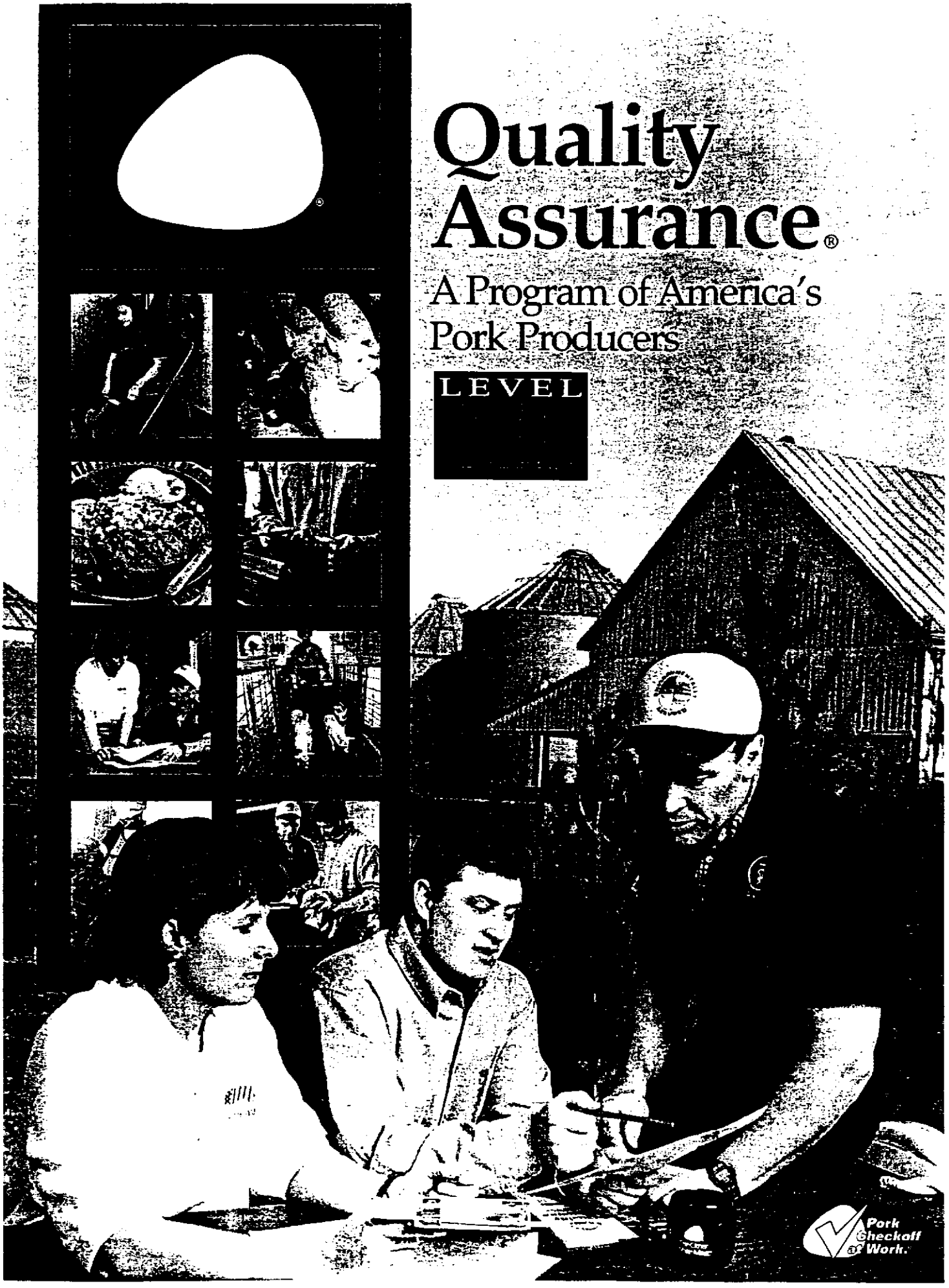
Multiply an imperial number by the conversion factor shown to get its equivalent in metric units.

Divide a metric number by the conversion factor shown to gets its equivalent in imperial units.

Imperial Units	Approximate conversion factor	Metric Units
Length		
inch	25	millimetre (mm)
foot	30	centimetre (cm)
yard	0.9	metre (m)
mile	1.6	kilometre (km)
Area		
square inch	6.5	square centimetre (cm^2)
square foot	0.09	square metre (m^2)
square yard	0.836	square metre (m^2)
square mile	259	hectare (ha)
acre	0.4	hectare (ha)
Volume		
cubic inch	16	cubic centimetre (cm^3, mL, cc)
cubic foot	28	cubic decimetre (dm^3)
cubic yard	0.57	cubic metre (m^3)
fluid ounce	28	millilitre (mL)
pint	0.57	litre (L)
quart	1.1	litre (L)
gallon (Imp.)	4.5	litre (L)
gallon (U.S.)	3.8	litre (L)
Weight		
ounce	28	gram (g)
pound	0.45	kilogram (kg)
short ton (2000 lb)	0.9	tonne (t)

ANNEXE 3 :

EXTRAIT DU PROGRAMME AMÉRICAIN QUALITY ASSURANCE PQA


Quality Assurance®
A Program of America's Pork Producers
LEVEL
Pork Checkoff at Work.

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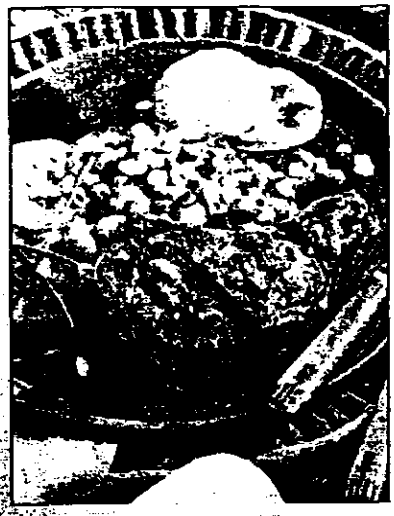


Quality Assurance®

Introduction

Perceived safety, wholesomeness, and nutritional value of food products influence consumer buying decisions. If consumers are not confident that a product is of the highest quality they have come to expect, they will not purchase it.

In 1989, pork producers created the PORK QUALITY ASSURANCE® Program (PQA) to help American pork producers meet today's consumer demands for quality and safety. Since that time, PQA materials have been revised periodically to provide producers timely, accurate information for producing safe, wholesome pork.

This revision builds on previous PQA materials to assist producers in developing a comprehensive management system to address the health and welfare of animals and the proper use of animal health products to prevent violative drug residues. In addition, this revision includes information about the Federal Government's rules and regulations for pork producers and explains how the National Pork Board incorporates these and other scientific principles into the PQA program.

As with previous materials, this manual outlines the ten Good Production Practices (GPPs) and offers suggestions about implementing each practice. The GPPs must be completed with a veterinarian, agricultural extension educator, or agricultural instructor as defined by the National Pork Board. Finally, this manual contains helpful sample forms and additional sources of information.

The entire pork industry will benefit from widespread producer commitment to the PQA program. Implementing PQA on every farm will help the industry protect or even expand its markets by reducing the risk of incidents that could erode consumer confidence in the safety, quality, and wholesomeness of pork.

Producer Comments about the PQA Program

Following are just a few comments from producers who have completed and use the PQA program.

"The Pork Quality Assurance Program provides producers with the most current information on the use of medications and feed additives. Information that would affect the safety of the pork we produce is provided. This certification allows our consumers to feel confident that the person who raises their food strives to produce the safest food possible."

Missouri producer

"By participating in regular update meetings to re-certify, I get the latest information to take back home to my operation. PQA is more than just lip service to our operation; we have actually seen where it affects our bottom line and implemented changes due to the education program. PQA makes a positive, pro-active statement to our consumers and own family members that we care about the food they consume."

Minnesota producer

"We use PQA as an educational tool on our farm. It has helped us lower our cost of production through a better veterinarian-client working relationship, and it tells the packer and consumer that we are concerned about food safety and producing a quality product."

South Dakota producer

"The PQA program is a good update and refresher course for producers to keep the standard of their operation in tune with other producers. It is also a valuable tool for assurances in the international market. It gives our trading partners the basics of our commitment to food safety."

Illinois producer

"The PQA program is excellent training for employees or anyone who works with pigs."

Iowa producer

Food and Drug Administration
5600 Fisher Lane
Rockville, MD 20857
800-INFO-FDA
(800-463-6332)
www.fda.gov

Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, D.C. 20460
202-260-2090
www.epa.gov

USDA Food Safety and Inspection Service
Washington, D.C. 20250-3700
www.fsis.usda.gov/

FSIS HACCP Hotline:
800-233-3935
(Press 2) or
402-221-7438 (Fax)

FSIS Meat and Poultry Hotline:
800-535-4555

The Pork Industry and PQA

The Current Regulatory System

The current regulatory system to help provide safe, wholesome food to consumers is a combination of rules and enforcement procedures established by several state and federal government agencies. Producers ultimately are responsible for providing a residue-safe product. While many animal health products are available over the counter, it is critical for producers to seek veterinarian involvement in medication decisions.

There are several federal agencies that help ensure the safety and wholesomeness of food products for consumers. They are the Food and Drug Administration (FDA), the Environmental Protection Agency (EPA), and the Food Safety and Inspection Service (FSIS).

- The FDA, which is part of the Department of Health and Human Services, is responsible for regulating medicated animal feeds and most animal health products. It approves the product, sets residue tolerance or action levels in edible tissues, and determines how drugs are to be administered in animals.

- The EPA sets tolerance levels for pesticides used in pork production. If a pesticide is applied to pigs or their immediate environment, then it is subject to regulations set by the EPA.

- The FSIS, which is part of the U.S. Department of Agriculture, inspects all pigs at federally inspected packing plants and examines plant sanitation. It conducts both routine residue monitoring and targeted food safety surveillance activities.

  Routine testing is conducted on randomly selected carcasses to detect tissue residues that exceed maximum levels allowed.

  Targeted testing is directed toward herds with a history of violative tissue residues or where there is some reason to suspect that there could be violative tissue residues, such as visible injection sites in the muscle at marketing.

Drug residues in pork can cause delays in marketing schedules and disruption of future production flow, which could result in direct financial loss for producers. Discuss with your educator the current FSIS policies regarding violative residues.

The Pork Quality Assurance® Program

Pork producers introduced the PQA Program in 1989 as an educational program. The program emphasizes 10 management practices for handling pigs and using animal health products during production. The ultimate goal of the program is to help producers ensure that quality pork is delivered to consumers.

The PQA Program is a voluntary program and is intended for all pork producers regardless of the size of their operation. The benefits of participating in the program include:

- Improved management practices.
- Use of systems and procedures that avoid violative drug residues.
- Reduced production costs.
- Increased awareness of food safety concerns.

The 10 Good Production Practices in the PQA program are based upon:

- The Hazard Analysis and Critical Control Point (HACCP) principles.
- The Food and Drug Administration's Compliance Policy Guide (CPG). CPG 7125.37 - "Proper Drug Use and Residue Avoidance by Non-veterinarians."
  This will be explained in greater detail on page 11 of this manual.

The PQA Good Production Practices (GPPs)

The guidelines of CPG 7125.37 are incorporated into the PQA program.

GPP #1 Identify and track all treated animals.

GPP #2 Maintain medication and treatment **records**.

GPP #3 Properly **store, label, and account** for all drug products and medicated feeds.

GPP #4 Use a valid **veterinarian/client/patient relationship** as the basis for medication decision-making.

GPP #5 **Educate** all employees and family members on proper administration techniques.

GPP #6 Use drug residue **tests** when appropriate.

GPP #7 Establish an efficient and effective herd **health management plan.**

GPP #8 Provide proper **swine care**.

GPP #9 Follow appropriate on-farm **feed processing** and commercial feed processor **procedures**.

GPP #10 Complete the Quality Assurance Checklist every year and the Education Card every two years.

Completing the PQA educational program with an educator will use a HACCP-like approach to supply the best quality animal in the most efficient manner.

Pork Quality Assurance®
Level III

Good Production Practices

The PQA program consists of ten Good Production Practices. You will find explanations of each practice and suggestions for their implementation. Several example recordkeeping forms with the type of information that should be tracked, a checklist that can be used for a self-assessment, and additional information sources about specific practices can be found in the Appendix.

Upon completion of the PQA program, submit the enclosed card to the National Pork Board for registration as a PQA producer.

For additional blank forms, visit the website www.porkboard.org.

You must complete and mail or fax your registration card to the National Pork Board every two years to maintain your PQA education status.

Pork Quality Assurance®
Level III

Good Production Practice #8:

Provide proper swine care.

Good Production Practice #8

Provide Proper Swine Care

PORK PRODUCER CODE OF PRACTICE

Producers take pride in providing proper care to the swine on their farms. They consider management and husbandry practices for good swine care to include the following:

- Providing facilities to protect and shelter pigs from weather extremes while protecting air and water quality in the natural environment
- Providing well-kept facilities to allow safe, humane, and efficient movement of pigs
- Providing personnel with training to properly care for and handle each stage of production for which they are responsible with no tolerance for mistreatment of swine in their care
- Providing access to good quality water and nutritionally balanced diets for each class of swine
- Observing pigs to make sure basic needs for food and water are being met and to detect illness or injury
- Developing herd health programs with veterinary advice
- Providing prompt veterinary medical care when required
- Using humane methods to euthanize sick or injured swine not responding to care and treatment and disposing of them properly
- Providing transportation that avoids undue stress caused by overcrowding, excess time in transit, or improper handling during loading and unloading

Good Production Practice #8

All producers are encouraged to keep themselves updated on advancements in the industry that can impact the animal's welfare. Make decisions based on sound production practices that consider the welfare of the pig and are founded on good scientific principles.

Look carefully at every animal every day.

The welfare of your pigs directly impacts their health, productivity, and product quality.

Swine Handling

When the animal's well-being is properly addressed, studies have shown that reproductive performance can increase, resulting in 1 to 2 more pigs per sow per year and improved rate of gain.

In addition, there are other factors on the farm, in transport, and at the packing plant that affect pork quality. The booklet "A System for Assuring Pork Quality" is available from the National Pork Board to give you more detail about how your control of genetics, nutrition, on-farm pig handling, and handling during transport affects pork quality. It includes specific recommendations that impact both the animal well-being and meat quality.

National Pork Board's videos 'Swine Handling for Pork Producers', and 'Swine Handling for Transporters', are excellent resources for learning more about handling and transporting pigs.

Improper handling can affect the carcass, causing:

- Bruising: Estimates show that bruising alone attributes to over $48 million dollars a year in trim loss.
- Pale, Soft, Exudative (PSE) Meat: PSE is caused by factors such as pigs with stress-susceptible genes, improper handling shortly before slaughter and poor carcass chilling. Consumers dislike the pale appearance, dry taste, and shrinkage during cooking.
- Dark, Firm, Dry (DFD) Meat: DFD occurs when pigs are stressed for long periods of time and fatigued when they reach slaughter. DFD meat is not desired nor purchased by customers, and can cost you and our industry money.

Good Production Practice #8

Provide Proper Swine Care

Human Contact

It is important that everyone who has responsibility for caring for your pigs is adequately trained and has the necessary animal husbandry skills to work effectively with your animals.

Following are some helpful tips:

- When moving, processing, or examining baby pigs, support them under the belly. Holding baby pigs close to your chest can make them feel more secure and will minimize struggling.

- When sorting in the barn, keep in mind that pigs don't understand the objective of your work. Remain calm, quiet, patient, and organized. Use the proper equipment for your safety.

- Spend time observing the animals every day to get them accustomed to human contact. This will help get the pigs used to your presence and will make movement and loading easier on them and on you.

Facility Considerations

There are a variety of production facilities in use in the industry today. The important point is that the management of the facility, regardless of its type, is sufficient to address the well-being of the pigs. The Swine Care Handbook from the National Pork Board provides pork producers with the latest information available on proper swine care, including recommendations about facility specifications. Following are just some of the swine care issues it addresses. Refer to it for more specific information when you talk with your educator.

- Provide proper diets and adequate feeder space.

- Check the water flow daily. This nutrient is too often overlooked. Flow rates and average daily water needs are listed below.

Production Stage	Flow Rate
Weanling	70 sec/pint
Grower/Finisher	50 sec/pint
Sow	35 sec/pint

Category of Pig	Daily Water Needed
1 wk old/3.3 lb	2.9 oz per lb
5 -9 wk old/22-57 lb	1.6 oz per lb

Facility Considerations *Continued...*

- Maintain comfortable environments in barns with respect to the age and weight of housed pigs. Maintain good air quality.
- Have an area, at each stage of production, designated for sick or injured pigs and sows. Hospital pens can aid in recovery and provide easier follow-up treatment.
- Provide non-slip flooring for pigs and sows in all housing and loading facilities.
- Remove sharp and rough edges on loading chutes, which may cause bruising that results in trim loss.

- Use ramps that are level with the trailer for loading pigs. If you have to use an incline, ramps should not exceed 20 degrees (about 48 in. height increase for each 11 ft. in length).
- If you are building a concrete step ramp, make the steps less than 2.5 inches high and at least 10 inches deep.
- Cleat steps for finisher pigs should not be more than 8 inches apart. Cleat steps for baby pigs should be 3 inches apart or less.

Equipment

A panel is the most effective tool for moving a pig because it blocks its path and vision while protecting the person holding the panel. Brooms or paddles are effective as a smaller version of a panel and are good for moving sows out of farrowing stalls.

Slappers, buzzers, and prods should be eliminated or significantly curtailed because they can cause unnecessary stress, pain, and injury. Negative behaviors by handlers will also create stress and fear in the pigs. All these factors can have negative effects on meat quality. Rattles, shakers, and similar tools are quite effective in moving pigs.

When an animal is put in a fearful situation, you risk both your health and the health of the animal. A large number of human injuries to the back and legs result from improper equipment and/or handling.

Are sorting panels easily accessible in appropriate areas of your facility?

❒ Yes ❒ No

What equipment is routinely used to move pigs in all sections of your operation?

_____

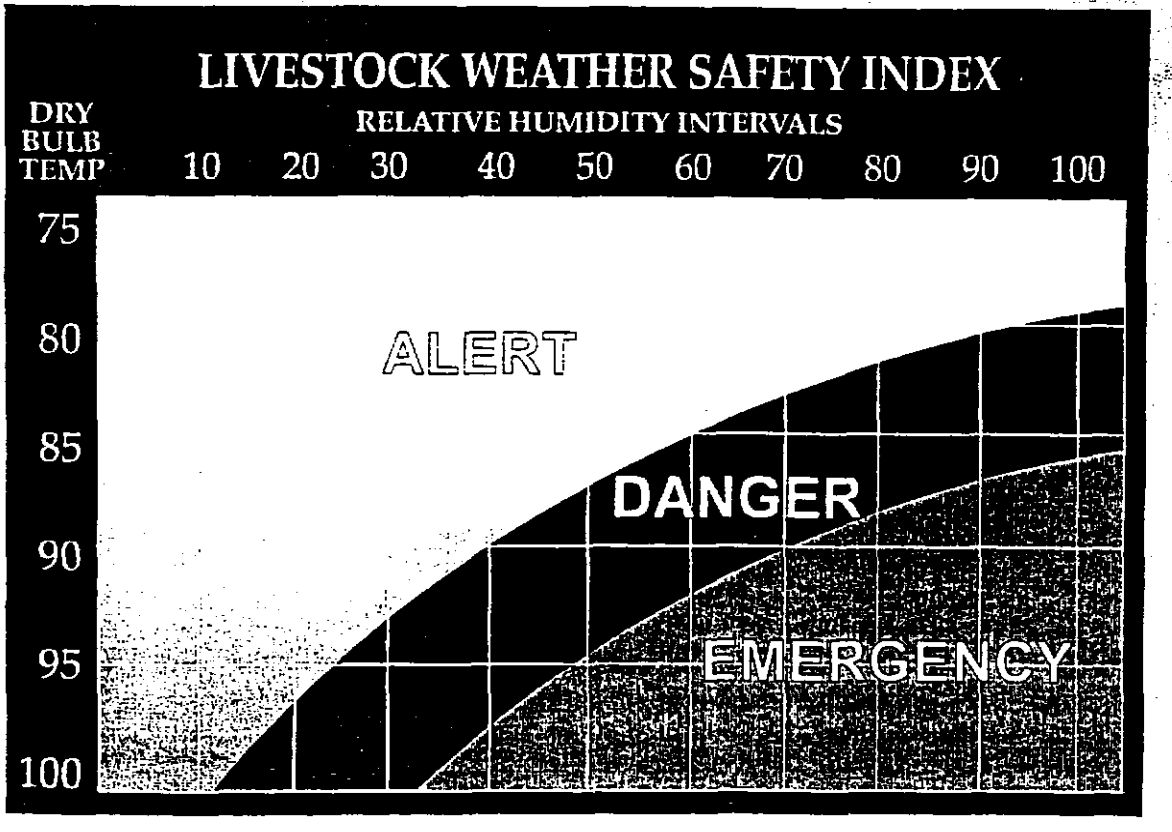
_____

_____

Good Production Practice #8

Loading and Transport

- You are ultimately responsible for how your animals are handled. If a truck driver is abusive to your animals, stop the loading and correct the action or pursue other trucking options.
- Move three to five finisher pigs at one time. If your alley way is narrower than 3 feet, reduce the number of pigs you are moving at one time.
- When moving pigs, make sure objects and people do not block the flow of the animals.
- When loading in hot weather, early morning loading can keep the animals cool and more comfortable. Wet shavings or sand in the bottom of the truck or trailer and spraying the pigs before or during transport can also reduce heat stress.
- In cold weather, bed down the truck or trailer with straw to keep the animals comfortable. The following chart can help you make decisions when transporting pigs in inclement weather.



Good Production Practice #8

Euthanasia

The National Pork Board has stated that pigs unable to walk or sick pigs that obviously will not recover should be humanely euthanized on the farm and not transported to market.

Euthanasia is defined as a humane death occurring without pain or distress. Even with our best efforts in every swine production system, animals will become ill or injured in such a way that euthanasia may need to be considered.

If euthanasia is necessary, the following must be considered when choosing the best methods for humane euthanasia:

1. **Human safety**
2. **Pig welfare**
3. **Practicality/technical skill required**
4. **Cost**
5. **Aesthetics (degree of unpleasantness for the observer)**
6. **Limitations (size of pig, location, etc.)**

Pigs unable to walk or sick pigs that obviously will not recover should be humanely euthanized on the farm and not transported to market.

The National Pork Board and the American Association of Swine Veterinarians (AASV) have published a brochure "'On-farm Euthanasia of Swine: Options for the Producer" with detailed information about methods of humane euthanasia. It can be ordered at no charge by contacting the National Pork Board at 515-223-2600.

Discuss this brochure with your veterinarian and determine the options appropriate for you to use.

With your veterinarian, complete the Euthanasia Action Plan found in the Appendix.

ANNEXE 4 :

GUIDE DES BONNES PRATIQUES POUR LA MANIPULATION ET L'ABATTAGE DES ANIMAUX DANS LES ABATTOIRS DE L'AMERICAN MEAT INSTITUTE FOUNDATION (GOOD MANAGEMENT PRACTICES FOR ANIMAL HANDLING AND STUNNING)

GOOD MANAGEMENT PRACTICES FOR ANIMAL HANDLING AND STUNNING

AMI Foundation

Published by
American Meat Institute Foundation

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www.grandin.com/meat/103097.html

Good Management Practices for Animal Handling and Stunning

by

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These guidelines are a supplement to the 1991 *Recommended Animal Handling Guidelines for Meat Packers*. The main emphasis of this guide, rather than specifying equipment design or practices, is on the use of welfare performance standards, which can be objectively scored. Scoring procedures for accessing animal welfare and recommendations which will help improve animal welfare are described.

The recommended scoring procedures are simple enough to be conducted easily under commercial conditions, and they should be conducted a minimum of once a week. Scoring, should be done at both the beginning and the end of a shift to determine the effect of employee fatigue. If a score falls below the acceptable range specified in the guide, plant management should take steps to correct the problem. The results of the 1996 Survey of Stunning and Handling in Federally Inspected Beef, Pork, Veal and Sheep Slaughter Plants (sponsored by USDA's Animal and Plant Health Inspection Service) indicated that the recommended minimum acceptable levels specified in this guide can be achieved easily at a minimum of expense.

Objective scoring should be done in the following areas which are critical control points for good animal welfare. The minimum acceptable percentage scores in this guide were determined by the author based on over twenty years of practical experience in over 100 different slaughter plants.

1 Percentage of pigs and sheep where the electric stunner was placed in the wrong position.

2. Percentage of cattle which had to be shot more than once with the captive bolt stunner.

3. Percentage of sensible and partially sensible animals on the bleed rail.

4. Percentage of animals falling down or slipping

5. Percentage of cattle vocalizing in the stunning chute area, which includes the stunning box, restrainer, lead-up chute and crowd pen

6. Percentage of pigs vocalizing in the stunning pen or restrainer conveyor.

7. Percentage of animals prodded with an electric prod

8. Non-ambulatory animal procedures. Scoring procedures need to be developed at this critical control point.

Poor performance in any one of the above critical control points would result in reduced welfare. This guideline also contains criteria for stunning equipment and recommendations which will enable a plant to maintain acceptable welfare scores. Other areas of welfare concern which will be covered are ritual slaughter and the handling of non-ambulatory animals.

Stunning

Electrical Specifications for Electric Stunning - Electric stunning equipment must operate within electrical parameters which have been verified by scientific research to induce instantaneous insensibility. Scientific research has shown that an electric stunner must have sufficient amperage to induce a grand mal seizure to insure that the animal will be made instantly insensible. Insufficient amperage can cause an animal to be paralyzed without losing sensibility. For market weight pigs, a minimum of 1.25 amps is required (Hoenderken 1982, Gregory 1988). For sheep, a minimum of one amp is required (Gregory and Wotton 1984, Gilbert, et al. 1991). These amperages must be maintained for one second to induce instant insensibility. The Council of Europe (1991) recommends the above minimum amperages. There must be sufficient voltage to deliver the recommended minimum amperage: 250 volts is the recommended minimum voltage for pigs to insure insensibility

(Troeger and Woltersdorf 1989). Research has also shown that too high of an electrical frequency will fail to induce insensibility. Warrington (1974) found that insensibility was most effectively induced at frequencies of SC cycles. Frequencies at 2000 to 3000 in failed to induce instant insensibility and may cause pain (Croft 1952, Van der Wal 1978). However, in pigs weighing under 200 lbs (80 kg), Anil and McKinstry (1994) found that high frequency, 1592 In sinewave or 1642 hz square wave, head only stunning at 800 ma (0.80 amp) would induce seizure activity and insensibility in small pigs. One disadvantage is that the pigs regained sensibility more quickly compared to stunning at 50 to 60 cycles. The pigs in this experiment weighed one-third less than comparable U.S. market pigs and this probably explains why the lower amperages were effective.

Some plants stun animals below the Council of Europe recommended minimum amperages in an attempt to reduce blood spots in the meat. Stunning market weight pigs with less than 1.25 amps should not be permitted (Hoenderden 1982, Grandin I 994a) unless different electrical parameters are verified by either electrical or neurotransmitter recordings from the brain. Since only a one second application at 1.25 amps is required to induce instant insensibility in market weight pigs, it is the author's opinion that plants should be permitted to use circuits which lower the amperage setting after an initial, one second stun at 1.25 amps for pigs and one amp for sheep. Plants should also be encouraged to use electronic constant amperage circuits which prevent amperage spiking. Both practical experience and research has shown that these types of circuits greatly reduce petechial hemorrhages (blood spots) (Grandin 1985, Blackmore and Peterson 1981).

Since U.S. market pigs are slaughtered at heavier weights compared to European pigs, an electric stunner must deliver the minimum amperage recommended by the Council of Europe (1991) to insure instantaneous insensibility. It is the authors opinion that high frequency stunning should not be permitted in the U.S. until research is conducted to prove that it is capable of inducing an instantaneous grand mal seizure in heavier U S. market weight pigs. In the Anil and McKinstry (1994) experiment, the pigs were stunned with a head only applicator. High frequency stunning has never been verified to induce instant insensibility when applied with a head to body

cardiac arrest stunning electrode. This is the type of electrode used in almost all large U.S. pork slaughter plants. However, at the present time, pork plants should be permitted to use higher frequencies in their stunning cycle provided that their initial stun is a minimum of 1.25 amps at 50 to 60 in for a minimum of one second.

Unlike pigs and sheep, electrical stunning of cattle requires a two-phase stun. Due to the large size of cattle, a current must first be applied across the head to render the animal insensible before a second current is applied from the head to body to induce cardiac arrest (Gregory 1993). A single 400 volt, 1.5 amp current passed from the neck to the brisket failed to induce epileptic form changes in the brain (Cook, et al. 1991). To insure that the electrodes remain in firm contact with the bovine's head for the duration of the stun, the animal's head must be restrained in a mechanical apparatus. The Council of Europe requires a minimum of 2.5 amps applied across the head to induce immediate epileptiform activity in the EEG of large cattle. A frequency of 60 or 50 cycles should be used unless higher frequencies are verified by either electrical or neurotransmitter measurements taken from the brain.

Electrodes must be cleaned frequently to insure a good electrical connection. The minimum cleaning schedule is once a day. For safety, the electrode wand must be disconnected from the power supply before cleaning. Adequate electrical parameters for cardiac avert stunning cannot be determined by clinical signs, because cardiac arrest masks the clinical signs of a seizure. Measurement of brain function is required to verify any new electrical parameters which may be used in the future.

Scoring

Electric Stunning - Electrode Placement Efficacy Criteria for Scoring

Score a minimum of 100 pigs or sheep in large plants.)

- Excellent -99.5 to 100% correct placement of stunning wand or tongs
- Acceptable 99.4 to 99% correct placement
- Not Acceptable - 98 to 95% correct placement or 4% or less of the pigs vocalize due to

energizing the electrodes before they are firmly positioned.

• Serious Problem - Less than 95% correct placement or more than 4% vocalization in response to electrode placement

If head only stunning is used, the tongs must be placed so that the current passes through the brain (Croft, 1952, Warrington 1974). Tongs may be placed on both sides of the head or one tong on the top and the other on the bottom of the head. Mother scientifically verified location for head only stunning is one electrode placed under the jaw, and the other is placed on side of the neck right behind the ears. For cardiac arrest stunning of pigs and sheep, one electrode must be placed on the head and the other one may be placed at any location on the body, which will induce cardiac arrest. The head electrode may be placed on the forehead, side of the head, top of the head, under the jaw, or in the hollow behind the ear The head electrode must never be placed on the neck because this would cause the current to bypass the brain. Electrodes must not be applied to sensitive areas such as inside the ear or in the eye or rectum.

Captive Bolt - Stunning Efficacy Criteria

(Score a minimum of 100 animals in large plants.)

- Excellent .99 to 100% instantly rendered insensible with one shot
- Acceptable .95 to 98% instantly rendered insensible with one shot
- Not Acceptable .90 to 94% instantly rendered insensible with one shot
- Serious Problem .less than 90% instantly rendered insensible with one shot

If one shot efficacy falls below 95%, immediate action must be taken to improve the percentage. The survey indicated that the most common cause of a low captive bolt stunning efficacy score was poor maintenance of the captive bolt guns. Guns must be cleaned and serviced per the manufacturer's recommendations to maintain maximum hitting power and prevent misfiring or partial firing. Each plant should develop a system of verified maintenance for captive bolt stunners. Mother major cause of failure to render animals insensible with one shot is poor ergonomic design of bulky pneumatic

stunners. Ergonomics can sometimes be improved with the use of a handle extension and improved balancers.

Aversive methods of restraint which cause three percent or more of the cattle or pigs to vocalize must not be used as a substitute for improvements in gun ergonomics. Electrical immobilization must never be used as a method for restraining sensible animals prior to or during stunning. Several scientific studies have shown that it is highly aversive (Lambooy 1985, Pascoe 1986, Grandin, et al. 1986, Rushen 1986). Vocalizing scoring is impossible in electrically immobilized animals because paralysis prevents vocalization Electrical immobilization must not be confined with electric stunning. Properly done, electric stunning passes a high amperage current through the brain and induces instantaneous insensibility. Electrical immobilization holds a sensible animal still by paralyzing the muscles. It does not induce epileptiform changes in the EEG (Lambooy 1985). A third cause of missed captive bolt shots is an overloaded or fatigued operator. Scoring at the end of the shift will pinpoint this problem. In some large plants, either two stunner operators or rotating the operators frequently may be required.

Stunning to Bleed Interval

Penetrating Captive Bolt Bleed Interval - Bleed interval does not have to be measured for welfare reasons unless non-penetrating captive bolt is used. Additional study would be needed to determine the recommended interval for non-penetrating captive bolt. All plants surveyed used penetrating captive bolt.

Electric Stunning Bleed Interval Cardiac Arrest - Sixty seconds maximum. All large plants are already less than this interval.

Head Only Reversible Electric - Fifteen seconds is strongly recommended (Blackmore and Newhook 1981), 30 seconds maximum (Hoenderken 1983). Scientific research clearly shows that pigs will start returning to sensibility after 30 seconds when stunned by the head only method.

3. Bleed Rail Insensibility - Criteria for stunned animals possibly showing partial sensibility.

(Score a minimum of 100 animals in large plants)

- Excellent -Cattle less than 1 per 1000
  -Pigs less than 1 per 2000
- Acceptable -Cattle less than I per 500
  -Pigs less than I per 1000

Insensibility should be checked at both the beginning and near the end of the shift. The following signs are indicators of possible return to sensibility Animals displaying any one of these signs must be immediately shot with a captive bolt stunner 1) rhythmic breathing, 2) vocalizations while hanging on the bleed rail, 3) eye reflexes in response to touch, 4) eye blinking, 5) arched back righting reflex (Grandin 1994, Gregory 1988). Animals should hang straight on the rail and have a floppy head. Limb movements should be ignored. If the tongue is hanging straight out the animal is definitely insensible. Gasping is a sign of a dying brain and should be ignored (Gregory 1988). There should be a zero tolerance for hanging a fully sensible, unstunned animal in an inverted position on the bleed rail.

4. Scoring of Slipping and Falling

Good animal welfare and quiet calm handling is impossible if animals slip or fall on the floor. All areas where animals walk should provide nonslip footing. Animals should be observed during all phases of handling and if slipping or falling is observed, steps should be taken to correct it. Slipping on scales, unloading ramps and stunning boxes can often be corrected by installing a grating built from steel bars. A concrete grooving machine is one good method which can be used to roughen an existing floor. Since the survey results indicated that the greatest slipping and failing problems were in the stunning chute area, scoring should be done in this area.

Scoring of Slipping and Falling in the Stunning Chute Area (All Species)

(Score a minimum of 50 animals in large plants)

Includes restrainer entrance, stunning box, lead up chute and crowd pen.

- Excellent - No slipping or falling

- Acceptable - Slipping of less than 3% of the animals
- Not Acceptable - 1% falling down (body touches floor)
- Serious Problem - 5% falling down or 15% or more slipping

5. Vocalization Scoring of Cattle

Vocalization is an indicator of cattle discomfort. Dunn (1990) reported that significantly more cattle vocalized when they were held in a restraint device that inverted them on their backs, compared to upright restraint. Preliminary research by Bridgett Voisinet at the author's laboratory at Colorado State University has shown that the number of times that cattle vocalize during a stressful husbandry procedure is related to cortisol (stress hormone) levels.

The 1996 survey results indicated that the percentage of cattle which vocalized in the stunning chute area ranged from three percent or less of the cattle in the three best plants to 12 percent to 32 percent in the two worst plants. Cattle vocalizations in the stunning chute area were caused by prodding with an electric prod, slipping in the stunning box, missed captive bolt stuns or excessive pressure applied by a restraint device The survey results showed that plants with a high percentage of cattle vocalizing could easily reduce this percentage. The average vocalization percentage in the two roughest plants was reduced from 22 percent of the cattle to 4.5 percent by reducing electric prod usage.

The 1996 survey results clearly showed that cattle seldom vocalize during handling or stunning unless an easily observed aversive event occurred. A total of 1,125 cattle were vocalization scored and 112 animals vocalized. Only two animals vocalized which were not responding to an aversive event such as electric prodding, slipping, falling, missed stuns or excessive pressure from a restraint device. Other aversive events which can cause vocalization are hitting cattle with gates or pinching an animal in a restraint device. This indicates that vocalization is an indicator of discomfort.

Criteria for Vocalization of Cattle in the Crowd Pen, Lead-up Chute, Stunning Box or Restraining Device

(Score a minimum of 100 animals in large plants)

- Excellent - 0.5% or less of the cattle vocalize
- Acceptable - 3% or less of the cattle vocalize
- Not Acceptable - 4% to 10% vocalize
- Serious Problem - Over 10% vocalize

When vocalization is being evaluated, cattle from more than one feedlot or ranch should be observed. To make scoring simple, each animal should be classified as either a vocalizer or a non-vocalizer.

Cattle vocalizations should be tabulated during handling in the crowd pen, lead up chute, restrainer or stunning box Vocalizations occurring in the yards should not be tabulated because cattle standing quietly in the yards will often vocalize to each other. In one plant, hungry Holsteins vocalized and turned to face a man bedding a pen with sawdust. It appeared that they perceived the sawdust as feed.

Observations at one of the sheep slaughter plants indicated that vocalization during handling is absolutely useless as a measure of handling problems in sheep. Sheep walking quietly up the stunning chute often vocalized to each other. Sheep which balked and had to be pushed by a person never vocalized. This is a species difference between cattle and sheep.

6. <u>Vocalization Scoring of Pigs</u>

Research conducted in commercial pork slaughter plants indicated that the intensity of pigs squealing in the stunning chute area is correlated with physiological measures of stress and poorer meat quality (Warriss, et al. 1994). Squealing was measured with a sound meter. White (et al. 1995) also found that the intensity of pig squeals is correlated with discomfort.

Since it is impossible to count individual pig squeals when a group of pigs is being handled, vocalization scoring of individual pigs can only be conducted in the restrainer. The 1996 survey results indicted that there were two major causes of pig vocalizations. They were misapplied

electric stuns and pinching in the restrainer. The 1996 survey results indicated that vocalization in the restrainer ranged from 0 percent to 14 percent of the pigs. Out of 11 plants, 72 percent (8 plants) had no pigs squealing due to misapplied electric stuns. In two plants, two percent to four percent squealed during stunning. The use of sound level meters should be studied for monitoring pig vocalizations during handling

Criteria for Vocalization of Pigs in the Restrainer or During Stunning

- Excellent - 0% or less of the pigs vocalize
- Acceptable - 1% or less of the pigs vocalize due to the restrainer; none due to a misapplied stunner.
- Not Acceptable - 2% or more vocalize in the restrainer for any reason
- Serious Problem - 5% or more vocalize in the restrainer for any reason

Restraint Device Principles Which Reduce Stress On Animals and Help Reduce Vocalization

In several different publications the author has outlined the behavioral principles of low stress animal restraint and handling (Grandin 1991, 1993, 1994, 1995, 1996). Pigs and cattle should enter a restraint device easily with a minimum of balking. Correcting problems with animal restraint devices can also help reduce bruises and meat quality defects such as blood splash. The basic principles of low stress restraint which will minimize vocalization and agitation are:

1. For cattle, block the animal's vision with shields so that they do not see people or objects that move while they are entering the restrainer. Install metal shields around the animal's head on box type restrainers to block the animal's vision.

2. Block the animal's vision of an escape route until it is fully held in a restraint device (Grandin 1991). This is especially important on restrainer conveyors. A flexible curtain of conveyor belts at

the discharge end of the conveyor works well. Cattle often become agitated in a conveyor restrainer if they can see out from under the solid hold-down cover before their back feet are off the entrance ramp. Extending the solid hold down cover on a conveyor restrainer will usually have a calming effect and most animals will ride quietly Solid hold downs can also be beneficial for pigs on conveyor restrainers.

3. Eliminate air hissing and other distractions such as clanging and banging. Refer to section on distractions.

4. The restraint device must be properly lighted. Animals will not enter a dark place or enter a place where direct glare from a light is blinding them. To reduce balking at the entrance of a conveyor restrainer, install a light above the entrance. The light should be above the lead-up chute. It should illuminate the entrance of the restrainer, but it must not glare into the eyes of approaching animals. Light coming up from under a conveyor restrainer should be blocked with a false floor to prevent animals from balking at the "visual cliff effect"

5. Provide nonslip flooring in box-type restrainers and a nonslip cleated entrance ramp on conveyor restrainers. Animals tend to panic when they lose their footing.

6. Parts of a restraint device operated by pneumatic or hydraulic cylinders that press against the animal's body should move with slow steady motion. Sudden jerky motion excites animals. On existing equipment install flow controls to provide smooth steady movement of moving parts which press against the animal.

7. Use the concept of optimum pressure. The restraint device must apply sufficient pressure to provide the feeling of being held, but excessive pressure that causes pain should be avoided. Install a pressure regulator to reduce the maximum pressure that can be applied. Very little pressure is required to hold an animal if it is hilly supported by the device. If an animal bellows or squeals in direct response to the application of pressure, the pressure should be reduced.

8. A restraint device must either fully support an animal or have nonslip footing so the animal can stand without slipping. Animals panic if they feel like they may fall. Restraint devices should hold fully sensible animals in a comfortable, upright position.

9. Equip restraint devices with controls that enable the operator to control the amount of pressure that is applied. Different sized animals may require differing amounts of pressure. Hydraulic or pneumatic systems should have controls which enable a cylinder on the device to be stopped in mid-stroke.

10. Never hold an animal in a head restraint device for more than a few seconds. The animal should be stunned or ritually slaughtered immediately after the head holder is applied. Head restraint is much more aversive than body restraint. Animals can be held in a comfortable body restraint for longer periods. The animal's reaction should be observed. If the animal struggles or vocalizes this is an indication that the device is causing discomfort.

11. Restraint devices should not have sharp edges that dig into an animal. Parts that contact the animal should have smooth rounded surfaces and be designed so that uncomfortable pressure points are avoided.

12. On V conveyor restrainers, both sides should move at the same speed.

In conclusion of this animal restraint section, in most plants it is possible to modify existing restraint devices to lower vocalization and agitation scores. Balking at the entrance is also easy to reduce. Most of the modifications that would reduce animal agitation and vocalizations can be installed at a minimum expense The estimated cost to modify a system is usually between $200 to $2000.

7. Electric Prod Use

Reducing the use of electric prods will improve animal welfare. Many well-managed plants have eliminated electric prods in the holding pens. In beef plants with well-trained handlers, the survey showed that 90 to 95 percent of the animals could be moved through the entire plant without the use of an electric prod. USDA regulations require that electric prods have a voltage of 50 volts or less. An easy way to test an electric prod to determine if it delivers too intense a shock is to touch an animal for one second with it. If it causes animals to vocalize, the power should be reduced. Prods which have sufficient power to knock an animal down or paralyze it

must not be used. Electric prods must never be applied to sensitive pans of the animal such as the eyes, ears, nose or anus.

Electric Prod Scoring Criteria for Cattle
Percentages of Animals Prodded

	Crowd Pen to Chute	Entrance of Stunning Box or Restrainer	Total Percentages Of Cattle Prodded
Excellent	none	5% or less	5% or less
Acceptable	5% or less	20% or less	25% or less
Serious Problem	--	--	50% or more

Electric Prod Scoring Criteria for Pigs

	Crowd Pen to Chute	Entrance of Restrainer	Total Percentages of Pigs Prodded
Excellent	none	10% or less	10% or less
Acceptable			25% or less
Serious Problem which must be corrected	-	-	80% or more

- Electric Prods should never be used on sheep.

Handling Recommendations to Reduce Electric Prod Use and Maintain Efficient Handling

1 Remove Distractions Which Cause Balking - such as air hissing, shadows, reflections off shiny metal, ventilation drafts blowing in the faces of approaching animals, and seeing either moving people or moving machinery up ahead. Get down in the chutes and look to find out what the animals are balking at. Install shields or strips of conveyor belting to prevent animals from seeing movement up ahead as they approach the restrainer or stunning box. Reflections can

sometimes be eliminated by moving a light. Ventilation drafts blowing down the chutes towards the animals may make it impossible to reduce electric prod use. The plant ventilation system may need to be adjusted.

2. **Provide Adequate Lighting** - Animals may refuse to enter a dark place. Entry into a restrainer can be facilitated by aiming a light into the entrance. The light must NOT shine into the eyes of approaching animals. Animals may be difficult to drive out of the crowd pen if it is brightly illuminated by sunlight and the chute is inside a darker building. Lighting problems can make quiet handling almost impossible. Mother common lighting problem is that a handling system may work well when lamps are new, but the animals will balk more and more as lamps dim with age. Experiment with portable lights to find the most efficient lighting. Animals may also balk at shiny reflections off a piece of metal or sparkling water on the floor. Moving a light will often eliminate the reflections.

3. **Reduce Noise** - Animals are very sensitive to high pitched noise. Reducing high pitched motor and hydraulic system noise can improve animal noise and improve animal movement. Clanging and banging metal should be reduced and hissing air should be muffled.

4. **Move Small Groups** - When cattle and pigs are being handled, the crowd pen and the staging areas which lead up to the crowd pen should never be more than three-quarters full; half full is best. Do not push crowd gates up tight against the animals, Cattle and pigs need room to turn. For sheep, large groups may be moved and the crowd pen can be filled all the way up.

5. **Use Other Driving Aids** - Electric prods should be replaced as much as possible with other driving aids such as plastic paddle, a stick with a flag on the end or panels for pigs. The animals should move easily and handlers should not hit them. Cattle and pigs can often be moved along a chute when the handler walks back by them in the opposite direction of desired movement.

6. **Problems With Excitable Animals** - There are some animals which have a very excitable temperament and are difficult to drive. Some lean pigs and cattle are very excitable. These animals will often have high vocalization scores. Plant management needs to work with

producers to solve this problem. Pigs with excitable genetics can be made easier to handle at the meat packing plant if producers walk through the pens during finishing. This trains excitable pigs to handling. Producers should be encouraged to produce animals which will be reasonably easy to handle.

8. Non-Ambulatory Animals

Each plant should develop written guidelines and procedures for handling non-ambulatory animals in a humane manner. Dragging sensible, non-ambulatory animals is a violation of The Humane Slaughter Act regulations. Stunned, non-ambulatory animals may be dragged. If a skid steer loader (Bob Cat) is used to transport non-ambulatory pigs or sheep, the animal must be rolled into the bucket. Two people are required unless the loader is equipped with a special bucket with a lid. One person operates the loader and the other rolls the animal into the bucket. Loading a non-ambulatory animal into the bucket by shoving it up against a wall or fence is not acceptable. Bare forklift forks shoved under non-ambulatory cattle is not an acceptable method for moving them.

AMI and USDA should develop ways to safely inspect non-ambulatory animals which arrive on the trucks so they do not have to be removed from the truck prior to anti-mortem inspection. Animal welfare would be greatly improved because non-ambulatory animals could be stunned on the truck.

Plant personnel should develop procedures to help reduce the occurrence of non-ambulatory animals on the premises. Nonslip flooring is essential. Mounting activity and animal fights can cause injuries. This is especially a problem with bulls and boars. Bulls which are mounting other animals should be placed in a separate pen. Mounting by bulls is a common cause of bruises and crippling injuries on cows.

Ritual Slaughter

Cattle, calves, sheep or other animals which are being ritually slaughtered without prior stunning should be restrained in a comfortable upright position. Small animals such as sheep and goats can be held manually by a person during ritual slaughter. Plants which conduct ritual slaugh-

ter should use the same scoring procedures. Stunning scoring would be omitted in plants which conduct ritual slaughter without stunning. Cattle vocalization percentages should be five percent or less of the cattle in the crowd pen, lead up chute and restraint device. A slightly higher vocalization percentage is acceptable because the animal must be held longer in the restraint device compared to conventional slaughter. A five percent or less vocalization score can be easily achieved. Scoring criteria for electric prod use and slipping on the floor should be the same as conventional slaughter.

Pen Stocking Density

Pens should be stocked per AMI 1991 guidelines. Animals must all have room to lie down. All animals should have access to water.

Maintenance

Pens, alleys, chutes, restraints and other equipment should be kept clean and well maintained. They should be free of protrusions which could injure animals.

Conclusion

An acceptable level of animal welfare can be maintained if scores at the critical control points for stunning, animal insensibility, slipping and falling, vocalization and electric prod use are in the acceptable range. Scoring performance on these variables is simple and easy to do under commercial plant conditions. Electrical stunning equipment must have amperage, voltage and frequency parameters which have been verified by either electrical or neurotransmitter recordings from the brain to reliably induce insensibility.

In conclusion, managers must be committed to good animal welfare. Plants which have managers who insist on good handling and stunning practices have management that insists that employees handle and stun animals correctly.

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