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Introduction

Pork Quality Assurance Plus® *Building Trust for a Stronger Industry*

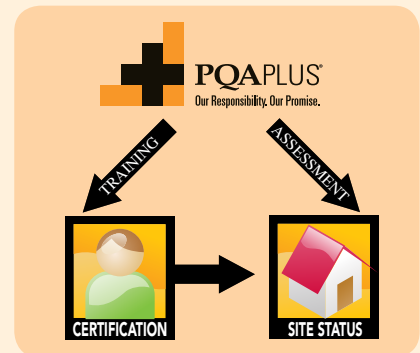
In business, many trends come and go. But one constant that will never change is the need to earn the trust of your customers. For pork producers, and all businesses involved in the food chain, earning and maintaining the trust of our customers – retail, foodservice and the consuming public – has never been more challenging. This fact, combined with our industry's desire to conduct our operations according to high ethical standards and best practices, led the National Pork Board to evolve the Pork Quality Assurance® program.

Launched in 2007, Pork Quality Assurance Plus® (PQA Plus) is a continuous improvement program that outlines Good Production Practices (GPPs) in the areas of food safety and animal well-being. It delivers the latest in scientific research and improved production practices to producers and production employees. Producer leadership urges all pork producers to recognize that they share a duty to demonstrate responsible practices and that full participation in the PQA Plus program is critical to building trust and maintaining the integrity of the pork industry.

PQA Plus® is comprised of two main elements - **food safety** and **animal well-being**. Food safety refers to the practices that minimize physical, chemical or biological hazards that might be injurious to consumers. Animal well-being encompasses producer responsibilities for all aspects of animal well-being, including proper housing, management, nutrition, disease prevention and treatment, responsible care, humane handling and when necessary, humane and timely euthanasia.

PQA Plus has three distinct components:

1. Individuals can become certified through an education program;
2. Producer farms can receive PQA Plus site status designation through an on-farm site assessment; and
3. As part of a third-party verification process, sites will be randomly selected to participate in an on-farm survey. Results will track the program's progress and determine opportunities for continuous improvement.



PQA Plus: Track Record of Continuous Improvement

The PQA Plus program was first launched in 1989 and was called Pork Quality Assurance®; it quickly became the pork industry's leading educational program. Over the years, PQA has expanded and evolved, incorporating the latest scientific knowledge and production methods and in recent years, a site assessment component designed to evaluate animal care practices on farms. It is this commitment to continuous improvement – striving to be better – that has built confidence among industry customers and stakeholders in the program's responsible production practices. As the accompanying timeline illustrates, the current PQA Plus program integrates aspects of other industry programs, providing producers with the most comprehensive food safety and animal care training available.

The Right Thing to Do. For Your Business. For Your Industry.

PQA Plus is a clear demonstration of how producers promote and implement responsible practices in their operations. Not as a result of regulation or mandate, but rather as an acknowledgement that adhering to good production practices is a good business decision, and it is the right thing to do. The spirit of continuous improvement – always striving to do better – is a mindset that has long been embraced by pork industry stakeholders. To recognize producer accountability among the customers we serve, the National Pork Board seeks to maximize participation in the program with a goal of certifying more than 40,000 producers and expanding certification to the thousands of allied employees involved in animal care and production. When the industry is seen as responsible and proactive, every stakeholder – including producers and their employees – benefits.

1959 – The first HACCP system for food production was developed by the Pillsbury Company.

1998 – The *Pathogen Reduction: Hazard Analysis and Critical Control Point (HACCP) Systems* final rule was implemented in all large plants that slaughter and/or process meat and poultry.

2002 – Florida voters approve a measure banning sow gestation stalls (effective 2008).

2004 – The Checkoff's Operation Main Street program is launched to help producers explain modern pork production.

2006 – A Web-based tool is introduced to assist producers in air quality control issues.

1989 – The PQA® program is launched to educate producers on best management practices.

2001 – The new TQA™ program focuses on the proper handling and transport of pigs.

2003 – The Checkoff's new SWAP™ program focuses on the care and welfare of animals.

2005 – The Take Care program is released and provides producers guidelines for the judicious use of antibiotics.

We Care: Making our Industry Stronger

There has been a growing interest among food-chain customers and the general public with the way food is produced. Recognizing that they must address these concerns and better position the industry's track record of responsibility, pork industry leaders launched the We Care initiative. The We Care initiative seeks ongoing improvement in the pork industry's production practices, building upon and promoting to those outside the industry its strong record of responsible farming. PQA Plus is the cornerstone of the We Care initiative and is a clear demonstration of the industry's commitment to responsible farming and continuous improvement.

At the heart of this commitment is a statement of ethical principles which asks each and every producer to commit to:

- Produce safe food
- Protect and promote animal well-being
- Ensure practices to protect public health
- Safeguard natural resources in all of our practices
- Provide a work environment that is safe and consistent with our other ethical principles
- Contribute to a better quality of life in our communities



2007 – The PQA Plus® program is launched to meet customers needs.

2007 – Two major packers announce that they are phasing out the use of sow gestation stalls.

2008 – Several major restaurant chains say they will increase purchases of pork raised without stalls.

2008 – Pork Act Delegates at Pork Forum approve a Statement of Ethical Principles.

2008 – The industry joins together to launch the We Care responsible pork initiative.

2008 – Packers show their commitment to the PQA Plus program.

2006 – Arizona voters pass an initiative banning sow gestation stalls (effective 2013).

2007 – Oregon becomes the first state to ban sow gestation stalls through legislative action.

2008 – California voters approve a measure banning sow gestation stalls (effective 2015).

2008 – Operation Main Street reaches 4-year mark, with over 2,700 presentations made.

2008 – Over 22,000 producers and 25,000 youth have received PQA Plus certification.

Role of the producer in food safety:

Pork producers have a vital role in ensuring food safety. In the course of a product moving from the "farm gate to the consumer's plate," production on the farm is the first of many steps in the food-supply continuum. In pork production, as pigs are raised and moved onto the next stage in the continuum, each participant in the process has to assume the responsibility for safeguarding the product from physical, chemical and biological hazards while the pig or pork product is under its supervision. If a product becomes contaminated by a hazard, its usefulness and value may be reduced or lost. The sensible approach to food safety, one that uses Good Production Practices, is designed to prevent, rather than to detect, problems.



Role of the producer in animal well-being:

The producer has a responsibility to provide appropriate conditions so that the pigs in his or her care maintain good health and physical condition. Producers also represent their industry and have a duty to maintain and promote the tradition of responsible animal care through the application of scientifically sound animal care practices. Now more than ever before, the actions of individual producers can help or harm the industry as a whole. Therefore, each producer has an obligation to engage in good practices and is strongly encouraged to participate fully in the PQA Plus program.

10 Good Production Practices of PQA Plus: Keys to Industry Success

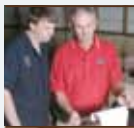
As you will see in this manual, the PQA Plus program consists of 10 Good Production Practices (GPPs) to ensure that pork is free from chemical and physical hazards and that the pigs are raised in a caring manner with regard to their well-being. These 10 practices are based on:

- Hazard Analysis and Critical Control Point principles (HACCP). HACCP principles are the standard for controlling hazards in foods produced and processed in the United States and many foreign countries.
- The Food and Drug Administration's Compliance Policy Guide (CPG) 7125.37 – "Proper Drug Use and Residue Avoidance by Non-veterinarians."
- The Animal Medicinal Drug Use Clarification Act (AMDUCA) of 1994.
- Science-based animal care and well-being guidelines.

The 10 GPPs, when implemented, can lead to benefits for producers as well as help maintain a positive perception of the entire U.S. pork industry. As you join the thousands of pork producers and employees who have adopted and consistently adhere to the practices of the PQA Plus program, you will be doing the right thing for yourself, your business and all stakeholders in the food chain.

The PQA Plus program is built upon these 10 Good Production Practices.

Good Production Practices (GPPs)



GPP # 1

Establish and Implement an Efficient and Effective Herd Health Management Plan.



GPP # 2

Use an Appropriate Veterinarian/Client/Patient Relationship (VCPR) as the Basis for Medication Decision-Making.



GPP # 3

Use Antibiotics Responsibly.



GPP # 4

Identify, Track and Maintain Medication and Treatment Records for All Treated Animals.



GPP # 5

Adhere to Medication Withdrawal Times.



GPP # 6

Properly Store, Label and Account for All Drug Products and Medicated Feeds.



GPP # 7

Use Proper Administration Techniques, Needle-Use Procedures, Observance of Withdrawal Times and Methods to Avoid Marketing Adulterated Products for Human Food.



GPP # 8

Follow Appropriate On-Farm Feed and Commercial Feed Processor Procedures.



GPP # 9

Develop, Implement and Document an Animal Caretaker Training Program.



GPP #10

Provide Proper Swine Care to Improve Swine Well-Being.



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Good Production Practice # 1

**Establish and Implement an
Efficient and Effective Herd
Health Management Plan.**



Good Production Practice # 1

Establish and Implement an Efficient and Effective Herd Health Management Plan.

Herd health is a key to food safety. Animals in good health grow faster and more efficiently. The healthier the animal, the less the need for therapy, thus reducing the risk of residues and costs associated with treatment of sick animals.

A herd health program should include these important components:

- A. Regular evaluation of herd health status by a veterinarian.**
- B. Biosecurity.**
- C. Rodent/pest control.**
- D. Cleaning and disinfecting procedures.**

A. Regular veterinary health evaluations

Regular observations of the herd by your veterinarian are not only beneficial in maintaining a healthy herd, they also fulfill the requirements of a Veterinarian/Client/Patient Relationship (VCPRs are explained in GPP # 2). Your veterinarian can observe the pigs in their production environment and review vaccination/treatment records in evaluating the current health status of the herd. In addition, any health problems you have noted since the last visit can be discussed and addressed. Many times the veterinarian can provide a “fresh set of eyes” and may observe subtle problems that have gone unnoticed by caretakers seeing them every day. If a packer has notified you that health problems are adversely affecting the carcass quality of the hogs you are shipping, work with your veterinarian to develop a strategy to control the problem.





B. Biosecurity

Biosecurity is a combination of management practices designed to prevent the transmission of diseases and disease-causing agents.

Biosecurity can be either “external” - keeping diseases out of a herd, or “internal” - keeping a disease already in one or more segments of the herd from spreading to other segments. An example of external biosecurity would be measures to keep Porcine Reproductive and Respiratory Syndrome (PRRS) out of your herd. An example of internal biosecurity would be the measures taken to keep Transmissible Gastroenteritis (TGE) from spreading from your gestating sows to the sows and piglets in the farrowing house. Biosecurity generally involves restricting the movement of anything capable of carrying disease or disease agents including people, pigs, birds and other animals and water.

1. External Biosecurity Measures

- A. Develop standard operating procedures with your veterinarian regarding biosecurity and post them for caretakers and visitors.
- B. When possible, locate new animal facilities away from other swine herds and major transportation routes.
- C. Control wildlife and pests to prevent contact with your herd. Perimeter fences and screening should be considered, especially to control exposure to feral swine, if they are in your area.
- D. When contemplating the purchase of herd additions, ask your veterinarian to discuss the potential source herd's current health status and its health maintenance program with that herd's veterinarian.
- E. When possible, establish an isolation facility for quarantining new stock at a site that is remote/isolated from the existing herd. During this quarantine period, observe and test for diseases, vaccinate, medicate and acclimate the new animals as recommended by your veterinarian.
- F. Limit the number of visitors to your facility and minimize their contact with your pigs. Have visitors register (name, address and phone) and question them about recent contact with other swine and downtime between animal/swine visits.
- G. Supply outer clothing (coveralls, boots) to all visitors. Require everyone to at least wash hands, if not shower, before entry to animal areas.
- H. Change clothes and shower after visiting other farms, livestock markets or exhibitions.
- I. Limit equipment and tools to those that have been cleaned and disinfected if they have been used on another hog farm.
- J. Prohibit livestock truck drivers from entering your animal areas and loading chutes. Make sure trucks are clean on arrival at your farm. Your load-out facility should be designed to prevent hogs from re-entering the barns after they have been on the truck or exposed to other animals and/or their manure.
- K. Consider composting of mortalities rather than having a rendering truck come to your farm. If mortalities are rendered, prohibit rendering trucks from areas near hogs or buildings. Promptly move carcasses to a pick-up area that is protected from scavengers.
- L. Locate feed storage bins so that delivery trucks do not cross through lots or animal traffic-flow patterns.



An example of internal biosecurity would be the measures taken to keep Transmissible Gastroenteritis (TGE) from spreading from your gestating sows to the sows and piglets in the farrowing house.

2. Internal Biosecurity Measures

- A.** Determine the disease profile for your herd. Know what diseases are present in your herd and within different age groups in your herd. You can get this information from observing animals, laboratory test results, necropsies and slaughter checks.
- B.** Growing pigs should be kept in age-segregated groups. Operate All-In/All-Out (AIAO) with cleaning and disinfection between groups when possible. Use AIAO by at least air space (room); a better practice is by building or site. Proper cleaning and disinfection reduces the contamination level to help control disease spread.
- C.** Establish a traffic pattern for both pigs and people that prevents exposure of younger pigs to older pigs, their manure, or people who have recently been in contact with them.
- D.** Strategically deworm and vaccinate according to conditions in the herd. In consultation with your veterinarian, formulate immunization and parasite control programs tailored to your herd, considering factors such as the disease profile of the herd, type of production and facilities. Forms for outlining routine preventive measures are located in the Appendix.
- E.** Provide dedicated boots and coveralls at strategic sites in the facility. When boots and coveralls are changed, hands should be washed. Because boot disinfection is sometimes difficult, disposable boots may be better if regular boots cannot be dedicated to a single site.



3. Foreign Animal Disease and Agroterrorism Prevention

In addition to the normal biosecurity measures already listed, producers should take special precautions to prevent the accidental or intentional introduction of foreign animal diseases.

- A. Require international visitors to observe an appropriate "animal-free" period before visiting your herd. People can harbor foreign animal disease agents for several days.
- B. Require anyone who has recently traveled in foreign countries to wear farm-supplied clothing. Jewelry and other items should not be worn unless it has been cleaned and disinfected.
- C. Prohibit anyone from bringing or consuming imported foods in the production facility. Some bacteria and viruses can survive processing and have been known to serve as the source of infection in countries distant to their origin.
- D. Thoroughly screen all job applicants and check references.
- E. Restrict visitors to those who have a verified need to be there. Don't give sensitive information or facility tours to people you don't know. Never allow visitors to be without an escort.
- F. Control visitor entry by fences, gates and signs. Lock doors and gates when the buildings are unattended. Use surveillance cameras and night lighting to deter intruders.
- G. Develop a written emergency action plan; have a mock emergency to practice the plan. Elements of the plan should include:
 - Assignment of specific responsibilities
 - Contact numbers for police, fire, veterinarian, animal health officials and nearby neighbors
 - Provisions for stopping movement of people and animals into or out of the site
 - Maps and diagrams available for responders showing the location of sensitive areas and building controls
- H. Discuss your security plans with local law enforcement officials. Let local law enforcement officials know you have a security plan.
- I. Immediately report suspicious activities to law enforcement agencies.
- J. Promptly report unusual or serious diseases to your veterinarian or animal health officials.

Biosecurity is a combination of management practices designed to prevent the transmission of diseases and disease-causing agents.



C. Rodent and Pest Control

Rodent and pest control should be included in biosecurity plans as rodents and other pests can compromise both external and internal biosecurity measures. They can bring new diseases into a herd as well as serve as a reservoir of disease affecting a herd. For example, it is known that more than 10 pig diseases can be carried by rats and/or mice.

Effective rodent control is based on four elements:

1. Denying entrance to facilities and buildings
2. Removing sources of food that can attract and maintain rodent populations
3. Preventing or denying them cover and places to live
4. Baiting/trapping to reduce rodent populations

Methods of rodent control that have proven effective include:

1. Working with a rodent control specialist to develop a plan tailored to your operation
2. Storing feed in rodent-proof bins and feeders. Lids must be in place and tight-fitting
3. Cleaning up feed spills promptly so not to attract rodents and wildlife
4. Plugging holes and gaps in the walls and doors of buildings
5. Placing bait stations strategically throughout the facility
6. Maintaining a 3-foot "sterile zone" around the exterior of buildings
7. Preventing refuge within 100 feet of the pig buildings




Cats are an unacceptable way of controlling rodents in and around livestock buildings. Cats can be the source of disease agents that infect pigs and other livestock. Some of these disease agents may present food-safety hazards in pork.

In addition to rodents, wildlife, feral swine and other pests can also compromise biosecurity. Consider perimeter fences, netting and screening to exclude wildlife, birds, feral swine, pests and even some insects.

Additional information on rodent control is available in the Pork Industry Handbook, on the National Pork Board Web site

 (<http://www.pork.org>) in the "Biosecurity in Pork Production" distance-learning program produced by Pork Checkoff and also from the USDA.

USDA's rodent control program can be found in its Trichinae Certification program at  http://www.aphis.usda.gov/vs/trichinae/docs/prog_std.htm or see the University of Nebraska's Web site at

 <http://rodent.swine.unl.edu>.



Use the checklist in the Appendix to check the biosecurity procedures for your herd. Discuss the checklist with your veterinarian as you formulate your plans for improvement.



Notes:

An effective internal biosecurity plan must include a complete cleaning and disinfection of each room or building between groups.

D. Cleaning and Disinfection Procedures

The process of cleaning and disinfecting a facility is a vital part of controlling the exposure of pigs to pathogens in their environment. Removal of organic material is necessary before disinfection can be effective. Thorough cleaning alone will reduce pathogens by more than 90 percent. Disinfection with effective products then inactivates additional pathogens as does drying.

To realize the full advantage of All-in/All-out (AIAO) production, cleaning and disinfection of the facility between groups is essential. The strict AIAO pig flow will break the direct-contact spread of disease between sequential groups, but some disease organisms can survive long enough in the unoccupied but, contaminated areas, to infect the next group of pigs.

An effective internal biosecurity plan must include a complete cleaning and disinfection of each room or building between groups. Allow the room or building to dry completely before placing the next group of pigs in it as the drying process further reduces the chance that disease-causing agents will survive until the next group of pigs arrives.

When choosing a disinfectant, considerations should include:

- **Type of surface to be disinfected**
- **Temperature in the building and of the surfaces in the building**
- **Hardness of the water**
- **Efficacy against specific diseases**
- **Time required for the disinfectant to inactivate the disease agents**
- **Toxicity to humans and animals**
- **Amount of organic material present**
- **Cost**

With many factors influencing the choices, most producers should discuss their options with their Advisor, veterinarian or Extension specialist. The disinfectant chart below is from Iowa State University's Center for Food Security and Public Health.

See  <http://www.cfsph.iastate.edu/BRM/disinfectants.htm>.

See disinfectant chart at  <http://www.cfsph.iastate.edu/BRM/disinfectants.htm>



Characteristics of Selected Disinfectants								
Disinfectant Category	Alcohols	Aldehydes	Biguanides	Halogens: Hypochlorites	Halogens: Iodine Compounds	Oxidizing Agents	Phenols	Quaternary Ammonium Compounds (QAC)
Sample Trade Names	Ethyl alcohol, Isopropyl alcohol	Formaldehyde, Glutaraldehyde	Chlorhexidine, Reckon [®] , Viracide [®]	Bleach	Betadine [®] , Povidone [®]	Hydrogen peroxide, Peroxide, acid, Vireon 5 [®] , Oxy-Sep 113 [®]	One Strike (pure) [®] , Phenol 50 [®] , Solu-50 [®]	Rescue [®] , D-Quat [®] , D-250 [®]
Mechanism of Action	-Proteins -Disrupts lipid	-Proteins -Disrupts lipid	-Disrupts proteins	-Disrupts proteins	-Disrupts proteins	-Disrupts proteins	-Disrupts proteins	-Disrupts proteins
Advantages	-Fast acting -Leaves no residue	-Broad spectrum	-Broad spectrum	-Broad spectrum -Short contact time -Non-toxic	-Stable in storage -Relatively safe	-Broad spectrum	-Good efficacy with organic material -Non-toxic -Stable in storage	-Stable in storage -Non-volatile -Effective at high temperatures and high pH (9-10)
Disadvantages	-Rapid evaporation -Flammable	-Carcinogenic -Irritates eyes and skin -Only use in well-ventilated areas	-Only function in limited pH range (5-7) -Toxic to fish -Environmental concern	-Inactivated by sunlight -Requires frequent application -Corrosive -Disrupts membranes and tissue irritation	-Inactivated by QACs -Requires frequent application -Corrosive -Disrupts membranes and tissue irritation	-Damaging to some metals	-Can cause skin and eye irritation	
Precautions	Flammable	Carcinogenic		Never mix with acids, bases, or oxidizers			May be toxic to animals, especially fish and birds	
Vegetative Bacteria	Effective	Effective	Effective	Effective	Effective	Effective	Effective	Effective
Mycobacteria	Effective	Effective	Variable	Effective	Limited	Effective	Variable	Variable
Enveloped Viruses	Effective	Effective	Limited	Effective	Effective	Effective	Effective	Variable
Non-enveloped Viruses	Variable	Effective	Limited	Effective	Limited	Effective	Variable	Not Effective
Spores	Not Effective	Effective	Not Effective	Variable	Limited	Variable	Not Effective	Not Effective
Fungi	Effective	Effective	Limited	Effective	Effective	Variable	Variable	Variable
Efficacy with Organic Matter	Reduced	Reduced	?	Highly reduced	Highly reduced	Variable	Effective	Reduced
Efficacy with Hard Water	?	Reduced	?	Effective	?	?	Effective	Reduced
Efficacy with Soap/Detergents	?	Reduced	Inactivated	Inactivated	Effective	?	Effective	Reduced

Disclaimer: The use of trade names does not in any way signify endorsement of a particular product. For additional product names, please consult the most recent Compendium of Veterinary Products. Accounts review: Linton AH, Hogg WB, Russell AD. Disinfection in Veterinary and Farm Practice. 1987. Blackwell Scientific Publications, Oxford, England; Quinn PJ, Markey BK. Disinfection and Disease Prevention in Veterinary Medicine. In: Stock SS, ed. Disinfection, Sterilization and Preservation. 5th edition. 2001. Lippincott, Williams and Wilkins, Philadelphia, 1040, 2000.

? Information not found

 Center for Food Security and Public Health
IOWA STATE UNIVERSITY
www.cfsph.iastate.edu

Additional biosecurity information is available at the Web site of the National Biosecurity Resource Center for Animal Health Emergencies (Purdue and Indiana agencies) located at  <http://www.biosecuritycenter.org/>.



Good Production Practice # 1

Establish and Implement an Efficient and Effective Herd Health Management Plan.

Summary

Herd health is a key to food safety. A herd health program should include these important components:

- Regular observations of the herd by your veterinarian are not only beneficial in maintaining a healthy herd, they fulfill the requirements of a Veterinarian/Client/Patient Relationship or VCPR.
- Biosecurity can keep diseases out of a herd, or keep a disease already in one or more segments of the herd from spreading to other segments.
- Rodent and pest control should be included in biosecurity plans as rodents and other pests can compromise both external and internal biosecurity measures.
- Cleaning and disinfecting a facility is a vital part of controlling the exposure of pigs to pathogens in their environment.

Notes:



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Good Production Practice # 2

Use an Appropriate Veterinarian/Client/Patient Relationship (VCPR) as the Basis for Medication Decision-Making.



Good Production Practice # 2

Use an Appropriate Veterinarian/Client/Patient Relationship (VCPR) as the Basis for Medication Decision-Making.

A VCPR as defined in the U.S. Code of Federal Regulations (21 CFR Part 530) is one in which:

1. **A veterinarian has assumed the responsibility for making medical judgments regarding the health of the animal(s) and the need for medical treatment, and the client (the owner of the animal or animals or other caretaker) has agreed to follow the instructions of the veterinarian.**

The herd medical decisions should be in the control of the veterinarian and the caretaker, not the feed salesman, equipment dealer or neighbor. If a veterinarian has agreed to evaluate and/or medicate an animal, any instructions for treatment must be followed by the caretaker if the VCPR is to remain valid. Medicating the animal more often, with a different dose or different route of administration than instructed by the veterinarian, means that the producer has not maintained his/her part of the VCPR.

2. **There is sufficient knowledge of the animal(s) by the veterinarian to initiate at least a general or preliminary diagnosis of the medical condition of the animal(s).**

To have sufficient knowledge to initiate at least a general or preliminary diagnosis requires that the veterinarian has recently seen and is personally acquainted with the keeping and care of the animal(s) by virtue of examination of the animal(s) and/or by medically appropriate and timely visits to the premises where the animal(s) are kept.

3. **The practicing veterinarian is readily available for follow-up in case of adverse reactions or failure of the regimen of therapy.**

If a veterinarian accepts the responsibility for the care of the animal, he/she also is responsible for providing continued care if needed, even if it is arranged with another veterinarian. Likewise, the veterinarian must be readily available for consultation and re-evaluation.

The veterinarian on record should be actively involved in making the medical decisions for the operation.

If the veterinarian is consulted for only a portion of the health program, it is impossible for the veterinarian to know the true scope of the problems and the response to treatments given. Seeing the entire breadth of problems can lead to more timely and accurate diagnosis and proper use of FDA approved drugs that can prevent harmful drug residues. Involving your veterinarian also increases the treatment options available.

With the implementation of the Federal Animal Medicinal Drug Use Clarification Act (AMDUCA) in 1994, provisions were established by which FDA-approved drugs could be legally used in food-producing animals in a way other than expressly directed on the label. AMDUCA extends the privilege of extra-label use of drugs **only to veterinarians** and only when *"the health of an animal is threatened or when suffering and death may result from failure to treat the animal."*

Veterinarians were given the privilege of extra-label drug use because of their training in physiology, pharmacology, access to scientific literature, and the ability to draw conclusions from their information resources. As a rule, there is no standard source for withdrawal time information for extra-label and prescription drug use; AMDUCA requires that the veterinarian directing extra-label drug use establish an extended withdrawal time so that no violative residue occurs. This involves the veterinarian reviewing the literature and consulting other information resources.

The details of the treatment of any food-producing animal must be recorded. Because extra-label treatment regimes have not undergone the extensive trials necessary to have a label approved for a specific use, the risk of adverse reactions or violative residues is increased over on-label use. Therefore, extra-label drug use is accompanied by a greater responsibility for documentation. The producer should have records showing the instructions from the veterinarian directing the extra-label drug use as well as the treatment records that result from the application of these instructions. Treatment records serve as important documentation of when, how, and with what drug the producer treated his/her animals. It is recommended that treatment records should be maintained for at least 12 months after an animal is marketed.



The producer should have records showing the instructions from the veterinarian directing the extra-label drug use as well as the treatment records that result from the application of these instructions.



Distribution of Approved Animal Drugs

The distribution of approved animal drugs falls into the following three categories: Over-the-Counter (OTC), Prescription (Rx) and Veterinary Feed Directive (VFD).

Over-the-Counter (OTC)

Over-the-Counter medications can be purchased by anyone from places such as farm supply stores, animal health salespersons, catalogs and veterinary clinics. The margin of safety for the animal, especially if an accidental overdose occurs, the difficulty in correctly diagnosing the disease, and the safety of the person administering the medications are all factors that the FDA considers when determining if the drug can be marketed as an OTC product. Even though VCPRs are not required for using OTC medications, a VCPR should be the basis for all medication decisions. The producer must use OTC drugs only as specified on the manufacturer's label unless prescribed for an extra-label use by a veterinarian.

Prescription (Rx)

Prescription drugs are those for which the FDA requires professional oversight. These drugs are available only through veterinarians, or pharmacists and distributors on the order of a veterinarian. The manufacturer's label will have the statement **"CAUTION: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian"** identifying this drug as a prescription product. The veterinarian will supply information about animal identification, dose, route, frequency of administration and the withdrawal time along with his/her name, address and phone number.

Veterinary Feed Directive (VFD)

A Veterinary Feed Directive drug is an antimicrobial intended for use in, or on, animal feed. Feeds containing a VFD product can be used only under an order issued by a licensed veterinarian within the confines of a VCPR. It is expected that in the future more antimicrobials for use in swine feed may be approved within the VFD category.

Once the veterinarian has the basis for making a diagnosis, he/she can issue a VFD order. The veterinarian hands the original VFD to the client for use to obtain feed from a distributor, or hands it directly to the distributor, while providing the client with a copy of the VFD order. This document allows the producer to buy medicated feed containing the VFD drug. The veterinarian, the producer and the distributor of the VFD feed all are required to keep the VFD order for two years; the veterinarian and client keep copies and the distributor keeps the original order.

Extra-label Use of Drugs

When over-the-counter or prescription drugs used as directed by the label are not adequate to resolve your animals' medical problems, your veterinarian may be able to prescribe an FDA-approved new animal or human drug in an extra-label manner. Extra-label use means using an FDA-approved drug in a manner not in accordance with the approved labeling. Only a veterinarian with a VCPR for your herd can direct extra-label drug usage. An extra-label use of medicated feeds, including VFD feeds, is prohibited by regulation 21 CFR 530.11.

Using a commonly available OTC antibiotic preparation, Penicillin G Procaine (300,000 IU per cc) as an example, let's look at some common situations where a veterinarian must be involved in extra-label drug use:

- 1. Increasing the dosage.** The label dosage for Penicillin G Procaine is 3000 International Units (IU) per pound of body weight. This means the label dose for a 200-pound hog is 2 ccs daily when using the usual penicillin product (300,000 IU/cc). If you use this penicillin in your hogs, are you following the label directions or has your veterinarian directed you to use a different dosage?
- 2. Changing the frequency or the route of administration.** Penicillin G Procaine is labeled for only intramuscular use in swine. Giving it by another route, such as subcutaneously, is extra-label use.
- 3. Changing the duration of treatment.** The label directions are to treat swine for two days after the symptoms are gone but no more than seven days. Do your treatment protocols match the directions?
- 4. Treating a disease or condition not on the label.** The only approved use of Penicillin G Procaine in swine is for treatment of erysipelas infections. Using it to treat anything other than erysipelas is extra-label drug use.
- 5. Changing the species or life stage to be treated.** If the product is approved for piglets only, using it at a later life stage is an extra-label use.



When an OTC or prescription product is used in an extra-label manner, the requirements are:

- A VCPR exists
- Adequate instructions have been given by the veterinarian and will be followed by the caretaker
- A withdrawal time has been assigned by the veterinarian so the extra-label drug use does not result in a violative residue
- Identity of the treated animal is maintained
- The treatment is recorded and the records are maintained by the producer for at least one year after the animal is marketed. The veterinarian must keep these records for two years.

When a drug is used in a way contrary to the label, the use is termed "extra-label use." Extra-label use is legal only if it is done by or on the order of a licensed veterinarian. When a producer uses a drug in an extra-label manner without a veterinarian's direction, such use is illegal. With feed medications, no one, not even your veterinarian, can use or direct the use of feed medications in or on feed in a way that is contrary to the label.

Under AMDUCA, the FDA has the authority to prohibit the use of certain drugs in food-producing animals. There are also some drugs that are not labeled for use in swine and that are specifically forbidden by the FDA from being used in an extra-label manner in pork production. As of January 2007, these compounds are found in the table shown:

The FDA forbids these drugs to be used in an extra-label manner in pork production.		
Class or active ingredient	A drug in the class	Trade name example
Chloramphenicol		Chloromycetin
Clenbuterol		Ventipulmin
Diethylstilbestrol (DES)		
Furazolidone		Furoxone
Nitrofurazone		Furacin
Nitroimidazoles	dimetridazole	Emtryl
Fluoroquinolones	enrofloxacin	Baytril 100
Glycopeptides	vancomycin	Vancocin

Compounding of Animal Drugs

Drug compounding is the mixing of two or more drugs to make a different medication for the needs of a particular patient. The mixing of two injectable drugs together in a bottle or syringe is compounding. Because the interactions of the different components may lead to the formation of new compounds or cause destruction and/or precipitation of active or inactive ingredients, setting a withdrawal time is merely a guess. The use of compounded drugs may result in adverse reactions or deaths of animals. Under AMDUCA, a veterinarian with a VCPR may be permitted to compound FDA-approved drugs following rules very much like those for extra-label drug use. The veterinarian is then responsible for the safety and efficacy of the compounded drug. Compounding by producers or distributors of animal health products is prohibited.

Residue Testing

Animals sometimes lose ear tags; some get out of their pens and have accidental access to medicated feeds. Sometimes treatment records are lost or destroyed. When questions arise about the residue status of an animal or a group, testing of live animals is necessary. The risk to your reputation as well as that of the industry far exceeds the cost of having the animals tested before marketing. Because finding a kit or laboratory for this service may be difficult, producers should do the research *before* a residue test is actually needed. Contact information should be recorded in the herd's emergency response plan. When there is any doubt about the residue status of your animals, test them rather than guessing.

Good Production Practice # 2



Use an Appropriate Veterinarian/Client/Patient Relationship (VCPR) as the Basis for Medication Decision-Making.

Summary

- A VCPR means that a veterinarian has assumed responsibility for making medical judgments regarding the health of (an) animal(s) and the need for medical treatment, and the client (the owner of the animal or animals or other caretaker) has agreed to follow the instructions of the veterinarian.
- Such a relationship can exist only when the veterinarian has recently seen and is personally acquainted with the keeping and care of the animal(s) by virtue of examination of the animal(s), and/or by medically appropriate and timely visits to the premises where the animal(s) are kept.
- Under a veterinarian's direction, FDA approved drugs can legally be used in food-producing animals in a way other than expressly directed on the label, but only when a VCPR exists.
- A VCPR includes the oversight of animal drugs used in an operation. Approved animal drugs are classified by category; either Over-the-Counter (OTC), Prescription (Rx), or Veterinary Feed Directive (VFD).
- According to FDA, VFD records must be kept for 2 years.

Notes:



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Good Production Practice # 3

Use Antibiotics Responsibly.



Good Production Practice # 3

Use Antibiotics Responsibly.

The basis for using antibiotics responsibly during pork production involves evaluating their use to protect animal health, optimize effectiveness, and minimize the risk of developing antibiotic resistance, thereby protecting public health.



Pork producers use antibiotics for three purposes: treatment of illness, prevention of disease and to improve the nutritional efficiency of their animals.

- **Treatment of Illness** – The administration of antibiotics in animals to combat a clinical illness. Antibiotics administered for treatment are delivered by injection, in feed or in water.
- **Prevention of Disease** – The administration of antibiotics in animals that have been, or are being, exposed to a bacterial infection, or are in operations that have historically experienced clinical outbreaks of disease at certain production stages. Antibiotics for prevention are typically delivered in feed or water.
- **Improve Nutritional Efficiency** – Antibiotics administered to enhance the efficiency of pigs in converting feed. Antibiotics to enhance nutritional efficiency are typically delivered in the feed.

Prevention of Disease: Response may be greater in younger animals.

- Using antibiotics in nursery age pigs at levels that promote nutritional efficiency and growth has been clinically shown to improve health.
- Using antibiotics in the finisher at levels that promote nutritional efficiency and growth may prevent disease on specific farms depending on the pathogens *present*.

Principles and guidelines for Responsible Antibiotic Use

Take appropriate steps to decrease the need for the application of antibiotics.

- A. Preventive strategies, such as implementing biosecurity programs, appropriate animal husbandry, hygiene, routine health monitoring, and vaccination programs, can help decrease the need for antibiotics.**
- A comprehensive herd health plan as described in Good Production Practice #1 is key to maintaining animal health and productivity. Maintaining a healthy herd will minimize the need for antibiotics. This includes talking with your veterinarian about the health status of your herd – how it can be improved and how it can be protected.

You should work with your veterinarian to protect the health of your herd. Include an analysis of your vaccination program, your biosecurity protocols, your hygiene practices, your pig flow, and other animal husbandry practices. Review all your medication uses regularly to determine if they continue to be needed. Other professionals should be consulted, as needed, to review your genetics, nutritional and environmental programs.

Assess the advantages and disadvantages of all uses of antibiotics.

Producers should consider the advantages and disadvantages of all uses of antibiotics, including animal health, welfare, environmental, food safety and economic impact. Analysis of risks should include consideration of the potential for development of resistant bacteria that may impact animal and/or human health and consideration of consumer confidence and the public image of the pork industry. Antibiotic treatment may not always be the most effective strategy. Consider management options that could be as, or more, effective than antibiotics. Medication should not always be the first option in addressing a health problem.

A. Other management options should be considered prior to, or concurrent with, utilizing antibiotic therapy.

- Supportive care could include management changes in ventilation or housing, or the administration of antipyretics such as aspirin or other anti-inflammatory medications.
- Options might include acidification of feed or water or electrolyte therapy.

When antibiotics are needed, remember that management changes and other supportive therapies may increase the effectiveness of the treatment plan.

B. Antibiotic use should be minimized by treating only for as long as needed for the desired clinical response.

- Antibiotic use involves both dose (amount and frequency) and duration (length of treatment).
- Label instructions can provide valuable guidance on the optimum dose and duration of treatment. It is illegal to deviate from the label when using antibiotics in the feed.
- Administration of antibiotics in chronic, non-responsive cases may not be effective.

Work with your veterinarian to create proper protocols for any herd-health regimen that requires antibiotics.

C. Periodically assess the need for continuing preventive antibiotic therapy.

Formally review any regimen that includes antibiotics on a regular basis with your herd veterinarian. Assess if there are other management changes you can make to reduce the need for antibiotics. Is the condition that was initially diagnosed, and that required antibiotic treatment, still present? Don't let antibiotic use become routine.

D. Consider the other impacts, in addition to animal health, of using antibiotics.

There are potential impacts of antibiotic use on animal welfare, the environment, food safety and economics. Analysis of risks should include consideration of the potential for development of resistant bacteria.



Use antibiotics only when they provide measurable benefits.

A. Assess the measurable benefits of all uses of antibiotics.

- The Food and Drug Administration (FDA) approves products based on their safety (human, animal, and environmental) and efficacy. The agency considers the risk to public health from foodborne antibiotic resistant bacteria.
- The FDA does not consider economic benefit in the approval decision. Producers have to assess potential economic benefits for their operation when deciding on product use.
 - Reduced mortality, morbidity and improved animal welfare are measurable benefits that can result from the appropriate treatment and prevention of disease.
- The measurable benefit from increased nutritional efficiency can be reduced days to market, better feed utilization and a reduction in animal waste.
 - Producers should evaluate these benefits on their farms to ensure there are measurable benefits from using antibiotics.
 - Producers may have the option of supplying markets that require certain restrictions for antibiotics based on marketing decisions. Producers should consider pig welfare, management implications and economic impact of adopting those specified production practices when choosing if they will participate in that market.

B. Assessing the measurable benefits of antibiotic use for nutritional efficiency should be based on scientific data.

- Data published in scientific journals, university publications, and clinical trials are examples of science-based data that could help in making the decision about using antibiotics to enhance nutritional efficiency. Properly designed on-farm trials can provide science-based data to determine measurable benefits of antibiotic administration.

Work with your veterinarian or nutritional advisor to help you design scientifically valid on-farm trials. Improperly designed trials will not provide you reliable information you can use to make decisions. If your herd health or management changes, you should reevaluate antibiotic regimens to determine if there is still a measurable benefit. Review them regularly with your veterinarian and nutritionist.



Use professional veterinary input as the basis for all antibiotic decision-making.

- As described in Good Production Practice #2 the responsible use of antibiotics should meet all requirements of a veterinarian/client/patient relationship
- Prescription, VFD, and the use of antibiotics in a manner other than what is on the label (extra-label drug use) must meet all the requirements of a veterinarian-client-patient relationship.
- The law prohibits extra-label use of antibiotics in the feed, even by a veterinarian.

Even though it is legal to obtain and use some veterinary antibiotics "over-the-counter" (OTC), pork producers must protect public health and consumer confidence through responsible

antibiotic use. Also, although a product may be available OTC, any change to its labeled directions – dosage, interval, condition being treated, age or class or animal treated, etc. – can only occur under the direction of the veterinarian for your operation. Doing otherwise is illegal even though the medication is available OTC. Getting the advice of the veterinarian before purchasing and using OTC products will meet these obligations, save you money because the antibiotic, expense and time won't be wasted.

- Veterinarians and producers should use the latest information on animal health care products to optimize the course of antibiotic therapy.

Important information is included on the label and in the package insert that comes with the antibiotic. If there is any question about the appropriate regimen (dosage, directions for use, frequency, route of administration, cautions and withdrawal times if necessary), ask your veterinarian.

Antibiotics should be used for treatment only when there is an appropriate clinical diagnosis.

- Diagnosis is supported by clinical signs, necropsy, laboratory tests, herd history, etc.
- An accurate diagnosis includes identification of factors contributing to the cause of the disease.
- Culture and sensitivity results can aid in the selection of antibiotics.

Insist on an accurate diagnosis, including culture and sensitivity results when appropriate. This will save you money by saving time in treatment and by establishing a pattern of bacterial susceptibility on your farm. Look for other management factors such as ventilation, pig flow, etc., that may be contributing to disease.

Limit antibiotic treatment to ill or at-risk animals, treating the fewest animals indicated.

- Consider group morbidity and mortality rates when deciding whether or not to initiate herd, group, or individual therapy.
- Consider the herd health history when selecting antibiotics.
- When the above factors are appropriately considered, prevention of disease in at-risk animals is a responsible use of antibiotics.

There are times when administering antibiotics to prevent disease will ultimately mean less antibiotics will be used than if treating the same group of animals following an outbreak. Responsible use of antibiotics during treatment includes administering antibiotics only when necessary, to the smallest number of animals feasible, and for the least amount of time necessary to prevent reoccurrence of the disease.

Antibiotics that are important in treating antibiotic-resistant infections in human or veterinary medicine should be used in animals only after careful review and



Limit antibiotic treatment to ill or at-risk animals, treating the fewest animals indicated.




reasonable justification.

- Culture and sensitivity results should be considered when selecting antibiotics used for treatment.
- Discuss product options with your veterinarian to select the most appropriate therapy for your specific situation.

Ask your veterinarian which antibiotics are recommended for any disease condition on your farm, and how they could impact antibiotic resistance on your farm and in human health. Work with your veterinarian to consider product choices and develop treatment protocols to minimize development of resistance or cross-resistance. Have a written action plan for antibiotic use and review it regularly with your veterinarian.

Minimize environmental exposure through proper handling and disposal of all animal health products, including antibiotics.

- Water medicators and feeders need to be properly adjusted to deliver the desired dose and avoid spillage and waste.
- Ensure proper handling and disposal of any outdated or unused animal health products through communication and employee training.

Additional discussion and explanation of antibiotic use can be found in the National Pork Board program "Take Care - A Producer's Guide to Using Antibiotics Responsibly." This program is available from the Pork Checkoff by calling 800-456-PORK (7675) or on the National Pork Board's Web site at:  <http://www.pork.org>



Good Production Practice # 3

Use Antibiotics Responsibly.

Summary

Pork producers use antibiotics for three purposes:

- Treatment of Illness
- Prevention of Disease
- Improve Nutritional Efficiency

Principles and guidelines for responsible antibiotic use:

- Take appropriate steps to decrease the need for the application of antibiotics.
- Assess the advantages and disadvantages of all uses of antibiotics.
- Use antibiotics only when they provide measurable benefits.
- Use professional veterinary input as the basis for all antibiotic decision-making.
- Antibiotics should be used for treatment only when there is an appropriate clinical diagnosis.
- Limit antibiotic treatment to ill or at-risk animals, treating the fewest animals indicated.
- Antibiotics that are important in treating antibiotic resistant infections in human or veterinary medicine should be used in animals only after careful review and reasonable justification.
- Minimize environmental exposure through proper handling and disposal of all animal health products, including antibiotics.

[illegible]



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Good Production Practice # 4

**Identify, Track and Maintain
Medication and Treatment Records
for All Treated Animals.**



Good Production Practice # 4

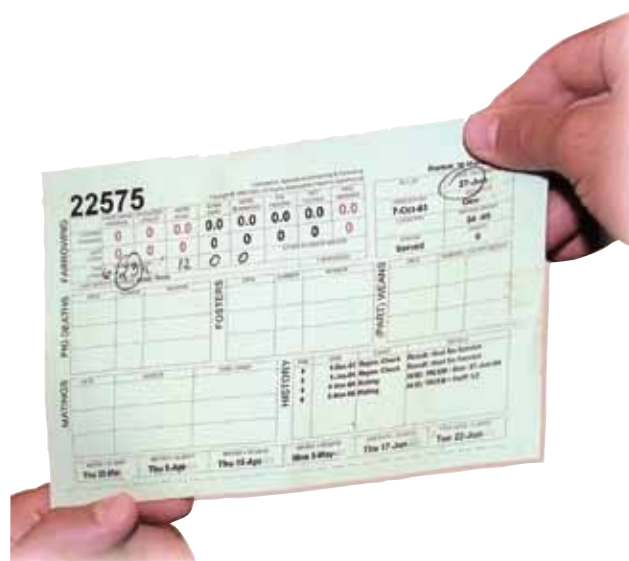
Identify, Track and Maintain Medication and Treatment Records for All Treated Animals.

Even before there is a need to treat an animal producers should decide which methods of identifying treated animals are most appropriate in their operation.



Producers must be able to identify treated pigs or groups of pigs from the time they receive the medication until they have completed their withdrawal time. Regardless of the visual identification method used, a written record should be kept on file for one year after the hogs have been marketed. Always be aware of product use that could cause violative residues including animals such as sows and small roaster pigs.

Without first identifying animals, there is no way to keep meaningful records. Many producers use some form of sow card or building record for tracking animals. Examples of treatment records can be found in the Appendix. When individual animal identification is not practical, a whole pen can be tracked and retained until the medication withdrawal time has elapsed. To be effective, each nursery, grower and finisher pen should be uniquely identified in a systematic manner. Do not rely on descriptions such as "3rd pen on the south side;" some caretakers may not know which way is south or which end of the building to count from.



Methods of identifying treated pigs individually include:

- A card that stays with the animal. This works best for adults housed individually in a pen or stall
- Paint marks are easy to apply and can be used for treatments with short withdrawal times, but may rub off or rub onto untreated penmates
- Tattoos are permanent, but depending on the type, the tattoo may be hard to apply and difficult to read at a distance
- Ear tags are the easiest to see but are more cumbersome to apply than some other methods
- Ear notches can be recorded on a card to identify treated animals. *Caretakers must be familiar with site-specific systems*



Without first identifying animals or groups of animals, there is no way to keep meaningful records.

Notes:

Medicated animals can also be identified and tracked by:

- **Pen or room number**
- **Group (building or site)**

It is important that the entire group remains intact until the withdrawal time has elapsed.

There are several reasons related to food safety for keeping records of all medications given to food-producing animals. The primary reason is to make sure withdrawal times have elapsed before marketing.

A basic expectation of regulatory officials is that medication and treatment records are kept for at least 12 months after an animal is marketed. Additionally, FDA requires that Veterinary Feed Directive (VFD) orders be kept for 2 years after date of issuance. Medication records provide documentation that demonstrates a drug was used properly. In instances where a residue found at harvest has been traced to a farm, the producer will be expected to provide complete records to the investigator.

Interest in producer records by packers also is increasing. As packers continue to refine their HACCP plans, producers should expect that those packers are more likely to want to do business with producers who are doing things right and have records to prove it.

Treatment records also can be useful as a management tool. Reviewing records can provide insight to questions such as: Are more animals being treated this year than last? Has the response to treatment been good? Which treatment for pneumonia gives the best response? All these things can be important when formulating disease-control strategies.

FDA requires that Veterinary Feed Directive (VFD) orders be kept for 2 years after date of issuance.

In instances where a residue found at harvest has been traced to a farm, the producer will be expected to provide complete records to the investigator.

FDA Compliance Policy Guide (CPG) 7125.37 – Proper Drug Use and Residue Avoidance by Non-Veterinarians outlines the practices and procedures the FDA would expect to see as part of the operation's standard operating procedure for using animal-health products. **The FDA expects producers to maintain medication and treatment records that will indicate:**

1. The animal(s) that were treated
2. The date(s) of treatment, including last date of administration
3. The drug(s) administered
4. The route of administration
5. The person who administered each drug
6. The amount of each drug administered
7. The withdrawal time prior to harvest



Treatment records also can be useful as a management tool.

Animal Treatment Record (minimum requirement)						
Date	Animal ID	Product name	Amount given	Route	Given by	Withdrawal time
9-17	145	Penicillin	2cc	IM	Bill P	7 days

Recording additional information may be very helpful in tracking treatments and withdrawal times (the chart below contains the suggested information):

Suggested Additional Information for Tracking Treatments

1. The approximate body weight of the animal treated to verify that the amount of drug given was appropriate
2. The route the medication was given to verify you followed the labels directions
3. The medical problem that prompted treating the animal, such as pneumonia, diarrhea, etc.
4. Calculated date the withdrawal will be completed
5. The name of the veterinarian who has a VCPR and directed extra-label drug use when appropriate

Date	Animal ID	Body weight (lbs)	Condition being treated	Product name	Dose given (cc)	Route	Given by	Withdrawal (days)	Date withdrawal complete	VCPR veterinarian if Extra-label drug use	Outcome of treatment
9-22	145	200	Cut leg	Penicillin	2	IM	Chuck	7	9/29	Dr. Fox	Lame

When treated animals are identified by pen, room or group number, it is important that the entire group remains intact until the withdrawal time has elapsed. Any pig removed from the group should be individually identified and the withdrawal time recorded.

Wherever possible, efforts should be made to integrate any animal identification system for tracking treated animals with the Swine ID program identification standards.

Notes:

Premises Identification

Premises Identification Numbers (PIN) are a key component of the Swine ID Plan. A premise identification number (PIN) is made up of seven alphanumeric characters that uniquely identify a physical location on which livestock may be located.

During natural or animal disease disasters Premises Identification Numbers will support:

- Faster trace-back capabilities during disease outbreaks
- Faster determination of the extent of an outbreak
- Faster implementation of disease control measures
- Businesses planning to diminish any effects of a disease outbreak
- Better communications to producers in areas affected by disasters

Premises Identification Numbers will support the development of more comprehensive and effective disease-surveillance programs for the swine industry.

For this to work, producers should register their premises or farm through their State or Tribal Nation to get a Premises Identification Number (PIN). If the State or Tribal Nation does not provide the location identifiers a local USDA representative can provide the Premises Identification Number. Premises Identification Numbers should be used as part of a producer's record system to keep track of animal movements. PINs can also be used by producers to purchase official animal identification tags that they can use to uniquely identify individual animals.





Good Production Practice # 4

Identify, Track and Maintain Medication and Treatment Records for All Treated Animals.

Summary

- Records on treated animals should be maintained for these purposes:
 - Food safety – Ensure that withdrawal time has elapsed
 - Regulatory – Documentation of proper drug usage
 - Management – Analyzing and planning production
- There are various tools and methods of identifying treated pigs and groups of pigs.
- The FDA has developed minimum requirements expected of producers while maintaining medication and treatment records.
- Regardless of the identification method used, it should be accompanied by a written record that will be kept on file for one year after the hogs have been marketed.

Notes:



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Good Production Practice # 5

**Adhere to Medication
Withdrawal Times.**



Good Production Practice # 5

Adhere to Medication Withdrawal Times.

Failure to observe pre-harvest withdrawal times following treatment of food animals is one of the major causes of violative tissue residues in the United States. The withdrawal time is the period required for the medication to be metabolized, broken-down, or excreted so that the level remaining in the body of the animal is below the level established as safe for humans.



Withdrawal times

This withdrawal period is established by the FDA based on the results of extensive testing. The withdrawal time is dependent on how fast the animal clears the drug from its body and the dose of the drug administered. If the drug has a withdrawal time, it will be found on the label, package insert or the feed tag. In the case drugs are used in an extra-label manner, the veterinarian must assign an adequate withdrawal time so there are no violative residues at harvest.

As a reminder, nearly all injectable vaccines are labeled with a 21-day withdrawal time. While a vaccine is not an antimicrobial agent, vaccines do contain preservatives and adjuvants requiring a withdrawal time. If there is a possibility that a pig will soon be sold as food, it should not be vaccinated unless the withdrawal time can be met.

Other countries may require withdrawal times different than the United States for some products. With the amount of pork that is exported, producers should expect that a portion of their production will end up in an export market. Therefore, an appropriate withdrawal time will need to be determined prior to using medications. One source for export market maximum residue level (MRL) information, and additional information regarding MRLs, is the National Pork Board Web site at:  <http://www.pork.org>, search for export withdrawal times. This Web site contains the most current information on export MRLs.

Other Sources of Drug Use Information: In addition to the label, information about the use of FDA-approved products can be found in several places.

Most medications will be packaged with a printed "insert." The insert is considerably longer and more technical than the label. In addition to the withdrawal time, the insert will provide information about the mode of action, adverse reactions, toxicity to humans and animals, and additional information.

The listing of FDA Approved Animal Drug Products, called the "Green Book," is compiled and maintained by the FDA. Electronic copies of the Green Book are available on the FDA Web site at <http://www.fda.gov>. For medications only approved for use in swine, go to <http://www.swinemedications.com>.

The Food Animal Residue Avoidance Databank (FARAD) is a national food safety project administered through the USDA. The purpose of FARAD is to provide livestock producers, Extension specialists and veterinarians with practical information on how to avoid violative drug, pesticide and environmental contaminant residues. In addition to the Web site, more specific residue avoidance information can be obtained from FARAD by calling 1-888-USFARAD (873-2723) or via the FARAD web site at: <http://www.farad.org>.



Other countries may require withdrawal times different than the United States for some products.



Medication Withdrawal Chart

As with lists of this nature, the information is time sensitive and may change. There are other approved medications, some of which have a zero-day withdrawal. **For complete information on all animal health products approved for use in swine (including those with zero-day withdrawal to market), visit <http://www.fda.gov> and search for 'Green Book.'**


This is only a partial list of approved medications that have pre-harvest withdrawal times in swine.

DRINKING WATER APPLICATION		
Drug	Trade Name (example)	Minimum Pre-harvest w/d (days)
Chlortetracycline	Aureomycin Soluble Powder	1
Chlortetracycline bisulfate & sulfamethazine	Aureomycin Sulmet Soluble Powder	15
Florfenicol	Nuflor Concentrate Solution	16
Levamisole hydrochloride	Levasole HCL Soluble Pig Wormer	3
Neomycin sulfate	Neomycin 325 Soluble Powder	3
Sulfaethoxypyridazine	S.E.Z. Drinking Water 6.25%	10
Sulfamethazine	Sulmet Drinking Water Solution	15
Tetracycline hydrochloride	Tetracycline hydrochloride Soluble Powder	4
Tiamulin	Denegard Soluble Antibiotic	
	3.5 mg/lb body weight 10.5 mg/lb body weight	3 7
Tylosin tartrate	Tylan Soluble	2

ORAL APPLICATION		
Drug	Trade Name (example)	Minimum Pre-harvest w/d (days)
Gentamicin sulfate (solution)	Gentocin Pig Pump	14
Neomycin sulfate	Biosol Liquid	3
Sulfachlorpyridazine	Vetisulid Powder	4
Spectinomycin dihydrochloride	Spectam Scour Halt	21

Printed charts listing withdrawal times for commonly used antimicrobials are convenient for quick reference and can serve as a reminder to record withdrawal times. Changes in drug use approvals and withdrawal times do occur and printed charts may contain outdated information. Always check the container label and Web sites for the most current drug use information. If there is any doubt about the proper withdrawal time, contact your veterinarian. Remember, the printed (published) withdrawal time is valid only when the drug is given in accordance with the label directions (species, route, dosage and condition).

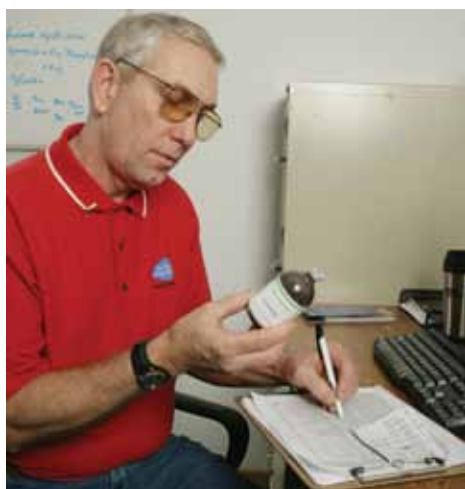
CAUTIONS

1. This chart is intended only to provide a guide for withdrawal times of commonly used medications. In cases of differences with the product label, the label directions or package insert should be followed.
2. Always check the label of the product you are using and follow the directions. Products with the same active ingredient but different manufacturers may have different withdrawal times.
3. The stated minimum withdrawal time applies only when a medication is used as stated on the label.
4. Using a product in a way other than specified on the label is illegal unless directed by a veterinarian with whom you have a VCPR and in a manner compliant with AMDUCA.
5. While many medications that do not require a withdrawal time have not been listed on this chart, do not assume a drug not listed above does not have a required withdrawal time.
6. Other countries may require withdrawal times different than those indicated on the chart for many products. Additional information can be found at:
 <http://www.pork.org>.

FEED ADDITIVE APPLICATION

Drug	Trade Name (example)	Minimum Pre-harvest w/d (days)
Carbadox	Mecadox Premix 10	42
Carbadox plus pyrantel tartrate	Mecadox/Banminth	70
Hygromycin B	Hygromycin B Premix	15
Ivermectin	Ivomec Premix	5
Levamisole resinate	Tramisol Premix 10%	3
Oxytetracycline	Terramycin 10 mg/lb body wt	0-5
Oxytetracycline plus Neomycin sulfate	Neo-Terramycin Type A < 140 g/ton Neomycin sulfate 140 g/ton Neomycin sulfate	5 10
Pyrantel tartrate	Banminth Premix	1
Roxarsone	3-Nitro Premix	5
Sulfamethazine	Aureomix 500; Aureo SP 250 Tylan 40 Sulf-G Premix	15
Sulfathiazole	CSP-250, CSP-500	7
Tiamulin	Denegard Medicated Premix 35 g/ton 200 g/ton	2 7
Tilmicosin	Pulmotil 18	7


INJECTABLE APPLICATION		
Ampicillin trihydrate	Princillin Injection	15
Ceftiofur	Excede for Swine	14
	Excenel-RTU	4
	Naxcel	4
Doramectin	Dectomax	24
Flunixin meglumine	Banamine-S	12
Gentamicin sulfate	Garacin Piglet Injection	40
Ivermectin	Ivomec 0.27% or 1.0%	18
Lincomycin hydrochloride	Lincomix Injectable	2
Oxytetracycline hydrochloride	LA-200; Bio-Mycin 200	28
	Oxy-Tet 50 Injection	26
Sodium selenite	BO-SE	14
Tulathromycin	Draxxin Injectable Solution	5
Tylosin	Tylan 50 or 200 Injectable	14
Vitamin injectables	Vitamin E-AD 300	60



Calculating Withdrawal Times

Each withdrawal day is a full 24 hours starting with the last time the pig is treated or has access to medicated feed or water. If a pig is last treated at 9 a.m. on Friday with a drug having a 5-day withdrawal, the withdrawal would be completed at 9 a.m. on the following Wednesday.

In the case of medicated feed or water, the withdrawal starts at the time the pig is removed from the medicated feed or water, not the last time the feed bin was filled with medicated feed or medication was put in the water supply. To help prevent violative residues from occurring, all medicated feed should be removed from bins and feeders and if water medication was used the water supply should be cleaned and flushed following treatment.

For further information regarding factors influencing withdrawal times, consult the Pork Safety Fact Sheet entitled "How do violative residues happen in swine?" (Apley, June 2003) available from the National Pork Board or online at:  <http://www.pork.org> and search for the title of the factsheet.



Summary

- The withdrawal time is the period required for the medication to be metabolized, broken-down, or excreted so that the level remaining in the body of the animal is below the level established as safe for humans.
- Other countries may require withdrawal times for many products different than those for the United States. For example, if your packer exports pork to Japan, determine the appropriate withdrawal time before using medications.

[illegible]

[illegible]



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Good Production Practice # 6

**Properly Store, Label and Account for
All Drug Products and Medicated Feeds.**



Good Production Practice # 6

Properly Store, Label and Account for All Drug Products and Medicated Feeds.

Medications should be viewed as a perishable commodity. They must be protected from damage by environmental conditions and from contamination.



The American Veterinary Medical Association (AVMA) has published best management practices for pharmaceutical disposal. For further information go to www.avma.org.

The effectiveness of a stored drug may be quickly diminished by temperature extremes or exposure to sunlight. Some drugs are best stored at room temperature while others require refrigeration. Most vaccines and some antibiotics should be refrigerated at 40° F - 45° F. Always refer to the label for correct storage of any product. As a rule, once a bottle of injectable medication has been opened, it should be stored in the refrigerator unless specifically directed otherwise by the label instructions or by your veterinarian.

To avoid using medications that have lost some of their potency, the supply of medication on hand should be kept to only what will be used well before the expiration date. The inventory should be rotated so that those with the shortest expiration date are used first, assuming they have not reached their expiration date. Periodically check products for expiration and properly discard those that are expired.



Sewage systems and septic tanks are not designed to remove antibiotics from the discharge water. Regulations regarding the disposal of unusable antibiotics vary from state to state. Unless specifically prohibited by local regulations, antibiotic preparations that are no longer wanted should be discarded in a manner such that they will go to a commercial sanitary landfill. These landfills are monitored by the EPA and engineered to prevent leachate from contaminating ground water.

In addition to preserving the efficacy of drugs in storage, it is also important to maintain their identity. As a rule, medication should be stored in the original container bearing the product label. If a product is placed in another container, it should immediately be clearly labeled to prevent misidentification.

The practice of withdrawing an injectable medication and storing it in a syringe for later use should be avoided. These syringes are often unlabeled so one medication may be mistaken for another resulting in unsatisfactory treatment response or withdrawal time mistakes. Syringes do not provide the protection from contamination and sunlight that a colored glass vial does. Additionally, syringes that have been cleaned and disinfected may have a soap or disinfectant residue that can inactivate the drug.



Medication must be stored in a way to prevent contamination. Injectable medications should be kept in a tightly sealed, clean bottle. Clean the rubber stoppers before inserting a needle into the vial. Use only clean needles to withdraw contents from multi-dose vials. Dirty needles can seed the contents of the vial with bacteria or fungi. This contamination can be the cause of injection site reactions and abscesses.

Feed pre-mixes should be protected from rodent and water damage. Pesticides, fuels and other agricultural chemicals must be stored separately from feed additives to prevent accidental contamination. Inspect feed medications before use and discard those that are wet, caked or clumped.

For many vaccines, the label directions will say to "Use the entire contents immediately when opened." These vaccines lose their effectiveness rapidly and should be discarded if not used soon after they are opened or rehydrated.



Labels should be read and understood before giving the medication.



The drug label provides important information to producers. Labels should be read and understood before giving the medication.

Drug labels contain the following:

- Trade name
- Active ingredient
- Indications
- Dosage and directions for use
- Precautions
- Cautions
- Warnings - withdrawal times
- Manufacturer's lot number
- Expiration date

Fictional Medication Label

Trade Name	<p>Omnibiotic (Hydrocillin in Aqueous Suspension)</p> <p>Directions for use: For use in Beef Cattle, Lactating and Non-Lactating Dairy Cattle, Swine and Sheep <i>Read Entire Brochure Carefully Before Using This Product</i> For Intramuscular Use Only</p> <p>Active Ingredients: Omnibiotic is an effective antimicrobial preparation containing hydrocillin hydrochloride. Each ml of this suspension contains 200,000 units of hydrocillin hydrochloride in an aqueous base.</p> <p>Indications: Cattle - bronchitis, foot rot, leptospirosis, mastitis, metritis, pneumonia, wound infections. Swine - erysipelas, pneumonia. Sheep - foot rot, pneumonia, mastitis; and other infections in these species caused by or associated with hydrocillin-susceptible organisms.</p> <p>Recommended Daily Dosage The usual dose is 2 ml per 100 lb. of body weight given once daily. Maximum dose is 15 ml/day.</p> <table border="0"> <tr> <td style="text-align: center;"><i>Body Weight</i></td> <td style="text-align: center;"><i>Dosage</i></td> </tr> <tr> <td style="text-align: center;">100 lb</td> <td style="text-align: center;">2 ml</td> </tr> <tr> <td style="text-align: center;">300 lb</td> <td style="text-align: center;">6 ml</td> </tr> <tr> <td style="text-align: center;">500 lb</td> <td style="text-align: center;">10 ml</td> </tr> <tr> <td style="text-align: center;">750 lb or more</td> <td style="text-align: center;">15 ml</td> </tr> </table> <p><i>Continue treatment for 1 or 2 days after symptoms disappear.</i></p> <p>Caution: 1. Omnibiotic should be injected deep within the fleshy muscle of the neck. Do not inject this material in the hip or rump, subcutaneously, into a blood vessel, or near a major nerve because it may cause tissue damage. 2. If improvement does not occur within 48 hours, the diagnosis should be reconsidered and appropriate treatment initiated. 3. Treated animal should be closely observed for at least 30 minutes. Should a reaction occur, discontinue treatment and immediately administer epinephrine and antihistamines. 4. Omnibiotic must be stored between 2° and 8° C (36° to 46° F). Warm to room temperature and shake well before using. Keep refrigerated when not in use.</p> <p>Warning: Milk that has been taken from animals during treatment and for 48 hours (4 milkings) after the last treatment must not be used for food. The use of this drug must be discontinued for 30 days before treated animals are slaughtered for food.</p> <p>How supplied: Omnibiotic is available in vials of 100 ml.</p> <p>Lot# 56789B Expires June, 20XX</p>	<i>Body Weight</i>	<i>Dosage</i>	100 lb	2 ml	300 lb	6 ml	500 lb	10 ml	750 lb or more	15 ml	Active Ingredients
<i>Body Weight</i>	<i>Dosage</i>											
100 lb	2 ml											
300 lb	6 ml											
500 lb	10 ml											
750 lb or more	15 ml											
Indications		Directions for Use										
Dosage		Administration Route										
Cautions & Warnings		Storage Requirements										
Sizes Available		Withdrawal Times										

Fictional Medicated Feed Tag

Trade Name	<i>Pig Grower</i>
	Medicated <i>for pigs between 30 and 75 pounds</i>
Indications	Administer to swine in complete feed for reduction of the incidence of cervical abscesses; treatment of BACTERIAL SWINE ENTERITIS (SALMONELLA or NECROTIC ENTERITIS caused by <i>Salmonella choleraesuis</i> or VIBRIONIC DYSENTERY), maintenance of weight gains in the presence of ATROPHIC RHINITIS.
	Active Drug Ingredients
	Chlortetracycline100g/ton Sulfathiazole0.011%(100g/ton) Penicillin.....50g/ton
	Guaranteed Analysis
	Crude Protein.....min 18.00% Lysine.....min 1.10% Crude Fat.....min 6.50% Crude Fiber.....max 4.00% Calcium.....min 0.60% Calcium.....max 1.10% Phosphorus.....min 0.40% Salt.....min 0.40% Salt.....max 0.90% Selenium.....min 0.30 PPM Zinc.....min 0.30 PPM
	Ingredients Grain Products, Plant Protein Products, Processed Grain By-Products, Animal Fat, Animal Protein Products, Calcium Phosphate, Lignin, Sulfonate, Ground Limestone, Salt, L-Lysine Monohydrochloride, Methionine Supplement, Zinc Oxide, Zinc Sulfate, Ferrous Sulfate, Manganous Oxide, Copper Sulfate, Calcium Iodate, Sodium Selenite, Vitamin A Acetate, Vitamin D-3 Supplement, Menadione Dimethylpyrimidinal Bisulphate, Riboflavin Supplement, Niacin, Calcium Pantothenate, Vitamin B-12 Supplement, Thiamine Mononitrate, Folic Acid, Choline Chloride, Pyridoxine Hydrochloride, Biotin, Ethoxyquin (as a preservative)
	Feeding Directions Feed as the only ration to pigs weighing from 30 to 75 pounds body-weight.
Cautions and Warnings	Caution: In order to obtain the desired performance results, the animal should be self-fed. Warning: Withdrawal 7 days prior to slaughter; contains high levels of copper, do not feed to sheep.
	Directions for Use
	Withdrawal Time
	Manufactured By: Skill-a-thon Feed Mills
	Net Weight 50 pounds (22.7 Kilograms) or as shown on shipping document
	Lot# 56789B Expires June, 20XX



The drug label provides important information for the producer.



Producers are encouraged to keep drug inventory and usage records.

Producers are encouraged to keep drug inventory and usage records. Not only will these records reflect trends in treatments by comparing the treatments in one period with another, the records can be used for accountability. Do treatment and usage records reflect the inventory records? If purchases far exceed the amount indicated on treatment records, managers should determine if not all treatments are being recorded or if medications are being wasted or stolen. Feed inventory records should enable the manager to trace each batch of ingredients to the group of animals that consumed it.



Good Production Practice # 6

Properly Store, Label and Account for All Drug Products and Medicated Feeds.

Summary

- **Drug labels contain the following information:**
 - Trade name
 - Active ingredient
 - Indications
 - Dosage and directions for use
 - Precautions
 - Cautions
 - Warnings -withdrawal times
 - Manufacturer's lot number
 - Expiration date
- **Always refer to the label for correct storage of any product.**



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Good Production Practice # 7

**Use Proper Administration Techniques,
Needle-Use Procedures, Observance
of Withdrawal Times and Methods to
Avoid Marketing Adulterated Products
for Human Food.**



Good Production Practice # 7

Use Proper Administration Techniques, Needle-Use Procedures, Observance of Withdrawal Times and Methods to Avoid Marketing Adulterated Products for Human Food.

Everyone who may be involved in treating pigs - managers, employees, and family members - must know and use proper techniques for administering medications.



Responsibilities

1. Read, understand and follow label directions when giving any medication.
2. Identify all treated animals.
3. Keep and use records in making judgments about marketing animals that have been treated.

One of the primary responsibilities of a pork producer must be food safety. This involves knowing where the information can be found about withdrawal times, how to calculate when the withdrawal is complete and when an animal is safe to market. The plan to prevent marketing adulterated animals or animals with violative residues must include all animal caretakers following label directions, identifying treated animals and keeping records so that one can quickly determine that the withdrawal time has elapsed before marketing. Employees, on behalf of the employer, are responsible for following directions given by the veterinarian in regard to the medical care of the animals.



One of the primary responsibilities of a pork producer must be food safety.

Administering Medications

Medications are commonly administered to pigs in three ways: injection, oral and topical. Each way has advantages and disadvantages in any given situation.

Methods of Medicating

Injection

Injections are useful when treating individual animals or ones in particular need of veterinary care. Injections may be the only practical way of medicating pigs that are too sick to eat or drink and for some medications that are poorly absorbed from the gut. Some form of restraint is needed to administer the drug by injection; at the same time the pig should be identified. Injections present a risk of broken needles and/or injection-site reactions.

Oral

Oral medications are those that are given through the mouth. Medications may be labelled for use mixed in feed or water or administered directly into the pig's mouth.

When a large number of animals are to be medicated, water and/or feed can sometimes be used as vehicles to deliver the medication. These routes are less stressful to the animals as well as to the people giving the medication.

Medicated feed may be the method of choice when treating animals for multiple days in succession. There is no risk of broken needles or injection-site reactions. When using medicated feed, all instructions on the feed tag or delivery slip must be followed. Extra-label drug use in feed is not an option; it is illegal.

Medications can also be given in the pigs' drinking water. Medicated water can be delivered to the pigs quickly in facilities that have a water medicator installed in the supply line. In other cases, it is necessary to empty water fountains or block them so the pigs have access only to medicated water. Veterinarians can legally direct the use of water medications in an extra-label manner, thus expanding treatment options.

Topical

Some medications are administered by applying them to the skin of the pig. Examples include sprays, dusts, pour-ons and dips. Most topical medications are for parasite control. Care must be taken to prevent chilling of pigs when using sprays or dips during cold weather.



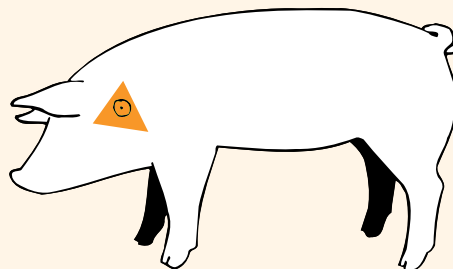
Administration of Injectable Drugs

Improper injection techniques are a significant cost to the pork industry each year. Injection-site reactions, broken needles and lack of product efficacy are consequences of improper injection technique.

There are five ways to give injectable medications to pigs:

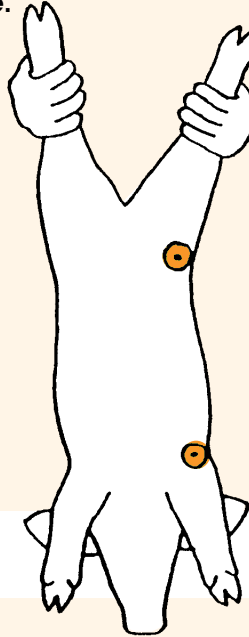
1. In the muscle (Intramuscular - IM):

- Use a spot on the neck just behind and below the ear, *but in front of the shoulder*.
- Do not use a needle to inject in the ham or loin. There may be some bleeding and bruising of the muscle followed by scarring. This scar can stay in the muscle for the life of the pig and be a blemish in the cut of meat. This standard applies to sows as well as to market hogs. While sows may not be going to market soon, they are at greater risk for blemishes because of the repeated injections they typically receive over their productive life in the form of vaccinations and farrowing medications.
- If a producer considers the use of alternate techniques or technologies, the veterinarian and packer can help to determine the acceptability of these techniques in avoiding carcass defects and/or physical hazards such as broken needles.
- Use the proper needle gauge and length to ensure the medication is deposited in the muscle, not in other tissues.



2. Under the skin (Subcutaneous - SQ):

- Inject only into clean, dry areas.
- Use the proper length of needle and angle to avoid injecting into the muscle.
- Slide the needle under the skin away from the site of skin puncture before depositing the product.
- For small pigs use the loose flaps of skin in the flank or behind the elbow.
- For larger pigs inject in the neck behind the ear at the same location as for IM injections.



3. In the abdominal cavity (Intraperitoneal - IP):

- This technique **SHOULD BE USED ONLY UPON VETERINARY INSTRUCTION** and guidance as serious injury, including death of the pig, can occur.

4. In the vein (Intravenous - IV):

- This technique **SHOULD BE USED ONLY UPON VETERINARY INSTRUCTION** and guidance as serious injury, including death of the pig, can occur.

5. In the nasal passages (Intranasal - IN):

- Withdraw the product from the bottle using a syringe and needle. Remove the needle from the syringe. Use the recommended application tip for administering the product.
- Keep the pig's head tilted upward during, and immediately following administration to help the product reach the deep nasal passages.



**The needle shaft
is much more
likely to break
if it has been bent
during an injection,
straightened and
used again.**

Needle Usage

The following are recommended needle sizes and lengths:

Intramuscular Injection	Gauge	Length
Baby Pigs	18 or 20	5/8" or 1 1/2"
Nursery	16 or 18	3/4" or 5/8"
Finisher	16	1"
Breeding Stock	14, 15 or 16	1" or 1 1/2"
Subcutaneous Injection	Gauge	Length
Nursery	16 or 18	1/2"
Finisher	16	3/4"
Breeding Stock	14 or 16	1"

Pork Checkoff-funded research on needle strength shows that disposable needles will rarely break during the initial use. However, the needle shaft is much more likely to break if it has been bent during an injection, straightened and used again, never straighten a bent needle.

Developing a Standard Operating Procedure (SOP) for Needle Usage

Developing a Standard Operating Procedure will help you address needle breakage in your operation in a logical, consistent way. It will also help animal caretakers, including employees and family, become acquainted with how these issues are to be handled. If needle breakage does occur, encourage honesty, proper identification and reporting.

Here are some points to consider including in your SOP:

1. Prevention

- A. Evaluate the strength and detectability characteristics of the needles you are using.
- B. Provide needle-use guidelines to all animal caretakers that address:
 - Ensuring proper animal restraint.
 - Selecting the proper site and technique for injection.
 - Selecting the proper size and length of needle according to the pig's age, the injection site and the characteristics of the product to be injected.
 - Changing the needle as appropriate to maintain cleanliness and sharpness.
 - Retrieving dropped needles. Packers report finding a significant number of needles lodged in the tissues around the mouth, throat and jowls of sows and market hogs. As many of the needles are intact, it must be assumed that these are needles that have been dropped in the feed trough or on the floor while vaccinating or giving other injections. It is important that measures are taken to minimize the loss of needles in areas occupied by hogs.
 - Changing bent needles – **NEVER STRAIGHTEN A BENT NEEDLE, ALWAYS CAREFULLY REMOVE AND REPLACE IT.**
 - Considering the appropriate number of needles that would be reasonable to use for a particular job and reconcile the number of needles at the beginning of the job, the number used and the number of needles at the finish.



**Never straighten a bent needle.
Always carefully remove and replace it.**

A Pork Checkoff video explaining needle strength and breaking research, "Needle Strength Evaluation", and other materials can be ordered by calling the National Pork Board at (800) 456-PORK.

There are alternative methods for administering vaccines and antimicrobials, which will eliminate the issue of broken needles in carcasses. These methods include orally administered, through the water, and needle-free injection systems. These alternative methods should be discussed with your herd veterinarian about their use and applicability.



Record all pertinent information regarding a broken needle event and communicate this to your packer.

2. Identification of hogs that are at risk of carrying broken needles

- Establish a plan for immediately identifying hogs known or suspected of harboring a broken needle fragment.
- Provide permanent identification of the animal if the one applied at the time of the incident is not permanent and provide employees appropriate training.
- Record all pertinent information regarding the event (information could include: activity, gauge and brand of needle, location, restraint used, person giving the injection, person who reported it).

3. Communications with your packer

- Find out from your packer their policies for at-risk pigs. Use this information as you develop the needle Standard Operating Procedure (SOP) for your operation.


How are the hogs to be marked?

How is the packer to be notified?

Disposal of used needles and surgical knives

Used needles, knife blades and syringes are called "sharps" and must be disposed of properly according to state regulations to prevent environmental contamination and injury to fellow workers, children, waste handlers and livestock. Proper disposal involves placing sharps in a rigid puncture-resistant container immediately after use. Commercially available containers can be purchased from many farm supply stores, safety supply houses, drug stores or from veterinarians. Some states allow sharps to be placed in containers such as empty detergent bottles made of heavy plastic with screw-on caps. Glass containers are not acceptable for sharps disposal because they are more likely to break in the disposal process.



Regardless of the container type it should prevent the penetration of needles both on the farm and throughout the transportation to the final disposal location. Sharps containers must be clearly labeled as a biohazard waste container not for recycling. When the container is full, the cap or lid should be securely tightened and sealed with heavy tape. For the rules that apply to your farm, contact the agency in charge of overseeing the disposal of biomedical wastes in your state. The following Web site  <http://www.epa.gov/osw/nonhaz/industrial/medical/disposal.htm> provides information on agencies in each state that regulate biomedical or infectious waste disposal. Approved sharps collection stations are available in some regions. Another option may be to ask your herd veterinarian, local solid waste department or public health department to determine the correct disposal method.

Additional information is available at:

 <http://safeneedledisposal.org>



**Properly dispose of
needles, knife blades
and syringes.**



Good Production Practice # 7

Use Proper Administration Techniques, Needle-Use Procedures, Observance of Withdrawal Times and Methods to Avoid Marketing Adulterated Products for Human Food.

Summary

- Medications are commonly administered to pigs in three ways:
 - Orally
 - Topically
 - Injectable
- There are five ways to give injectable medications to pigs:
 - In the muscle (Intramuscular - IM)
 - Under the skin (Subcutaneous - SQ)
 - In the nasal passages (Intranasal - IN)
 - In the abdominal cavity (Intraperitoneal - IP)
 - In the vein (Intravenous - IV)
- Never straighten a bent needle.

Notes:



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Good Production Practice # 8

**Follow Appropriate On-Farm Feed and
Commercial Feed Processor Procedures.**



Good Production Practice # 8

Follow Appropriate On-Farm Feed and Commercial Feed Processor Procedures.

The importance of high-quality feed to a livestock operation cannot be over emphasized.

The goal of feed manufacturing is to produce feed that:

- Meets specifications for nutritional composition.
- Meets the desired medication level, if appropriate.
- Is free of contaminants or contaminants are below established tolerances or action levels.



Medicated Feed

A set of guidelines for processing medicated feed, referred to as current Good Manufacturing Practices (cGMPs), is designed to prevent feed contamination by approved animal drugs and to provide reasonable assurance that the medicated feed is manufactured accurately. The cGMPs must be followed to ensure safe, wholesome meat products for human consumption.

The cGMPs outline the standards for medicated feed manufacturing facilities, ingredients, manufacturing process, monitoring, labeling, and records needed to assure a medicated feed product that is suitable for feeding livestock intended for human consumption.



1. Buildings and Grounds:

- Maintain good housekeeping. Prevent accumulation of dust that could contaminate finished feeds.
- Ensure adequate space exists for equipment, processing and storage of medicated feeds.
- Provide access for preventive maintenance and equipment cleaning.
- Implement pest control procedures.

2. Equipment:

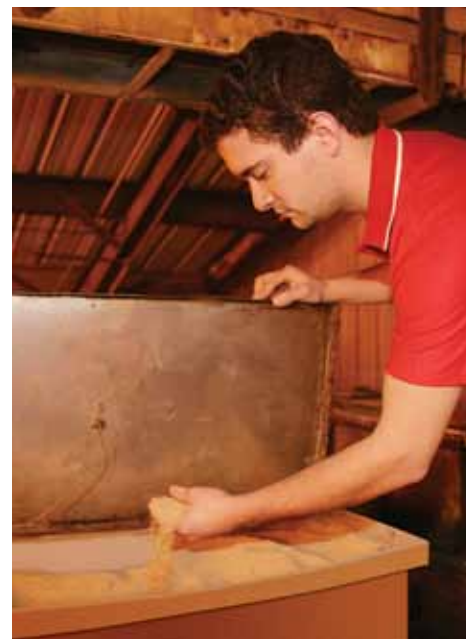
- Check equipment to be sure it can produce medicated feeds of intended potency, safety and purity.
- Pick up spills, plug leaks in equipment and prevent build-up of feed ingredients.
- Regularly check scales and metering devices to ensure they are accurate, functioning properly and are suitable for their intended purpose.
- The equipment must be of suitable size and construction to facilitate cleaning and adjustments when needed.

3. Workspace and Storage Areas:

- Design workspaces and storage areas to avoid accidental contamination of feed with toxic or other non-feed substances.
- Ensure that feed work areas, equipment and storage areas for animal drugs and manufactured feeds are physically separated from other work areas. Feed work areas also should be separated from equipment used for pesticides, fertilizers and toxic substances.

4. Product Quality Assurance:

- Laboratory Assays: Consider analyzing feeds periodically for their nutritive and/or medication content or asking your feed supplier for this information.
- Cleanout Procedures: Establish equipment and feed storage cleanout procedures (physical cleanout, flushing, sequencing of production and delivery sequencing) to prevent unsafe cross-contamination of feeds or carryover of medicated feed products.



Check equipment to be sure it can produce medicated feeds of intended potency, safety and purity.



5. Labeling:

- Receive, handle and store medications and their labels in a way that prevents confusion.
- Make sure that the correct label is fixed to all medicated feed containers you receive or store.
- The label should accompany bulk feed shipments and deliveries, identify the product and contents, provide directions about use and state withdrawal times (for medicated feeds).

6. Recordkeeping:

- Visually inspect received feed ingredients for quality or defects. Written records that contain the delivery date, method, carrier, and any observations about color, weight or other quality measurements will be very useful if a question of feed quality or contamination is ever raised.
- Keep written records of medicated feed production. The Medicated Feed Mixing Records chart found in the Appendix includes the minimum information that must be kept.
- Retain feed production records for one year after feed is used.
- Samples of ingredients and finished feeds should be taken, identified appropriately and stored for six months.



Complete the feed-manufacturing questionnaire found in the Appendix.

Pork producers should be aware that the FDA bans feeding of ruminant-derived products, such as ruminant-derived meat and bone meal, back to ruminants.

Ruminant-derived products

Pork producers should be aware that the FDA bans feeding of ruminant-derived products, such as ruminant-derived meat and bone meal, back to ruminants. Feed for swine can legally contain ruminant-derived products. The current FDA policy states that cattle accidentally fed ruminant-derived protein are permanently prohibited from use as human food regardless of the withdrawal time or the amount of ruminant-derived protein consumed. Therefore, measures must be taken to keep cattle, sheep, goats, and other ruminants from having access to hog feed if it might contain ruminant-derived products.



Calculating the amount of medicated article/feed to add to the mixer

When manufacturing a medicated feed, it is important to make sure the feed contains the proper concentration of the drug. If the concentration is lower than desired, there may be little or no beneficial effect. If the concentration is higher than directed on the label, there may be health effects on the pigs or violative residues beyond the published withdrawal time.

Refer to the manufacturer's directions to determine the amount of medicated article/feed needed to achieve the desired concentration in the final feed product. Manufacturers provide a table showing the amount of their product that must be added to attain the desired drug use level.



Summary



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Good Production Practice # 9

**Develop, Implement and Document an
Animal Caretaker Training Program.**



Good Production Practice # 9

Develop, Implement and Document an Animal Caretaker Training Program.

All new animal caretakers and other employees involved in the herd's production must be trained in their duties.



All new animal caretakers and other employees involved in the herd's production must be trained in their duties. This training can come from training manuals, CDs/DVDs and videos, as well as from on-the-job-training under the guidance of experienced supervisors. Training is not only essential for the workers' safety but also for assurance that the animals in their care are treated humanely and in a manner not to jeopardize the safety of the pork product. Other benefits of a formalized training program are increased productivity and efficiency, improved employee morale and retention and greater sense of achievement and job satisfaction as the operation's goals are met.

Advances in science and technology continually provide new opportunities as well as new products, equipment and techniques for the industry. To stay abreast of these changes, everyone from the most senior manager to the newest employee should be engaged in training and educational opportunities consistent with their responsibilities. An effective training program is vital to understanding and implementing the PQA Plus Good Production Practices for promoting food safety while improving pork production efficiency.

Throughout a training program, a technique called the PTSDR method may be used to train others. The diagram below illustrates this technique that consists of five steps: 1) Prepare, 2) Tell, 3) Show, 4) Do and 5) Review.



Step 1: Prepare Stage

The Prepare stage consists of the trainer preparing to train by focusing on the objectives and outcomes he or she wants to achieve within a training program. The Prepare stage also consists of determining the time constraints needed for an individual to obtain a desired skill, as well as identifying any activities that should be implemented in the training program to enhance the knowledge and skills of individuals, and then gathering the materials needed to carry out activities and the entire training program.

Step 2: Tell Stage

The Tell stage involves addressing the key points needed to obtain knowledge and skills. In this stage, the trainers share the information needed in order to complete the task. For example, when conducting a training session on animal handling, the trainer might discuss an animal handling brochure that covers specific information the trainee would need to know in order to properly handle or move pigs.

Step 3: Show Stage

The Show stage involves demonstrating to individuals how to complete a specific task. Continuing the example given above, this is the point at which the trainer would demonstrate how to properly handle or move pigs. This may take place in a barn with the animals.

Step 4: Do Stage

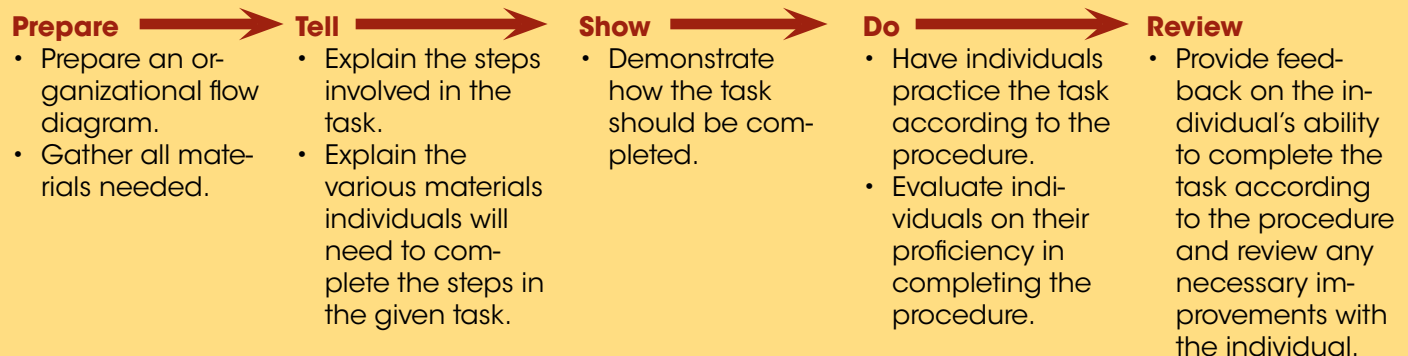
The Do stage enables the individuals to practice what they have been already told and what has been showed to them. In this fourth step the trainee has the opportunity to practice properly moving and handling pigs, as they were first told and then shown in the examples above.

Step 5: Review Stage

During the Review stage, the individual is evaluated on his or her performance of a desired task. After evaluation is completed, the individual is given feedback and recommendations for improvement.



Attention should be given to make sure the caretakers are trained and proficient in tasks before they perform them without supervision.



Regardless of the type of educational program used for training, and regardless of how formal or informal the training event for the animal caretakers, the documentation of the training is important. Training records should indicate the topics and techniques covered in the training as well as the names of trainees and trainers and the date of the training. Attention should be given to make sure the caretakers are trained and proficient in tasks before they perform them without supervision.

GROUP TRAINING RECORD



PQWAVE
INDEPENDENT WAVE

Group Training Record

Trainee / Advisor: _____ Company: _____
 Address: _____
 Phone: _____ Email: _____
 Office Status: _____ Advisor ID (if available): _____

Real and Last Name	Competing in Tournament	20 & 30 Minutes	Training Team
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

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Individual Training Record

[illegible][illegible]

Individual Development Plan

The Pork Checkoff offers the Pork Production Resources training materials on CD and DVD-Rom including a Production Series that addresses euthanasia, handling and husbandry of swine. Additional training materials are available online at: <http://www.pork.org>.





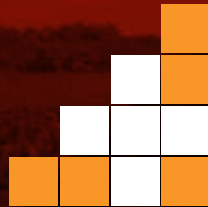
Good Production Practice # 9

Develop, Implement and Document an Animal Caretaker Training Program.

Summary

- All animal caretakers involved in the herd's production must be properly trained in their duties and to care for the animals, equipment, and co-workers in the operation.
- Throughout a training program, a technique called the PTSDR method may be used to train others. This technique consists of five steps: 1) Prepare, 2) Tell, 3) Show, 4) Do and 5) Review.
- Training must be documented.

[illegible]



PQA PLUS®
Our Responsibility. Our Promise.



Good Production Practice # 10

**Provide Proper Swine Care to
Improve Swine Well-Being.**



Good Production Practice #10

Provide Proper Swine Care to Improve Swine Well-Being.

There are many factors within a pig's environment that will influence its overall well-being.

Providing proper swine care is one commitment you, the caretaker, can make to assure the well-being of the pigs in your herd. **Good Production Practice #10** discusses **12** of these factors along with explanations of each and strategies on how to implement each one in your operation.



1. Recordkeeping

Veterinarian/Client/Patient Relationship (VCPR)

A VCPR allows the caretaker and veterinarian to work together to ensure the health and well-being of the pigs on that operation. A VCPR is defined in the U.S. Code of Federal Regulations (21 CFR Part 530) and is described in further detail in GPP #2. A VCPR can be demonstrated to your Advisor by providing a letter from your veterinarian confirming the relationship, veterinary bills, a phone call to your veterinarian who can assure a VCPR or medical prescription labels. Verification must be dated within the past 12 months.

Medication and Treatment Records

Medication and treatment records provide the health history of each individual pig and help to ensure food safety. By tracking the medication and treatment of animals within a herd, you will be able to identify trends and to work toward improving herd health. All food-animal producers should keep medication and treatment records for 12 months after marketing a medicated animal. For a complete explanation of medication and treatment records, refer to GPP #5 "Maintain Medication and Treatment Records." The form related to GPP #5 is provided in the Appendix of this book. It will help you organize your system and be a useful tool for discussions with your Advisor.

Recordkeeping continued ...


Documented Caretaker Training Program

One of the most important factors in animal well-being is the husbandry skill of the people caring for the animals. The knowledge, training and attitude of the caretaker are the foundation upon which animal well-being is built.

Different production systems have different training program needs. Producers who own and work in the operation every day have different training needs than employees who may not be as familiar with pig husbandry. Research has shown that negative interactions between caretakers and their animals can limit the productivity and well-being of these animals. That makes training essential. Training should be customized to match the needs of the operation and a standard operating procedure for training the caretakers in your operation should be created and implemented. Such a program could be requiring caretakers to participate in the PQA Plus education program. There are at least three areas common to all production system training programs that address swine well-being. They are:


- **Euthanasia** - *On-Farm Euthanasia of Swine - Recommendations for the Producer (2008)* brochure outlines the methods and practical considerations for euthanasia of pigs and can serve as a training resource. Employees should understand and use the euthanasia plan developed for your operation. Refer to section 2 for further information on euthanasia plans.
- **Handling** - Additional training information on how to handle pigs, other than the information contained in Good Production Practice # 10, is available in the *Transport Quality Assurance™ (TQA™) Program*, the *Swine Care Handbook* and the *PQA Plus Animal Handling Supplemental Materials* (inventory number NPB-08200).
- **Husbandry** - Chapter 1 of the *Swine Care Handbook*, Management Practices and Animal Husbandry, contains information about husbandry skills. Additional information on specific husbandry skills and needs may be available from university Extension services or area community colleges.

In addition to these resources, the Pork Checkoff offers the Pork Production Resources training materials on CD and DVD including a Production Series that addresses euthanasia, handling and swine husbandry.



COURSE FARROWING
Lesson:
Farrowing Process


"Put the heat lamp in the proper place."



COURSE FARROWING
Lesson:
Pre-farrowing Management


"What are the signs a sow is about to farrow?"

- Easy Access
- Flexible Schedule
- Delivered When and Where Needed
- Partnership between National Pork Board, Universities and Colleges
- Developed by National Experts



COURSE HANDLING
Lesson:
Pig Handling Tips and Tricks

"Get advice from experts in their field"



COURSE HANDLING
Lesson:
Understanding Pigs and Stress

"How do you tell someone how to move pigs?"

**Pork Production
Resources training
materials are available
by calling the
Pork Checkoff
Service Center
@ (800) 456-7675.**



**Manual procedures
or automated
intervention should
be in place as
emergency backup
in the event of
mechanical
ventilation failure.**

**A tool to help you develop
your personalized emergency
action plan can be found at
<https://eap.pork.org>**

2. Emergency Support

Written Action Plan

In case of an emergency, quick communication is important. The facility should have a written emergency action plan for a variety of emergencies that might be encountered. This might be as simple as the names and telephone numbers of the owner, the veterinarian, the equipment suppliers and/or the fire and police departments being posted near telephones.

With an Advisor, a written emergency action plan should be developed for the operation. You should review and be familiar with emergency procedures for the operation. A design layout of the operation will be helpful to emergency response personnel. Details such as building design, hazard locations and animal numbers per barn will aid them in their response to an emergency situation.

Emergency Detection System

Suitable alarm systems should warn of power failures or temperature changes as needed, but judgment may need to be used to assess the adequacy of the emergency detection system, taking into account the site of the facility. For example, if a barn is sited next to your house, visual detection of a power outage or other emergency is possible. If a barn is not near your house, some method of alarm – notification to a person or an automatic intervention – should be available as appropriate if the mechanical system fails.

Emergency Backup System

You should have manual procedures in place or your facilities should be equipped to provide some automated intervention to prevent the death of your animals in the event there is a mechanical ventilation failure. For example, a back-up generator, automatic or manual drop curtains, or some provision for natural ventilation may be appropriate depending upon the building's ventilation type. Testing this emergency backup system on a regular basis allows you to identify problems and perform maintenance updates to the system.

3. PQA Plus Site Assessment

You should be aware of your animals' well-being every day. The success of your operation is dependent upon the well-being and productivity of your animals; to do anything less than maintain that well-being and productivity just doesn't make sense.

Having a PQA Plus Site Assessment at least once every three years, will help you be aware of new developments, equipment, production practices and research that can affect the well-being of your animals. This program will provide you with knowledge for tracking and benchmarking animal well-being on your farm. To remain a PQA Plus assessed site, and retain PQA Plus Site Status, complete a site assessment every three years.

It is highly recommended that you review the 12 care and well-being principles with a Certified PQA Plus Advisor. A PQA Plus Advisor is an individual who has been trained to perform assessments objectively and knows how to address any problem areas found during the assessment. Completing a site assessment more often than every three years will give you an even better tool to track changes in your production practices and operation that could affect the well-being and the productivity of your animals.

While not recommended, a self-assessment may be performed. A limitation of a self-assessment may be the ability to maintain objectivity. As a caretaker, you work with your herd on a daily basis and may not be aware of slight changes in the environment that could affect the well-being of the pigs. In the event a self-assessment is performed, you will need to complete the site self-assessment portion of the PQA Plus education program and pass an examination to obtain the PQA Plus Site Self-Assessment Endorsement. Following your site self-assessment, you will need to discuss your results with your Advisor to complete the site assessment process and earn PQA Plus Site Status.

A variety of options for continuing education are available. Talk with your Advisor, your veterinarian, your Extension person or your fellow pork producers about meetings, materials and other opportunities to learn more about how you can successfully address the well-being needs of your animals.



Having a PQA Plus Site Assessment at least once every three years, will help you be aware of new developments, equipment, production practices and research that can affect the well-being of your animals.



**Talk with your Advisor
about the advantages
of tracking daily
observations of the
animals for your
operation.**

4. Daily Observation

Daily observation and prompt delivery of care are critical in addressing individual animals' health and in detecting facility or management issues that need to be addressed. In addition, daily pig observation helps to assess the effectiveness of health and nutrition programs, the suitability of facilities and the quality of stockmanship. Recording animal, facility or management concerns as you walk through the facilities also will promote corrective actions.

Recording daily observations can be as simple as posting a calendar, paper or poster inside the door of the facility or building where the caretaker can initial and date the document daily. This also can be an opportunity to record such information as water intake or high/low temperatures within the barn. Recording this additional information can be a useful management tool. A decrease in water intake can be an early indicator of illness in the herd. Large differences in high/low temperatures can be an indicator that the ventilation system is not functioning properly to prevent large swings in temperatures. Talk with your Advisor about the advantages of tracking daily observations of the animals for your operation.

Seriously Ill, Non-Ambulatory or Dead Animals

When the trained caretaker's ability to evaluate an animal's condition is combined with daily observation, a caretaker will be able to more easily detect ill, disadvantaged or dead animals in the herd. Pigs that are seriously ill, in some way disadvantaged or are dead can give valuable information about the other animals' conditions.

An animal should be considered non-ambulatory if it refuses to get up or if it can stand with support but refuses to bear weight on two of its legs. For an animal under veterinary care, unless there are special circumstances, no more than two days of intensive care with no improvement or prospect for improvement should be necessary before the animal is euthanized.

Your operation should have a treatment or notification plan if animals with health conditions of concern are found. If your Advisor notices them during a walk-through and they had not already been found, be sure to review your training and observation programs with your Advisor.



Treatment Pen

Through daily observation, caretakers will be able to more readily identify ill or injured pigs that may need to be isolated for treatment. Isolating injured or sick animals can positively influence their health and well-being and may improve the biosecurity of your operation. Treatment pens also can aid recovery and provide easier follow-up treatment.

Caretakers should have a plan for how an animal could be isolated from the rest of the herd for treatment or recovery if needed. This isolation area might be a temporary or permanent separate pen or enclosure or it might be an individual stall. The important consideration is providing for adequate treatment and recuperating needs of the animal.

It is important to move a pig to a treatment area when its health and well-being is compromised by its fellow pen mates or if treatment of the animal is affected by remaining with the group. When moving a pig into a treatment pen, it is important to provide care for the pig to enhance its potential for recovery. It also is important to remember that if a pig in a treatment pen has shown no improvement or has no prospect for improvement after two days of intensive care, the pig should be euthanized.

Caretakers should have a plan for how an animal could be isolated from the herd for treatment or recovery if needed.



Animal evaluation will help verify that the other aspects of the well-being program have been successfully extended to the animals themselves.

5. **Animal Evaluation**

Animal evaluation will help verify that the other aspects of the well-being program have been successfully extended to the animals themselves.

Production Performance

The production performance of the pigs in your herd often can be an indicator of their well-being. Some production performance measures that can be tracked include average daily gain, feed efficiency, mortality rates and farrowing rates. A change in any one of these measures can be a potential indicator of a change in the well-being of the pigs. These indicators may depend upon genetics and nutrition, so it is important to benchmark these performance measures in your herd over time to better understand the typical performance of your herd as well as to allow you to identify changes in the well-being of the herd.

Physical Evaluation

With careful observation, your animals can give clues as to how well they are being managed. Look at their skin and their extremities. Do they have wounds that indicate fighting? Do they walk with equal weight on all four legs? Watch how they react to people being around. Are they inquisitive? Are they fearful? These initial observations will serve as a personal benchmark. From this information, you will be able to evaluate aspects of your system that might affect the occurrence of lameness and injury and improve productivity in your operation.

Lameness

A lame pig is one that cannot bear full weight on one or more limbs, including shifting weight from leg to leg because of pain. There are several factors that can contribute to lameness including bacterial infections, heredity, foot and leg structure, facilities or nutrition. To detect lameness, pigs should be observed while they are standing or walking on a flat surface. Pigs that are diagnosed as lame should be treated, culled or humanely euthanized depending on the cause and degree of lameness.

Skin lesions

If skin abscesses or wounds are present, count how often they occur and note their location to get some important clues about their sources and about ways to prevent them.

Look for and note skin lesions on:

- Main part of the body – on the shoulder, belly, back, flank and limbs (both front and back legs)
- Hooves
- Head and ears – to include the cheek, ears, snout, mouth and chin
- Tail and genital areas

Abscesses

Abscesses are fluid filled pockets in or under the skin that may cause the skin to be raised. They can be observed after a deep bruise, a penetrating injury or an injection. Pay attention to how many pigs have abscesses and if one location is more common than others are.

Wounds

Wounds are defined as breaks that completely penetrate the skin, such as bites or other lesions that penetrate through the skin. Note the wounds and their location. For example, on the shoulder, vulva or other parts of the body

Rectal prolapses

Rectal prolapses are an eversion or the turning inside-out of the rectal lining. Common causes are pigs coughing

or piling to stay warm. Docking tails too close to the body or the pigs' genetics also could contribute to the occurrence of rectal prolapses. It is important to isolate or treat these animals as quickly as possible to prevent further injury and to enhance the chances of full recovery. Your Advisor can help you with a treatment plan but finding and addressing the contributing cause also are very important.

Swine behavior

Swine behavior will be reflective of the quality of the care received and suitability of the facilities. Swine that are repeatedly exposed to unpleasant handling and abuse will show evidence of fear in the presence of humans. Pigs that have repeated exposure to pleasant handling are relaxed around people and generally will be easier to move. As a result, these pigs might have better meat quality.

Watching how your animals react to you or someone else can give an important indication of how they are being handled. Pigs are naturally inquisitive. However, they also are cautious. Normally, a pig may initially act fearful or excitable as a protective reaction but then relax and maybe even explore your presence by nosing you or biting at your legs or feet. The pigs' reaction also is affected by recent vaccinations, blood collection for herd or individual diagnostics, etc.



Observe your pigs while they are standing or walking on a flat surface.

Body condition scores are useful to assess the adequacy of the nutrition program.

6. Body Condition Score (BCS)

Body condition scores are useful to assess the adequacy of the nutrition program and the effectiveness of the heating and cooling strategies in the facility's management plan.

Body condition scoring has been adopted from the industry standard that is based on a 1 (emaciated) to 5 (obese) system as shown in figure 6.1. Animals should be fed according to its body condition. ANY animal with a body condition score less than 2 should receive immediate attention that will improve their body condition. Without improvement, the on-farm euthanasia plan should be implemented and the animal humanely euthanized in a timely manner.

While emaciated (body condition score 1) is a potential indicator of a pig's well-being, an obese pig also has increased risks to its health. Obese pigs should have caloric intake decreased. Pigs that are either too thin or too fat could be an indication of a management need and a cause for discussion with your Advisor.

Pay particular attention to sows 14 days before farrowing – body condition at this time can be an indicator of how the sow might be able to handle the stresses of nursing and 14 days after weaning – allowing the sow enough time to gain weight, if needed, after she is weaned.

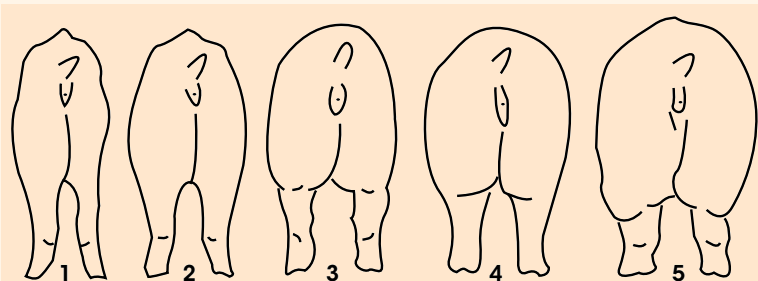


Figure 6.1. Body Condition Scoring

Score	Condition	Detection of ribs, back bone, "H" bones, and pin bones
1	Emaciated	Obvious
2	Thin	Easily detected with pressure
3	Ideal	Barely felt with firm pressure
4	Fat	None
5	Overly fat	None

Taken from "Assessing Sow Body Condition" by R. D. Coffey, G. R. Parker, and K. M. Laurent (ASC-158; 1999).

7. Body Space

Physical Space to Accommodate the Body

For pig space to be considered adequate, and pending further research, the pig must be able to:

- Easily lie down fully on its side (full lateral recumbency) without having to lie on another pig and be able to easily stand back up
- Lie down without the head having to rest on a raised feeder
- Additionally, a pig housed in a stall must be able to lie down fully on its side (full lateral recumbency) without the head having to rest on a raised feeder and the rear quarters coming in contact with the back of the stall at the same time.

In the case of stalls, it is important to make sure the stall size is appropriate for the size of the animal and does not cause injury to the animal. For the animal to perform all of the above mentioned criteria, the appropriate size of the stall will be dependent upon the animal's physical size. Tables 3, 4, and 5 in the *Swine Care Handbook* give recommended space allowances for pigs in total confinement, pigs in pens with outside concrete aprons and pigs on pasture. However, production practices, such as group size, ventilation equipment and rate, and type of floors (partial versus total slats), have an effect on proper stocking densities. Discuss with your Advisor the stocking density that meets the needs of your animals given the specifics of your production facility.



Discuss with your Advisor the stocking density that meets the needs of your animals.



**Train all caretakers
to use the written
euthanasia plan.**

8. Euthanasia

Written Euthanasia Plan

Because every operation will at some time have sick or injured pigs that do not respond to care and treatment, it is important to have a written euthanasia action plan. The *On-Farm Euthanasia of Swine* brochure provides information to help you choose the appropriate method by considering the following:

- **Human safety:** The method must not put you or others at unnecessary risk.
- **Pig well-being:** The method should minimize pain or distress on the animal.
- **Practicality/technical skill requirements:** The method should be easily learned and repeatable with the same expected outcome.
- **Caretaker compliance:** You and others must be comfortable with, and willing to perform, the chosen method when needed. Lack of compliance compromises the well-being of the pig.
- **Aesthetics:** The method should not be objectionable to the person administering the procedure.
- **Limitations:** Some methods are only suitable for certain sizes of pigs or certain locations.

With this information, you will be able to identify the best methods to use in your operation. Be sure to complete the euthanasia plan in the back of the *On-Farm Euthanasia of Swine* brochure for each stage of production in your operation. Then post the written euthanasia plan in a prominent place in your facility and train all caretakers to use the plan.

Timely Euthanasia

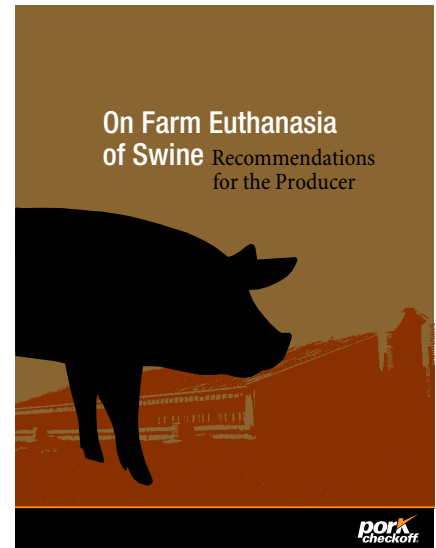
Euthanasia is defined as humane death occurring with minimal pain or distress. Pigs that are not responding to care or are unlikely to recover must be euthanized humanely. Timely euthanasia, as well as using the appropriate methods and equipment, is critical to the well-being of these pigs.

1) Timeliness

Timely euthanasia will minimize animal pain or distress. The definition of "timely" is: animals that are showing no improvement or having no prospect for improvement after two days of intensive care should be humanely euthanized, unless there are special circumstances. In addition, severely injured or non-ambulatory pigs with the inability to recover should be euthanized immediately. Any animal that is immobilized and with a body condition score of 1 should be euthanized immediately. Accidents that call for quick euthanasia can happen any day of the week. Personnel trained in euthanasia should always be available to respond if called – including nights, weekends and holidays.

2) Functional Equipment

Any equipment that you use for euthanasia of pigs in your operation must be kept in proper repair and must be functional. A maintenance record can help to demonstrate that the condition of the equipment is being addressed. Euthanasia equipment should be centrally located for use throughout the site. Caretakers trained in euthanasia methods need to have access to this equipment.



**The On-Farm
Euthanasia of Swine -
Recommendations for
the Producer (2008)
brochure provides
information to help
you choose the
appropriate method
of euthanasia.**

9.

Facilities

The state of repair of the facilities can directly impact the well-being of the pigs. Facilities are defined as barn structural components, penning, feeders, waterers, floors, chutes and alleyways. Penning, floors, chutes and alleyways should be appropriate for the phase of production and be in a good state of repair and not cause injury to the animal. Feeders and waterers in a good state of repair will help give unobstructed feed or water delivery to the pigs.

Pen Maintenance

The condition of the pens can affect other indicators of your pigs' well-being. For example, sharp protruding objects could affect the number and type of skin lesions that might be found on your pigs. Pens with broken slats could contribute to lameness or other leg injuries. Nursery pigs in a wean-to-finish facility may be at risk for increased leg injuries due to the space between slats. For inside facilities, floors for all phases of production should be rough enough to minimize slips and falls, but not so rough as to injure the pad of the hoof.

Feeder Space

There are a wide variety of feeders and feeding equipment available today. Whatever type you use in your operation, the number of feeding spaces and their size should allow your pigs to consume their daily ration without unnecessary fighting and competition.

Adequate feeder space is especially important in the period immediately after weaning because newly weaned pigs tend to eat at the same time. Therefore, it is important to have food readily available and easy to access. Additional information can be found in the *Swine Care Handbook*.

Water Availability

Water must be available at least twice daily and in a quantity sufficient to fully satisfy the pigs. Waterers should be designed so animals can drink freely and have flow rates that easily meet the pigs' water intake requirements. Enough waterers should be available within a pen to decrease competition for the resource. Specific information about appropriate water requirements per day and suggested flow rates can be found in Table 9.1.

Table 9.1 Water Requirements by phase		
Production Phase	Water Requirement (gallons/pig/day)	Flow Rate (sec/pint)
Nursery	0.7	70
Growing	2 to 3	50
Finishing	3 to 5	50
Gestating sows	3 to 6	35
Lactating sows	2.5 to 7	35
Boars	5	35

In the instance of wet/dry feeders or cup waterers, flow rate can be difficult to measure. In these instances, it is necessary to ensure that the internal diameter of the supply line is large enough to allow sufficient water flow to accommodate the desired flow rate for all waterers if they were all to be used at the same time. It also is important to follow manufacturer recommendations for the water pressure necessary for each specific waterer design.

10. Proper Handling

The Caretaker Training section refers to the need for a training program for anyone who handles or moves pigs in your operation. Using proven pig-handling and movement practices will contribute to good well-being of the pig and a safe work environment for the handler. When pigs are improperly handled, they become distressed, which can lead to several negative consequences such as: physical injury to the pig, decreased sow reproductive performance, increases in the incidence of non-ambulatory pigs, increased time to load and unload pigs and reduced growth rates. Additionally, improper handling also significantly contributes to carcass shrink, trim loss and poor meat quality. Improper handling and transport of pigs is one of the largest profit-reducing issues facing the pork industry today. Estimates show that bruises alone cost the U.S. pork industry millions of dollars per year, with overall pork-quality defects totaling several hundred million dollars annually.

Proper handling is best achieved by first understanding some general behaviors exhibited by the pigs, as well as understanding the pig's behavioral and physical characteristics such as how they can see, hear, smell, learn and remember experiences. The main instinctive behaviors of a pig that a handler should understand, and use to his or her advantage when possible, include:

- Flight Zone and Point of Balance
- Following/Herding Instinct

Flight Zone

The flight zone is an imaginary circle around an animal that it considers its individual space.

- When a handler enters a pig's flight zone the pig will move away. If the pig does not see an escape route, it may attempt to turn around (if necessary) and run past the handler.
- The size of the flight zone is determined by the pig's familiarity with humans and will vary from pig to pig.
- A completely tame pig has no flight zone - a handler can walk directly up to the pig and touch it.
- Handlers should work with an animal from the edge of its flight zone. This principle also applies to working the collective flight zone of a group of pigs.



Handlers should be quiet and calm during animal movement.



Animals will tend to move from a darker lit area to a more brightly lit area.

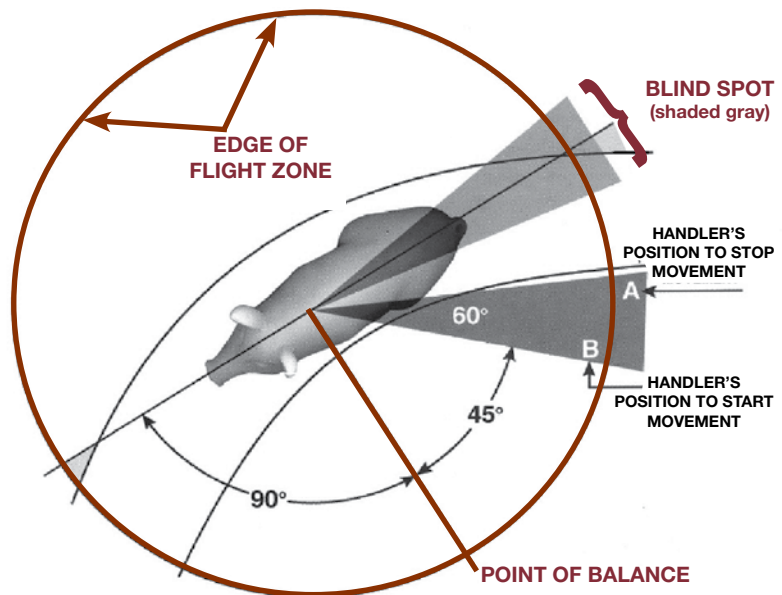
Point of Balance

The point of balance is located at a pig's shoulder. The pig responds to a handler's approach relative to the point of balance. If a handler enters a pig's flight zone, the pig will move:

- Forward if the handler approaches from behind the point of balance
- Backwards if the handler approaches from in front of the point of balance

Ideally, to move the pig forward, enter the point of balance from the rear, just inside the animal's flight zone. Moving in and out of the flight zone and behind the point of balance allows pigs to remain calm and move in an orderly fashion.

Because a pig's eyes are on the sides of its head a pig's vision is approximately 310 degrees leaving a blind spot directly behind it. This blind spot means that a handler cannot rely on a visual reaction to get a pig to move when standing directly behind it.



A Pig's Flight Zone, Point of Balance and Blind Spot

Following/Herding

Pigs instinctively group together to be in visual or physical contact with each other. This instinctive behavior also causes pigs to follow each other in order to maintain that contact. The caretaker can take advantage of this behavior when moving pigs of any age or size.

Examples where this is effective include when a handler is moving pigs:

- Up or down a ramp or chute
- Through hallways
- Into or out of a pen or room

When these concepts are not used, or are used incorrectly, pigs can easily be injured when trying to escape, either through contact with other pigs or through contact with an object in their environment such as a gate, feeder or chute. Visual gaps between pens, alleys, ramps, gates, chutes or other places can appear to be an escape route to a pig and can result in injuries to the pig and/or cause balking.



**Visual gaps
between pens, alleys,
ramps, gates, chutes
or other places can
appear to be an
escape route to a pig.**



Handlers should act calmly and avoid sudden movement, loud noises and other actions that may frighten or excite pigs.

Environment

During movement, a pig may come across unfamiliar or distracting elements within its environment. Pigs typically slow, stop or change direction (or balk) when they encounter something new or unfamiliar such as changes in:

- Floor surface (i.e. transition from concrete alley to wooden chute)
- Footing/traction (i.e. wet, slippery chute or loose cleats)
- Temperature (i.e. moving from a warm building to an outdoor chute/ramp on a cold day)
- Lighting – pigs move best from dark areas to lighter areas
- People, equipment, trash, other animals or objects in their path or peripheral vision area
- Drafts or wind
- Doorways that may change the width of the alley

It is important to understand the potential effects that human interactions have on pigs and pig behavior. A person's intentions are not always understood by the pig and this may create fear and/or a negative reaction to a handler. Additionally, pigs that have had regular, positive interactions with people will typically be less fearful and easier to handle.

Walking pens slowly on a daily basis will help pigs become used to positive interactions with people. This will train the pigs to quietly get up and calmly move away from the handler. Pigs can recall previous experiences and if they have had a bad handling experience in the past they may be more difficult to handle the next time. This previous experience may relate specifically to a human interaction or it may relate to a piece of equipment such as a loading chute.

Handlers should act calmly and avoid sudden movement, loud noises and other actions that may frighten or excite pigs. Calm pigs are easier to handle than excited agitated pigs. Frightened pigs bunch together and will be more difficult to sort and move. Pigs should be moved at their normal walking pace. Aggressive handling should be avoided as it can lead to pigs becoming non-ambulatory due to injury, stress or fatigue. Research indicates that more than 20 percent of aggressively handled market hogs can become injured, stressed or fatigued compared to 0 percent of those handled properly. Aggressive handling includes things such as:

- Overuse, or improper use, of electric prods
- Loud noises and yelling
- Moving pigs too fast
- Moving too many pigs per group
- Overcrowding pigs in chutes, ramps and alleyways
- Rough physical contact

Handling Pigs of Various Types and Sizes

Basic handling techniques apply to all pigs but specific requirements for certain sizes and types of pigs differ.

Handling Breeding Stock

Breeding swine (sows, gilts and boars) are the largest pigs a handler will work with and handlers should use extra caution when moving these animals. A sorting board should be used when attempting to turn or stop a large animal. The handler should not use his or her body alone. If the animal appears aggressive or agitated, it may be safer for the handler to move out of the way than to risk potential injury.

Breeding swine are the most unpredictable pigs. Boars are especially unpredictable when exhibiting mating behaviors, such as when they are being used for estrus detection. Boars are dangerous because their large tusks can cause injury. Sows can be aggressive as well, especially when they perceive their litter is being threatened (i.e. such as during piglet processing or weaning). In addition to their reproductive behaviors, pigs of breeding age require extra caution just because of their sheer body mass. Therefore, it is important for these pigs to be familiar with positive human interactions.

Moving breeding females and boars in and out of pens and/or individual housing units can be a challenge even to the best handlers. There are many techniques that can be used based on what is known about pig behavior. For example, when trying to move a sow into a farrowing stall she may resist because she sees her path is blocked by the stall end being closed. This may be overcome by leaving the stall door open and having someone close it when she enters the stall, but before she can move out through the other end.

These large animals also can cause injury, to people or pigs, through sudden movement of their large heads or by pinning the handler between the pig and a fixed object such as a gate or feeder. Often this type of injury is a result of the handler's arm or leg being in the wrong place at the wrong time. An example may be a crushing or pinching injury to a hand or foot when a pig closes a gate with its body.



Handling Piglets

Handling piglets can present a safety challenge to the handler. Piglets have sharp teeth and can bite the handler when they are picked up. The sow may also attempt to bite the handler when he or she reaches into the stall to grab a piglet. Piglets can either be moved by herding or by picking them up and moving them by hand or with a cart. Piglets should be picked up under the rib cage or by grabbing a rear leg, above the hock, and then gently setting the piglets into a cart, alleyway or pen. Piglets may squirm and wiggle when picked up, so care should be used so that they are not dropped. Piglets should not be tossed or thrown. When being held for an extended period of time, piglets should be held under the rib cage next to the handler's body or by both rear legs using two hands.



Handling Nursery and Finisher Pigs

Nursery and finisher pigs grow rapidly and quickly become too large to lift or hold. When sorting and moving these pigs, it is often the best practice to work in pairs and have one person work the pen gate while the other sorts the pigs with a sorting board. This is especially true when finished pigs are being sorted for load-out as the first pigs may be reluctant to leave their pen mates.

Handlers should rely on a sorting board instead of their body to turn or stop large finishing pigs. If an animal appears aggressive or agitated, it may be safer for the handler to move out of the way than to risk a potential injury.

Group Sizes

Pigs should be moved in groups large enough to be efficient for the production system, but small enough to be safe for the pigs and the handler(s). Groups should be small enough so that the handler can always maintain control of the lead pig. Conditions of the facilities, temperament of the animals or weather may require adjustment to the number of animals being moved.

Suggested group sizes by pig type.

Pig type/size	Suggested group size
Weaned piglets	20
Nursery pigs	10
Finished/Market pigs	3-5
Sows/Gilts	1-5*
Boars	1-5*

**Depending upon temperament and safety conditions, may require moving individually.*

Non-Ambulatory Pigs

Non-ambulatory pigs are a challenge that a stockperson may face at some point. A pig that cannot get up or walk on its own is called non-ambulatory. A pig may become non-ambulatory due to injury, illness or fatigue. Determining the specific cause will help handlers identify the appropriate way to care for the pig.

Medical treatment is an option for a pig that is non-ambulatory due to injury or illness. When the likelihood of recovery is high, the pig should be moved to a pen where competition for feed and water is reduced and where the pig can be monitored and treated regularly. When pigs become non-ambulatory due to illness or injury and the likelihood of recovery is low, even with treatment, the pig should be humanely euthanized.

In the case of pigs becoming non-ambulatory due to fatigue, quietly move the pig to a pen and allow it to recover before attempting to move them again. Most pigs will fully recover after two to three hours of rest. Fatigued pigs can be recognized by open-mouth breathing, vocalization (squealing), blotchy skin, stiffness and muscle tremors. The best way to prevent the occurrence of fatigued pigs is to minimize stress by utilizing good animal handling practices.

The position of the National Pork Board is that any pig that is unable to walk or that is ill and will not recover should be humanely euthanized on the farm and not transported to market channels. When

the likelihood of recovery is low, even with treatment, the pig should be euthanized. When the likelihood of recovery is high, the pig should be moved to a pen where competition for feed and water is reduced and where the pig can be monitored and treated regularly.

Handling Equipment

There are many different pieces of handling and sorting equipment on the market, or that can be easily made on the farm, to help you sort or move pigs in a safe, humane and efficient manner.

Handling equipment is effective by providing barriers or stimuli including:

- Physical barrier (i.e. sorting board)
- Visual barrier (i.e. matador's cape)
- Auditory stimulus (i.e. rattle/shaker paddle)
- Visual stimulus (i.e. nylon flag)

Most of these tools are effective for a specific situation and should not be used for others. For example, a plastic rattle/shaker paddle may be effective for moving weaned piglets from the farrowing room to the nursery but is not a tool to use when moving a boar to his pen after estrus detection. The most versatile tool is typically the sorting board or panel. A sorting board can provide both a physical and a visual barrier.

The use of an electric prod is a stressful event.

- Use of electric prods should be avoided or minimized
- Never prod a pig in sensitive areas such as eyes, nose, anus, testicles, etc.
- If regular use of an electric prod is needed, evaluate your handling procedures and facilities
- An electric prod should not be the primary tool for moving pigs

Understanding pig behavior, including flight zone, point of balance, herding instinct and using proper handling techniques can ease handling and decrease stress. The failure to properly handle pigs is a common cause of human injury within a production facility. Proper use of handling equipment (i.e., minimizing electric prod use, increasing use of sort board) and techniques can facilitate handling and reduce injuries to both pigs and handlers. These details should be the focus of caretaker training and should be implemented in your operation.



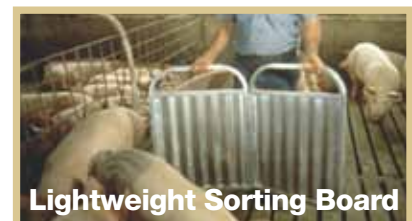
Nylon Flag



Witch's/Matador's Cape



Plastic Paddle



Lightweight Sorting Board

11. Ventilation

Both air temperature control and air quality can impact the well-being of the pigs on the operation. These two factors can be controlled through adequate ventilation management. The management and quality of the ventilation system in the facility will also impact the pig's well-being. Every type of housing system must provide conditions that are conducive to good health, growth and performance at all stages of the pig's life.

Temperature Control

Provisions for heating and/or cooling should be present and in working order during extremes in the weather. The facility should provide for moderating temperature enough to prevent the pigs from displaying extreme thermoregulatory behaviors. Pigs perform thermoregulatory behaviors in effort to help regulate their body temperature. These behaviors are the best indicator of the pigs' perception of the temperature in their environment as seen in Figure 11.1. It is important to assess these behaviors without disturbing the pigs. If air temperature is too cold, pigs will huddle together, shiver and excessively pile onto each other to keep warm. If the air temperature is too hot, pigs will try to avoid body contact with other pigs and have increased respiration rates. Respiration rates are assessed by counting breaths per minute. Normal ranges for healthy pigs can be found in Table 11.2.

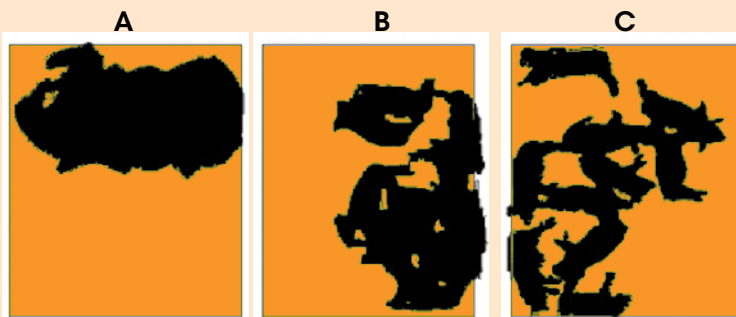
Table 11.2. Normal Respiration Rates for Swine

Production Phase	Respiratory Rate (breaths/minute)
Prenursery	50-60
Nursery	25-40
Growing	30-40
Finishing	25-35
Gestating sows	13-18
Lactating sows	15-22*
Boars	13-18

Table adapted from Diseases of Swine, 2006

**Respiration rates will increase beginning 24 hours prior to farrowing and should return to normal by 24 hours post-farrowing.*

Figure 11.1: Thermoregulatory Laying Postures of Swine.



The images in Figure 11.1 portray the thermoregulatory laying postures of pigs in an environment with three different air temperatures. Take note of the pigs in relation to each other as well as the amount of free space within the pen. Image A depicts a pen of 10 pigs in an environment with cold air temperature. These pigs huddle very close together in a dense pile in one area of the pen. Image B depicts a pen of 10 pigs in an environment with ideal air temperature. These pigs have body contact with each other but do not pile excessively. Image C depicts a pen of 10 pigs in an environment with hot air temperature. These pigs spread out throughout the pen and avoid physical contact with other pigs in the pen. Figure 11.1 is taken from Shao et al., 1997 in volume 40 of the Transactions of the American Society of Agricultural Engineers.

The thermal perception of the caretaker may be very different than that of the pig. Table 11.3 gives the critical limits and preferred temperature ranges for pigs in various stages of production. Upper and lower critical temperatures define the Thermal Comfort Zone or the range of temperatures that the pig does not have to use heat conserving or dissipating mechanisms (such as shivering, huddling or panting). Keeping pigs above or below their critical temperature cannot only negatively influence thermal comfort, but also feed intake, growth, feed conversion efficiency and health. Remember that air temperature measurements should be recorded at pig height (approximately 1 foot above the ground). Temperatures should be taken in the center at one-third intervals down the length of the barn. Remember to avoid taking temperatures near inlets and direct heat sources.

Table 11.3. Thermal Limits for Swine

Production Phase	Lower critical limit ¹	Upper critical limit ²	Preferred range
Lactating sow and litter	50°F for sow	90°F for sow	60-75°F for sows; 85-90°F for piglets
Prenursery, 10-30 lbs	60°F	95°F	75-80°F
Nursery, 30-75 lbs	40°F	95°F	65-80°F
Growing, 75-150 lbs	25°F	95°F	60-75°F
Finishing, 150 lbs-market	5°F	95°F	50-75°F
Sows or Boars	5°F	90°F	60-75°F

¹Bedding, supplemental heat, or other environmental modification is recommended when air temperatures approach the lower critical limit.

²Except for brief periods above these air temperatures, some form of cooling should be provided when temperatures approach upper critical limits.



Remember to avoid taking temperatures near inlets and direct heat sources.

Air Quality: Ammonia

Air quality can be controlled with a ventilation system that is in working order and that can operate without interruption. This is true whether the ventilation system uses the natural flow of air or mechanical assistance. There are several contaminants, such as dust and various gasses, that contribute to the quality of the air within the pigs' environment. Some air contaminants, at high concentrations, can irritate the respiratory tract of the pigs and may leave them susceptible to disease infection while others can be lethal when concentrations are high enough. Watery and mattery eyes, bloodshot eyes and breathing difficulty are indicators that pigs may be exposed to poor-quality air.

Ammonia is a common air contaminate that can directly impact the well-being of the pig through irritation of the respiratory tract. Ammonia concentrations in the air can be measured by using gas diffusion tubes for time-weighted average (TWA) measurements taken throughout the facility. These TWA measurements should not exceed 25 ppm. Samples should be taken in the center of the building at one-third intervals down the length of the barn. Remember that all air samples should be taken at pig level (approximately 1 foot above ground) and areas around air inlets and fans should be avoided.

Air Ammonia Concentrations

- TWA measurement ≤ 25 ppm = Acceptable
- TWA measurement > 25 ppm = Develop and Implement an Action Plan



Willful acts of neglect or abuse are not acceptable.

12. Willful Acts of Abuse

There are currently no national laws or regulations that dictate animal production conditions on the farm. There are, however, some local and state governments that do have laws that address animal cruelty. Producers should familiarize themselves regarding such laws in their locations.

Willful acts of neglect or abuse are unacceptable. Willful abuse and neglect are defined as acts outside of normally accepted production practices that intentionally cause pain and suffering including, but not limited to:

1. Intentionally applying prods to sensitive parts of the animal such as the eyes, ears, nose or rectum
2. Malicious hitting/beating of an animal
3. Purposeful failure to provide minimal food, water and care that results in significant harm or death to animals.

If a willful act of abuse is observed, immediately intervene to stop the situation if reasonably and safely possible. Discuss the situation with the appropriate authority (owner, manager, law enforcement, etc.).



Good Production Practice #10

Provide Proper Swine Care to Improve Swine Well-Being.

Summary

- Recordkeeping includes keeping records of a Veterinarian-Client-Patient Relationship (VCPR), medication and treatment of animals, and of a caretaker training program.
- A written emergency action plan and an emergency backup system are necessary in the event of an on-farm crisis.
- Daily observation of animals and facilities and documentation of this is critical to animal care and well-being.
- Animal evaluation will help verify that the other aspects of the well-being program have been successfully extended to the animals themselves.
- Body condition scores (BCSs) are useful to assess the adequacy of the nutrition program and the effectiveness of the heating and cooling strategies in the facility's management plan.
- Pig space should be adequate for the pig's size and is important for animal well-being.
- It is important to have a written plan for euthanasia, and to perform euthanasia in a timely manner.
- Facility maintenance and management impact animal well-being. The condition of pens can directly affect other indicators of your pigs' well-being.
- Correctly use animal handling devices and handling practices when sorting and moving pigs of various sizes.
- Both air temperature control and air quality can impact the well-being of the pigs on the operation. These two factors can be controlled through adequate ventilation.
- Willful acts of neglect or abuse are unacceptable. Willful abuse and neglect are defined as acts outside of normally accepted production practices that intentionally cause pain and suffering.

[illegible]


The Certification/Recertification Process:

Like a diploma, **PQA Plus Certification** is certifying that you have completed the PQA Plus educational program with a PQA Plus Advisor.

PQA Plus Certification is valid for three years from the date of issuance.

To become PQA Plus Certified, an individual must attend a PQA Plus Certification training session on the 10 PQA Plus GPPs conducted by a PQA Plus Advisor.

The name of a PQA Plus Advisor near you can be found at:

 <http://www.pork.org/Producers/PQA/PQAPlusLocateAdvisor.aspx>

No examination is required for PQA Plus Certification
but retraining is needed for recertification.

PQA Plus **Site Status** is a PQA Plus status assigned to a production site and stays with that site for three years from the date of the assessment.

To be granted PQA Plus Site Status the production site must be identified with your state by a premises ID.

The site also must have associated with it a PQA Plus Certified individual that has a stable relationship/responsibility with the production site. Finally, the site needs to have a PQA Plus site assessment done either by a PQA Plus Advisor or you, if you have the PQA Plus Site Self-Assessment Endorsement. **Once these criteria have been met** and a PQA Plus Advisor reports the assessment data, the site will receive a PQA Plus Site Status that will be valid for three years. Reassessment is required to renew PQA Plus Site Status. The anonymous aggregate data from the PQA Plus site assessments will be used to help the Pork Checkoff direct research and educational programming.


The first step to getting a PQA Plus Site Self-Assessment Endorsement is to hold a current PQA Plus Certification. A training session with a PQA Plus Advisor is the next step during which you will need to successfully complete and pass an examination covering PQA Plus GPP #10 and the on-farm site assessment process. The PQA Plus Site Self-Assessment Endorsement is valid for up to three years based on the date of issuance of your PQA Plus Certification. Retraining and completing and passing an examination is required for re-endorsement.



Appendix

1. ACRONYMS

AMDUCA = Animal Medicinal Drug Use Clarification Act (1994)
AASV = American Association of Swine Veterinarians
C & D = Cleaning and disinfecting
cGMPs = current Good Manufacturing Practices
CPG = Compliance Policy Guide
EPA = Environmental Protection Agency
FARAD = Food Animal Residue Avoidance Databank
FDA = Food and Drug Administration
FSIS = Food Safety and Inspection Service
GPP = Good Production Practice
HACCP = Hazard Analysis and Critical Control Points
PQA = Pork Quality Assurance
TQA = Trucker Quality Assurance
USDA = United States Department of Agriculture

For a more detailed listing of pork industry acronyms visit
 <http://www.pork.org/newsandinformation/acronyms.aspx>

2. GLOSSARY

Administration techniques: Refers to proper delivery of medication by injection, water or feed.

Antibiotic: A chemical substance produced by a microorganism which has the capacity to inhibit the growth of or kill other microorganisms.

Antimicrobial: An agent that kills bacteria or suppresses their multiplication and growth. This includes antibiotics and synthetic agents.

Biological hazard: These include microbiological or zoonotic agents, such as bacteria including *Salmonella* and parasites, such as *Trichinella*.

Chemical hazard: These include natural toxins, drug residues, such as violative levels of sulfonamides or antibiotics, pesticides and unapproved use of direct or indirect food or color additives.

Drug sponsor: The manufacturer of the animal drug.

Environmental Protection Agency (EPA): The government agency that sets tolerance levels for pesticides used in pork production.

Ethical Principles: U.S. pork producers' commitment to produce safe food, protect and promote animal well-being, safeguard natural resources in all of their practices, ensure their practices protect public health, provide a work environment that is safe and consistent with their other ethical principles, and contribute to a better quality of life in their communities.

Extra-label use: Use of an animal drug in a manner that is not in accordance with the approved drug labeling. This type of use is done legally under the direction of a veterinarian under a VCPR. Extra-label use is not allowed in medicated feeds.

continued ...



Food and Drug Administration (FDA): Agency of the U.S. Department of Health and Human Services. The FDA is responsible for regulation of medicated animal feeds and most animal-health products.

Food Safety and Inspection Service (FSIS): A branch of the U.S. Department of Agriculture that is responsible for inspecting all pigs and sanitation levels at packing plants.

current Good Manufacturing Practices (cGMPs): A set of guidelines for processing feed designed to prevent feed contamination and provide reasonable assurance that the feed is manufactured accurately.

Good Production Practices (GPPs): A set of guidelines for the safe, healthy, efficient and humane production of pork.

Hazard Analysis and Critical Control Points (HACCP): A system that identifies specific hazards and preventive measures for their control to minimize the risk of producing defective products and services.

Intramuscular (IM): Injection into the muscle tissue of the pig.

Intranasal (IN): Administration in the pig's nasal passages.

Intraperitoneal (IP): Injection into a pig's abdominal cavity. This type of injection should only be used upon veterinary instruction and guidance as serious injury or death to the pig can occur.

Intravenous (IV): Injection into a pig's vein. This type of injection should only be used upon veterinary instruction and guidance as serious injury or death to the pig can occur.

Label use: Use of a drug as exactly specified on the label.

Operation (also known as a system): A grouping of pork production sites/farms forming a complex or unitary whole. May consist of only one site or multiple sites.

Over-the-Counter (OTC): Animal health products that can be purchased lawfully without a Veterinary Feed Directive order or prescription.

Physical hazard: These include glass, metal or needle fragments.

PQA Plus Advisors: Veterinarians, animal scientists, University Extension specialists or adult ag educators that conduct producer training and on-farm assessments.

PQA Plus Candidate: An individual seeking certification in PQA Plus.

PQA Plus Certification: Recognition that an individual has completed PQA Plus education and training from a PQA Plus Advisor.

PQA Plus Endorsement: Recognition that a PQA Plus certified individual has received additional training from a PQA Plus Advisor, and successfully completed an examination. It allows a producer to conduct a self-assessment of a production site along with a follow up conversation with an Advisor.

PQA Plus Site Assessment: An educational site evaluation tool for pork producers to objectively assess records, facilities and the well-being of their pigs on-farm.

Appendix

PQA Plus Site Status: Recognition offered to an individual site on which a completed on-farm assessment has taken place.

PQA Plus Trainers: Veterinarians, animal scientists, University Extension specialists or adult ag educators identified and trained by the National Pork Board that conduct advisor and producer training and on-farm assessments.

Prescription drugs: Drugs that can be obtained only by the means of a veterinarian's prescription.

Site/Farm: The location of an individual pork production facility. A site is defined by its premises identification number, which can be obtained by registering the site at the state level.

Subcutaneous (SQ): Injection under a pig's skin.

Third-party Verification Process (also known as Survey): A third-party evaluation of the implementation of PQA Plus in the industry used to identify opportunities for improvement of the program's information and delivery. Randomly selected statistically valid sampling of PQA Plus sites with Site Status.

Maximum Residue Level (MRL): Maximum amount of drug that may be allowed in the animal's tissues at time of harvest that has been demonstrated to be of no-risk to public health and has been approved by the Food and Drug Administration. This also is known as a tissue tolerance level.

Veterinary/Client/Patient Relationship (VCPR): A relationship that exists between a client and a veterinarian where the veterinarian has assumed the responsibility for making medical judgments regarding the health of the animals, has sufficient knowledge of the animals and is readily available for follow-up consultations. (See GPP #2 for full definition.)

Veterinary Feed Directive (VFD): A category of animal drugs created by the Animal Drug Availability Act of 1996. This category is specific for new/approved antimicrobial drugs used in feed to treat disease. FDA determines which drugs are VFD drugs. These drugs must be ordered by your veterinarian.

Violative drug residue: A drug remaining in animal tissue after harvest that exceed the levels allowed by the FDA.

We Care Initiative: A joint effort of the Pork Checkoff, through the National Pork Board, and the National Pork Producers Council which helps demonstrate that producers are accountable to established ethical principles and animal well-being practices.

Withdrawal time: Length of time between the last day animals were given an animal-health product and their harvest.



3. FDA COMPLIANCE POLICY GUIDE 7125.37

Proper Drug Use and Residue Avoidance by Non-Veterinarians (CPG 7125.37)

BACKGROUND:

This Compliance Policy Guide (CPG) provides regulatory guidance for the development of cases resulting from the use of animal drugs contrary to label directions ("extra-label use") by non-veterinarians in food-producing animals. It also provides guidance on measures that can be taken by non-veterinarians to ensure proper drug use and avoid illegal residues (See CPG 7125.06 (Sec. 615.100) for guidance on proper drug use by veterinarians).

Extra-label use of drugs by non-veterinarians in food-producing animals is a significant public health concern and a contributing factor in illegal residues in edible animal tissue. Such use of drugs is illegal under the Federal Food, Drug, and Cosmetic Act (the Act). Under the Act, virtually all drugs that are intended for use in animals are subject to extensive pre-market approval requirements. New animal drugs (those drugs that are not generally recognized as safe and effective for their labeled conditions of use) may not be legally marketed unless they are the subject of an approved new animal drug application (NADA). A new animal drug that has not been approved is "unsafe" under Section 512 of the Act, and adulterated under Section 501(a)(5).

The pre-market approval process ensures that when animal drugs are used in accordance with the labeled directions (type of animal, medical conditions, dosage, route of administration, and any other precautions or instructions for the safe and effective use of the product, including withdrawal and milk discard times) milk, eggs, and the edible tissues of slaughtered animals treated with a drug will not contain potentially harmful or violative drug residues. The withdrawal time is the period following the last treatment with the drug during which the animal may not be offered for slaughter and during which products from this animal such as milk and eggs may not be offered for sale. The length of the withdrawal period is based upon the time necessary for drug residues in the animal to deplete to levels that are shown to be safe.

The withdrawal period is based on residue studies conducted under the labeled conditions of use (type of animal, dosage, route of administration) to ensure that residues above levels that have been shown to be safe will not be present in animal products used as human food. Those levels, called tolerances or safe concentrations, represent the amount of drug legally permitted in the edible tissue of the animal. The withdrawal period enables the animal to metabolically reduce the drug level in its tissues to levels that are not of public health concern.

POLICY:

Use of Drug Products Contrary to Label Directions

A new animal drug is "unsafe" under Section 512(a)(1) of the Act and adulterated under Section 501(a)(5) when it is not used in accordance with its approved label directions. Therefore, use of an unapproved new animal drug or of an approved new animal drug contrary to label directions constitutes a violation of the Act.

Appendix

Use by veterinarians and non-veterinarians (e.g., livestock and poultry producers, herdsman, dealers, haulers, etc.) of veterinary drug products in food-producing animals contrary to label directions is illegal. Uses that are contrary to label directions would include ignoring labeled withdrawal times or milk discard times, using the product in a species not indicated on the label, using the drug to treat a condition not indicated on the label, administering the drug at a different dosage than stated on the label, or otherwise failing to follow label directions for use and administration of the drug.

FDA, in the exercise of its regulatory discretion, allows veterinarians, acting in a valid veterinarian-client-patient relationship and in accordance with the conditions outlined in CPG 7125.06 (See Sec. 615.100) ("Extra Label Use of New Animal Drugs in Food-Producing Animals") to consider the use of a new animal drug contrary to label directions when the health of the animal is immediately threatened and suffering or death would result from failure to treat the affected animal(s). This policy applies only to licensed veterinarians who administer, prescribe, or dispense drugs in accordance with the policy guide and applicable state laws. If the veterinarian does not personally administer the drugs, certain labeling information is required, as explained in CPG 7125.06 (See Sec. 615.100). Also, no drug residues above permitted levels may be present in the final food product whenever a drug is used in an extra-label manner by a veterinarian.

Avoiding Drug Residues Through Proper Drug Use

The presence in food of a residue of a new animal drug above permitted levels causes the food to be adulterated under Section 402(a)(2)(D) of the Act. The ability of persons who produce and sell food-producing animals and animal products such as milk and eggs to have systems to monitor and control the use of animal drugs is an indispensable adjunct to providing appropriate therapy and is essential to avoiding illegal residues. Such systems also enable federal and state officials to monitor the food supply and ensure that it is free of harmful drug residues. Failure to establish and utilize such systems can result in adulteration of live food-producing animals, for reasons explained in the following paragraphs.

The Act defines food as "(1) articles used for food or drink for man or other animals... and (3) articles used for components of any such article." 201(f). Food-producing animals, even though not in their final, edible form, have been held to be food under the statute *United States v. Tomahara Enterprises Ltd.*, Food, Drug Cosm. L. Rep. (CCH) 38,217 (N.D.N.Y. 1983) (live calves intended as veal are food). More generally, courts have long held that unprocessed or unfinished articles are or can be food. See *Otis McAllister & Co. v. United States*, 194 F.2d 386, 387 (5th Cir. 1952) and cases cited there (unroasted coffee beans are food). Thus, FDA regards live animals raised for food as "food" under the Act.

Section 402(a)(4) provides that a food shall be "deemed" to be adulterated "if it has been prepared, packed, or held under insanitary conditions whereby...it may have been rendered injurious to health." The phrase "insanitary conditions" in 402(a)(4) is not limited to filth or bacteria. Indeed, the courts have construed "insanitary conditions" in 402(a)(4) to comprehend a variety of conditions that may render food injurious to health. See *United States v. Nova Scotia Food Products Corp.*, 417 F. Supp. 1364, 1369-70 (E.D.N.Y. 1976), rev'd on other grounds, 568 F.2d 240 (2d Cir. 1977); *United States v. 1200 Cans, Pasteurized Whole Eggs*, 339 F. Supp. 131, 140-41 (N.D. Ga. 1972). Thus, in the context of holding food-producing animals, FDA believes that "insanitary conditions" could include a lack of adequate controls concerning treatment of food-producing animals with drugs.



The “may have been rendered injurious to health” standard requires a reasonable possibility of injury. See *United States v. Lexington Mill & Elevator Co.*, 232 U.S. 399, 411 (1914); see also *Berger v. United States*, 200 F.2d 818 (8th Cir. 1952). In FDA’s view, failure to maintain adequate controls with respect to use of animal drugs could result in a reasonable possibility of injury to human health because illegal drug residues often result from a lack of such controls and illegal drug residues could have adverse toxicological effect on consumers, ranging from acute to chronic reactions.

Under the circumstances described above, FDA may regard live animals raised for food as adulterated under 402(a)(4).

Persons involved in raising, handling, transporting, holding, and marketing food-producing animals are encouraged to establish systems to ensure that animal drugs are used properly and to prevent potentially hazardous drug residues in edible animal products. These control systems should include the following measures:

- A. Identifying and tracking animals to which drugs were administered, in order to preclude the sale of edible animal tissue, milk or eggs containing illegal residues (identification may be by specific animal identification, pen or lot, quarantine/segregation, or other means);
- B. Maintaining a system of medication/treatment records that, at a minimum, identifies the animal(s) treated (individual animals, pens, lots, etc.), the date(s) of treatment, the drug(s) administered, who administered the drug(s), the amount administered, and the withdrawal time prior to slaughter (and when milk, eggs, etc. can be used, if appropriate);
- C. Properly storing, labeling and accounting of all drug products and medicated feeds;
- D. Obtaining and using veterinary prescription drugs only through a licensed veterinarian based on a valid veterinarian/client/patient relationship; and
- E. Educating all employees and family members involved in treating, hauling and selling the animals on proper administration techniques, observance of withdrawal times and methods to avoid marketing adulterated products for human food.

Establishing and maintaining such systems should help producers avoid marketing milk, eggs or edible animal tissue containing illegal residues and avoid regulatory action based on Sections 402(a)(2)(D), 402(a)(4), or 501(a)(5).

Persons who do not administer medications but who purchase or lease animals for milking or sale for slaughter (such as livestock dealers) should also establish and implement a record-keeping system. This system should include information on the source of the animal and whether the animal has been medicated (when, with what drug, and the withdrawal period) to preclude marketing of edible animal tissue, milk or eggs, that may contain illegal residues.

Such persons also may be subject to regulatory action if they market animals containing illegal residues and have failed to take reasonable precautions to prevent the sale of adulterated food.

REGULATORY ACTION GUIDANCE:

FDA investigators should determine the extent of the misuse of drugs in food-producing animals during the course of their inspections or investigations, such as when following up on an illegal tissue residue report from United States Department of Agriculture/Food Safety and Inspection Service or other information concerning improper drug use. The occurrence of an illegal tissue residue will be regarded as prima facie evidence of improper drug use and may be an appropriate subject for enforcement action. Of course, before recommending such action, FDA will also consider whether evidence of proper drug usage, as described under the "Policy" section above, exists to demonstrate that every reasonable effort has been made to preclude residues.

CVM is prepared to recommend regulatory action when drugs are misused as described above. If the misuse involves administration contrary to labeled directions, the drug itself is adulterated under Section 501(a)(5). If an illegal residue is involved, the food is adulterated under Section 402(a)(2)(D). Further, if an illegal residue is involved and inadequate control measures are documented, the food (edible animal tissue, milk, or eggs) may also be adulterated under Section 402(a)(4). Except in egregious situations, a warning letter is ordinarily the appropriate action of choice. Compliance Program 7371.006, Illegal Drug Residues in Meat and Poultry, provides additional regulatory guidance for illegal residues. Drug residues in milk should be handled according to Compliance Programs 7318.003, Milk Safety Program and 7371.008, National Drug Residue Milk Monitoring Program.

Issued: 7/9/93



Group Training Record

Trainer/Advisor: _____ Company: _____

Address: _____

Phone: _____ Email: _____

Class Date: _____ Advisor ID (if available): _____

	First and Last Name	Company or Department	ID # (if available)	Training Topic
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				



Individual Development Plan

Trainee: _____ Evaluation Date: _____

Evaluated By: _____ Next Evaluation: _____

Tasks	Proficiency Rating 1=poor 3=proficient	Proficiency Rating (6mo) 1=poor 3=proficient	Notes

Employee Signature: _____ Date: _____

Supervisor Signature: _____ Date: _____

INDIVIDUAL DEVELOPMENT PLAN—Steps to improve performance

Employee Signature: _____ Date: _____
Supervisor Signature: _____ Date: _____



Individual Training Record

Name: _____
Home Address: _____
City, State, ZIP: _____
Mobile Phone: _____
Home Phone: _____

Email: _____
Business Name: _____
Business Mailing Address: _____
Business City, State, ZIP: _____
Business Phone: _____

Date	Training Completed	Certification # (if available)	Trainer/Advisor Name	Trainer/Advisor Signature	Employee Signature

- PLEASE PRINT -

[illegible]



Gilt / Sow / Boar Treatment Records

- PLEASE PRINT -

Unit Location: _____ Premises ID Number: _____

Date (MM/DD/YY)	Animal or Pen ID	Product Name	Amount of Drug Given (cc;water)	Route ¹	Remarks / Initials of Who Administered	Preharvest Withdrawal (Days)	Date Withdrawal Completed (MM/DD/YY)	Date and Treatment Results ²	Advising Veterinarian

¹ IM=Intramuscular; SQ=Subcutaneous; IN=Intranasal; Water, Feed
² Solid; Recovered; Died



- PLEASE PRINT -

Premises ID Number: _____

[illegible]

IM=Intramuscular; **SQ**=Subcutaneous; **IN**=Intranasal; **Water**; **Feed**

Sold; Recovered; Died



Euthanasia Action Plan

- PLEASE PRINT -

Unit Location: _____ Premises ID Number: _____

Date: _____ Drafted by: _____

Phase of Production	Euthanasia Method	Alternative Method
Farrowing Piglets <12 lbs or 5.5 kgs		
Nursery <70 lbs or 32 kgs		
Grow/Finish up to 300 lbs or 136 kgs		
Mature Animals sows, boars		



Vaccination and Management Schedule Non-Breeding Herd

- PLEASE PRINT -

Unit Location: _____ Premises ID Number: _____

	Date Completed (MM/DD/YY)	Product Name	Dosage	Route ¹	When Given / Age Done	Person Responsible	Preharvest Withdrawal (days)
Nursing Pigs							
Weaned Pigs							
Grower (40-100 lbs.)							
Finisher (100 lbs - Market)							

¹ IM=Intramuscular; SQ=Subcutaneous; IN=Intranasal; Water; Feed



Vaccination and Management Schedule Breeding Herd

- PLEASE PRINT -

Unit Location: _____ Premises ID Number: _____

	Date Completed (MM/DD/YY)	Product Name	Dosage	Route ¹	When Given / Age Done	Person Responsible	Preharvest Withdrawal (days)
Gilt Prebreeding							
Sows Prebreeding							
Boars							
Gilts Prefarrow							
Sows Prefarrow							

¹ IM=Intramuscular; SQ=Subcutaneous; IN=Intranasal; Water; Feed

- PLEASE PRINT -

Drug Name: _____

[illegible]

Emergency Action Plan

- PLEASE PRINT -

SITE INFORMATION

Unit Location: _____ Premises ID Number: _____

Owner/Operator Name: _____

Unit Address (including Emergency 911 Address):

Directions to Unit: _____

Rescue/Ambulance: Phone _____

Hospital or Clinic: Name _____ Phone _____

Veterinarian: Name _____ Phone _____

Fire Department: Phone _____

Police/Sheriff: Name _____ Phone _____

Animal Abuse Reporting: Name _____ Phone _____

Other: Name _____ Phone _____

Name _____ Phone _____

Name _____ Phone _____

Name _____ Phone _____



Farm Medication Plan

- PLEASE PRINT -

Unit Location: _____ Premises ID Number: _____

Date Completed: _____

Production State	Product Name & Concentration	Route ¹	Dosage (cc, g/ton, etc.)	Preharvest Withdrawal (days)	Drug Purpose ²
New Stock Isolation					
Breeding					
Gestation / Prefarrow					
Lactation					
Nursing Pigs					
Nursery					
Grower (<100 lbs.)					
Finisher (100 lbs. to Market)					

¹ IM=Intramuscular; SQ=Subcutaneous; IN=Intranasal; Water; Feed

² DT=Disease Therapy; GP=Growth Promotion; SP=Stress Periods; DP=Disease Prevention

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- PLEASE PRINT -

[illegible]

External Biosecurity	Yes/No	Comments for improvement
Livestock facilities are located away from other livestock facilities and major transportation routes.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Livestock buildings are locked when unattended.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Signs restricting entrance and giving instructions to report to designated point are posted.	<input type="checkbox"/> Y <input type="checkbox"/> N	
There is a designated parking area for visitors.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Premise is fenced and driveway is gated to control entry.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Farm adheres to written policy regarding requirements for employees, service personnel and visitors.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Boots and coveralls are supplied to all visitors entering animal areas.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Equipment brought into facilities is cleaned and disinfected.	<input type="checkbox"/> Y <input type="checkbox"/> N	
The sources of new animals are kept to a minimum.	<input type="checkbox"/> Y <input type="checkbox"/> N	
New animals are from a known source, have been tested, and found free of the diseases of concern.	<input type="checkbox"/> Y <input type="checkbox"/> N	
The isolation facility is located such that direct and indirect contact between the animals in isolation and the rest of the herd is prevented.	<input type="checkbox"/> Y <input type="checkbox"/> N	
New animals are kept separated from the resident herd, monitored for signs of illness and exposed to the resident herd in consultation with the herd's veterinarian.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Animals that have left the herd temporarily for exhibition are handled as new animals upon re-entering the herd.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Before being exposed to the herd, new animals are immunized against diseases known to be in the herd.	<input type="checkbox"/> Y <input type="checkbox"/> N	
New animals receive treatments against parasites before moving to the herd.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Livestock trucks deliver and load-out animals at a site remote from livestock housing units.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Drivers of feed and livestock trucks are instructed not to enter buildings.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Feed delivery trucks are clean and do not enter animal areas.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Livestock trucks are cleaned and disinfected before arrival for loading-out.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Water and feed are from uncontaminated sources.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Supplies of water and feed are protected from contamination during storage and distribution.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Animals are denied access to flowing water such as streams and rivers.	<input type="checkbox"/> Y <input type="checkbox"/> N	
In confinement facilities, contact with wildlife and birds is prevented by fencing and screening.	<input type="checkbox"/> Y <input type="checkbox"/> N	



Internal Biosecurity	Yes/No	Comments for improvement
Health of the herd is monitored by observations, testing and production records.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Disease control/prevention programs, including deworming, vaccination, and medication protocols, are designed in consultation with a veterinarian.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Animals are housed and fed in ways to minimize stress, crowding, and fighting.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Animals are housed separately by age groups and moved using all-in/all-out pig flow.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Pens are cleaned and disinfected between groups.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Personnel duties are assigned in a manner to minimize the risk of spreading diseases between groups within the herd.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Sick animals are immediately treated and/or removed from groups to treatment areas to reduce exposure to others.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Any unusual illness is immediately brought to the attention of the herd veterinarian.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Professional pest control services are used to prevent rodent and insect infestations.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Building design and maintenance discourage the entry and harborage of pests.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Access to feed by rodents is minimized by storage in rodent-proof containers and the prompt clean-up of spills.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Moribund and dead animals are immediately removed from the animal area.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Dead animals are disposed of promptly in an approved manner to prevent spread of disease, cannibalism, and the attraction of scavengers	<input type="checkbox"/> Y <input type="checkbox"/> N	
Access to manure by animals is reduced by timely cleaning and removal.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Prevention of Foreign Animal Diseases / Agroterrorism	Yes/No	Comments for improvement
Employees are trained to be vigilant and report suspicious visitors, activities or materials.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Unusual or suspicious events are recorded.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Premises are well-illuminated at night.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Premises are under electronic surveillance (video cameras, motion detectors, alarms) at strategic places to aid in safeguarding workers, animals, facilities and equipment.	<input type="checkbox"/> Y <input type="checkbox"/> N	
The farm water system is protected from vandalism.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Pesticides, chemicals and fertilizers are secured.	<input type="checkbox"/> Y <input type="checkbox"/> N	
International visitors are required to have at least 5 days free of animal contact before farm entry.	<input type="checkbox"/> Y <input type="checkbox"/> N	
International visitors must wear farm-supplied clothing and boots.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Personal items that can not be disinfected are prohibited in the production areas.	<input type="checkbox"/> Y <input type="checkbox"/> N	

Prevention of Foreign Animal Diseases / Agroterrorism	Yes/No	Comments for improvement
Unnecessary animal contact by visitors is prohibited.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Visitors are restricted to those with a verified need to be there. Visitors are always with an escort.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Imported foods are prohibited.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Job applicants are thoroughly screened; references and background are checked.	<input type="checkbox"/> Y <input type="checkbox"/> N	
New employees are closely supervised.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Requests for tours and sensitive information are denied to people you don't know.	<input type="checkbox"/> Y <input type="checkbox"/> N	
The facility has an emergency action plan.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Contact has been established with local law enforcement officials.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Suspicious activities are promptly reported to appropriate officials.	<input type="checkbox"/> Y <input type="checkbox"/> N	
Unusual or severe animal diseases are reported to your veterinarian or state/federal animal health officials promptly.	<input type="checkbox"/> Y <input type="checkbox"/> N	

