FACT SHEET

L-993

SWINE HERD HEALTH

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Swine production continues to become more complex because of the intensified confinement systems of production used today. Pigs are being bred, fed and housed in environments so that they should weigh 200 to 210 pounds at 5 months of age. Modern pigs have this genetic potential; however, to reach this genetic potential, all producers need to follow a sound herd health program.

A swine herd health program that prevents disease and parasite infection is much less expensive and more efficient than one that emphasizes treatment. Prevention involves the isolation of the swine herd from disease-causing agents and parasites. A practical and effective health program should include sound sanitation, protection from exposure to infected animals and man and disease prevention through well-planned immunizations. Basic principles and management practices that have proved effective for all producers are discussed in this leaflet. However, a more rigid program for replacement animals and visitors is required to maintain the status of an SPF (specific pathogen-free) herd. More information in this area is available from the authors of this leaflet.

PREVENT EXPOSURE

When initiating a swine enterprise, foundation animals should be purchased from as few herds as possible; a single herd is most ideal. This reduces the possibility of combining a broad spectrum of pathogenic organisms. If all females are purchased from a single source, acquired active immunity against organisms in that herd will be gained. This "built-in resistance" should reduce chronic disease problems. Once herds have been established, the objective is to bring in as few breeding animals as possible. Maintaining semiclosed herds prevents the introduction of foreign pathogens into the herd. Periodic purchase of boars presents less chance of introducing new pathogens into the herd than the purchase of sows or gilts, since many chronic diseases are "contact" diseases transmitted from the sow to nursing pigs.

To prevent exposure of the herd to disease-producing organisms, follow these management practices:

New Purchases

1. Buy all replacement boars directly from reputable breeders. If possible, do not purchase gilts.

2. Before purchasing replacement boars, observe closely the seller's herd for signs of disease.

3. Purchase and isolate boars at least 30 to 60 days before they are used. The isolation area should be downhill, if possible, from the herd. Newly purchased animals should be examined or observed closely for signs of disease and parasites. Animals should be blood tested for brucellosis and leptospirosis.

Mechanical Transmission of Diseases

Man can transmit diseases between swine herds. Commercial trucks, birds and animals other than hogs can be carriers of disease-causing agents. To prevent this method of exposure, producers should:

1. Require all visitors to clean their footwear thoroughly before entering *any* portion of the

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operation. Footwear should be changed if visitors have come directly from other swine farms.

2. Do not allow any visitors in the farrowing house. Newborn pigs are most susceptible to disease.

3. Have disinfectant at the farrowing house entrance for scrubbing boots. Change the disinfectant daily.

4. Establish a working routine. Take care of the youngest animals first and proceed up the age scale. Take care of breeding and sick animals last.

5. Avoid human traffic between the farm and auction market. Travel to sales, shows and other farms should be avoided.

6. Keep commercial vehicles out of hog-raising areas, unless previously disinfected.

7. Purchase feed from reliable sources because feed and containers often are contaminated. Salmonella often is introduced into swine herds by using meat scraps or tankage from plants that do not have a rigid sanitation program.

8. Fence off streams which flow through hog farms. Do not give hogs access to these waters. Leptospirosis and brucellosis can be waterborne diseases.

9. Do not keep hogs in lots adjacent to neighboring hog lots. Nose-to-nose contact through fences often transmits swine diseases. Virus pig pneumonia and atrophic rhinitis are examples of contact diseases.

10. In areas of heavy hog concentrations, double fence the hog facilities to prevent stray hogs from transmitting diseases. Fences in a double-fenced system should be 30 feet apart.

11. Keep dogs, cats and rodents out of pens and housing units.

12. Keep birds out of hog houses.

PREVENT PATHOGEN BUILDUP

Pathogens (disease-causing agents) tend to "build up" in facilities heavily used. To maintain a healthy, clean environment, take care to prevent this buildup from reaching disease-causing levels.

Since newborn pigs are without a disease defense mechanism, the most ideal environment on a hog farm should be in the farrowing house. See MP-953, *Keys to Profitable Swine Production* for optimal environmental conditions in farrowing houses.

To prevent a buildup of pathogens in the farrowing house, move out all sows after each farrowing and clean and disinfect the building before the next group of sows enter. Many producers have found the following procedure to be highly effective:

1. *Clean manure from the buildings and pens.* Only a clean surface can be disinfected. Any dirt remaining after cleaning will neutralize the disinfectant or prevent it from coming in contact with disease-causing agents. High-pressure sprayers can be used on all surfaces. If these are not available, all surfaces except aluminum can be cleaned with a solution of 1 pound of lye to 15 gallons of water. The lye solution is used primarily as a cleansing agent. Do not use lye solution on aluminum surfaces because of its corrosive action. When lye or other cleansing solutions are used, be sure to rinse all surfaces with clear water.

2. Fumigate. Fumigate buildings that are relatively airtight in the following manner. Seal windows, doors and air vents. Wet the floor, ceiling and walls. Use formaldehyde and potassium permanganate as a fumigant. Formaldehyde gas produced from this mixture serves as a disinfectant. Use 1 gallon of 37.5 percent formaldehyde with 2 pounds of potassium permanganate for each 6,000 cubic feet of building space. Mix the ingredients in an earthenware or enamelware container with a capacity of at least 10 times the volume of the total ingredients. Circulate the gas within the building, using electrical fans if necessary. Evacuate the building and leave it closed for 8 hours. Air the building for 8 hours before use.

3. *Disinfect.* Thoroughly wet the floors and equipment with the disinfectant and allow them to dry. Commonly used disinfectants for swine buildings are sodium orthophenylphenate, cresol and quaternary ammonium compounds. Always follow the directions on the label.

PREVENT STRESS

Stress includes physical, chemical and emotional factors that threaten or alter physiological balance. Pigs can cope with a limited amount of stress with no *measurable adverse effects* on efficiency. However, death sometimes is attributed to stress. Efficient producers prevent stress by:

1. Providing adequate floor and feeder space and watering facilities.

2. Providing proper nutrition for all classes of hogs.

3. Providing optimum temperature conditions.

4. Providing sanitary quarters, free of pathogenic organisms and roundworm eggs.

5. Grouping growing-finishing pigs into uniform weight groups.

6. Providing adequate ventilation to avoid detrimental concentrations of noxious gases.

PREVENT DISEASE WITH ANTIMICROBIAL COMPOUNDS

Most trials have clearly demonstrated that the improvement in rate and efficiency of gain due to antimicrobial compounds is inversely related to the performance of the nontreated swine. In other words, such compounds aid in combating subclinical diseases and in reducing the effect of poor sanitation and management. However, antimicrobial compounds do not eliminate the need for practicing strict sanitation and doing everything possible to prevent stress and subclinical diseases.

Recommended levels for feeding antimicrobial compound to baby pigs, growing pigs and finishing pigs may be obtained from product manufacturers or by consultation with local veterinarians.

Antimicrobial compounds can be used at therapeutic levels to treat unthrifty, diseased pigs at the rate of 200–400 grams per ton of feed. If pigs are in very poor condition and will not eat, the antibiotics can be given in drinking water.

Certain compounds must be withdrawn from the feed prior to the slaughter of hogs to allow for the reduction of the compound levels in body tissue to those acceptable by the Food and Drug Administration. *READ THE WARNING LABEL ON THE FEED TAG!*

PREVENT DISEASE BY VACCINATION

A sound vaccination program is *part* of a good management and sanitation program, and *not a substitute.*

Vaccination against certain diseases is necessary in certain areas. Producers should adapt vaccination programs to meet their individual needs and management systems. For example, producers using total confinement systems have less need to vaccinate for erysipelas than those using dirt lots or pastures. Individual premise or area experience also governs the efficient use of erysipelas and leptospirosis bacterins.

Administration of Immunizing Agents

Immunizing agents must be used properly if they are to be effective. For best results:

1. Store in the refrigerator according to manufacturer's recommendations.

2. Do not use outdated products.

3. After a vial of vaccine has been opened, use it that day. Do not keep for use at a later date.

4. Administer in accordance with manufacturer's instructions.

5. Use clean syringes and sharp needles which have been properly disinfected.

DISEASES

Erysipelas

Hogs may experience the disease in the acute form and die quickly, or the chronic form, which normally is not fatal but results in leg joint and general stiffness. Vaccinate breeding stock, boars and sows every 6 months. Vaccinate gilts before breeding. Sows usually are vaccinated during the lactation period, while in the farrowing house or nursing barn. In areas where erysipelas is a major problem, vaccinate sows 25 to 30 days prior to farrowing, so that antibodies against erysipelas will be in colostrum milk for the baby pigs.

Leptospirosis

Many forms infect swine. Abortion occurs near term or sows may farrow stillborn or weak pigs. Vaccination against leptospirosis is satisfactory when gilts and sows are vaccinated before breeding. *L. pomona* is the most common form; however, in some areas it is necessary also to use bacterins against *L. icterohemorrhage* and *L. canicola.*

Other Diseases

There are no vaccination programs for hog cholera (because of the cholera eradication program), brucellosis, swine arthritis and mastitis-metritis-agalactia. Previously mentioned prevention steps and good management will aid in the prevention of these swine diseases.

CONTROL PARASITES

Internal and external parasites can be controlled successfully through good management and sanitation. The most common parasites are roundworms (*Ascaris lumbricoides*), lungworms (*Meta-*

strongylus Spp.), hog lice (*Haematopinus suis*) and mange mites (*Demodex phylliodes* and *Sarcoptes scabei* var. *suis*).

Roundworms

The roundworm is found in most swine and is particularly prevalent in those raised in dirt lots and pastures. Several anthelmintics are recommended to eliminate the roundworm. They are piperazine, dichlorvos (Atgard®), hygromycin B, pyrantel tartrate (Banminth®), and levamisole hydrochloride (Tramisol®).

When pigs are raised or fed on pasture, worm them when they are 8 to 10 weeks old and approximately 20 to 30 days later or, if a continuous feeding drug is used, mix with the pig starter. If pigs are raised in confinement, worming at 8 to 10 weeks is adequate or may not be necessary if a well-planned worming program is followed with the breeding animals. A check can be made by noting the amount of larva damage in the livers of slaughtered hogs. Breeding animals should be wormed twice a year or every 60 days, except when sows are lactating. Management routine and types of facilities dictate which system is best. If only the sows have access to dirt lots or pasture, worm sows 6 to 8 days before farrowing.

In a TAMU study, Dichlorvos and levamisole·HCL were more effective than piperazine in removing large roundworms from 8-10-week-old pigs when all three compounds were used according to manufacturers' recommendations in a single treatment.

Method of Administering Anthelmintics[1]

Anthelmintic	Water	Feed	
		Single day's feedings	Continuous feeding
Piperazine	*	*	
Dichlorvos		*	
Hygromycin B			*
Levamisole hydrochloride	*	*	
Pyrantel tartrate		*	*

[1]Follow the recommendations of the manufacturer.

Lungworms

Lungworms are a problem where pigs are fed or raised on dirt lots, pasture or areas where they might ingest earthworms. Earthworms serve as an intermediate host for the lungworms. A single earthworm may contain as many as 2,000 lungworm larvae, enough to produce a heavy infection. Pigs having access to earthworms should be wormed with levamisole hydrochloride.

Hog Lice

Pigs of all ages may be severely affected by lice. Several insecticides are recommended for treatment of infested swine.[2] Treat all swine on the farm at the same time, usually two applications are sufficient if the animals are covered thoroughly. Prevent contact with infested swine. When herd additions are made, isolate and treat these individuals to rid them of lice.

Mange Mites

Mites cause irritations, inflammations and blister formation. Scratching and rubbing to relieve the itching causes thickened, rough skin. Hair follicles are destroyed and the hair in affected regions usually is lost. Healthy animals normally become infected through contact with infested swine.[2]

[2]Refer to MP-691, *Suggestions for Controlling External Parasites of Livestock and Poultry.* Follow the manufacturers recommendations.

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