

# ERADICATING **Hog Cholera** from North Dakota



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**EXTENSION SERVICE**  
NORTH DAKOTA STATE UNIVERSITY  
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## ERADICATING HOG CHOLERA FROM NORTH DAKOTA

### Is Hog Cholera Still A Threat To North Dakota?

Cholera will remain a threat until it is completely eliminated. Even though our state has nearly freed itself from the disease, we cannot afford to be careless. This circular is intended to bring hog producers up to date on the cholera status of North Dakota. We are definitely winning the battle, but we can't afford to let up now.

### What Is Being Done To Eliminate The Threat Of Hog Cholera?

In September, 1961, Congress passed a law authorizing the U.S. Department of Agriculture to undertake a broad state-federal effort to eradicate hog cholera from the United States. The Animal Health Division of USDA's Agricultural Research Service administers the federal program in cooperation with the states.

### How Does This Hog Cholera Eradication Program Operate?

The cooperative state-federal eradication program is divided into four steps or phases: Phase I - Preparation; Phase II - Reduction of Incidence; Phase III - Elimination of Outbreaks; and Phase IV - Protection against Reinfection. Each of these phases represents a gradual buildup in a state's fight against cholera.

The standards for this four-phase program were approved by representatives of state livestock disease control officials prior to being adopted by USDA as a framework for developing cooperative programs with the states.

### Just Exactly What Is Involved In Each Of These Four Phases? What Happened First?

Phase I - Preparation - was just what the name implies: getting the program underway. Before a cooperative program can be formally started, a state must have certain basic laws or regulations.

State and county hog cholera eradication committees were organized during Phase I and they help distribute information to producers. Other important activities carried out in this phase were: (1) reporting all outbreaks promptly by telephone, (2) investigating each outbreak completely to find its source, and (3) re-emphasizing garbage cooking through increased inspection of commercial garbage feeders.

### How Does A State Move Into Phase II Of The Program?

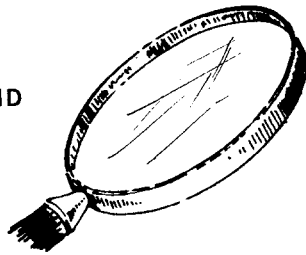
When a state has all the procedures outlined above in operation at the proper level, it enters Phase II, Reduction of Incidence. As the name implies, the objective here is to cut down the number of outbreaks. New eradication measures applied in this phase included: (1) quarantining all outbreaks, with provisions for supervised disposal of infected animals, and (2) establishing intra-state shipping rules to prevent feeder pigs and breeding stock, moving from markets back to farms, from spreading hog cholera.

### What's Required To Go Into Phase III - Elimination Of Outbreaks?

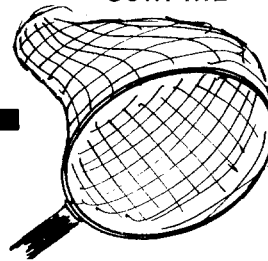
North Dakota is now in Phase III. This is the first phase in which federal indemnities can be paid for hogs destroyed because of cholera.

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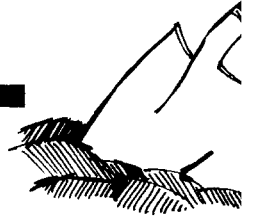


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ERADICATE



A state enters this phase after it has sufficiently reduced the incidence of hog cholera by carrying out all the steps in the first two phases. The primary goal in Phase III is to promptly eliminate those few infected and exposed herds which remain to threaten the eradication program - in other words, to progress from the intensive control program developed in the first two phases to an active eradication program. In North Dakota this includes cooperative state-federal indemnities for hogs destroyed because of hog cholera.

Federal participation in indemnities is intended only for the final stages of the program - after incidence of the disease has been reduced to a low level and state and federal regulatory officials agree that indemnity payments are an efficient method to wipe out the remaining infection. In any event, Phase III operations involve complete depopulation of infected herds - that is, supervised removal of the animals so that they do not spread the disease.

#### **When Does A State Enter The Final Phase Of The Program?**

When hog cholera apparently does not exist in a state, it can move into Phase IV - Protection against Reinfection. All the steps in the preceding phases must be in full operation. In addition, the state must have provisions for complete depopulation of any infected herd, with indemnity payments, and must put into effect more stringent rules on importation of feeder pigs and breeding swine.

A state in Phase IV can be declared hog cholera free when it meets certain standards. These standards have been adopted by the U.S. Livestock Sanitary Association - an organization representing state animal disease control officials - and have been approved by the USDA.

#### **Why Aren't Indemnities Scheduled In The Early Stages Of The Program?**

It's primarily a matter of economics - finding the most practical way to get rid of hog cholera. Eradication measures such as prompt reporting and investigation of outbreaks, combined with quarantines, can eliminate a lot of cholera themselves without paying indemnities.

#### **Then Why Use Indemnities At All?**

To eliminate the final traces of cholera, it's imperative to treat each outbreak on an emergency or "stamp out" basis; that is, immediate disposal of all hogs in an infected herd. And, in most cases where such action is necessary, there are provisions for indemnity payments.

Also, offering cooperative indemnity payments will stimulate maximum reporting of outbreaks.

#### **Is It Right To Pay a Man For His Own Sick Pigs?**

Indemnities are intended as a protective measure for healthy herds, rather than as payment for sick ones. Their purpose is to help eradicate disease. The fact that someone gets paid for his sick pigs is incidental.

In the latter stages of the program, there will be very few outbreaks. Payment of indemnities at this point, to assist in quickly eliminating these infected herds and thus prevent further spread, is necessary to help protect the vast majority of swine producers from hog cholera.

#### **STATUS AND REGULATIONS FOR HOG CHOLERA IN NORTH DAKOTA**

##### **Status Of North Dakota Cholera Eradication Program**

At the present time, North Dakota is operating in Phase III - the "stamping out" phase - of the four-phase cooperative state-federal hog cholera eradication program.

For several years hog cholera was not diagnosed in the state, however, in April, 1966, three cases were diagnosed. Again, in October, two cases were confirmed. All the swine on these infected premises were appraised and destroyed, and indemnity was paid on those cases which qualified for indemnity payment. Confirmation of the diagnosis of hog cholera is made by submitting tissues to the National Animal-Disease Laboratory at Ames, Iowa.

When a diagnosis of cholera is confirmed, all animals infected with or exposed to the disease are appraised by an authorized agent of the North Dakota Livestock Sanitary Board and the Animal Health Division at their actual value for meat,

## NO HOG CHOLERA



NO NEED TO VACCINATE

feeding, or breeding purposes. In the case of grade animals, only females are eligible for appraisal based on breeding value, and no appraisal exceeds three times the meat or feeding value.

The Animal Health Division and the North Dakota Livestock Sanitary Board share equally in the payment of the indemnity, each paying not more than 50 per cent of the difference between the appraised value of each animal destroyed and the net salvage received by the owner. Total indemnity from both agencies can not exceed \$80 per head for grade or \$100 per head for purebred swine.

No indemnity can be paid on hog cholera resulting from illegal importation of swine into the state or to any owner of swine who has violated any of the laws or regulations of the Animal Health Division or the North Dakota Livestock Sanitary Board pertaining to hog cholera.

### Requirements For Movement Of Swine Within The State

No inspections or vaccinations are required by the Livestock Sanitary Board for the sale or movement of swine within North Dakota. However, managements of some shows and sales do have inspection requirements.

### Interstate Shipment

Swine infected with or exposed to cholera cannot be shipped across state lines.

Healthy, unexposed slaughter hogs may be shipped across state lines without restriction directly to a recognized slaughtering center; or to a public stockyard; or to any other market specifically approved under the federal regulations.

Healthy, unexposed feeder pigs and breeding swine may be shipped across state lines from the farm where they were raised:

1. To another farm in the other state. Health certificate and special permit required.
2. To a public stockyard or other market specifically approved under the Federal regulations.

The requirements differ depending upon vaccination status of the swine, the regulations of the state of destination, etc. Before shipping feeder pigs or breeding swine across state lines, **ALWAYS CHECK WITH YOUR VETERINARIAN, OR STATE OR FEDERAL LIVESTOCK HEALTH OFFICIALS.**

### What Progress Has Been Made?

Excellent progress has been made since the cholera eradication program was started. Vermont, Nevada, Utah, Montana, Alaska, Michigan, and Idaho are now officially considered "cholera free". States now in Phase IV (Protection Against Reinfection) include Washington, Oregon, Wyoming, Wisconsin and Florida. The rapidly decreasing incidence of hog cholera nationally is reducing the carcass condemnations from cholera to near zero, according to the 1966 report of the USDA Federal Meat Inspection activities. The latest figures of 1.3 carcasses per million total slaughter compares with 36.3 in 1961 and 138.2 in 1951.

North Dakota had no hog cholera for a period of two years and moved into Phase III of the eradication program at the end of 1965. A total of 21 states representing one-third of the nation's pork supply are now in the latter two phases of the program.

### What Causes Hog Cholera?

Hog cholera may be caused by any of a number of strains of hog cholera virus. While these strains may vary in virulence from time to time, tests have shown they can be kept active for at least seven years when placed in a preservative. The virus will survive in pork products for months, and will live for at least six months in pickled, salted, and smoked meats. The ability of the virus to exist outside its host depends on the temperature. Freezing tends to preserve the virus while heat tends to kill it. In experimentally contaminated manure water, it lives from two days to seven weeks.

### Is There A Treatment For Hog Cholera?

No effective cure for hog cholera has been developed. Since North Dakota is now in Phase III of the state-federal hog cholera eradication program, all infected or exposed animals are destroyed following appraisal by authorized state or federal veterinarians.

### What About Hog Cholera Vaccination?

At present, North Dakota law prohibits the use of any vaccine containing live hog cholera virus except by special permission from the North Dakota Livestock Sanitary Board.

Swine vaccinated after July 1, 1967 with any vaccine containing living virus will not be eligible for shipment into South Dakota. For this reason no live vaccine should be used in North Dakota for any purpose except to qualify swine for immediate shipment to other states. In the very near future it will be possible to ship swine interstate by injecting a protective dose of anti-hog cholera serum only within ten (10) days of shipment or on permit with no treatment.

In view of these developments, vaccination is no longer recommended as a routine procedure in North Dakota. However, if any immunization is practiced, inactivated vaccines of blood origin only should be used since these are the very safest of all vaccines.

#### How To Tell If Swine Are Infected

Hog cholera is a blood infection. When the virus enters the pig's body, it passes to the bloodstream and develops there. The blood becomes infectious within 12 to 20 hours after the virus enters the animal's body. The urine and manure usually contain the virus within three days. Secretions of the eyes and nose also become infectious by the third day.

Pigs seldom show symptoms before the fourth day and may fail to show symptoms for seven days or longer. Maximum growth of virus is usually reached in six to eight days. However, infected animals can transmit the disease before any symptoms appear.

A standard diagnostic procedure for hog cholera has been developed. This procedure includes both laboratory tests and field examination by a qualified veterinarian.

Hog cholera may be suspected if your hogs show any of the following signs:

- Fever - often 105°F., or higher. Temperature usually stays above normal for several days, then gradually drops, often becoming sub-normal.
- Loss of appetite. Pigs may appear depressed and become inactive.
- Loss of coordination - especially in the hind-quarters. Pigs may stagger and sway as they walk, and eventually collapse in any position. This symptom is most easily seen just after pigs are made to get up and walk.
- A tendency for pigs to pile on one another. As the disease progresses, the pigs may tend to go off from the rest of the herd and lie alone.
- Fits or convulsions. This is not a common symptom, but does occur in some cases.
- Purplish discoloration or blotching of the skin. This is most often seen on the ears, snout, or abdomen, and is most apparent in white hogs or in light-skinned areas of other breeds.
- Constipation in early stages of infection. A yellowish gray diarrhea develops after the animal has been sick a day or more. Diarrhea often gets progressively worse.
- Vomiting.
- Eye discharge during early stages of the disease. Later, this discharge becomes thicker and gums the eyelids together.



The most familiar symptom of hog cholera: pigs that are "just sick all over". Many present-day cases of cholera do not show this typical sign. This means hog producers should let their veterinarian diagnose their problem of suspected cholera.

- “Shaker” pigs - or other trouble at farrowing. Abortions; stillborn or weak pigs; weak pigs which die soon after birth; “shaky” or “jittery” pigs; or a high mortality from birth to weaning may be indicative of hog cholera.

However, many hog cholera symptoms resemble those common to other diseases. Also, some forms of hog cholera do not show typical symptoms. If your pigs are sick, call your veterinarian at once.

#### **What To Do When You Suspect Hog Cholera**

- Isolate sick animals immediately.
- Notify your local, state, or federal veterinarian immediately so that he can examine the herd and arrange for all necessary laboratory tests.
- If the disease is found, observe all quarantines and cooperate fully with the veterinarians to locate the source of infection and prevent further spread.
- Follow the “Golden Rule” for hog cholera prevention: protect your neighbor as you would have your neighbor protect you.

Remember, the new forms of cholera appearing make cholera diagnosis difficult - even for the veterinarian. If you have any doubt, call him.

#### **How Hog Cholera Is Spread**

Hog cholera virus enters the animal's body through the mouth, nose, eyes, or through wounds or breaks in the skin. A susceptible pig gets the disease by contact with infected animals or with contaminated facilities and premises.

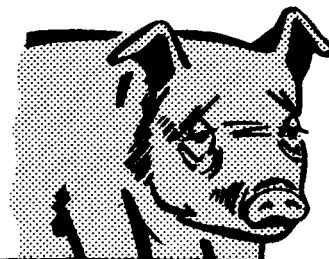
Here are some common ways that hog cholera spreads:

- Adding infected pigs to a susceptible herd.
- Marketing apparently healthy pigs from a herd where hog cholera exists.
- Transporting pigs in contaminated vehicles or housing pigs in contaminated premises.
- Disposing of dead animals improperly. Dogs, crows, and other animals or birds may carry the disease from infected carcasses.
- Feeding uncooked or improperly cooked garbage. Raw pork scraps in such garbage may contain hog cholera virus.
- Carrying the disease on clothing, equipment, or vehicles from an infected to a healthy herd.

- Transmission through the pregnant sow. Field evidence indicates that the pregnant sow may harbor and transmit hog cholera virus through her offspring, without showing clinical evidence of illness herself. Sows exposed to hog cholera virus - either field strains or modified live virus vaccines - during pregnancy have, in some instances, transmitted the disease to their unborn pigs. The pigs thus carry the virus at birth and can transmit it to susceptible hogs.
- Hog cholera may not be recognized in baby pigs because the usual symptoms and post mortem findings are not present. Often the disease develops slowly - or appears in chronic form. In many cases, hog cholera is not detected until it has spread to older susceptible pigs.

#### **How To Prevent Hog Cholera**

- Purchase replacement animals from a reputable source. Follow state and federal shipping rules.
- Isolate replacement animals from the main herd for at least 21 days.
- Avoid contact with infected herds; discourage visitors from entering areas where swine are kept.
- Don't feed raw garbage (including household scraps) to hogs.



**SUSPECT  
CHOLERA  
FIRST!**

### Some General Things To Consider

Since North Dakota is now past the vaccination stage in eradicating hog cholera, it becomes doubly important to AVOID POSSIBLE CHOLERA INFECTION. Any unvaccinated swine herd can contact the disease. Keeping a closed swine herd, except to bring in new boars, is the most economical way to fight disease. Hogs are susceptible to many contagious infections. However, it is not natural for swine to have disease; they only contract such infectious diseases as cholera when exposed to other contaminated swine or surroundings.

#### NOTE:

Although not required by law, the use of anti-hog cholera serum before sending pigs to shows and sales is a good management practice to follow to prevent the introduction of hog cholera into show stock.

This circular has been prepared by the following:

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Appreciation for information used in preparing this circular is due Dr. Dean E. Flagg, North Dakota State Veterinarian, Dr. George Spangler, Veterinarian in Charge, USDA Animal Health Division, North Dakota, and Dr. Edward R. Betlach, Assistant Veterinarian in Charge. Material has also been adapted from the following USDA publications.

ARS 91-42 May, 1963  
PA-628 July, 1964  
PA-577 September, 1966  
ARS 91-59 January, 1967

## THE GOAL:

