ERYSIPELAS of turkeys

- How to detect it
- How to prevent it
- How to control it
Erysipelas kills turkeys rapidly. It usually affects them when they are 16 weeks old or older. Toms are especially susceptible to the disease, but outbreaks in flocks of breeder hens are not uncommon. Serious losses have occurred in many turkey flocks in Washington and Oregon. Since the disease affects flocks which are grown or nearly so, the economic loss is often great.

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What Causes Erysipelas

Erysipelas is caused by the bacterium, *Erysipelothrix rhusiopathiae*. It is the same bacterium which causes erysipelas in swine. Chickens are rarely infected by natural means. Pigeons, pheasants, and ducklings, as well as sheep and goats, are susceptible. Man also may become infected. Reddened, painful, and swollen sores on the hands or fingers result from infection—it usually starts in a skin scratch. The disease is rarely fatal in man, but a doctor should be consulted if suspicious sores develop after handling erysipelas-infected turkeys. The disease medical doctors call erysipelas in humans is caused by a different bacterium (a streptococcus) than that which causes erysipelas in turkeys. Physicians call turkey erysipelas in humans erysipeloid.

What Happens when a flock gets erysipelas

Occasionally, only a few deaths occur when a flock gets erysipelas. As a rule you may suspect erysipelas if you suddenly find dead birds, unless you know they have cholera. Usually the dead birds will be in good condition because they die so rapidly. Darkened and purplish spots or blotches appear under the skin around the head and on other parts of the body. A swollen snood suggests erysipelas infection, but it may not occur or it may be due to other causes.

It is difficult to spot birds that have erysipelas, because they die so suddenly. Sick birds can be treated successfully (see section on treatment). If the disease has progressed too far, however, the bird cannot be saved. It may be only a matter of hours from the time a bird first shows symptoms until it dies. Inspect the flock several times daily to pick out and treat sick birds.
Immediately treat birds you suspect have the disease.

2. Cut off a shank from each dead bird and send them to a laboratory (see figure 3). The birds may have died from cholera, which is difficult to distinguish from erysipelas without diagnostic tests. The laboratory can check this in a day or two by culturing the shank. Ask them to call you collect if you are in a hurry. Give your phone number. Don't forget to give history of flock (have birds been vaccinated?).

3. Vaccinate (see section on vaccination).

**Treatment**

Most growers in Washington and Oregon depend on penicillin for treating erysipelas in turkeys. Several penicillin products are available (see table 1).

Streptomycin and aureomycin also may be used but are considered less effective than penicillin. Streptomycin and penicillin combination products are available and may be used if desired.

**Vaccination**

Recently, a bacterin has been developed which can be injected to immunize (vaccinate) turkeys. It has proved to be effective, and has taken the "bite" out of the disease on many farms that formerly had considerable trouble with erysipelas. Because of vaccination, erysipelas is no longer highiv dreaded.

When to vaccinate depends on various conditions on different farms. The following will help you decide:

1. You can vaccinate at 8 to 10 weeks of age to protect the flocks until market time.

2. You can vaccinate at any time after 8 to 10 weeks of age (see No. 7 on next page).
Fig. 3. How to remove and handle turkey shanks for erysipelas culture.

1. Grasp shank and bend hock joint backward as far as possible.
2. Cut from front side of hock joint.
4. Attach slip to shank giving date of death, flock history, treatment (if any), and whether vaccinated. Band will serve as identification. If bird is not leg banded, write wing band number or other information on attached slip. Also include flock history.
5. Wrap and immediately send to laboratory in fresh condition, or:

3. Usually erysipelas does not strike until after birds are 16 weeks of age.
4. Protection is best soon after vaccination and then gradually decreases.
5. One vaccination is good and may be enough, but revaccination boosts immunity and improves protection. Breeder turkeys should have two injections. An injection at about 8 to 16 weeks and again at time of selection and blood testing is a good practice with breeder birds.
6. Do not inject the bacterin into the muscle after birds are about 16 weeks of age if they are to be marketed. You can inject under the skin of the neck close to the head to avoid a "pocket" in edible meat. Do not inject more than 2 ml. in any one place.
7. If you vaccinate laying birds, you may cause a drop in lay, although many laying flocks have been revaccinated without effect on rate of lay.
8. Outbreaks have been stopped in 48 hours after vaccination, with no other treatment. Sick birds should be treated, however, at time of vaccination.
9. A bacterin is composed of dead erysipelas bacteria and cannot spread the disease. These dead bacteria do settle out so it is imperative to shake the bacterin thoroughly before using.
10. You may vaccinate for erysipelas and other diseases at the same time.

How to Vaccinate

An automatic syringe is necessary for speedy operation (see figure 6). The syringes break easily so get a spare and/or a repair kit, both of which are available on the market. Also get several 18-gauge needles, 1 to 1½ inches long. Use sharp needles. If you have your bacterin (vaccine), you are then...
DOSE: Give 2 ml. (cc.) to each bird; it can be increased up to 4 ml. for large toms.

After using the syringe, disassemble it and thoroughly wash the parts in a warm, detergent solution. Rinse at least three times and allow to air dry. After drying, reassemble the syringe so that it will be ready for the next use. Leave plunger as far back in the barrel as possible when you put the syringe away.

ready to start. However, it pays to "rig up" with catching chutes, conveniently-sized tables or benches of comfortable working height, and to have plenty of help. Try to vaccinate at a time when you are handling the birds for some other operation. By doing this, you will need only a small amount of extra help for vaccination.

Will Erysipelas Recur?

Erysipelas may strike one year on a particular farm and never show up again on that farm. However, the only safe rule on most farms has been: "Once a farm is infected, it is always infected." Hence if you have erysipelas one year, plan to vaccinate the next year. You will be right more often than wrong.

Fig. 4. Shake the bottle before injecting bacterin.
## Penicillin Products You Can Use

<table>
<thead>
<tr>
<th>Product and units per cc.</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Procaine penicillin G 300,000 units and crystalline penicillin G Potassium 100,000 units*</td>
<td>Aqueous (water) solution. Crystalline penicillin G Potassium is fastest acting and shortest lasting form. Is used in acute cases.</td>
</tr>
<tr>
<td>2. Same as Product 1, but diluted in oil instead of water*</td>
<td>Oil diluent prolongs action. Sometimes difficult to use in cold weather. Not as fast acting as Product 1 and is not recommended for advanced cases.</td>
</tr>
<tr>
<td>3. Dibenzylethylenediamine dipenicillin G 150,000 units and procaine penicillin G 150,000 units</td>
<td>Aqueous (water) solution. Longest-acting form (may remain in blood up to 4 days). This long-acting form is combined with a faster acting form.</td>
</tr>
</tbody>
</table>

*Products 1 and 2 each contain 400,000 units of penicillin per cc. Dose used is 0.5 \( \frac{1}{2} \) cc. or 200,000 units since it is impractical to measure less. Repeat treatment if necessary. Product 3 has only 300,000 units. Dose is 1.0 cc.

Fig. 5. Stab the syringe deep into the breast muscle.
The Automatic Syringe—Its Use and Care

Fig. 6. An automatic syringe for administering erysipelas bacterin to turkeys.

Fig. 7. The syringe part of an automatic syringe along with the spring that returns the plunger and the ring for supporting the spring.

Fig. 8. A layout of the parts of the automatic filling and injecting assembly of an automatic syringe.

All pieces and parts are shown in Figure 8 in the order and position in which they go together. The floating gaskets must be assembled as shown.

Cut a hole in a vaccine bottle stopper and run rubber tube from syringe through it if the metal ball is used at the end of the rubber hose. A snug fit will prevent spilling when bottle is shaken but it should not be so snug that air cannot enter. It is also possible to buy a long needle with a short small needle soldered to the side. These are pushed through the rubber cork. The rubber tube is attached to the long needle instead of the metal ball.

Shake vaccine before using and periodically shake while using to prevent settling.

A drop of glycerin on the plunger makes it work more easily and prevents breakage. The glycerin will prevent "freezing" of the plunger to the barrel. After each use, clean the syringe thoroughly. Leave the plunger as far back in the barrel as possible when you store it.

This publication is also distributed by the Washington State Extension Service as Extension Bulletin 509.