

CANYON COUNTY AGENTS
P. O. Box 1058
Caldwell, Idaho 83605

Ergot Poisoning

Richard F. Hall, D.V.M.*
Extension Veterinarian

Ergot has been found in grain throughout Idaho this year, particularly in the upper Snake River valley. This can lead to serious marketing problems since grain with ergot contamination may be discounted or may not be marketable at all. And if this grain is used as livestock feed, even more serious problems may result. Ergot can cause poisoning in all classes of livestock.

Ergot is a parasite which attacks seeds or ovaries in many cereal grains and grasses. Rye is among the most susceptible grains but wheat and barley are also affected. Infection takes place when the flower opens. What we recognize as ergot are the pink and purplish black structures, called sclerotia, which develop on the head in place of the grain seeds. The sclerotia vary from normal seed size to three or four times as large as the seed they replace.

Toxicity

To humans: Ergot contains alkaloids which stimulate and contract the smooth muscles of the body. Witch doctors used it to control bleeding for hundreds of years and, for a time around 1800, physicians and midwives also used it widely.

The ergot alkaloids are poisonous, however, and federal law now prohibits the use for human consumption of grain which contains more than 0.3 percent ergot sclerotia by weight. Grain standards specify that such grain be graded as "ergoty." Ergoty grain may be subject to price discounts or may not be marketable at all.

To livestock: Ergot is toxic to all classes of livestock to some degree. The amount of ergot in the feed determines how rapidly toxic effects will show. Toxicity is accumulative, varying both with amount of ergot consumed and the length of time ergoty feed is used.

*Contributions to this publication were made by R. C. Alldaffer, Caribou county extension agricultural agent, and Edward Duren, extension agent for livestock programs in Caribou, Bear Lake and Franklin counties.

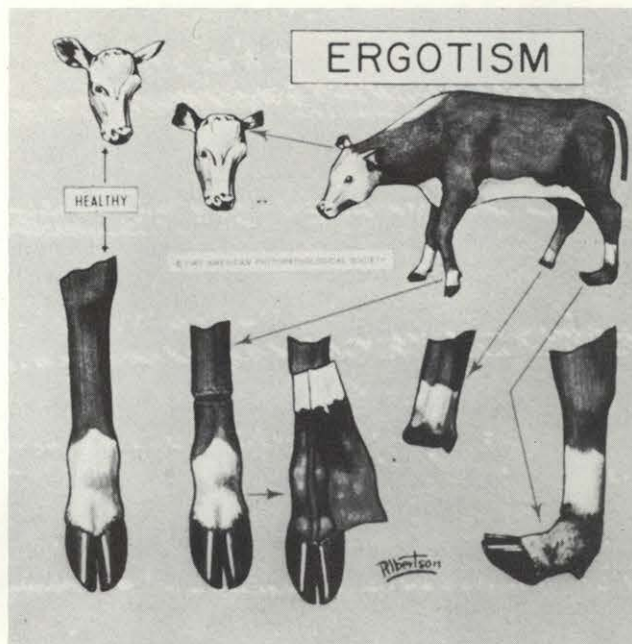


Fig. 1. Symptoms of ergotism in cattle. (Courtesy of American Phytopathological Society)

Pregnant mares and sows seem to be least tolerant to ergot. Fattening beef, sheep or swine are likely to go off feed if fed ergot and may not return to normal gains or feed consumption.

Toxicity Symptoms in Animals

Ergot poisoning causes the muscles of the intestinal tract and some of the small blood vessels to contract. This reduces and often stops blood circulation in the extremities — the areas of the ears, feet, legs and tail. In pregnant animals, ergot poisoning reduces or completely stops milk production and reduces vitality of the newborn.

Acute ergotism results when animals eat large quantities of ergot in a relatively short time. Typical symptoms are nervousness and extremely sensitive skin, muscular trembling, incoordinated gait, painful contractions and convulsions. The animals often die in these convulsions.

Chronic ergotism results when animals eat small amounts of ergot daily for several weeks. They may go off feed and become dull and depressed. Often their lower legs will be stiff and sore or become lame. In time, you will notice a dry gangrene in areas of poor circulation.

Symptoms in poultry or other birds are usually gangrene of the comb, wattles and beak.

Little experimental work has been done with ergot. In New Zealand, ergot fed to sheep caused gangrene of the tip of the tongue and the digestive

tract, but not of the extremities. Toxic levels were variable: one sheep died two days after receiving 0.022 percent ergot in the feed; another ate 3 percent ergot for 238 days with no symptoms.

The Montana Agricultural Experiment Station fed sows rations with 1 percent, 0.5 percent and 0.1 percent ergot and found ergot symptoms in all animals tested. Those fed even the smallest amount during pregnancy produced less milk and more dead, weak and premature pigs.

Treating Ergotized Animals

To treat animals which have ergot poisoning:

1. Place them on ergot-free feed or pasture. They will usually recover in 10 days to 2 weeks if the poisoning is not severe.
2. Keep them quiet. Do not allow them to overexert. Give a sedative to any animal in convulsions.
3. Keep them warmly housed. Exposure to cold promotes the tendency of ergot to constrict blood vessels.
4. Consult a veterinarian for proper diagnosis and treatment.

Controlling Ergot

It's too late to prevent ergot in this year's grain but you can plan now to protect next year's crop. None of the common seed-treating chemicals will control ergot. These cultural practices may reduce the disease:

1. Rotate cereal grains with other crops which are not susceptible to ergot.
2. Use ergot-free seed. The Idaho Crop Improvement Association allows only 1 ergot per pound of certified seed.
3. Mow or flame grasses bordering grain fields before they head out and bloom. When you harvest the grain, keep the first two or three rounds separate. Ergot infection is usually greater along these borders.
4. Clip pastures infected with ergot. The ergot heads are less likely to be eaten from the ground. Plow under badly infected pastures or grain fields so that the ergot sclerotia are covered by at least 2 inches of soil.

You may notice ergot in a number of grasses, including the wheatgrasses, fescues, smooth

Published and Distributed in Furtherance of the Acts of May 8 and June 30, 1914, by the University of Idaho Agricultural Extension Service, James E. Kraus, Director; and the U.S. Department of Agriculture, Cooperating.



JAMES E. KRAUS, Director



Fig. 2. Typical examples of ergot in small grains and grasses.

bromegrass, wildrye, reed canarygrass, bluegrass and quackgrass. Some of these are infected from sclerotia dropped from the previous year's growth. Ergot then spreads from the grasses to cereal grains. So neither crop rotations nor ergot-free seed will completely control the disease—but they will help.

How much ergot in your grain?

Here's one practical way to estimate the amount of ergot in grain:

Separate infected and non-infected kernels in a sample of grain (1 or 2 pounds). Weigh the ergotized kernels and normal kernels separately. From this you can calculate the percentage of infected grain in the sample. For more accurate analysis, send a representative sample to an official grain grading laboratory. Laboratories are located in Lewiston, Idaho, and Ogden, Utah.

Cleaning ergot from grain

Feeding ergotized grain or grass hay to livestock is not recommended. But if you have grain which must be used as seed or feed, you can remove ergot this way:

Place the whole grain in a tank and cover with a 20 percent solution of salt in water. Stir the grain in the water. The ergot will float and can be skimmed off the top. Grain should be washed and dried before use.