



# ERGOT:

## A LOSER for GRAIN GROWERS and LIVESTOCK OWNERS

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Ergot is a fungus disease that attacks grain (rye, wheat, barley and oats in about the order named), many tame grasses (wheatgrass, smooth brome grass, rye grass, orchardgrass, reedtop, bluegrass and Reed's canary grass), and many wild grasses, especially basin wildrye. It causes economic loss to grain growers and livestock owners.

Because ergot is poisonous to humans and livestock, ergoty grain is discounted on the market. Any grain containing more than 0.3 percent ergot by weight is graded as "ergoty" and is discounted.

The amount of ergot in the grain fed to livestock determines how rapidly toxic effects will show. Toxicity is accumulative, depending upon the amount of ergot eaten and the length of time over which it is eaten.

### ERGOT IN THE FIELD

The disease is easily recognized by conspicuous blue-black sclerotia or ergots, which replace the grain or grass seeds. Sclerotia vary in shape and are usually larger than the seeds they replace. Sclerotia may be harvested along with the grain, or they may fall to the ground where they overwinter.

Sclerotia germinate in the spring and produce spores, which are carried to grain and grass flowers by air currents, rain and insects. The spores form a fungus and the fungus threads form the sclerotia. Moist, cloudy weather at flowering favors the disease, because moisture aids the fungus and because flowers remain open longer. Flowers are susceptible for a short period during and after pollination.

Some grasses are infected regularly by sclerotia dropped the previous year. Then ergot spreads from grasses to grains.

### Control

Ergot cannot be completely controlled, but the following cultural practices should help reduce the disease:

1. Use ergot-free seed or seed that is a year or more old, as sclerotia lose their viability after about 1 year. The Idaho Crop Improvement Association allows 0.05 percent by weight of ergot in certified grain.
2. Reduce sources of infection: when seed heads begin to bloom, mow or flame grasses along fences, ditches or roads near grainfields.
3. Rotate cereal grains with crops that are not susceptible to ergot, such as alfalfa, sugar beets and potatoes. There are no resistant varieties of barley, rye or wheat.
4. Prevent germination and spore formation. If seed contains ergot sclerotia, plant it at least 2 inches deep.
5. Protect livestock and prevent further contamination: pasture the animals **before** seed heads begin to bloom. Mow pasture **when** seed heads begin to bloom.
6. During harvest, keep the grain from the first two or three rounds separate. This keeps grain from field borders, where ergot concentration may be high, from contaminating grain from the rest of the field.

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## ERGOT SYMPTOMS IN LIVESTOCK

Lameness of the hind legs is one of the obvious early symptoms. Ergot causes the muscles of the intestinal tract and some of the small blood vessels to contract. Blood vessel contraction often stops blood circulation in the extremities — ears, feet, legs and tail. In pregnant animals, ergot poisoning reduces vitality of the newborn. It also reduces or stops milk flow.

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, uncoordinated gait, painful contractions, and convulsions. The animals often die in the 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. Lower legs often become stiff and sore, with dry gangrene evident in areas of poor circulation.

Poultry and other birds usually show gangrene of the comb, wattles and beak.

### Treatment

To treat animals that have ergot poisoning:

1. Place them on ergot-free feed or pasture. They will usually recover in from 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 increases the tendency of ergot to constrict blood vessels.
4. Consult a veterinarian for proper diagnosis and treatment.



Sclerotia are darker than the grain.

## WHAT TO DO WITH ERGOTY GRAIN

If you must, you can feed ergoty grain to livestock. But if you do, watch the animals closely for symptoms of ergotism.

Cattle, the animals most susceptible to ergotism, will show symptoms if they eat 0.02 of 1 percent of their own body weight of sclerotia per day for 10 to 12 days. This amounts to 127 grams (about 4 ounces) of sclerotia daily for a 1,400-pound cow, 23 grams (about 2/3 ounce) for a 250-pound calf.

Brood sows eating barley that was 0.1 percent ergoty have shown symptoms of ergotism.

Rations containing 0.05 percent ergot are potentially toxic and will reduce performance of cattle in the feedlot. Ten times that amount (0.5 percent) will result in weight loss.

One specific guideline is available for feeding ergoty grain: the USDA Poisonous Plant Research Laboratory at Logan, Utah, suggests that cattle not be allowed to consume more than 1 ounce of sclerotia per head per day. In general, for all animals, keep the percentage of sclerotia as low as possible.

Keep the percentage low by:

1. Mixing the ergoty grain with grain that is ergot-free. Remember, however, whenever you feed ergot-infested grain in any amount, you must watch your stock closely for ergotism.
2. Running the ergot-infested grain over a "clipper cleaner," which would remove the larger ergots. . . or completely cleaning it by running it over a gravity mill. Both of these processes cost money, with the gravity mill costing most.

## AMOUNT OF ERGOT IN GRAIN

Here is one practical way to estimate the amount of ergot in grain. Separate infested and non-infested seed in a representative grain sample (1 or 2 pounds). Weigh the ergoty seed and normal seed separately. From this you can calculate the percentage of infested grain in the sample.

For more accurate analysis, send a representative sample to Ogden Grain Exchange, Box 1519, Ogden, Utah 84403; or Lewiston Grain Inspection Service, 1102 Snake River Ave., Lewiston, Idaho 83501.



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