



# Pork Prose

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### Molds and Mycotoxins

Depressed feed intake, below-normal growth rate, poor feed efficiency, low milk production, prolapsed rectums, abortions — these are just a few of the problems associated with moldy feed. If you're lucky enough to see one of the obvious signs, like an aborted litter, you'll know something isn't right. But if your herd is experiencing slow growth rates or inefficient feed conversions, you may be the last to know that these molds are eating away at your profit potential.

What kinds of mold can lead to problems in a swine herd? Before I answer that, remember — the mold itself is not the problem. The mycotoxins produced by the molds are the real culprits. And whether or not they develop will depend on environmental conditions.

Here's a list of the molds and their respective mycotoxins that can be an aggravation to the hog producer.

**Fusarium roseum.** This is usually referred to as Fusarium or Giberella. It grows on virtually all cereal grains, but is especially found on corn after a wet harvest season. Fusarium produces several toxins, but the two that seem to cause the most damage for hog farmers are zearalenone and vomitoxin (deoxynivalenol). One can be present with the other.

Zearalenone has a structure similar to estradiol, the female sex hormone. And it's the "estrogenic" properties of this mycotoxin that can lead to abortions, stillbirths, or swelling of the vulva or teats. You can often spot zearalenone contamination by watching young gilts closely. If the feed contains as little as five ppm of zearalenone, most or all of them will have red vulvas, swollen two to three times normal size, as well as an enlarged underline. In other words, they look like they're in heat, even though they may weigh only 75 pounds.

Zearalenone also reportedly irritates the lining of the rectum. This leads to straining and eventual prolapse or "blow-out" of the rectum.

Vomitoxin, the other major Fusarium mycotoxin, causes feed refusal in pigs. When vomitoxin is present, they'll often stand in front of the feeder and squeal, rather than eat out of it. I've observed pigs doing this when the feed contained only 100 pounds of contaminated corn per ton. If enough vomitoxin is consumed, vomiting will follow. But the pigs are more likely to just go hungry.

The odd thing about Fusarium is

that the affected corn looks normal. You could send a sample to the lab to confirm the presence of mycotoxins. But when your sows are aborting, young gilts have swollen vulvas and your market hogs are squealing at you when the feeders are full you have all the evidence you need.

What can you do about it? With this mold, dilution is your only alternative. Find some mold-free corn or other feed grain to mix with the contaminated grain and hope for the best. Sometimes it takes a stiff dilution to get things back to normal. And if at all possible, avoid feeding moldy corn to sows and replacement gilts.

**Aspergillus flavus.** This is the mold that produces aflatoxin, a nasty compound that poisons the liver. Drought induced stress, inadequate nitrogen, delayed harvest and physical damage make conditions right for Aspergillus invasion of grain in the field. Improper drying and storage will add to the problem.

Problems in pigs begin when aflatoxin levels approach 500 parts per billion. Some common effects of aflatoxin poisoning include poor growth rates and feed conversions, impaired blood clotting, altered immune response, depressed vitamin A and E levels, impaired kidney function. The list goes on and on. Fortunately, Aspergillus doesn't strike that often and most problems are limited to the Southeast.

A blacklight test is often used to screen for aflatoxin. This procedure is the best method we've got, but is has several drawbacks. First, the greenish-yellow fluorescence it produces indicates the presence of the Aspergillus, not aflatoxin. Also, numerous weed seeds, corn "bees wings", and soybean hulls can contribute to false readings.

Ammonia treatment appears to be the only effective means of removing aflatoxin from grain. Organic acids don't seem to help. And normal heating associated with drying or pelleting has no effect on the toxin.

**Claviceps paspali.** This is the mold that produces ergot and is most often associated with rye. Ergot contamination in swine feed will depress feed intake, growth rate, milk production and feed conversion. It can also lead to abortions. Since rye often contains ergot, and because it's not easily digested by pigs anyway, swine producers rarely feed this grain.

**Mold Growth on Complete Feeds.** As soon as you grind, roll or crack a feed grain, you open the door to mold growth. The longer

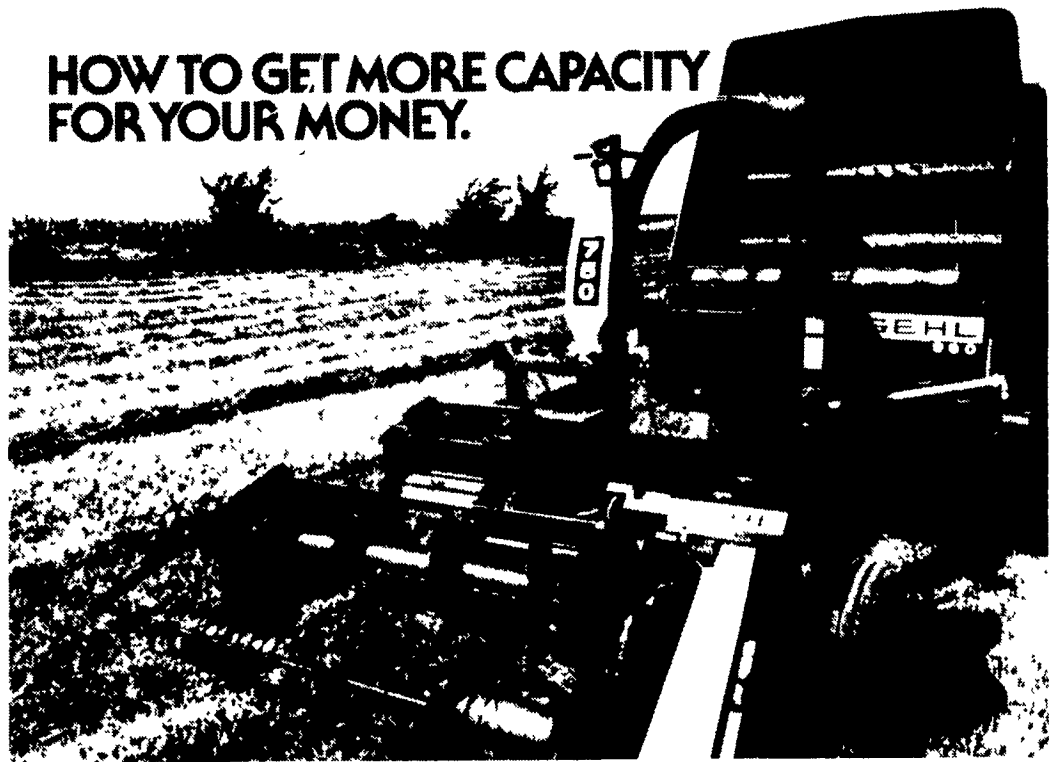
that feed sits in the bin, especially through the summer, the greater the chance of mold growth. Ideally, after mixing, feed should be consumed within two weeks. If you have feed sitting around for more than a month, give serious consideration to rescheduling feed orders.

Is there anything you can do to retard the growth of molds on complete feeds? Texas Tech

researchers recently reported that "Mold Check Plus", a product containing several organic acids, improves feed intake (five percent) and growth rate (six percent) in 16 pound weaning pigs. And work from Leeds University in England shows faster weight gains with the addition of citric acid in 10-day-old weaning diets. So there may soon be a place for mold inhibitors in swine rations.

In summary, moldy feed will seldom go through a pig without causing some kind of a problem. The signs may be obvious or they may go unnoticed. The secret is to keep your eyes on your pigs and their performance. Be aware of the weather and storage conditions that contribute to mold growth. Early detection of mycotoxin contamination can save you a lot of dollars.

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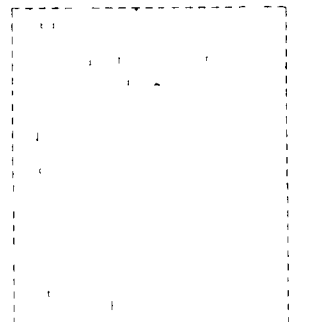
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