

## **Feeding Value of Drought-stricken Corn Grain for Swine**

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Growing conditions during 2002 have not been favorable for optimum corn production in much of Nebraska. Inadequate moisture and high temperatures have persisted since spring. Corn yields are significantly reduced. Despite the drastic reductions in grain yield, the feeding value of drought-stricken corn for swine may not be affected.

Do not assume that drought-stricken corn will have a lower test weight or energy concentration than corn grown under normal conditions. Research at the University of Kentucky with corn that yielded 14 bushels per acre demonstrated that drought had no effect on test weight, metabolizable energy, or pig growth performance.

In some instances drought stress during grain fill can reduce grain test weight. However, research with corn suggests there is a poor relationship between test weight and corn's nutritional value. Pig growth rate is seldom affected by corn test weight as long as the test weight is not reduced by more than approximately 30%. If the low test weight corn has less metabolizable energy, pigs will compensate by increasing feed consumption, resulting in a poorer feed efficiency. Fat can be added to diets containing low test weight corn to offset a possible reduction in feed conversion efficiency.

Corn weighing between 40 to 56 lb/bushel has the same feeding value for growing-finishing swine when compared on an equal moisture basis. When test weight drops below 40 lb/bushel, growth rate and feed efficiency may decrease by 5 to 10%.

It is also important to watch for mycotoxin contamination, particularly zearalenone, vomitoxin, and fumonisins in this year's corn crop. Aflatoxin is seldom a problem in Nebraska, but this year could be different. Drought causes stress on plants which increases the risk of mycotoxin development in the grain. The main signs of mycotoxin contamination in pigs include swollen vulvas in 4 to 6-week old gilts, feed refusal, and respiratory problems. The University of Nebraska Veterinary Diagnostic Center will analyze corn for these mycotoxins. A discussion of mycotoxins in corn is found in the NU NebGuide, *Grain Molds and Mycotoxins in Corn* (G00-1408).

Normally only 1 or 2% of the corn plants in a field are infected with smut. This year

producers are observing more smut in their corn than usual. Smut is not known to harm pigs. In addition, smut does not produce any known mycotoxins.

Corn grown under drought conditions usually contains more crude protein than that grown under normal conditions. The protein content of drought-stricken corn may be increased by 1 to 1.5 percentage units. However, don't be fooled into thinking that you can use less supplemental protein in swine diets when using drought-stricken corn. As the protein content of corn increases, the lysine content (the most limiting amino acid in corn for swine) does not increase at the same rate. Pigs do not require protein in their diet. Instead they require amino acids which are found in protein. If diets using higher protein corn are formulated on a crude protein basis, they may be low in lysine resulting in reduced pig performance. Therefore, maintain the same level of supplemental protein in swine diets when using drought-stricken corn.

It is best to use lower test weight or lower quality corn in late finishing diets, because older pigs utilize lower energy feedstuffs better than younger pigs. Consider blending lower quality corn with higher quality corn in the diet of finishing swine to reduce possible problems due to test weight and mycotoxins. Some producers may want to add a mycotoxin binder to diets to lessen the effects of possible mycotoxin consumption by pigs.

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