

**NEW VISION CO-OP
"PIG'S EAR"**

"AFLATOXIN AND LACTATION FEED INTAKE"

This year's weather conditions have resulted in some corn containing aflatoxin. If present, how do swine producers deal with it? The importance of lactation feed intake is of greater importance as swine producers strive for more pigs/sow/year.

In this newsletter we reviewed information on aflatoxin and solutions and the effect lactation feed intake on weaning to estrus interval.

AFLATOXIN AND SOLUTIONS

This summer's weather conditions, of being hot and dry, are ideal for the mold fungi *Aspergillus flavus* to grow on corn. It is recognized as a yellow-green or gray-green mold on the ears in the field or in storage. The fungal spores, which are the mold, will appear powdery and may disperse like dust when the husk is pulled back from the ear.

These fungal spores produce the mycotoxin known as aflatoxin which is inside the diseased kernels. Other fungus or molds could also be present on an ear of corn.

Aflatoxin toxicity varies among animal species with young animals being the most sensitive. Aflatoxin is a liver toxin and a potential carcinogen. Livestock that consume aflatoxin can experience a variety of health issues including suppressed immune systems, reduced liver function, reduced performance, and reduced reproduction.

Following is the allowable FDA levels for aflatoxin in animal diets.

Aflatoxin Level (ppb)	Intended Use
20	<ul style="list-style-type: none"> • Intended for dairy animals • Human consumption
100	<ul style="list-style-type: none"> • Intended for breeding beef cattle, swine, and mature poultry
200	<ul style="list-style-type: none"> • Intended for finishing swine
300	<ul style="list-style-type: none"> • Intended for finishing beef cattle

An initial screening of a corn sample can be done by cracking kernels and viewing them under a black light looking for a glow with a bright green-yellow fluorescence which would indicate the presence of the fungus which may contain aflatoxin. These results need to be verified by laboratory analysis.

Aflatoxin generally does not occur uniformly throughout a lot of grain. It is usually localized in small areas or pockets. Therefore, when taking a corn sample one needs to make a composite sampling of the lot consisting of several subsamples from every part of lot being sampled.

If the aflatoxin level in the corn is over the threshold levels there are effective binding agents that bind and reduce the effect of aflatoxin on livestock. These binding agents are non-restrictive feed additives that are not digested or fermented in the pig's digestive tract and are excreted in the manure. While passing down the digestive tract the binding agents can attract and bind small molecules, like aflatoxins, so they are not absorbed into the blood stream and cannot be carried to target tissues.

The absorbents can be classified as inorganic and organic polymers.

- Inorganic: Based on silica and are generally referred to as clays, such as bentonite.

- Organic: Are carbon-based and are the equivalent of plant fibers, such as glucomannan absorbent extracted from the cell wall of yeast.

Each of these types of products are equally effective but higher inclusion levels of the inorganic are needed, compared to the organic.

Mycotoxin absorbents, for the mycotoxin aflatoxin, are an effective way to minimize the adverse effects of aflatoxin. Also, on the farm blending of none aflatoxin corn with aflatoxin corn can be done to lower the overall aflatoxin level of the diet.

WEANING TO OESTRUS INTERVAL AND LACTATION FEED INTAKE

Analysis of weaning to oestrus interval allows swine producers to evaluate how well sows have recovered from their previous pregnancy and how well management during lactation has aided this process.

Flowers, at North Carolina State University, suggests that one of the greatest influences on weaning to oestrus interval is the management of the sows during lactation. Most research studies have shown that between 12 and 16 days after farrowing are required for the reproductive hormones to be replenished.

Lactation plays a critical role in this recovery process because the suckling action of the piglets serves to keep the sow's brain in a state of quiescence and the secretion of these hormones at very low levels.

After weaning the suckling induced inhibition of these hormones is gone. Once they have been replenished sufficiently, which is usually 4 to 8 days after weaning, oestrus and ovulation should occur. Flowers' data indicates that weaning to oestrus intervals of 8 days or more averaged about ½ pig less per litter. If weaning-to-oestrus interval is extended over 8 days, the most obvious cause is the amount of feed intake during lactation.

It has been estimated that about 75% of the nutrients that a sow consumes during peak lactation goes to support production of milk for her litter. Therefore, to meet the metabolic demands of lactation it is common for sows to mobilize tissue protein and fat which results in sow weight loss. If excessive weight loss and body condition during lactation, the sow's reproductive performance post-weaning can suffer.

Another contributor to extended wean-to-oestrus interval is split or partial weaning strategies. Because whenever piglets are removed from its littermates, the sucking stimulation is reduced. If enough piglets are removed it reduces suckling intensity which reduces suppression of the endocrine system and the sow may begin normal reproductive activity.

Bottom line: Anything that can be done to increase feed intake during lactation should help improve weaning to oestrus interval and minimize weight loss during lactation.

For additional information on the **Co-op Swine Nutrition Program** contact your local **Co-op** feed department or the swine nutritionist.

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