Livestock Notes

On-farm Composting Handbook Available

By Kenneth B. Kephart

On-Farm Composting, a 186-page manual researched and written by a team of scientists, engineers, farmers, and manufacturers, is available for $10.00 from Penn State's Publications Distribution Center.

As manure odor problems continue to mount in Pennsylvania, it appears that composting may offer a partial solution for some livestock producers. Composting is the aerobic decomposition of organic materials. Mixtures of manure and dry material, such as straw, compost easily. During the process, temperatures of 120-140 degrees F are reached, killing pathogens and creating a low-odor product. This is important at the time of land application since odor problems with raw manure are maximized when raw manure is surface-spread on fields. In addition, composted manure serves as an excellent soil conditioner.

The composting manual provides a wealth of details and drawings to enable the producer to compost manure both effectively and economically. To order copies of *On-Farm Composting* (NRAES-54), send a check or money order for $10.00 (payable to Penn State University) to: Publications Distribution Center, College of Agricultural Sciences, 112 Ag Administration Building, University Park, PA 16802.

Research Briefs For Swine

By Kenneth B. Kephart

1. Injecting zinc-arginine complex into the testicle at four weeks, is effective at reducing testicular weight. Further, injected pigs are superior to knife-castrated boars in all carcass traits. But the compound does not appear to be suitable for chemical castration, since boar odor is not reduced.

2. Supplementing sows with extra (90 to 100 mg/head/day) riboflavin during the first 12 days after breeding had no effect on number of pigs born, stillborns, or litter birth weight.

3. A single injection of 150 mg of iron dextran maintains optimal hemoglobin levels in the pig until weaning. An oral dose of 60 mg of iron does not adequately maintain hemoglobin.

4. High fiber diets for sows in gestation reduces stereotypical behavior (chewing, excess water consumption) and improves weaning weights of pigs.

5. Gilts housed in pens bedded with straw during gestation show no obvious behavioral differences when moved to a farrowing crate, compared to gilts housed in crates throughout gestation.

6. Sows housed in farrowing crates compared to those in open pens or walk-through crates spend more time sitting, drinking, chewing, and lying on their udders — behaviors associated with increased levels of frustration in the sow.

7. Use of a roller mill for processing corn reduced stomach lesions and ulcerations in growing pigs compared to that of a hammer mill. Weight gain and feed efficiency values are similar for both groups.

8. Pelleting feed increased stomach lesions in growing pigs compared to that of meal feed regardless of initial particle size. The best compromise for optimizing performance and minimizing stomach irritation is a particle size between 600 and 900 microns.

Sources

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Mold Problems on Corn

Kenneth B. Kephart

This year will go down as one of high corn yields in Pennsylvania. We got the corn in the ground early, and we had plenty of rain. But we also had more than our share of cool weather. And as producers are learning, much of the corn hadn't fully matured when the killing frosts hit. The drying process slows down drastically after the corn stalk dies.

So we're left with lots of corn, still in the field, that contains 25-35% moisture. That's wet enough to support mold growth, which can lead to mycotoxin contamination. In fact, we've had enough mild days this fall that mold is already a problem in a lot of corn.

If you're feeding some of this corn to growing pigs, you should be concerned. If you're feeding it to sows, you should be worried sick. Abortions and drastic drops in milk production are two nightmares that no one needs during a $40 hog market.

What Should You Do?

1. Watch the pigs for symptoms. A sudden drop in feed intake, or any reproductive problems in the sow herd should make you suspicious. Also keep your eyes open for subtle changes like redness or swelling in the vulvas of young gilts. If you see any of these symptoms, avoid feeding the corn to the breeding herd if possible. Sure, feeding contaminated corn to a grower-finisher pig can be costly, but at least the effects are reversible. Once a sow aborts, you're back to square one for at least another four months.

2. Consider having the corn tested. You can purchase test kits for various mycotoxins that will cost roughly $10 per test. As of

Handling Low Quality Corn

MATT ANTOS
Eastern Field Agronomist
Pioneer Hi-Bred International, Inc.

The summer of 1992 coupled one of the coolest and cloudiest growing seasons on record with a freeze in late September which left fields of corn with immature grain and high moisture contents. Hardest hit were many parts of Pennsylvania, Ohio, as well as most northern corn growing areas. Wet fall weather eliminated any natural "dry down" and further restricted harvest activities leading to many reports of low quality or moldy corn.

The most common quality complaint centered on chaffy grain with poor test weights. The most common molds reported were Cladosporium sp., Gibberella zeae, and Fusarium species. Cladosporium, a black mold (saprophytic), was the most widely observed, according to area experts. It appears as a dark, green-black mold found at the kernel base, and was most commonly associated with prematurely frozen corn left to dry in the field. Cladosporium molds are not generally associated with the production of poisons known as mycotoxins.

Gibberella and Fusarium ear molds commonly referred to as white molds also have been reported but to a much lesser extent in harvested grains. These molds can produce mycotoxins such as DON (deoxynivalenol), zearalenone, fumonisin and T-2, which can cause serious health problems in livestock consuming the grain. White molds appear as white-pink kernel discolorations. Gibberella starts at the tip of the ear while Fusarium is scattered throughout the ear and is generally associated with bird damage.

Combine Adjustment Critical

In areas where corn remains to be harvested, special care should be taken when adjusting the combine to reduce cracked or broken seed coats. Excessive amounts of fines often can create conditions favorable for the continued development of molds in storage. For this reason, we recommend pre-cleaning low quality or moldy grain before drying or binning. Furthermore, caution should be taken in feeding fines screened from grain with significant mold contamination. Under no circumstances should fines be fed to dairy cows, poultry or to young or pregnant animals before being tested for mycotoxins.

Careful harvesting and cleaning are only the beginning. The two most significant factors in reducing the growth and development of molds in stored grain are moisture content and grain temperature. Low quality or moldy grain should be dried quickly to a kernel moisture of 13 percent or lower to inhibit the growth of molds during winter storage. Every effort should be made to market this grain before the onset of warmer temperatures.

Monitor Storage Conditions

Extending storage into the summer months will require grain moisture to be lowered an additional 1 percent below winter storage levels, to 12 percent or less. Aerate to cool grain as soon as it is binned. Stored grain temperature should be maintained around 35-40 degrees F for safe winter storage. When possible, store low quality or

(Turn to Page E25)

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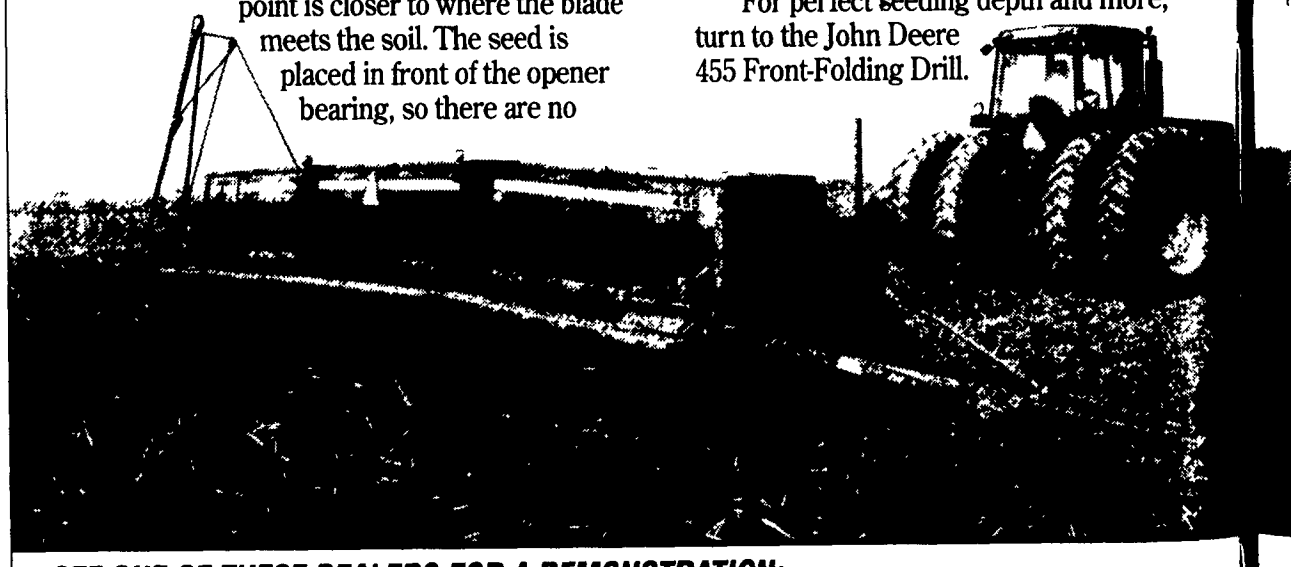

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