

# Complex is raised in Lancaster Co.

the pens in the gestation rooms. These woven floors allow manure to drop down into pits which are flushed out continuously.

Middle Creek's manure system is the first of its kind to be installed in a farrowing operation in the East, noted Horst. The Lissco system incorporates an aerated lagoon with a solids separator.

Manure collected in the pits is flushed to the separator where the solids are extracted and the waste water is piped out to the lagoon. The solids will be fed to beef cattle in a corporation member's feedlot, according to Horst who claims it "comes out like silage."

"The manure from the separator is 70 percent moisture. This manure either has to be dried or used within 48 hours. We plan to feed it at 70 percent moisture and add nutrients and protein to the cattle's diets," he said, noting an analysis of "wastage" measured 14 percent protein.

The waste water that is stored in the lagoon will be irrigated onto croplands once a year. The rest of the year, daily aeration of the water is claimed to eliminate odor and balance the acids in the waste water, along with stabilizing the nitrogen and neutralizing bacteria.

Before the waste water is sprayed onto the crops, it will be reused to flush the manure pits at the rate of 100,000 gallons a day. Horst claimed there is no problem with recycling disease along with the waste water, and the continuous flow of water through the pits means "no gas, no dust, and no odor."

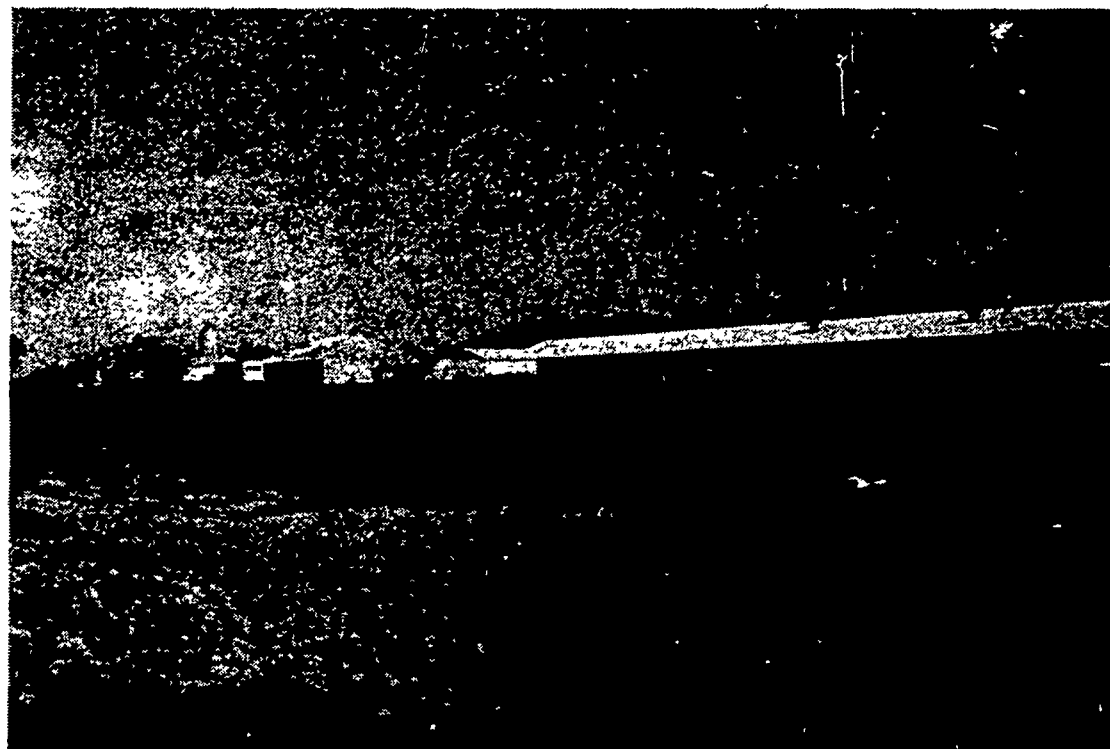
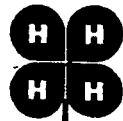
The lagoon also is the "catch basin" for excess fresh water that flows through the troughs and the pen wash-down water. This adds up to an additional 20,000 gallons of water per day.

In the 300 sow complex, the pigs are weaned off the sow at 4 weeks of age and moved into the nursery. Then at 9 weeks of age, the pigs are moved to grower pens in a self-contained room where they remain for another 9 weeks before moving to the finishing rooms. When it's time to leave the confines of the complex, the breeding and market hogs are segregated and each move out of separate loading chutes — an added measure to control disease.

This "no corners cut" complex is totally insulated and utilizes the Frisamat ventilation system for

climate control inside the building. The total cost of the building per sow figures out to about \$1,500, and the manure system equipment costs come to roughly \$20,000.

At full capacity, this new complex will provide about 6,000 Dekalb crossbred swine with a modern home in Lancaster County.



The facility is the first farrowing operation in the East to utilize the Lissco manure handling system. Solids are separated from the manure slurry as it is flushed from the pits — liquids are then piped to this storage lagoon where air is circulated through it to control odors and bacteria.

# Strain 19 vaccine provides sufficient brucellosis protection

AMES, Ia. — Adequate protection against brucellosis in cattle, a disease causing abortion and reduced milk production, can be produced with a substantially reduced dosage of Strain 19 vaccine, Science and Education Administration research indicates.

Billy L. Deyoe, SEA veterinary medical officer, found that vaccine doses of 100 million to 10 billion

Brucella abortus bacteria provided sufficient protection against brucellosis.

Based on results of the SEA studies the Department's Animal and Plant Health Inspection Service and state animal-health regulatory agencies are altering their regulations to permit vaccination with 300 million to 3 billion bacteria instead of the average of 90 billion used previously. Bacteria from the naturally attenuated or weakened Strain 19 are used in the vaccine.

1-, 10-, and 90-billion dosages produced consistent or intermittent reactions lasting until immunity was challenged at 8 months after vaccination.

In heifers vaccinated as calves, only 10- and 90-billion dosages produced false positive reactions lasting as long as 12 weeks after vaccination, Deyoe says. All of the heifers vaccinated as calves tested negative when immunity was challenged at 15 months after vaccination.

Deyoe, veterinary medical officer Terrance A. Dorsey, and technicians Kathryn A. Meredith and Linda A. Garrett compared results with dosages of 10 million, 100 million, 1 billion, 10 billion, and the former standard rate of 90 billion bacteria. They vaccinated 106 beef heifers as yearlings and 106 Angus-Hereford heifers as 4- to 6-month-old calves.

After vaccination, the heifers were tested for false positive reactions in diagnostic tests for brucellosis. False positive reactions may cause vaccinated animals to be classified as possibly diseased, which may lead to their slaughter.

The intensity and duration of false positive reactions were directly related to vaccine dosage levels, Deyoe says.

In heifers vaccinated as yearlings, the 10-million and 100-million dosages produced false positive reactions at 8 weeks after vaccination and thereafter, but the

The heifers' immunity to brucellosis was challenged by inoculating the heifers with virulent B. abortus bacteria.

Levels of immunity produced by the various vaccine dosages differed according to the age of the heifers at vaccination, the researchers found.

In yearling heifers, all vaccine dosages produced significant and indistinguishable levels of immunity. In heifers vaccinated as calves, higher dosages produced higher levels of immunity. The 90-billion and 10-billion dosages gave maximum immunity, the 1-billion and 100-million dosages gave adequate immunity, and the 10-million dosage produced noticeable but less than adequate immunity.

Deyoe says that ideally, different dosages should be given to calves and to yearlings and other animals. Practical considerations may, however, dictate a compromise intermediate dosage for all ages.

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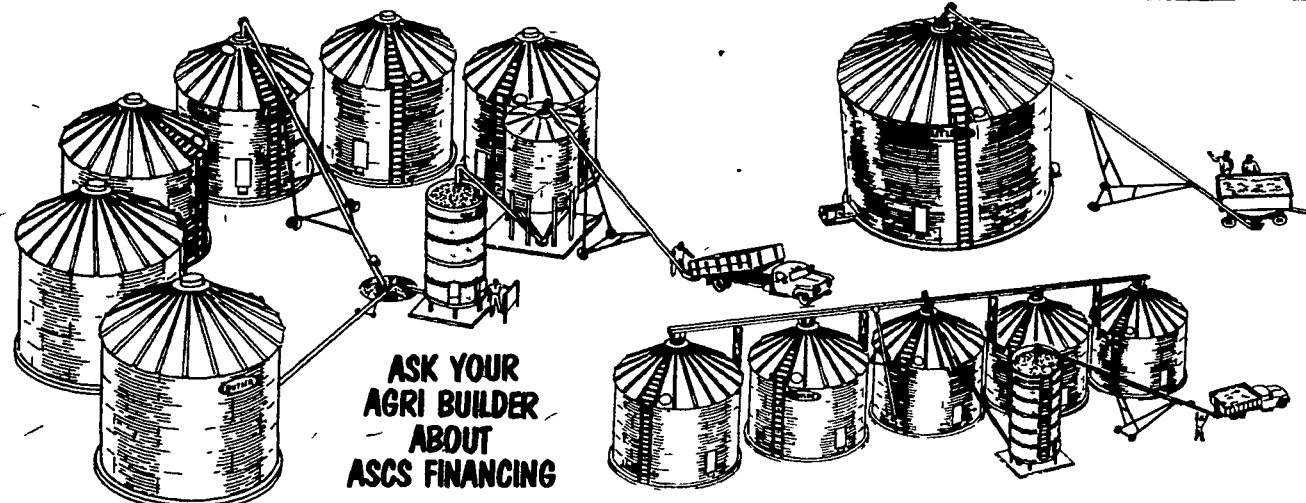
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