

# Nutrition & temperature are keys to sow productivity

ST. LOUIS, Mo. — Heat-stressed sows are likely to consume less feed, lose more weight, and experience greater delays in returning estrus than sows not stressed by hot environments, according to David Nichols, environmental physiologist at Kansas State University.

"Temperatures of 85 degrees and above place considerable stress on lactating sows," he says, pointing to a KSU study he conducted in 1983 on drip-cooling lactating sows. In the study, heat-stressed sows shrank considerably more during lactation than those cooled by a drip irrigation system. "In fact, drip-cooled sows lost an average of only 8.4 lbs. during lactation, while their heat-stressed counterparts lost 38.5 lbs.," Nichols recalls. "And while the drip-cooled group weaned an average litter weight of 123.9 lbs, the heat-stressed sows weaned litters weighing an average of 112.2 lbs."

Sows experiencing significant shrinkage during lactation are less likely to return to estrus soon after weaning, Nichols says. "And missed or delayed estrus means downtime to the hog producer," he adds.

Excessive heat also adversely affects conception rates and the number of pigs born live, according to Oklahoma State

University studies on heat-stressed sows. In one test, where 28 gilts were subjected to periods of 95 degrees Fahrenheit only 19 of them settled, says OSU extension swine specialist Dr. Bill Luce. "In the control group, where temperatures were kept at a constant 74 F, all gilts settled."

Luce points to another OSU study which indicated that gilts heat-stressed during the last three weeks of gestation farrowed an average of 5.2 dead pigs per litter, while the control group farrowed only 0.4 dead pigs per litter. "Extreme heat affects gestating sows most adversely during the first and last three weeks of pregnancy," Luce adds. "During the first three weeks, it affects conception rates; during the last three, it increases the number of stillborns."

Drip-cooling is probably one of the best ways to keep sows cool during heat spells, suggests Bob George, extension agriculture engineer at the University of Missouri. "The cool water gradually dripping on the animals evaporates, lowering body temperature and reducing heat stress."

A more time-tested method George advocates for keeping sows comfortable during the summer heat is snout cooling. "This is akin to an air conditioner," he says. "It

cools the air, and then drops it at low velocity around the sows heads. They inhale it, and the cooled air reduces body temperature."

Also critical to temperature control is good ventilation, George continues. To ensure optimal air movement, he advises producers to first determine air flow for the hottest summer day. This should be based on per head air movement, or air changes per minute, whichever number is higher. "Then producers should pick a combination of fans that will move that much air at 1/8th-inch static pressure," he says.

After producers have cooled the breeding environment as much as possible, they should provide rations that produce minimal metabolic body heat while meeting the animals' nutritional needs, advises Dr. Ray Washam, manager of swine technical services for Ralston Purina Company. "A sow's first reaction to heat is to go off feed, which causes body weight loss that can delay return to estrus," he says.

A solution to reduced feed intake is to provide lactating sows with high-fat, high net energy rations, the researcher suggests. "It's well-established that fat causes less heat production during digestion, and thereby decreases heat stress. High energy rations like High

Octane Lactation Chow help sows maintain energy intake even during hot temperatures," says Washam.

Because of the ration's high energy concentration, the researcher says, sows can maintain body condition on less feed than on conventional rations. "In addition, these rations contain lower levels of heat-producing fiber and are also amino acid-

balanced to meet a sow's protein needs," he says.

Summers, especially extremely hot ones, can present costly breeding problems for hog producers, Washam continues. "But these problems will be far less severe if producers have fine-tuned their management techniques and facilities to meet the warm weather challenge."

## DeKalb-Pfizer reports turnaround

DEKALB, IL. — This has been a year of turnaround and improvement for DeKalb-Pfizer Genetics, according to John McCarter, President. The company recorded a substantial increase in 1984 sales over 1983 figures.

McCarter summarized the company's 1983-84 sales and marketing accomplishments during the company's National Sales Conference July 8-11 in Osage Beach, Mo. More than 600 members of the sales staff and their families were in attendance.

The growth was not easy nor automatic, McCarter said. Seed production reduced two thirds due to the 1983 drought. The company's Quality Assurance staff closely monitored seed to prevent seed lots that didn't measure up to DeKalb-Pfizer's rigid standards from

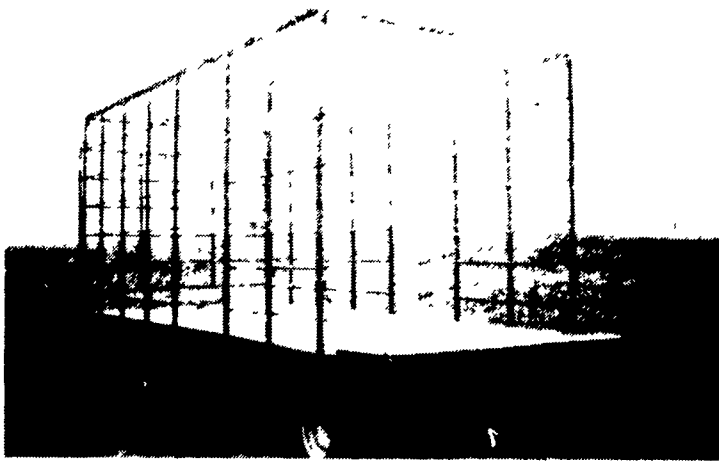
being planted.

To ensure adequate quantities of seed for farmers in 1985, DeKalb-Pfizer is expanding production in key product lines, McCarter explained. The company plans to produce a four-fold supply increase over the 1984 net supply for six major corn hybrids. Soybean seed production will be up 80 percent, McCarter said. He also reported increased production of forage sorghum and Sudax.

In addition to a more abundant seed supply, McCarter pointed to the company's research efforts and development of new hybrids as the components that will move the company forward in future years. DeKalb-Pfizer released nine new corn hybrids and five new soybean varieties in 1984 as a result of such research efforts.

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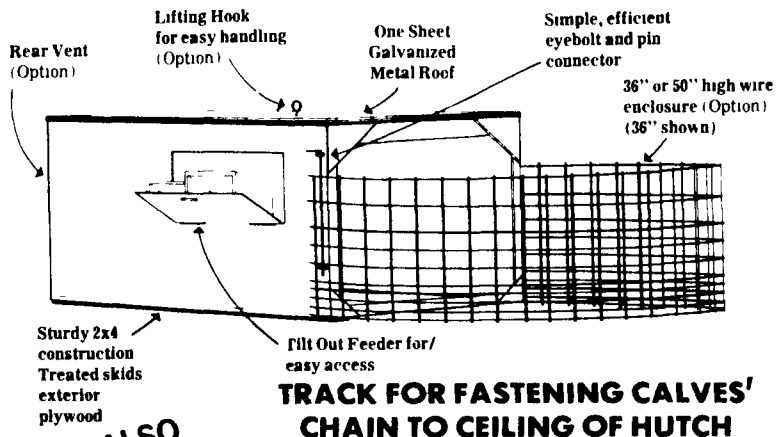
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