Decision-making: Identifying Critical Points and Picking the System That's Right for You (Sessions 1D and 3E)

PRODUCER PANEL: David Struthers, Collins; Homer Showman, Shellsburg; Richard Thompson, Boone; Rex Thompson, Boone
MODERATOR: Paul Lasley, Department of Sociology, ISU
RECORDER: Larry McMullen, ISU Extension swine specialist, East Central Area

David Struthers is part of a family farm operation that involves his brother, sister, and their parents. They have a 900-sow farrow to finish system with some confinement buildings, but they are converting to a hoop building system. They chose hoop buildings because of the lower cost of construction and decreased environmental impact, and the fact that the hoops work well for them.

Currently, they maintain a multiple-site production system. They have 10 hoops (eight are 30 x 84 ft. and two are 30 x 54 ft.). The longer building houses 200 to 220 head. The shorter buildings are used as gestation facilities and/or sleeping units for finishing hogs (finishing hogs are allowed outside lots). All farrowing facilities are at one site (they use confinement crates for breeding and gestation), and confinement nurseries are at another site. The third site is used for finishing. They had considered using two 1,200-head confinement facilities to finish hogs, but chose the hoop system for environmental reasons.

Homer Showman started using the hoop system six years ago with three structures. He now has eight hoop buildings. He operates one confinement building as a nursery/grower facility. He chose hoop buildings for their low cost/low capital outlay and lower environmental impact on the community (less odor).

His decision to use hoops also centered on the economics of hoop structures, namely, average daily gain and feed conversion of the pigs. After looking at hoops, he decided that the rate of gain was as good or better than confinement units. Feed conversion was questionable, but Showman has done on-farm tests with good results.

Other advantages of hoop buildings include the solid manure handling as well as the ability to compost manure in summer when there is limited on-ground disposal. He likes the composting aspect of hoops, which was an unexpected benefit. He also has used hoops as a wean-to-finish facility by placing 18-day-old pigs in hoops. This can be done every month of the year by using warm-hot compost material as the initial floor bedding, covered by about a foot of dry corn stalks. However, he still generally rears nursery pigs in confinement buildings during the winter months, then moves them into hoops. Odors are lower in hoop buildings than confinement buildings, so his employees enjoy working in hoops. Certain times of the year will generate dust in hoops, so they do wear masks. The facilities are easy to clean when the proper equipment is available.

Richard Thompson and his son, Rex,
have experienced many changes through the years. When Richard began farming in 1958, he said he caught the “enough is never enough” disease. He was always buying feeder pigs and cattle, putting in more pens, and cropping with continuous corn. All systems had high inputs! Livestock sickness was the rule, and good health the exception. Thompson used a lot of antibiotics with hogs.

In 1968, after what Richard calls several “spiritual experiences,” he converted to a five-year crop rotation, a farrow-to-finish system, and a cow herd. He still used high amounts of antibiotics with sows and did not have an “all in/all out” system. When disease became a major problem, he quit raising hogs.

In 1978, he quit farrowing because the herd health problems did not respond to antibiotics. To combat the antibiotic residue problem, he started over with a Cargill unit to put pigs outside in fresh air and natural bedding. He raised Farmers Hybrid hogs because they could adapt to outdoor weather. Use of this genetic line helped develop current sales with Niman Ranch. Thompson continued with this system for 20 years.

By 1998, his swine unit had deteriorated. The buildings and fence line panels needed repair, and feeders were due for replacement. At this point the operation was transferred to his son. As a team, they made plans for the future.

Their decision for future direction of the hog unit was based on one question: “What is good and friendly for both humans and animals?”

They considered how they would contain diseases, and how they could farrow in hoop structures. They decided to use outside production with hoops, and to remodel and repair some buildings. They replaced wire panels used as fence lines with concrete walls, making their own forms and doing all work themselves. Lime, which they used as a disinfectant, had been stored outside and became wet in the summer and froze in the winter. So they built a “lean-to” shed for lime and ground corn cobs. The materials could be handled by tractor and loader instead of manual labor, and the lime stayed in useable condition.

They are in the process of replacing old farrowing isolets with home-designed A-frame sheds that are insulated for winter use within a hoop structure. They are still experimenting with the shed design, i.e., where to place doors, etc. They also replaced individual Smidley feeders, which had trouble with holes getting plugged, with stainless steel feeders. They currently use Solderhom rocking feeders for the finishing area.

QUESTIONS:
Are 75 cornstalk bales about right for each hoop building?
Showman said it depends on the weather conditions of the year and the quality of the bale. He makes about half or more of the bedding in the fall and the remainder in the spring. Spring bales may be in better condition to go into the summer and they are drier.

Any problems with pathogens, molds, etc, with spring bales?
Showman said he has never had any problems or reactions with any of his hogs.

Struthers also uses spring bales. They are fluffier, dirtier, and dustier, and they fall
apart more quickly than fall bales. He uses about three bales (30 x 84-inch bales rather than the standard 30 x 72-inch) per week in his 34 x 84-ft. hoop buildings. He bought a new Vermeer baler for processing corn stalk and soybean stubble for bedding. He needed to own the baler for timeliness and reliability of getting good quality bales. He bales all of the 800 crop acres, and gets bedding material from neighbors.

The Thompsons have had no problems with spring bales.

Any recommendation on the size and weight of the bale?
Struthers: The size of the bales should be as large as can be handled with equipment. Not as many bales need to be handled if they are bigger, and the bales surface water better in storage.

How do you move the bales into the hoop structure?
Showman uses a uni-loader with forks to bed the dunging area. He has had no problems driving into the hoop, but you can get stuck. He usually enters from the south end where the building has offset waterers and a raised 2-ft. concrete ramp. It is simple to place bedding and requires little labor. Typically, bedding is done with two people but one person can bed the facility with the aid of working the alleys.

Struthers also beds from the south end. He uses outside working alleys to position bales and keep pigs contained.

What do you use to sort and load out hogs from the hoop buildings?
Showman’s buildings are in a row with outside alleys. He sorts and loads out of the facility in the center. He drives all pigs out of the hoop (this may take two to three people the first time) and sorts in the alley.

Weighing is done in a load-out facility, which was designed by Dr. Temple Grandin (Colorado State University). This facility allows him to load out 200 head in about 20 minutes. Showman believes that hogs raised in hoops handle differently than hogs raised in confinement facilities. He encourages anyone with multiple buildings to consider such a facility for sorting and loading to reduce labor.

Struthers uses two to four people to run pigs into the working alley. Pigs are accustomed to going into the alley from the bedding process, and can load out very easily. He recently sold 120 head from one hoop using only four people with three 6-ft. panels to sort. Once pigs have been out to the alleys, they are very easy to move in again.

Do the Thompsons farrow in the isolets in January and February?
The Thompsons have been trying to get away from farrowing in the colder months, especially January, but it doesn’t always work. Each isolet has a gas heater and heat bulb, which can be used when needed. They also are trying to design A-frame huts that use only heat lamps, which will reduce gas expenses.

July and August also are problem months. They have found it is much easier to cool in the summer than to heat in the winter.

The A-frame is constructed from 2 x 6-inch lumber with 5 1/2 inches of insulation placed within the walls. Isolets have 1/2 plywood and 1/2 foam insulation and are placed on a concrete pad that has no floor heat, just styrofoam insulation in the cement.
Isolets are cleaned once so sows must be trained to dung outside. No bedding is used in the isolets because of difficulty in cleaning. The A-frames are designed to use straw and be easily cleaned by tipping over or being lifted off the cement pad.

When baling corn stalks, are there any advantages for chopping versus using a V-rake? Showman has done both and sees no difference. His hired help custom bales using a V-rake in front of the tractor and a chopper in front of the baler. This method sucks up more of the shucks, etc., although he doesn't know how it affects pig performance.

Struthers uses a chopper to get smaller pieces, which may be harder to bale. The smaller particles make corn stalks more absorbent. He uses a 20-ft. chopper with a V-rake behind it to make windrows. If he uses the chopper attachment on baler, he has to make more trips through the field, which adds to his time and labor.

The Thompsons are on ridge-till. They use an MC rotary Scythe, without the hoods, to make hay. Four corn rows go into each windrow for baling.

How much time does it take between groups to clean and re-bed the hoop building? Showman said it depends on the equipment used. With large equipment, he has cleaned the building in four to five hours. Generally, three days is allowed to clean the building, wash down the cement, clean the feeders and waterers, and put in fresh bedding. Sometimes he uses lime, especially to fill holes and establish a deep-bed pack. The health of his hogs has been excellent.

Struthers uses lime as a base and to fill holes and to get a good hard pack established. To clean, he uses a 40-hp skid loader, although he has used a 140-hp cab tractor and loader. He does not wash anything down. His turnover time is usually about a day. When he re-populates with 40-50-lb. pigs coming from the nursery, the pigs are afraid of the bedding. Usually he must force them into the sleeping area, where he fences them off for a short time. Then the pigs can go to the feeder and waterers; otherwise, they will pile on the concrete.

McMullen (the recorder) suggested loading the pigs into the north end of the building. This allows the pigs to acclimate to the bedding, and they will work themselves to the south end where feeders and waterers are located.

What is the economic cost assigned to a bale of bedding and value of corn stalks? Showman would not sell bales for less than $30 each because of the nutrients that have been removed from the soil. If he uses his own bales, he figures actual costs, which assumes a $1/bale handling charge, the custom charge/bale, and the labor to put it into the building. The bale is then returned to the soil.

Struthers harvests bales from a neighbor in exchange for liquid manure from Struthers' farrowing and gestating facilities that can be applied back to the neighbor's field. Operators also must consider the extra cost of harvesting bales from highly erodible land (HEL), which may not produce as many bales. This also may create compliance problems.

The Thompsons have been keeping crop records and have assigned a value of $50 per ton for corn stalks. The value recom-
mended by ISU is $40 per ton, or approximately $20 per bale.

(Asked of Showman) Are you pasture farrowing?
Showman does not pasture farrow pigs. He has done so in the past and weaned directly into hoops, but after two back surgeries he now buys only SEW pigs.

(Asked of Showman) Did you mention composting and using that material back in the hoops for little pigs?
Showman uses the compost material under the bedding in the nesting area for SEW pigs. He cleans the building and then uses a manure spreader to apply a row of compost in the building about three to four days before he stocks pigs. This compost material is about 140-160°F, which is covered with about a foot of sawdust or corn stalk bedding. This starter material generates heat. After the pigs have been in the building, he checks the bedding with a compost thermometer. Typically, the nesting area temperature will be 120°F at a 1-ft. depth, so there is heat. He also has a friend who uses a small portable Cargill-type building with heat lamps that he pulls into the hoop building.

Struthers said the key to making these buildings work is management. The question to ask: Do you want to flip switches, turn dials and invest high dollars to take care of pigs, or do you want to simply be out there with the pigs and help them to adjust to their environment?

Showman: “The neat thing about it is the pigs will make their environment.”

What other materials besides straw and cornstalks will work for bedding?
Showman suggested green sawdust, bean stubble straw, brome hay (which is very hard to clean), paper bedding (both glossy and newspaper, although newsprint is dusty), wood chips, and shredded crates.

Struthers said poor quality alfalfa hay also will work as bedding.