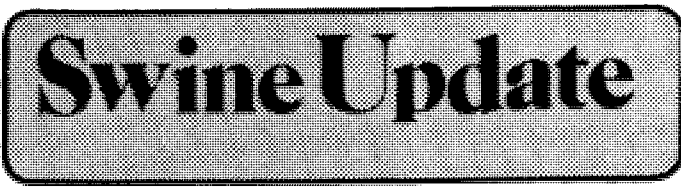
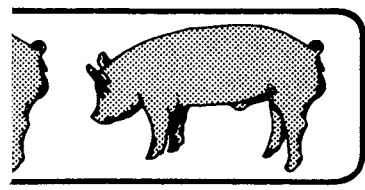


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USING A SUPER CALF HUTCH FOR SWINE

During the past few years, super calf hutches have been used for housing calves on many Minnesota dairy farms. Several hog producers have used similar designs to house either gestating sows, or finishing pigs. The main advantage in using a super calf hutch for swine is the relative lower cost of these portable units as compared to an open sided pole building.

Housing gestating sows is the most common use of hutches for swine. Generally from 16 to 20 sows can be housed in a nominal 12 x 19' hutch (Figure 1). It is advisable to divide the unit into halves, so that no more than 10 sows are in any one group. One should use hard wood, (home sawed oak) as the interior rub boards and partitions, since sows can be quite destructive of pine or other commercial lumber.

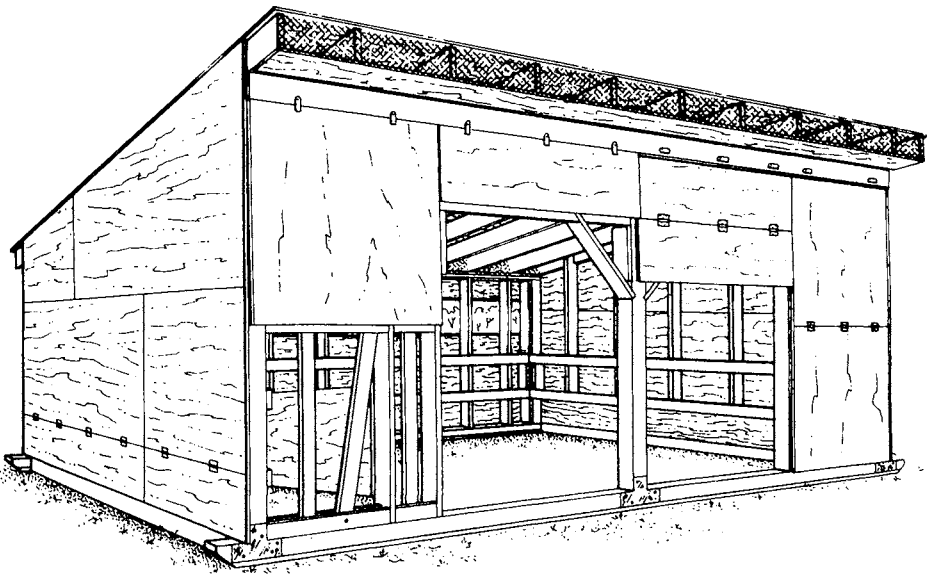


Figure 1

Hutches can be used as sunshades for sows on pasture, or can be used practically year round, if adequate wind protection and drainage are provided around the facility. Bedding is used and manure removal is accomplished by simply sliding the hutch on the attached runners. Winter use is limited since a considerable manure pack will build during cold weather.

Hutches may also provide a low cost facility for 40 finishing pigs during fall, summer or springtime conditions. Again, the barn should be partitioned in half, so that no more than 20 pigs are in one group. The hutch could fit into a pasture feeding system, or a fenced in lot, as long as good drainage and adequate space is provided to prevent muddy conditions. As with sows, construction of interior walls with home sawed lumber is advisable, and possibly placement on concrete slabs to provide better conditions during wet weather.

A bulletin entitled "Building a Super Calf Hutch" by Donald W. Bates and John F. Anderson, is available from the Extension Service. This publication does include an engineering drawing of a nominal 19' x 12' shed roof hutch with removable ventilation doors for winter and summer operation.

DRIP COOLING OF SOWS

One of the simplest and least expensive methods of cooling swine in the summertime is to run water over the pig. This is routinely done with sprinklers in growing and finishing barns, as well as gestation units where sows are housed in groups. In a farrowing unit, this approach is generally not acceptable because of the concern with keeping the baby pigs dry. Many producers are now using a procedure known as drip cooling, which provides a limited amount of wetting of the sow, thus keeping the creep area and baby pigs dry.

A drip cooling system was studied by researchers at Kansas State University, where commercially available drip irrigation nozzles were used. The recommended flow rate is approximately 3 liters (approximately 3/4 gallon) of water per hour, per sow. These nozzles can be placed in a flexible or rigid water line above the farrowing crates, or placed on the ceiling to prevent physical damage by the animals (Figure 2). A nozzle is placed directly over the sow so that the drop lands on the animal's neck and front shoulder, which is a very sensitive area and gives maximum evaporative cooling to the sow.

The Kansas State University trials found that the wetted sows had significantly lower respiration rates, (approximately 1/2) than those sows who were not drip cooled. The daily feed intake of the wetted sows also increased by roughly 2 lbs. per sow over the controlled group. This is of particular practical value since many of the new "white" sows have problems with maintaining sufficient feed intake during the warm conditions to produce sufficient quantities of milk.

Drip Cooling of Sows

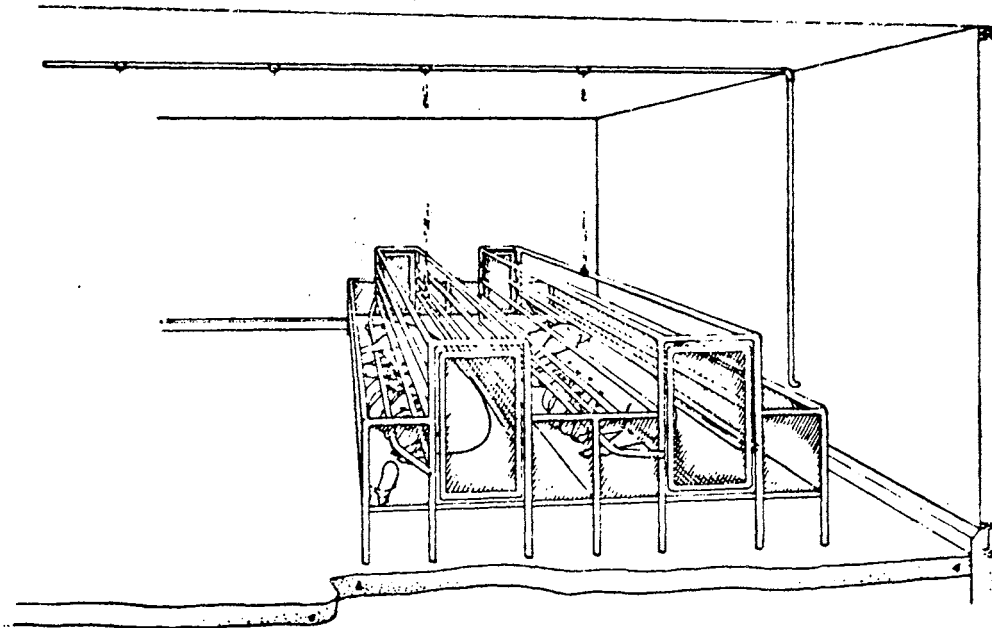


Figure 2

The drip cooled sows also lost much less weight during lactation than did the control sows. For the entire period of the experiment, the control sows lost 30 more pounds than the wetted sows. There was no difference between the number of pigs born live or dead, and the number weaned or birthweights. There also was no difference in returning to estrus following weaning, between cooled and controlled sows. Observation during the experiment showed that the wetted sows appeared to be more comfortable (moved less in crates and played less with waterers and were quieter in general) than the control sows.

The overall cost of a drip cooling system is quite low, probably totaling less than \$100 for a 20-sow farrowing unit, with operating costs almost negligible. The summer ventilation rate could easily be reduced by 20 to 40% if drip cooling is present in the farrowing barn. The resulting savings in fan initial cost and operation would easily pay back the cost of the drip cooling materials during the first year.

AGENT - SPECIALISTS TRIP TO 1986 PORK CONGRESS

The 1986 American Pork Congress will be held in St. Louis, Missouri on Tuesday, March 11 through Friday, March 14. We plan to take a van to the meeting next year, with a farm and/or industry visit before, or after the session, similar to the trip in 1984 to Kansas City. If any Agricultural Agent is interested, please let me know and save these dates on your calendar. I will be contacting those who have expressed an interest in going this coming fall and need commitments by January 1, 1986. Hope you can join us.

REMODELING POLE BARNS FOR HOGS

During the past year, there has been considerable interest from feeder pig producers, to finish all or a portion of the pigs they grow, rather than sell them as feeder pigs. This has been a result of the financial crunch seen in the industry and throughout agriculture during these economically difficult times. The problem that many producers in this situation face, is to come up with some type of low cost facility to house finishing pigs during at least a portion of the year. One low cost alternative is discussed in another article in this newsletter, that being using portable "hutches" for finishing pigs on pasture or in fenced lots. Another more common approach, is to remodel an existing pole building, which originally was designed for cattle or machinery storage. The first decision that needs to be made when converting an existing pole barn for finishing hogs, is if the animals are to be confined or have access to outside lots. If the existing barn already has the south or east side completely open with an outside concrete slab, as often is the case for old cattle feeding facilities, then long narrow pens, similar to a "Cargill" type feeding floor can be followed (Figure 3). If the barn has a gabled roof, one should make sure that the ridge roll is removed for a minimum of a 3" wide continuous opening. Insulation underneath the roof or on the sidewall is not required when the south or east side is completely open. Bedding is used and hogs are generally fed and watered outside.

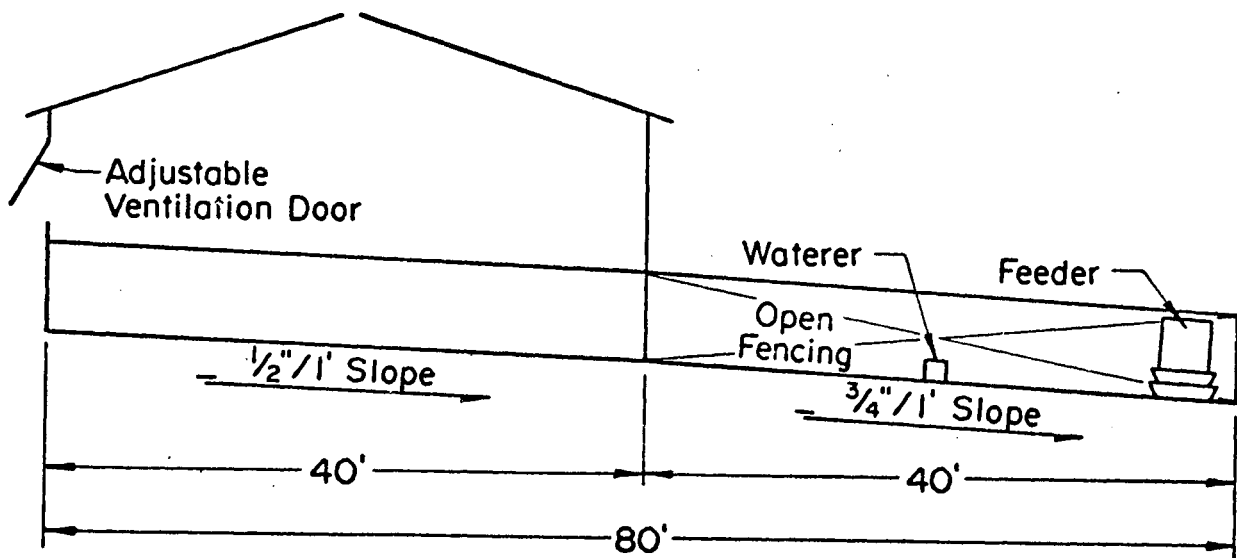


Figure 3

In many situations, it may be better to confine the hogs inside the structure, especially if the barn does not have an open side. If this option is chosen, then the next major question is how to handle the manure. Generally, some type of liquid manure handling system is advocated, because of the large amount of manure produced by finishing hogs.

This could entail a pit dug inside the building, especially if there is no floor presently in the barn, or a scrape alley where manure is scraped with a front end or skid steer loader every other day, to an outside holding area or pit.

The layout of pens depends on the width of the existing facility. Generally, if the barn is wider than 40', it is better to make two rows of long narrow pens, rather than just one (Figure 4). The reason for this being, the pens will become too long for their width, and dunging problems may result because of the large ratio between length vs. width. In a two-row arrangement, one can have the dunging area either in the center of the barn, or along the outside walls. Generally, when just one row of pens are used, the dunging area is along the south or east wall (Figure 5), depending upon the orientation of the barn.

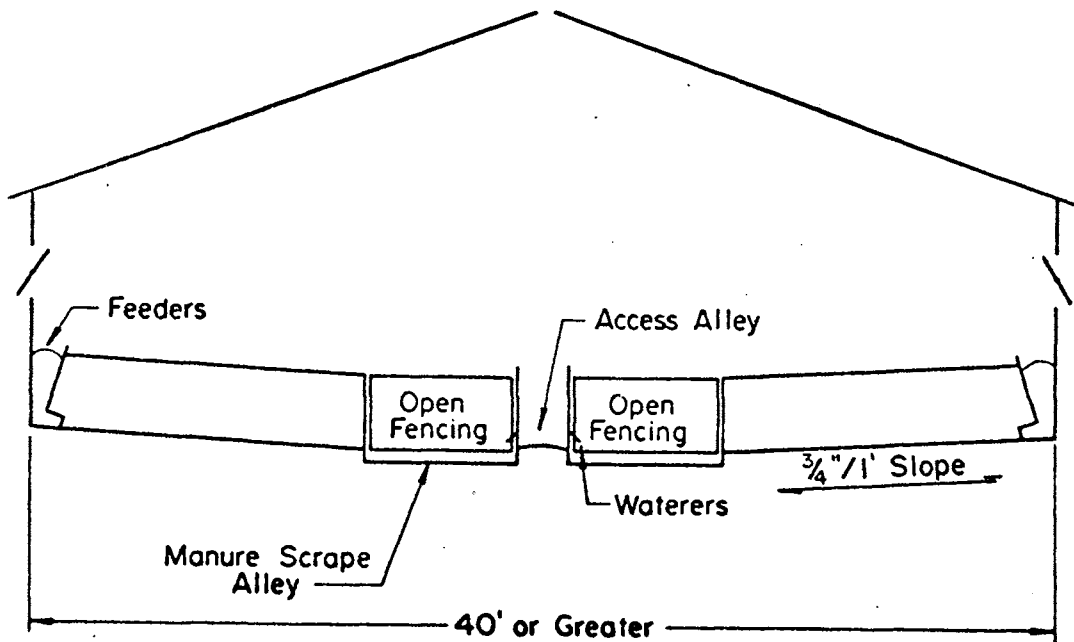


Figure 4

In almost all cases, the best suggestion for ventilation in these remodeled facilities, is an open ridge system. Again, assuming a gabled roof design, one would open the ridge 1 - 1/2 inches wide for every 10 feet of building width. When the hogs are confined in the barn, insulation on the underside of the roof is required. This can be done in numerous ways, but a minimum R-value of 6 is needed, and generally, some type of protective covering, such as plywood, to protect the insulation from birds and physical damage. Insulation of the sidewalls and endwalls is optional, and in many cases, are not needed in remodeled units.

Relatively large ventilation doors (3 ft high x 6 ft long) are necessary along both long walls, north and south sides on an east-west orientation, or the east and west sides on a north-south orientation. Opening and closing of these doors should provide the main management for control of airflow. During the wintertime the north or west doors should be closed, with slight opening of doors on the south or east. During the summertime, all doors should be opened, to provide as much airflow through the barn as possible. It is important to have vent doors at least every 15 feet along both long sides.

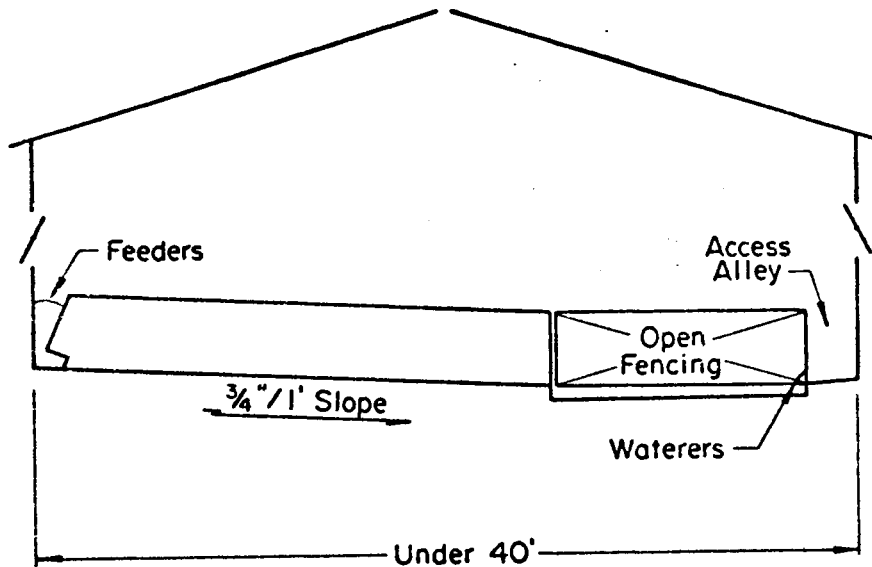


Figure 5

These facilities will work best for hogs above 80 lbs, especially during cold weather. If younger animals are housed in these units, hovers at the rear of the pens should be used with possibly radiant type heaters, during the cold months. If the manure handling system is compatible, one can use bedding to provide a warmer environment for young pigs during the winter months also.

Existing pole barns formerly used to house cattle, or unused machine sheds, can become acceptable hog finishing facilities, if carefully planned and managed. One will, however, not have as ideal a facility as if you were building a new unit.

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D. Jackson

Extension Agricultural Engineer

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