

# Nebraska

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drawn across the front of the building. These panels or curtains are the key to both ventilation and temperature control within the building.

Joe Zimmerman, a pig farmer near Stevens in Lancaster County, agrees wholeheartedly with Younkin's assessment of the learning requirement. New in the business, Zimmerman does not claim to know the answers to hog management, but — like many others — he is gaining experience with his Nebraska Unit and he is well pleased with the results he has seen so far. He has encountered only two minor problems thus far, those being improper height of gates and too large of a spacing between the pipes which make up the gates. The problem, he says, is that pigs can manage to shift their heads underneath the petitions while sleeping, only to find themselves stuck when they want to get up. The solution, he advises, is to have the gates no more than three inches off the ground in pens designed for younger pigs, and no more than four to 4½ inches for gates near the "marketing end." Similar widths would apply for pipe spacings within the gates themselves.

Zimmerman was interviewed by Lancaster Farming at about 10:30 on Wednesday morning — a bright and beautiful day. The curtain had been adjusted twice up until that time — illustrating the fact that the Nebraska unit's natural ventilation principle needs attention. "This isn't something for the fellow who wants to farm part-time and spend most of his day in an office," he advised. "You have to be here and adjust the curtain periodically in order to make the building work properly, and it is definitely a learning experience," he emphasized.

Zimmerman and his father built their Nebraska Unit last Fall. Their own

labor input saved tremendously on costs. The building has been in use since mid December and the second batch of hogs is soon ready to go to market. With only a few months of actual experience with his 1000-head capacity unit, Zimmerman makes no claim to be an expert. But he has been observant and he's convinced that the Nebraska Unit is a good thing. Other farmers interviewed by Lancaster Farming agree, and Penn State's Younkin has found similar verdicts all across the state. He himself is convinced of the structure's merits.

At a Lancaster County Swine Producers' Day in February, Younkin stated: "The Nebraska Unit is the best building a swine producer can build. It will stay a lot warmer than the others, but as with any other, you have to manage it. It's important to learn how to use it."

Although the Nebraska Unit is often thought of as not needing supplementary heat, Younkin advises that heat be provided during severely cold weather.

Most of the Nebraska Units in the area have heeded that advice. Owners of several units in Lancaster County all indicated they supply heat to the first and second group of pens. The reason is that the small pigs aren't capable of generating enough heat among themselves to keep the building warm.

Harold Kurtz of Manheim, who has been and continues to be instrumental in introducing the units to area hog producers, heats the first two of the four sections in his 1280-head capacity Nebraska Unit. Zimmerman does the same with his facility. Both rely on hot water to do the job. If Zimmerman had to do it over again, however, he said he'd space the heating pipes closer together. The 1-inch diameter pipes are presently four feet apart. Nevertheless, his building stays warm. A



An exterior view of the Nebraska Unit at Joe Zimmerman's farm shows the open side, with curtains rolled up at mid-position for maximum exposure to warm Spring air and sunshine.

Finished pigs are loaded out and up the ramp at the near end of the building. Two feed bins at each end provide feed to various groups of pens.

thermostat placed about 4½ feet above the floor is set at between 60 and 65 degrees. Most owners of Nebraska Units claim the temperature inside the building rarely drops below 55 degrees on even the coldest days. That's largely due to the design of the building.

Nebraska Units face south to take advantage of the sun's warmth. Open at the south side, the building is characterized by either curtains or panels which can be raised or lowered as needed to control ventilation and temperature. The roof slopes downward to the rear of the building where the wall height is approximately five feet. In comparison, the distance from floor to roof is about 9½ feet up front. In Zimmerman's case, as well as many others, the roof has a pitch of 1½ inches per foot.

Zimmerman, unlike some

others, allowed for a bit more insulation in his building than some others do. There are a little over six inches of fiberglass insulation in the ceiling, as well as a layer of insulation in the floor, and back wall. For further protection from the cold, the rear wall is sunk into the ground and shielded by an embankment. There is sufficient room at the rear, however, to operate 24-inch wide panels which run the length of the building. They're opened in warm weather to allow for a greater flow of air.

Proper construction of the Nebraska Unit is important if it is expected to function properly. Zimmerman points out that the ceiling panels, for example, must be placed parallel to the width of the building so that the ridges and lines which the panel might have will not

obstruct with natural air flow.

Another important feature is the 4-inch opening just beneath the roof on the open side. It too runs the full length of the structure. The purpose of this opening is to allow for permanent circulation of air. It stays open even in the coldest weather when curtains or panels are closed in the front.

While many Nebraska Unit owners prefer slatted floors and pits, they're not essential to the operation of the system. If they are a part of the structure, then the management of odors and gases become what Younkin describes as a "pretty ticklish situation."

Most Nebraska Unit managers report no problems with odors and gases. With the building open during warm weather, the pit is naturally ven-

tilated. During cold weather, however, Younkin believes odors could linger inside the building in uncomfortable concentrations. He therefore recommends that pit fans be installed. They need not affect the conditions in the actual swine housing area and would only need to run during times when the building is pretty well closed up, thus preventing efficient natural ventilation. Younkin suggests one fan for every 50 feet, noting that fan diameter size should be between 18 and 24 inches.

The Penn State swine specialist emphasizes the importance of gas and odor elimination. "Odors and gases can cause a lot of irritability in pigs," he stresses. A fan system for the pit and supplemental heat for the younger pigs is what Younkin highly

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Joe Zimmerman used this metering device in the service room to medicate portions of his watering system. Medicated drinking water can be directed to any one of four housing sections.

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