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Floor Heat for Swine

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Floor Heat for Swine

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Floor heating systems are used in swine housing to provide a warm environment for the pigs without excessive heating of the entire building. The most extensive applications of these systems is for heating baby pig creep areas in farrowing houses. Floor temperature up to 95 F. can be maintained in the creep area while the building is kept at a lower, more comfortable temperature for the sow. In housing without floor heating, the surface temperature of the floor is usually between 50-60 F.—too cold for baby pigs. While dry bedding can be used to keep pigs more comfortable, it is expensive, sometimes unavailable, increases labor requirements, and is not compatible with facilities using slotted floors and liquid manure systems. Floor heating is a logical and relatively low-cost substitute for dry bedding to provide the necessary warm, dry sleeping area required by the pigs.

Floor heating has its disadvantages, however. It increases the cost and construction difficulty of a swine facility, and additional management and maintenance will be required once the system is in place. Some options, such as a totally slotted floor, may not be feasible.

This fact sheet will provide some important points to help you select, design, install and operate floor heating systems.

Options

Either electric or hot water floor heating systems may be used in most types of buildings. The fixed and operating costs for floor heating systems should be about 3-5% greater than for a building without floor heat. In general, oil or gas-fired hot water floor heating will be slightly less costly to install and operate than electric resistance heating systems. Using solar energy to preheat water also appears to have promise as this technology continues to develop. All components in hot water systems except the pipe are easily accessible for maintenance or replacement. Control of heat to individual pens is generally not possible with hot water systems.

Electric floor heating systems have the advantage of more flexibility because it is possible to maintain individual or groups of pens at different temperatures. This is an important point to consider if a portion of the building is empty or if several groups of pigs having substantially different heat requirements are to be in a building at the same time. Maintenance of electric floor heating systems involves only the control system because the heating cables are embedded in the concrete. Therefore, careful selection and installation of quality materials are extremely important if years of trouble-free service are to be obtained from these systems.

Planning and Management

When installing a floor heating system, heat only the pigs' resting area. Avoid placing the floor heat under normally wet areas in a pen, such as waterers and dunging areas, and drain as much water and urine from the floor as possible. Excess liquids evaporated into the air can overtax ventilation systems, increase the odor and moisture level and require additional floor and supplemental heat.

The amount of heated floor space provided is also important. Too much heated area wastes energy and increases costs. Heated areas that are too small, however, encourage pigs to pile up, resulting in injuries and/or suffocation of the animals. Some guidelines for the amount

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This factsheet contains valuable information on providing some important points to help you select, design, install and operate floor-heating systems. To obtain a copy, contact:

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