



## SWINE EXTENSION

Providing educational resources and applied research to assist Minnesota's pork producers and allied industry.

### **Preparing Swine Barns to Sit Empty**

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During hard economic times, pork producers may be considering having barns sit empty for an extended period of time, particularly during periods with high feed costs and/or low hog prices. However, closing these facilities involves much more than simply emptying the barn and shutting the lights off, especially if it is anticipated that barns may be brought back into production in the future. There are several steps that should be taken to ensure safety while empty and ability to economically return production in future.

#### ***Thoroughly Clean the Facilities and Equipment***

Removal of all organic material from the barn, penning, and equipment is necessary to minimize deterioration. Wash all surfaces thoroughly and allow time to dry, removing as much moisture as possible. Manure, animal dander, feed dust, and manure gases can all combine with moisture or condensation on cooler exterior surfaces, resulting in enhanced degradation. Grease motors, drives chains, and other moving metallic components to inhibit moisture penetration.

#### ***Empty Feed Lines and Feeders, Water Lines***

Feed contains salts and other products that, when combined with moisture, can cause corrosion. Empty out all feed lines and feeders and flush feed lines with whole grain, such as corn, to remove as much of the feed particles and salts as possible. Flush and drain out water lines, blowing out lines with air if possible to remove all water. Shut off the main water line coming into the barn, and remove all water orifices, such as nipple water receptacles.

#### ***Remove All Manure in Storage***

Removal of manure from under empty barns is perhaps the most important consideration that needs to be taken. Gases, such as methane, hydrogen sulfide, carbon dioxide, and ammonia, continue to be produced from the decomposition of manure, even during cold weather. Buildup of methane provides an explosion risk, while other gases are extreme health and safety hazards. Take all necessary precautions while pumping out manure pits, including ensuring adequate ventilation, and attempt to remove all accumulated solids. Some producers may want to consider filling pits up one-third to one-half full with water after removing manure to relieve pressure and stress on pit walls, although this also can increase level of condensation in the barn.

#### ***Supplemental Heat Required Over Winter***

In order to prevent flooring and foundation from freezing, and thus deteriorating and potentially losing structural soundness, minimum heat should be provided and maintained

over winter months. Frost may crack exterior walls, causing leaks in pits and potentially resulting in structural failure. To ensure proper operation and minimize the cost of heating, have a qualified individual inspect and maintain the heating system.

### ***Maintain and Provide Ventilation***

Minimum ventilation should be provided in empty barns to ensure adequate removal of moisture and gases that may continue to accumulate either from manure decomposition or heater combustion in the barn. Failure to provide adequate ventilation may result in increased equipment and facility corrosion or severe injury or death due to carbon monoxide poisoning or hydrogen sulfide asphyxiation. Make sure the facility is reasonable “tight” and that room inlets are operating properly to ensure fresh air is properly introduced and distributed in the barn from designed air inlets. Close and seal sidewall curtains in curtain barns and louvers of large summer operating fans in tunnel or year-round mechanically ventilated barns to prevent backdrafting and leakage of air using insulated panels or heavy plastic. Allow only one side of the barn to introduce fresh air during winter months (south side in barns running east-west) to prevent snow “blow through” in the building attic. Finally, check the operation and cleanliness of all minimum ventilation fans. Dirty or rusted shuttles can reduce airflow capacity of a direct drive fan by 40%.

### ***Routinely Inspect Empty Facilities***

Empty barns should be periodically checked, i.e. weekly during cold weather. Inspect heating and ventilation systems to ensure they are functioning properly. Check for signs of water or mold damage, particularly in the attic. These may indicate roof damage, or if the attic is humid, inadequate distribution of air suggesting insufficient ventilation. Actively bait and check rodent traps – removing feed will help rodent control considerably, but maintaining bait stations should ensure that a rodent infestation does not occur. Finally, when considering bringing a facility back into production, have all electrical and heating systems inspected by a qualified technician and thoroughly test all other water and feed systems, equipment and penning for functionality prior to use.

### **References**

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