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Concepts and concerns in remodeling swine facilities

Abstract

Shall I remodel or burn it down? Determining an answer to this question requires careful consideration of construction costs and production goals. When considering a particular building - consider the following;; Swine Day, Manhattan, KS, November 19, 1987

Keywords

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CONCEPTS AND CONCERNS IN REMODELING

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SWINE FACILITIES

UPat Murphy¹

Shall I remodel or burn it down? Determining an answer to this question requires careful consideration of construction costs and production goals. When considering a particular building - consider the following:

Alternative Uses

Carefully evaluate which phase of the production enterprise can be best incorporated into the adapted building. Remember that over 50% of the cost of a new building is for equipment such as crates, pens, electrical equipment, etc. Also consider the cost of getting a building "ready" for remodeling, such as cleaning out the building or removing an existing concrete floor. Factors that might influence this phase of the decision are location, building dimension (height, width, and length), ability to incorporate ventilation, ease of adding insulation and heating, and changes necessary to pig-proof the walls.

Manure Handling

There is a growing trend for daily or weekly removal of manure from swine buildings. Buildings that store manure in deep pits are still usable, if ventilated properly. Manure handling options include hand cleaning, deep pit storage, shallow pit storage (sometimes called pull-plug pits), mechanical scrapers, and flush gutters (open and underslat). Final manure disposal options are lagoons, tank wagons to field, and irrigation systems.

Floor Design

Swine producers should consider total slatted floors for farrowing or nursery buildings. Raised floors or floor-level pens that elevate pigs above concrete floors provide greatly improved sanitation and cleanliness for farrowing crates and nursery pens. Whatever floor design is utilized, plan for two to three replacements of the floor in most buildings.

Ventilation

A good ventilation system must not only move the right amount of air through the building, but must also distribute the air throughout the building (Table 1). Ventilation during winter is the most critical and costly, so concentrate on a system that will give you control of the amount of incoming air and distribute the

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cold air effectively. Many buildings use the correct amount of air but are not getting full benefit from the air, because it is not uniformly distributed. Heat exchangers can be utilized to satisfy the cold weather air requirement. Provisions should be made to dispose of condensed water from the heat exchanger.

Insulation

Foam insulations (urethane and styrofoam) are usable in swine buildings, if they are protected from birds and rodents (encasement in concrete is preferable). Cellulose and fiberglass are usually the cheapest insulations to obtain the required R-values in walls and ceilings. A vapor barrier between the pigs and insulation should be used to prevent condensation of moisture into the insulation. The required R-values are as follows: modified open-front, walls = 6 and ceiling = 14; farrowing and nursery, walls = 14 and ceiling = 22.

Economic Consideration

As a general rule, if the cost of remodeling is in excess of two-thirds the cost of a new facility, it is wiser to proceed with a new building. In order to make an intelligent choice on remodeling, all costs related to the remodeling should be estimated.

Table 1. Midwest Plan Service Airflow Recommendations for Swine Buildings

Animal type	Weight lb	Cold weather rate	Mild weather rate	Hot weather rate
Sow and litter	400	20	+60 = 80	+420 = 500
Prenursery pig	12-30	2	+ 8 = 10	+ 15 = 25
Nursery pig	30-75	3	+12 = 15	+ 20 = 35
Growing pig	75-150	7	+17 = 24	+ 51 = 75
Finishing pig	150-220	10	+25 = 35	+ 85 = 120
Gestating sow	325	12	+28 = 40	+110 = 150
Boar	400	14	+36 = 50	+250 = 300