Feed Processing for Swine

D. R. Zimmerman

V. B. Mayrose
Pigs to Pork

MANAGEMENT

Cooperative Extension Service, PURDUE UNIVERSITY, Lafayette, Indiana

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D. R. Zimmerman, and V. B. Mayrose, Animal Sciences Department

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Definition

Processing feed for swine includes grinding, pelleting and methods of preserving (drying and ensiling).

How much feed processing is necessary for maximum profits?

It would be great if this question had one simple answer, but it doesn't. For example, the answer may be different for the swine producer using a pasture system and another using a confinement system. The most profitable system may also be different for the producer buying grain and the producer who raises all the grain he feeds.

Free-choice (FC) versus the complete mixed ration (CMR) system

First, the feeding system dictates to some extent the amount or degree of feed processing. What are the pros and cons of the FC and CMR systems? The research at various experiment stations does not agree that one of these systems is always the most profitable. At the Purdue University Experiment Station the FC system has rather consistently been the most profitable. However, at other stations the CMR system has often been the most profitable of the two systems. Most comparisons do indicate more rapid daily gains with the CMR system, but the results vary in regard to feed efficiency.

To make the FC system work properly it is important that the pigs be allowed enough feeder space for supplement. If not, they will not eat enough protein. However, at the same time it is also necessary to include some alfalfa meal and/or meat meal in the protein supplement to decrease its palatability. This is to prevent excessive consumption of expensive protein supplements. With the CMR system the producer knows the exact proportions of protein, vitamins and minerals the pigs are eating. The CMR lends itself well to an automatic feeding system. The FC system often works best when high moisture corn is fed. Whole kernels of high moisture corn will not bridge in self-feeders as will ground corn. Also, whole corn can be held longer after removal from the silo before spoilage than can ground high moisture corn.

Does it pay to grind grain?

There are two primary reasons for grinding grain for swine. First, if a CMR is to be used, it is necessary to grind grain so that it can be mixed properly with other components of the ration. Second, research results indicate improved utilization of corn when it is ground before being fed. Evidently breaking the kernel makes it easier for pigs to digest the corn. The research indicates that a medium or fine grind is necessary to obtain the desired response. There are several reasons for recommending a medium grind as opposed to a fine grind. Finely ground feed tends to bridge in self-feeders, and to blow when feeder lids are raised, increasing feed wastage. There are indications that the incidence of gastric ulcers in swine is increased by finely ground feeds.
Does it pay to pellet swine feed?

Some producers using complete mixed rations have the choice between a meal and a pelleted feed. Can one expect enough improved pig performance with pelleted feed to pay for the added expense? A summary of numerous experiments conducted in the United States and England indicates about a four per cent saving in feed due to pelleting. If a swine ration costs $60 per ton, then one can expect to save $2.40 per ton of feed by pelleting. The pelleting process costs about two dollars per ton. The forty cent difference between cost of pelleting and value of feed saved may or may not be significant to an individual operator.

Air dried versus artificially dried corn

All indications are that air dried corn and properly artificially dried corn are of equal value in swine rations. However, excessive drying conditions can adversely affect feeding value. If kernels are visibly parched, some feeding value has been lost.

High moisture corn versus dried corn

High moisture corn from air tight silos is excellent feed for swine, but no better than dried corn. Pigs like high moisture corn. It increases feed consumption. However, it does not increase rate of gain and has a slight adverse effect on feed efficiency (adjusted to equal moisture levels). In some experiments, when a FC system was used, there was a tendency for pigs to overeat on high moisture corn and undereat on protein supplement. Therefore, it is important to use a highly palatable protein supplement (basically a fortified soybean oil meal supplement) when self-feeding high moisture corn.