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Review of Research of the Value of High Moisture
Corn for Growing and Finishing Swine

L. J. Kortan

Work at South Dakota State University during the 10 year period 1942-1951 with soft corn for growing-finishing pigs showed that hogs are well adapted to utilize soft corn. In all six trials during this period, pigs fed soft corn showed a lower rate of gain per day than the pigs fed hard corn. However, when the soft corn was dried and fed, the pigs made practically the same rate of gain as the pigs fed hard corn. Compared on a dry matter basis, the value of soft corn was practically equal to hard corn for growing pigs. However, the pigs fed soft corn required more corn and also slightly more protein feed for each 100 lb. of gain. It was found that the best results were obtained by feeding the soft corn in the winter because of the deterioration in the quality of the corn in the warmer months. Moisture content of the soft corn used in these trials ranged from 25 to 50%.

In more recent years interest in storing corn in the high-moisture shelled form has been increasing. This has followed the shift toward field shelling of corn at harvest time. In 1970 it is estimated that approximately 60% of the South Dakota corn crop was field-shelled. The primary advantages of early harvest of high-moisture corn are reduced field losses and the opportunity to harvest the stalks as silage when they have greater feed value.

Work at Iowa State University in the late 1950's (Hunt et al., 1960) indicated that high-moisture corn was of equal feeding value to dry corn when included in a complete ground and mixed ration or mixed with a pelleted supplement. In Illinois studies, Jensen and Becker (1961) reported that high-moisture corn produced approximately the same rate of gain and was utilized as well as dry corn when mixed into the ration on an equivalent dry matter basis.

In the series of Iowa studies, more feed was required per pound of gain when high-moisture corn was fed free-choice with supplement in comparison to free-choice dry corn and supplement, although the gains were approximately the same. Feed required per pound of gain increased because the pigs ate a higher proportion of the high-moisture corn resulting in a lower protein content in the ration. This same observation of more total feed required per pound of gain for high-moisture corn was made by Conrad et al. (1969) from Purdue University studies in which the corn and supplement were also offered free-choice. In the Purdue studies slightly less protein supplement was required per pound of gain with the high-moisture corn.

On the other hand, in University of Illinois (Becker and Jensen, 1961) and Michigan State University (Harmon et al., 1959) studies, pigs fed high-moisture corn and supplement free-choice consumed more protein supplement than pigs fed dry corn and supplement free-choice. As a result of the increased protein supplement consumption, 32 to 51% more supplement was required per pound of gain with the high-moisture corn in the Michigan State studies. Gains were slightly slower on the free-choice, high-moisture corn than on the free-choice dry corn in both the Illinois and Michigan State studies.

Since most studies with free-choice, high-moisture corn and supplement have indicated that under or over consumption of protein supplement is a problem, it is recommended that the high-moisture corn either be mixed with a pelleted supplement or included in a complete ground and mixed ration. Spoilage may be a problem with a complete ground and mixed ration unless it is prepared daily, which will increase the labor requirement. Therefore, an automated system which mixes high-moisture shelled corn and a pelleted supplement is the most desirable method.

The free-choice system may be used successfully if precautions are taken to insure the proper intake of protein supplement in comparison to the corn intake. Certainly more research is needed on the type of supplement which should be used with free-choice, high-moisture corn.

Summary

1. Studies conducted at midwest universities indicate that growing and finishing pigs may not properly balance their ration when high-moisture corn and supplement are fed free-choice.

2. Rate of gain and feed efficiency, when compared on an equivalent dry matter basis, have been essentially the same for pigs fed high-moisture or dry corn in studies where corn and supplement are mixed together rather than fed free-choice.

3. There is no apparent advantage to cracking high-moisture corn for growing and finishing swine.

4. The possible use of high-moisture corn in a swine feeding system is primarily an economic decision rather than a nutritional one. Thus, the various costs involved should be carefully studied for each individual case before a sound decision can be made.

References

- Conrad, J. H., T. W. Perry, B. D. Virgain and R. B. Harrington. 1969. Vitamin E, Selenium and High-Moisture Corn for Growing-Finishing Swine. Ind. Agr. Exp. Sta. 49th Annual Swine Day.
- Harmon, B. G., J. A. Hoefler and G. A. Branaman. 1959. A Comparison of the Feeding Value of High-Moisture, Artificially Dried and Naturally Dried Corn for Growing and Finishing Swine. Mich. Agr. Exp. Sta. 4th Annual Swine Day, AH-46.
- Hunt, W. M., J. D. Jones, V. Speer, V. Hays and D. V. Catron. 1960. What About High-Moisture Corn for Hogs? Iowa Farm Science 15(3):9-11.
- Jensen, A. H. and D. E. Becker. 1961. High-Moisture Corn for Growing-Finishing Swine. Ill. Agr. Exp. Sta., Illinois Swine Growers' Day, AS-548.
- Wright, Turner. 1953. Soft Corn, Feeding and Handling. S.D. Agr. Exp. Sta. Bul. 433.