



Early-weaned pigs on complete pelleted ration.

Barley In Rations

For Early-Weaned Pigs

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Current evaluations of various North Dakota feed grains using nutritive content as the basis for determining value indicate that barley and oats are the most economical feed grains for use in swine rations. Wheat is of intermediate value in relation to current market prices, while corn is the least economical of the four grains evaluated for use in swine rations.

Many rations fed to growing-finishing pigs or breeding stock in North Dakota are based upon

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barley as the major, if not the only, grain in the rations. Comparatively less barley is included in rations for young pigs because of the fiber content of the grain and a lack of information relative to acceptable levels of barley for young pigs. Whole oats contain even more fiber than barley, so this grain is rarely used in rations for young pigs. De-hulled oats are a standard component of baby pig rations but are quite costly.

When considering the use of barley or oats in rations for young pigs, barley is the more logical choice because of its lower fiber and generally higher energy content. A series of five experiments de-

signed to evaluate the acceptability of up to 40 per cent barley in rations for early-weaned pigs was conducted. Early-weaned pigs were used because of the inherent difficulties associated with creep-feeding experiments and because the conclusions drawn from experiments with early-weaned pigs may be extended to creep rations.

The pigs used in these experiments were weaned at approximately 21 days of age.

The experimental rations (Table 1) were patterned after semi-complex creep rations which are extensively used for both creep feeding and for early-weaned pigs. A total of 96 pigs were used in the five experiments.

Table 1. Composition of Experimental Rations for Early-Weaned Pigs

Ingredient:	% Barley in Ration ¹				
	0	5	10	20	40
Barley	—	5.0	10.0	20.0	40.0
Corn	36.7	32.2	27.7	18.4	—
Soybean meal	15.1	14.6	14.1	13.4	11.9
Fish meal	5.0	5.0	5.0	5.0	5.0
Oat groats	30.0	30.0	30.0	30.0	30.0
Dried skim milk	10.0	10.0	10.0	10.0	10.0
Dicalcium phosphate	2.5	2.5	2.5	2.5	2.5
Salt, trace mineralized	0.5	0.5	0.5	0.5	0.5
Vitamins	0.2	0.2	0.2	0.2	0.2

¹All rations were pelleted

Results

The results of the experiments (Table 2) were encouraging and indicated that young pigs may utilize up to 20 per cent barley in semi-complex rations. The barley was used to replace corn and soybean meal and therefore reduced the cost of the rations slightly.

Only a limited number of pigs were fed rations containing 40 per cent barley. Performance of all pigs in the experiment in which the 40 per cent barley ration was fed was reduced. The perform-

Table 2. Summary of Performance of Early-Weaned Pigs Fed Rations Containing Barley.

Item:	% Barley in Ration				
	0	5	10	20	40
No. of pigs	24	20	24	24	4
No. of experiments	5	4	5	5	1
Ave. initial wt. ¹	13.8	14.0	14.1	13.5	13.4
Ave. final wt. ¹	27.2	27.3	28.7	26.7	22.5
Ave. daily gain ¹	0.63	0.63	0.67	0.62	0.56 ²
Feed per day ¹	1.02	1.06	1.09	1.04	1.15 ²
Feed per gain, lb ¹	1.67	1.69	1.63	1.70	1.94 ²

¹Data presented are the average for the number of experiments noted

²Adjusted data

ance data were adjusted by relating performance of pigs fed the rations in that experiment to average performance in the other experiments. It appeared that 40 per cent barley may be more than the young pig can utilize in rations of the type used in these experiments.

It is important to note that feeding the ration containing 20 per cent barley did not reduce weight gain, nor did it increase feed required per pound of gain. It had been anticipated that some difficulty might have been encountered with the 20 per cent barley ration in terms of reduced weight gain and increased feed per unit of gain, but this was not observed.

Based on these experiments, North Dakota swine producers may use up to 20 per cent barley in well-formulated rations for pigs weighing less than 25 pounds. Balanced rations containing 20 per cent barley may be creep-fed to nursing pigs until weaning or may be fed as the sole ration to pigs weaned as early as 21 days of age.

Observations

It was noted that weaning at 21 days of age requires considerable attention on the part of the swine herdsman. Pigs from litters produced by first litter sows (gilts) may occasionally weigh only 9-10 pounds at 21 days of age, while pigs from older, more heavily milking sows may weigh as much as 15 pounds at 21 days of age. The very light pigs (9-10 pounds) did not adapt readily to weaning and were extremely difficult to manage. On the other hand, pigs weighing 14 to 15 pounds were quiet and accepted weaning more readily.

These observations suggest that 12 pounds is possibly the lightest weight for minimizing the trauma or shock of early weaning. Fifteen pounds is a more acceptable weight for early weaning. The increasingly popular technique of weaning pigs individually as they reach pre-determined weights (such as 15 or 20 pounds) may have considerable merit for North Dakota swine producers wishing to attempt early-weaning.

Summary

Barley may comprise up to 20 per cent of well-formulated semi-complex rations for early-weaned pigs without reducing weight gain or increasing feed required per pound of gain. Rations containing as much as 20 per cent barley may also be used as creep feeds for baby pigs. Rations containing in excess of 20 per cent barley cannot be recommended for baby pigs at this time. Performance of early-weaning baby pigs was influenced by weight at the time of removal from the sow.