

In conclusion, you should understand that Hormel will continue to be progressive in all areas of procurement, carcass evaluation, hog shows, and industry promotion. Be assured that, having already tested and researched model buying programs similar to those suggested by the Task Force and after a careful study of the carcass evaluation proposals, we will be ready to respond to their recommendations making changes which are also in response to the needs of our plants and the concerns of producer customers.

IMPLICATIONS TO PUREBRED AND COMMERCIAL SWINE BREEDING PROGRAMS

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Progress made by the swine industry in improving the lean content of pork has been remarkable. Lard yield per hog has been reduced from 32 lbs. in 1960 to approximately 12 lbs. in 1980. Only 50% of our market hogs produced U.S. No. 1 and 2 carcasses in 1969. In 1980, the USDA random sample study of over 25,000 hogs revealed that over 96% of all barrows and gilts carcasses fell into these two grades. This change represents a reduction in backfat of approximately 0.3 inch in 11 years - nearly .03 inch reduction per year. This estimate of change is beyond our expectations based on genetic theory particularly since improved composition has not been considered the trait of primary interest in the minds of the commercial pork producer.

Further reductions in backfat thickness and lean composition, however, over the past 3-5 years are not in evidence. Average backfat probe data from central testing stations has been rather static for the past several years. Summaries of carcass shows reveal little if any change in composition in this time frame. Although part of this lack of change may be due to procedures that prevent old, slow-growing hogs from entering the competition, some is no doubt due to reduced emphasis on reducing fat thickness.

This result is not unexpected. The economic pressures facing the pork industry have required producers to become more cost conscious and to emphasize those traits contributing directly to reduced production costs. Price differentials offered by the packing industry have been only a fraction of the value differences that exist and have provided little incentive for placing extreme pressure on carcass traits. Commercial and seedstock producers have begun to place major emphasis on sow productivity, rapidity of growth, structural soundness and mating behavior. This has been further stimulated by previous experience that has suggested that animals extreme in muscle content are often reproductively inferior, slower in rate of growth, more subject to leg unsoundness and frequently subject to stress death and/or the production of pale, soft and exudative carcasses.

It is anticipated that efforts of the Pork Value Task Force of the National Pork Producers Council and the resulting Lean Guide to Pork Value that has been developed will have a major impact on altering these recent trends. The data used to compile the Guide was collected through the joint efforts of Iowa State University and the U.S. Meat Animal Research Center with considerable direction from leading swine and meat researchers located throughout the U.S. The USDA carcass survey data was also used in conjunction with the information obtained from the hogs tested at Iowa State University. A summary of data from the carcasses studied appears in table 1. The means and variation of these carcasses was considered to be consistent with that of the industry.

It is hoped that the Guide will be used by all segments of pork procurement to reflect true value differences between animals and their carcasses. This Guide, based on last rib backfat and carcass weight with some adjustment for muscling, accounts for approximately 80% of the value differences among slaughter hogs and produces a range in value differences of as much as \$8 cwt. on a live weight basis. It is almost certain that various packers and other buying segments of the industry will slightly modify these values to better conform to their individual needs, such as reducing the rate of index reduction with increase in weight because the Guide does not consider a reduction in processing cost per unit of weight in heavier weight hogs.

Regardless of any minor modifications made prior to its implementation, the important issue is that the industry adopt this approach as a stimulus to further progress in improving pork composition. The continued acceptance of pork by the consumer could depend on such action if pork is to compete successfully with alternative red meat sources.

Current Priorities of Commercial Producers

Table 2 summarizes responses to a recently conducted survey of Iowa commercial producers. It was pleasing to find that over 40% of the respondents indicated that performance was the major factor determining where they purchased boars. Of further interest is that producers ranked reputation and health ahead of price and convenience. Response to a related question suggests that purchase of specific animals from within the source was based on health, structural soundness and level of performance.

When asked if they use or prefer performance data on the boars they buy, only 35% indicated they bought boars with data. However, 46% indicated that although they don't buy boars with data they would prefer to do so (table 3). Only 20% indicated that they didn't use or prefer performance data on the boars they buy.

Table 4 reveals the performance traits commercial producers responding to the survey considered to be of greatest importance. These results clearly suggest producers to consider daily gain, feed conversion and number born alive to be the most important traits.

Less than 2% considered backfat to be of paramount importance and less than 5% ranked loin eye area at the top of their priority list.

If the responses of these 1200+ Iowa producers are indicative of the general population of commercial hog men, it is evident that little reduction in backfat thickness is likely to occur in the immediate future unless an incentive is developed to directly compensate producers for a product of superior composition.

Present Relative Economic Values

Parameter estimates and relative economic values of the traits included in indexes recommended by NSIF are shown in table 5. When expressed in standard deviation units and transformed to values relative to backfat thickness, it is readily apparent why many producers have discontinued to emphasize selection for reduced backfat. Present pricing systems are such that number born alive is over 18 times more important than backfat and feed conversion and daily gain are 4 and 2 times more important than fat thickness.

Impact on Breeding Programs of Commercial Producers

A tripling of the economic importance of fat thickness should have the immediate effect of causing producers of hogs superior in merit to search out marketing outlets offering the highest incentives. Buyers not offering sufficient premiums should subsequently experience difficulty in obtaining market hogs of superior composition. The longterm effects should be one of all major market outlets employing merit buying programs and commercial producers striving to improve the composition of the animals they produce.

The commercial hog producer is likely to alter his breeding program in the two areas where genetic change is possible. First, he will be searching for boars superior in backfat thickness relative to their herdmates and apply some selection for reduced backfat in his gilt selection. Secondly, he may modify his breeding plan from a rotational to a static system so as to permit maximum complementation, i.e., position the breeds superior in carcass merit on the paternal side and use the breeds superior in mothering traits on the maternal side of the pedigree.

Impact on Seedstock Suppliers

The seedstock industry has historically reacted rather quickly to the demands of its clientele. An increased demand for seedstock with backfat information will result in suppliers providing this information and altering their selection efforts to include more emphasis on the compositional traits of backfat and loin muscle area. Hopefully, this demand will stimulate increased participation in the on-the-farm and central testing programs recommended by NSIF.

If, as postulated earlier, commercial producers move from rotational to static (terminal) breeding programs, separation of the various breeds and/or lines into specialized maternal and paternal groups is likely to occur at a more rapid rate than is currently the

case. Sow productivity programs offered by state and breed associations are likely to receive increased participation, particularly in breeds or lines used primarily in producing superior F₁ females for use in these crosses. Breeds or lines classified as paternal will no doubt concentrate on improvement in composition and growth traits. Renewed interest in development of equipment and testing procedures to assess body composition is another expected result. These might include refinement of ultrasonic procedures, adaptation of tomographic procedures to the live pig and the testing of boars to heavier weights to more accurately determine their ability to sire lean offspring at conventional market weights.

Concluding Remarks

Increasing the incentives for leaner hogs at the market place should stimulate renewed interest in breeding programs to improve composition. Hopefully, an "over sell" will not occur resulting in undue emphasis at the expense of improvement in growth rate and reproductive performance. Use by the seedstock industry of selection indexes which weight the component traits in accordance with their respective economic values and genetic and phenotypic parameters should result in favorable changes in net merit.

References

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Table 1. Means, Standard Deviations and Ranges for Selected Carcass Traits^a

Trait	Mean	s	Range
Hot carcass weight, lb.	186.1	27.1	139.0 - 236.0
Carcass length, in.	33.2	1.5	29.0 - 37.0
LEA, 10th rib, in ²	5.47	0.86	3.75 - 7.55
FD10, in.	1.19	0.32	0.85 - 1.90
BF, last rib, in.	1.00	0.21	0.85 - 1.65
BF, average, in.	1.30	0.23	0.77 - 1.93
Muscling score ^b	12.25	1.89	8 - 18

^a N = 185.

^b USDA muscling score: 18 = very thick, 15 = thick, 12 = moderately thick, etc.

Table 2. What Is the Major Factor Determining Where You Buy Your Boars?*

<u>Factor</u>	<u>Response, %</u>
Price	5.0
Performance	41.4
Health	21.0
Convenience	6.1
Reputation	26.6

* Iowa Swine Producers Survey - 1272 useable responses.

Table 3. Do You Use or Would You Prefer Performance Data on the Boars You Buy?*

<u>Alternative</u>	<u>Response, %</u>
I use data	34.6
No, I do not	19.7
No, but I would prefer it	45.7

1204 respondents

Table 4. Rank the Following Items in Order of Importance.*

<u>Trait</u>	<u>Response, %</u>
Loin eye size	4.5
Daily gain	33.3
Feed efficiency	34.1
Backfat	1.6
Number born alive	24.4
21-day litter weight	2.0

* Iowa Swine Producers Survey - 1224 useable responses.

Table 5. Presently Used Parameter Estimates and Economic Values

Trait	h ²		Economic Value		
			per unit	per s	relative
	.15	2.50	3.90	9.75	18.75
	.20	15.00	.50	7.50	14.42
D230	.25	12.00	-.10	1.20	2.31
ADG	.30	.20	4.00	0.80	1.54
F/G	.35	.25	-9.00	2.25	4.33
BF	.50	.15	-3.50	0.52	1.00

Table 6. Parameter Estimates and Economic Values with Pork Value Guide

Trait	h ²	s	Economic Value		
			per unit	per s	relative
	.15	2.5	3.90	9.75	5.16
LW21	.20	15.0	.50	7.50	3.97
D230	.25	12.0	-.10	1.20	.63
	.30	.2	4.00	0.80	.42
	.35	.25	-9.00	2.25	1.19
BF	.50	.15	-12.60	1.89	1.00

THE PUREBRED PRODUCER'S CHALLENGE

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Obviously, the challenge of being a purebred breeder is making an acceptable living and enjoying a career raising and selling seedstock. Although I have met breeders who could "sell refrigerators to eskimos" it is a wiser proposition to supply a product that consumers want. Both commercial livestock people and purebred breeders want one thing from their purchases, GENETIC VALUE. If you are going to sell it, you'd better produce PREDICTABLE GENETIC VALUE, and plenty of it!

I'm a teacher, but I've come here to learn. I do not specifically produce purebred hogs, but my goal is to influence students to prepare themselves to build a life in livestock agriculture. I'm one of a group of fortunate people who have the privilege of encouraging