



# pork industry handbook

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## Optimal Weight to Market Slaughter Hogs

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For many years the recommended weight to sell barrows and gilts as slaughter hogs was, in most instances, 200-220 lb. Two reasons for this recommendation were: (1) available research indicated that feed costs increased substantially above this weight, and (2) most of the added pounds above 220 were fat. A possible third reason was that the wholesale cuts—hams, loins, butts, and bellies—from heavier hogs weighed more, and these heavier cuts were discounted. This was, of course, related to the second reason: heavier cuts in the past were fatter because they came from the bigger and fatter hogs and were, therefore, of less value.

The best weight to market hogs now is influenced by a number of factors. They include: (1) type of hogs produced; (2) price of hogs relative to feed prices; (3) market discounts for heavier weights; (4) season of the year.

## Feed Conversion

Research results in feed conversion and other production characteristics for meaty hogs at a number of stations are shown in Table 1. Pigs were fed from starting weights of 40-60 lb. to the final market weights shown.

**Table 1. Summary, research with meaty hogs, selected university experiment stations, 1966-1974.**

<b>Missouri, 1966—25 pigs per lot</b>		<b>Pounds</b>		<b>South Dakota, 1972</b>		<b>Pounds</b>	
Market weight	223	262	Market weight	210	250		
Daily gain	1.68	1.52	Daily gain	1.80	1.81		
Feed/lb. gain	4.00	4.12	Feed/lb. gain	3.25	3.50		
Feed/lb. gain from 223 to 262 lb.	-----	4.64	Feed/lb. gain from 210 to 250 lb.	-----	4.50		
<b>Missouri, 1967—25 pigs per lot</b>			<b>Iowa, 1974</b>				
Market weight	229	269	Market weight	200	250		
Daily gain	1.54	1.63	Daily gain	1.81	1.93		
Feed/lb. gain	3.80	3.76	Feed/lb. gain	3.27	3.38		
Feed/lb. gain from 229 to 269 lb.	-----	3.58	Feed/lb. gain from 200 to 250 lb.	-----	3.71		
<b>Florida, 1969—18 pigs per lot</b>			<b>Texas, 1974</b>				
Market weight	200	250	Market weight	200	250		
Daily gain	2.03	2.02	Daily gain	2.04	2.02		
Feed/lb. gain	3.14	3.43	Feed/lb. gain	3.14	3.43		
Feed/lb. gain from 200 to 250 lb.	-----	4.06	Feed/lb. gain from 200 to 250 lb.	-----	4.30		



The six trials showed an average of 4.13 lb. of feed per pound of gain to grow hogs from the lighter market weights to heavier market weights. This was up from 3.43 lb. of feed per pound of gain for feeding from 40-60 lb. to the lighter market weights. However, if the feed required for the breeding herd and the pigs up to 40-60 lb. was included there would be less difference in the amount of feed required per pound of market weight.

Feed conversion on the typical farm probably would be somewhat higher than these research results. The average with the same type hog probably would be about 4.4 lb. in commercial production compared to about 4.1 lb. for the research trials.

### Type of Hogs Important

For fatter hogs the efficiency probably does drop faster than in the results just shown. Hogs of unknown genetic background in a trial run in Missouri in 1968 required 5.2 lb. feed per pound of gain from 216 to 255 lb.

The fat-lean ratio does increase at heavier weights even with good meat type hogs. Based on two studies at Oklahoma, the lean cuts as a percentage of carcass weight decreased by an average of 0.6% from 200 to 250 lb. The decrease in lean cuts at Missouri for two studies was an average of 1.3% from 220 to 260 lb.

### Discounts for Heavy Weights

The most common weights that receive top prices are 200-230 lb. A few packers pay top prices for 210-240 lb. weights, and at least one packer buys a limited number of hogs with no discount up to 260 lb. if they are meaty hogs. However, in some markets, price discounts for hogs above 230 lb. are substantial. The cost of killing a 260-lb. hog is approximately the same as it is for a 200-pounder. Packers also have lower labor costs and higher yields when they process the product, such as hams into boneless portions. Therefore, the heavier lean hogs are worth more to the packer who can use the product in such a way that heavier cuts are not discounted.

### Returns for Selected Weights

Tables 2, 3, and 4 show the effect on returns *above feed costs* to market hogs at an average weight of 250 lb. compared to 215 lb., under various feed and hog prices. All three tables use a conversion of 4.4 lb. of feed per pound of gain from 215 to 250 lb.; only this part of the production program is considered since all hogs have to be taken to 215 lb. In Table 2 there is no discount in hog prices for the 250-lb. hogs. In Table 3 the 250-lb. hogs are discounted \$1.00 per cwt. In Table 4 the 250-lb. hogs are discounted \$2.00 per cwt. as compared to the 215-lb. hogs.

Tables 2, 3, and 4 are read in the following manner. Assume a producer has a market with no discount for 250-lb. hogs compared to 215-lb. hogs, and he has a hog price of \$35 per cwt. and feed costs of \$5.00 per cwt. With the same price for 250-lb. hogs as 215-lb. hogs one would use Table 2. Follow the \$5.00 per cwt. feed line across to the \$35 per cwt. for hogs column to find the added income above feed costs. In this example, it would be \$4.55 per hog.

Because facilities and other costs vary tremendously from farm to farm only feed costs are considered in Tables 2, 3, and 4. For a producer who is now marketing his hogs at an average of 215 lb. and is using his finishing facility to capacity, 15-20% additional finishing space would be required to increase average weights to 250 lb. Labor, medicine and other costs would go higher, but these costs would be less per pound of pork produced than if hogs were marketed at lighter weights. Producing 250-lb. hogs as compared to 215-lb. hogs would also reduce the feeder pig cost per pound of pork.

For example, the average price paid for 40-50 lb. feeder pigs in Missouri through the MFA TEL-O-AUCTION for 1975 and 1976 was \$90.92 per cwt. or \$40.91 per head, assuming a 45-lb. average weight. This price did not include transportation costs to the feeder's farm. With the above values the average feeder pig cost per pound of pork sold would be 19.0 cents for 215-lb. hogs and 16.4 cents for 250-lb. hogs.

**Table 2. Added returns above feed cost for feeding hogs to 250 lb. compared to selling at 215 lb., with no market discount for heavy hogs (250 lb.).**

Feed cost per cwt.	Price of hogs per cwt. @ 215 lb.					
	\$25	\$35	\$45	\$55	\$65	\$75
Added returns above feed costs per hog						
\$3.00	\$4.13	\$7.63	\$11.13	\$14.63	\$18.13	\$21.63
4.00	2.59	6.09	9.59	13.09	16.59	20.09
5.00	1.05	4.55	8.05	11.55	15.05	18.55
6.00	-.49	3.01	6.51	10.01	13.51	17.01
7.00	-2.03	1.47	4.97	8.47	11.97	15.47
8.00	-3.57	-.07	3.43	6.93	10.43	13.93



**Table 3. Added returns above feed costs for feeding hogs to 250 lb. compared to selling at 215 lb., with \$1.00 per hundredweight market discount for heavy hogs (250 lb.).**

Feed cost per cwt.	Price of hogs per cwt. @ 215 lb.					
	\$25	\$35	\$45	\$55	\$65	\$75
	<b>Added returns above feed costs per hog</b>					
\$3.00	\$1.63	\$5.13	\$8.63	\$12.13	\$15.63	\$19.13
4.00	.09	3.59	7.09	10.59	14.09	17.59
5.00	-1.45	2.05	5.55	9.05	12.55	16.05
6.00	-2.99	.01	4.01	7.51	11.01	14.51
7.00	-4.53	-1.53	2.47	5.97	9.47	12.97
8.00	-6.07	-3.07	.93	4.43	7.93	11.43

**Table 4. Added returns above feed cost for feeding hogs to 250 lb. compared to selling at 215 lb., with \$2.00 per hundredweight market discount for heavy hogs (250 lb.).**

Feed cost per cwt.	Price of hogs per cwt. @ 215 lb.					
	\$25	\$35	\$45	\$55	\$65	\$75
	<b>Added returns above feed costs per hog</b>					
\$3.00	-\$ .87	\$2.63	\$6.13	\$9.63	\$13.13	\$16.63
4.00	-2.41	1.09	4.59	8.09	11.59	15.09
5.00	-3.95	-.45	3.05	6.55	10.05	13.55
6.00	-5.49	-1.99	1.51	5.01	8.51	12.01
7.00	-7.03	-3.53	-.03	3.47	6.97	10.47
8.00	-8.57	-5.07	-1.57	1.93	5.43	8.93

### Seasonal Price

Based on work done by Skadberg at Iowa State, there are four seasonal price change periods. From December through January, the chance for a price rise ranges from 70 to 90%. From February through April, there is only about a 20% chance for a price rise. From May through July, the chance for a price rise is 80%. From August through November, there is only a 10-30% chance for a price rise.

On the basis of seasonal price variations, producers probably will maximize average profits over a period of years by marketing hogs in the February-April and August-November periods at the lowest possible weight that avoids price discounts for light hogs—usually 200 lb. or a little heavier. Keeping hogs to heavier weights during these periods not only increases feed cost per pound of gain as indicated earlier, but there is a high probability the general price level for hogs will be declining and the hogs will be sold for a lower price even though there may not be a discount for the heavier weights.

However, during the December-February and May-July periods, the probability of a price rise is high. During

these periods a producer may maximize profits by shifting toward the heavier weights of 250-260 lb. The odds are that price increases during these periods will more than offset any price discount applied.

### Summary

There are opportunities for producers with good meat type hogs, and in a market that does not discount price too severely because of weight up to 250-260 lb., to maximize income by marketing hogs at these heavier weights.

For producers with markets that penalize the price of heavier hogs, there are opportunities in most years to increase profits by adjusting market weights to the seasonal change in prices. This latter strategy does add some management problems for the total confinement type operation, because it varies the amount of space needed in finishing facilities.

During periods when hog numbers are increasing cyclically, marketing hogs at the lightest weight possible without price discounts is advisable because it reduces the total pork tonnage, thus helping the general price level for the total industry.

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