AN ECONOMIC APPRAISAL OF PRODUCING HEAVY WEIGHT HOGS: FEED AND OTHER VARIABLE COSTS

by

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SUMMARY

As expected, the market weight that maximizes return over feed and other variable costs decreases as market price declines and/or the price of corn increases. It is interesting to note, by comparing the data in Tables 2 and 3, that at low price combinations one will probably want to feed gilts to a slightly heavier weight than barrows while at high hog prices barrows can be profitably fed to higher weights. This is the result of the difference between the rate of gain and feed efficiency of gilts and barrows that Mahan demonstrated. It is important that producers include, as was done in this study, more than feed costs, price of corn, and price of hogs in calculating the most profitable market weight for their hogs. Using only these costs would have resulted in higher market weights for Tables 1 and 2. It is also important for producers to realize that the results reported in Tables 1, 2, and 3 are based on closely monitored and controlled experiments. It would not be unreasonable to expect on-farm conditions to result in using 20 percent more feed than that shown and used in this study. Increasing feed usage would result in the weights reported in Tables 2 and 3 to decline substantially. For example, the gilt weight of 225 pounds reported at the $35 hog and $2.50 corn price combination would decline to 215 pounds if 20 percent more feed were used. Another consideration of importance is that room is available to raise hogs to heavier weights if warranted. If the finishing space is needed for younger hogs total profit is likely to be higher if the older heavier hogs are sold and replace by younger lighter pigs that will likely use the space more profitably.

INTRODUCTION

Marketing hogs at alternative weights is a decision that deserves and receives the close attention of astute hog producers. Numerous factors are important in determining the most profitable finishing weight. The price of corn, feed efficiency, and the price of hogs come to mind immediately as determinants of this decision. It is important, however, not to overlook the other variable costs associated with feeding to heavier weights. Each producer must look at all cost items and decide which will vary as marketing weight changes. In this analysis it is assumed variable costs, including utilities, veterinary medicine, marketing, and interest on operating capital

(including feeders), will increase proportionately with weight. Corn and supplement costs will be directly related to reported feed efficiencies. Other costs such as labor, management, buildings, and equipment are assumed to be fixed and will not vary with market weight.

DISCUSSION

This paper addresses the question: "What market weight maximizes return above variable costs?" It is assumed that feeders have been purchased or produced and will be finished. The feed efficiency data used in this analysis were provided by Dr. Donald Mahan, Animal Scientist, OARDC-OSU, at Wooster, Ohio. These data, using rounded results, are presented in Table 1 below. The variable costs (listed above), other than corn prices, are taken from the 1984 Livestock Enterprise Budgets prepared by the Farm Management Faculty at OSU; these costs are assumed to be 6.5¢ per pound; supplement cost is included at $360 per ton. Corn prices in this analysis are $2.50, $3.00, $3.50, and $4.00 per bushel and hog prices vary from $35 to $55 in increments of $5.

Using the above feed efficiencies, costs, and prices, it is possible to construct the following charts (Tables 2 and 3) as an aid to deciding what market weight for hogs maximizes return over feed and other variable costs. The weights reported in these tables are the rounded weights for periods beyond which net returns from the following equation are zero or negative. The calculation was done for each period, hog price, and corn price.

Net return for period = (weight gain x price of hogs) - feed cost

- other variable costs

Table 1.   EXPECTED WEIGHTS AND FEED TO GAIN RATIOS[1]
FINISHING SWINE
OHIO 1983

Week (Period)	Weight at End of the Week [2]		Average Feed Efficiency for Week [3]	
	Gilt	Barrow	Gilt	Barrow
1	143	145	3.2	3.1
2	155	158	3.3	3.3
3	167	172	3.4	3.5
4	179	185	3.5	3.6
5	190	198	3.6	3.8
6	202	210	3.7	3.9
7	213	222	3.9	4.1
8	224	235	4.0	4.2
9	235	246	4.1	4.3
10	246	258	4.3	4.4
11	257	269	4.4	4.5
12	267	280	4.6	4.6
13	277	291	4.8	4.7
14	288	301	4.9	4.8
15	298	311	5.1	4.9

[1] Data supplied by Dr. Donald Mahan, OARDC-OSU, The Ohio State University, Wooster, Ohio.

[2] Rounded to nearest pound.

[3] Rounded to nearest 1/10.

Table 2.   GILT MARKET WEIGHT TO MAXIMIZE
                            RETURNS OVER FEED AND
                            OTHER VARIABLE COSTS

Price of Gilts	PRICE OF CORN ($ / BU.)			
	$2.50	$3.00	$3.50	$4.00
	- - - pounds - - -			
$35	225	190	155[1]	---[2]
40	265	245	215	190
45	300	275	255	235
50	300[2]	300	290	290
55	300[2]	300[2]	300	300

[1] Selling hogs at this weight is unlikely. It would require four to five weeks for the hog to reach 210 pounds. By that time price is likely to have improved.

[2] Calculated weights do not exceed range of data presented in Table 1.

Table 3.   BARROW MARKET WEIGHT TO MAXIMIZE
                            RETURNS OVER FEED AND
                            OTHER VARIABLE COSTS

Price of	PRICE OF CORN ($ / BU.)			
Gilts	$2.50	$3.00	$3.50	$4.00
		- - - pounds - - -		
$35	210	185	160[1]	145[1]
40	290	245	200	185
45	310	310	260	220
50	310[2]	310[2]	310	290
55	310[2]	310[2]	310[2]	310

[1] Selling hogs at this weight is unlikely. It would require four to five weeks for the hog to reach 210 pounds. By that time price is likely to have improved.

[2] Calculated weights do exceed range of data presented in Table 1.