Current Report

Marketing Tool for Slaughter Lambs and Sheep

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A marketing decision sheep producers face regularly is sell now vs. hold and sell later. Producers make that marketing decision both for slaughter lambs and cull ewes. The decision boils down to the question, "Will the added income from selling later be enough to offset the added costs of holding lambs or cull ewes until later?"

This Current Report includes: (1) examples of two marketing situations commonly faced by sheep producers; and (2) an illustration of a computer spreadsheet program (Visicalc template) that can assist producers make their sell vs. hold marketing decisions.

Nature of the Problem

Sheep production is a seasonal enterprise, based in part on the biological breeding pattern of ewes. Demand for lamb is also seasonal, and is influenced in part by religious holidays such as Easter. Seasonality in both supply and demand combine to periodically generate relative surpluses of lamb in the marketing channel. The result is variable prices for slaughter lambs.

During periods of short-term excess supplies of lamb, large discounts are often imposed on lambs weighing more than 110-115 pounds. The "heavy lamb" discounts combined with depressed prices resulting from excess supplies may result in relatively low returns for slaughter lambs.

Sheep producers do not have futures markets to shift the market risk of volatile prices to others. Forward contracts with packers, another method to reduce price risk, are used on a limited basis in the industry and rarely in Oklahoma. Producers also encounter production risks such as poor feeding performance and death losses. As lambs near slaughter weight, producers incur higher feeding costs. The best economic decision a producer can make in that situation is to market lambs when the expected added revenue (income) from feeding lambs longer, equals or exceeds the expected added costs

(expenses) of feeding lambs for the longer period. The same concept applies to marketing cull ewes.

The computer program illustrated in this report is a tool to compare various possible combinations of feeding performance and market conditions. The program provides information to producers that can help them market slaughter lambs and cull ewes (when the added returns from holding and feeding lambs or ewes for a longer period, equals or exceeds the added costs of holding and feeding them longer). The program cannot substitute for the producer's judgement, but it can provide supplementary information which can help producers with their marketing decision.

The computer spreadsheet program (Visicalc) was developed for an Apple II+/IIe computer and can be obtained for the cost of a blank disk (about $2) from Clem Ward, 513 Ag. Hall, OSU, Stillwater, OK, 74078.

Marketing-Management Examples

Two examples of marketing decisions producers face regularly are given here: marketing slaughter lambs and feeding cull ewes. The Visicalc template is available in both a short and long version. The short version is discussed and illustrated in this report. A discussion and illustration of the long version can be found in, "Visicalc Template for Marketing Slaughter Lambs and Sheep," Department of Agricultural Economics Paper A.E.-8496, by the same authors as this Current Report.

Marketing Lambs on Feed

The short version of the marketing tool requires 6 pieces of information from the user. They are: (1) the length of the decision period, or how many additional days a user is considering holding and feeding lambs; (2) the number of lambs for which the decision is being made; (3) an estimate of the current average weight of the lambs, in other words at the beginning of the next feeding period; (4) an estimate of the average daily gain the user expects for the lambs

during the additional feeding period; (5) an estimate of costs per head per day for feeding the lambs longer; and (6) the current and expected price for slaughter lambs. In the program, a ">" sign prompts the user to insert information. The user may insert 3 possible values for some information (average daily gain, costs per head per day, and slaughter lamb prices). The user is exposed to production risks (poorer or better feeding performance than expected, which means higher or lower costs than expected), and is exposed to market risks (higher or lower market prices). A user may insert: (1) an optimistic expectation -- what might happen that would be better than expected (the High column); (2) a most likely expectation -- what is expected to happen (the Expected column); and (3) a pessimistic expectation -- what might happen that would be worse than expected (the Low column).

The example here assumes a producer has lambs on feed that are approaching slaughter weight and finish. A decision must be made to market them this week or feed them another week or two. In this example, the decision period is 14 days (2 weeks), for 35 lambs that currently weigh about 107 pounds. Table 1 shows a printout for this lamb marketing decision.

The next piece of information required is average daily gain (ADG). Feed consumption or intake varies according to how efficiently lambs might gain weight. The High column (or optimistic estimate) assumes lambs gain better than expected, .6 lbs./day. The Expected ADG is .55 lbs. The Low ADG, which might occur under adverse (or pessimistic) feeding conditions, is .5 lbs.

Thus, total gains per lamb over the next 2 weeks could range from 8.4 lbs. under good feeding conditions down to 7 lbs. under poor feeding conditions. Expected total gains are 7.7 lbs. Thus, in 2 weeks lambs are Expected to weigh an average of 114.7 lbs., but could weigh as much as 115.4 lbs. or as little as 114 lbs.

Table 1

SLAUGHTER LAMB MARKETING TOOL: SHORT VERSION
DEVELOPED BY:
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(SAMPLE MARKETING DECISIONS AND A DISCUSSION OF THIS TEMPLATE CAN BE FOUND IN OSU EXTENSION CURRENT REPORT #478, "MARKETING SLAUGHTER LAMBS AND SHEEP" AND IN DEPARTMENT OF AGRICULTURAL ECONOMICS PAPER AE- 8496 , "VISICALC TEMPLATE FOR MARKETING SLAUGHTER LAMBS AND SHEEP".)

ESTIMATED COSTS AND RETURNS FOR FEEDING VS. SELLING SLAUGHTER LAMBS.

	CURRENT PERIOD	HIGH	NEXT PERIOD EXPECTED	LOW
DECISION PERIOD (NUMBER OF DAYS)--->	14			
NUMBER OF HEAD-------------------->	35			
BEGINNING AVERAGE WEIGHT (LBS)----->	107			
AVERAGE DAILY GAIN (LBS/DAY)---------------->		.6	.55	.5
TOTAL GAIN		8.4	7.7	7
COSTS/HEAD/DAY----------------------------->		.25	.28	.31
AVERAGE MARKET WEIGHT (LBS)	107	115.4	114.7	114
SALE PRICES ($/CWT) FOR				
SLAUGHTER LAMBS ----------------->	56	58	56	54
COST AND RETURNS COMPARISON ($/HD):				
TOTAL REVENUE	59.92	66.932	64.232	61.56
ADDED REVENUE		7.012	4.312	1.64
ADDED COSTS		3.5	3.92	4.34
FEED VERSUS SELL DECISION				
(FEED IF TRUE AND SELL IF FALSE)		TRUE	TRUE	FALSE
BREAK-EVEN ESTIMATES				
SLAUGHTER LAMB PRICE ($/CWT)		54.95667	55.65824	56.36842
AVERAGE MARKET WEIGHT (LBS)		109.3448	114	119
AVERAGE DAILY GAIN (LBS/DAY)		.1674877	.5	.8571429

Feed and other expenses amount to an Expected cost per head per day over the next 2- week feeding period of $.28. The optimistic cost/hd/day could be $.25 if feeding performance is better than expected (the High column), or $.31 if feeding performance is less than expected (the pessimistic estimate, in the Low column).

Lastly, the user inserts current and alternative selling prices for slaughter lambs. This example assumes current slaughter lamb prices are $56 per hundredweight. The Expected price in two weeks is also $56/cwt. The High or optimistic price of $58/cwt. assumes prices improve and the Low or pessimistic price of $54/cwt. assumes a declining market.

After all information has been entered, the program computes the cost and returns information, generates a decision, and computes three breakeven figures.

Both total revenue (income) and total costs increase in all cases. The additional income from holding and feeding lambs is Expected to be $4.31/head but could range from $7.01/hd. under optimistic marketing and feeding conditions to $1.64/hd. under pessimistic marketing and feeding conditions.

Given the costs/hd./day, the additional costs of feeding and maintaining lambs another 2 weeks is Expected to be $3.92/hd. Added costs could be as low as $3.50/hd. under good feeding conditions (the HIgh column) or as high as $4.34/hd. adverse feeding conditions (the Low column).

If prices and costs are at the Expected level, then the Expected revenue from marketing lambs in 2 weeks exceeds the Expected costs of feeding lambs over that period ($4.31 vs. $3.92/hd., respectively). Thus, the program - gives a TRUE or "hold" signal. A producer would be better off marketing lambs in 2 weeks rather than now. The same decision occurs if prices and costs are at the optimistic level (the High column).

However, at the pessimistic level (the Low column), a procuder would be better off marketing lambs now. Under those conditions, the additional costs of holding lambs exceeds the additional income from marketing heavier lambs. That occurs because lambs do not gain as efficiently and because prices drop.

The liveweight breakeven price is the price needed for the additional revenue to match the additional cost of feeding lambs 2 more weeks, given the assumptions about feeding performance. Similarly, the breakeven market weight is the weight lambs would have to reach, given the assumptions about prices, in order for the additional revenue to match additional costs. Lastly, the breakeven ADG indicates how fast lambs must gain, given the assumptions about prices and costs, in order for the additional revenue to match additional costs.

One of the principal advantages of a spreadsheet program is its flexibility. For example, a producer could change one or a combination of any number of variables (decision period, ADG, costs/hd./day, and prices). Then the computer re-computes the worksheet and informs the user of the impacts stemming from the changes.

Feeding Cull Ewes

Producers cull their ewes regularly. Cull ewe prices are typically quite low so it may pay at times to improve the condition and increase the weight of cull ewes by feeding them for some period before marketing. Again, whether or not it pays depends on the expected added costs of feeding them compared to the expected added returns from marketing higher quality, heavier ewes, and perhaps at higher prices.

Information required for this decision is nearly identical to that required for the slaughter lamb marketing decision. And the worksheet is nearly identical.

Table 2 illustrates a printout for a cull ewe marketing decision. Assume a producer is considering a 42-day (6-week) feeding period for 20 ewes currently weighing 130 pounds. Estimated ADG is assumed lower than for lambs and costs/hd./day are assumed higher. As in the lamb example, slaughter ewe prices are estimated for higher, lower, and stable market conditions compared to the current level.

The program computes the total gain and market weight as in the lamb marketing example. Then it computes a cost and returns comparison, makes a marketing decision, and computes the breakeven estimates.

In this example, total revenue increases by feeding cull ewes for 6 weeks. However, the added returns from feeding cull ewes is only more than the added cost of feeding and maintaining the ewes under the most optimistic feeding and marketing conditions (High column).

The breakeven estimates indicate how price, market weight, and ADG would have to change to reverse the feed vs. sell decision under each production and marketing combination. Then a producer can judge whether or not those changes are likely.

Other Management Decisions

This template could be used for making other marketing-management decisions. Another application is the decision of whether or not to castrate ram lambs before the feeding program. Research indicates that ram lambs gain faster and more efficiently than wethers. However, packers severely discount ram lambs that show mature ram characteristics and cannot grade USDA Choice. This template could be used to analyze required rates of gain for ram lambs to market them at an early enough age so as not to be discounted in price. Various prices (incorporating price discounts) could be combined with feeding performance assumptions to help determine whether or not to castrate ram lambs.

Conclusions

The short version of the Visicalc template illustrated in this report can provide additional information on which marketing decisions can be based. Its major attribute is its flexibility to answer several "What if" questions quickly and accurately. The sensitivity of the marketing decision to changes in selected variables like ADG, costs/hd./day, and market prices can be seen quickly and easily.

Table 2
CULL EWE MARKETING TOOL: SHORT VERSION
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ESTIMATED COSTS AND RETURNS FOR FEEDING VS. SELLING CULL EWES.

	CURRENT PERIOD	HIGH	NEXT PERIOD EXPECTED	LOW
DECISION PERIOD (NUMBER OF DAYS)--->	42------------------------------			
NUMBER OF HEAD-------------------->	20------------------------------			
BEGINNING AVERAGE WEIGHT (LBS)----->	130-----------------------------			
AVERAGE DAILY GAIN (LBS/DAY)--------------->		.5	.45	.4
TOTAL GAIN	---------	21	18.9	16.8
COSTS/HEAD/DAY----------------------------->		.25	.28	.31
AVERAGE MARKET WEIGHT (LBS)	130	151	148.9	146.8
SALE PRICES ($/CWT) FOR				
SLAUGHTER EWES ---------------->	21	26	23.5	21
COST AND RETURNS COMPARISON ($/HD):	--			
TOTAL REVENUE	27.3	39.26	34.9915	30.828
ADDED REVENUE	---------	11.96	7.6915	3.528
ADDED COSTS	---------	10.5	11.76	13.02
FEED VERSUS SELL DECISION				
(FEED IF TRUE AND SELL IF FALSE)	---------	TRUE	FALSE	FALSE
BREAK-EVEN ESTIMATES	--			
SLAUGHTER EWE PRICE ($/CWT)	---------	25.03311	26.23237	27.46594
AVERAGE MARKET WEIGHT (LBS)	---------	145.3846	166.2128	192
AVERAGE DAILY GAIN (LBS/DAY)	---------	.3663004	.8622087	1.476190