

**BUSINESS
MANAGEMENT
IN AGRICULTURE**

A joint project of the Cooperative
Extension Service, Farm Credit and
Chicago Mercantile Exchange

Marketing Strategy for Livestock

Table of contents

Introduction	1
Video script	2
Exercise 1	15
Exercise 2	18
Exercise 3	21
Exercise 4	23
Exercise 5	26
Exercise 6	29
Video questions	32
Exercise 1 - key	33
Exercise 2 - key	34
Exercise 3 - key	35
Exercise 4 - key	36
Exercise 5 - key	37
Exercise 6 - key	38

Video questions - key	39
Blank worksheets 1-6	40-45
Appendix A - components of pricing plan	46
Appendix B - price decision model	47
Appendix C - examples of cash flow needs	48
Appendix D - examples of threshold price levels	49
Appendix E - price expectations and risks	50
Appendix F - alternative pricing methods	51
Appendix G - illustrating pricing criteria & weights	52
Appendix H - illustrating price decision rule	53
Appendix I - should I produce hogs	54
Appendix J - farm planning prices	59

Credits

Coordinated by:

Carl O'Connor, Extension Economist,
Agricultural & Resource Economics,
Oregon State University, Corvallis, OR

Thomas Powell, Senior Education Officer,
Human Resources Planning & Development,
Farm Credit Services, St. Paul, MN

Produced by:

Farm Credit Services, St. Paul, MN, and
Oregon State University, Corvallis, OR

Wayne E. Carlson, Extension Specialist, Agriculture
University of Minnesota, St. Paul, MN
Consultant, Farm Credit Services, St. Paul, MN

- David Parry, Media Producer
- Bruce Fredericksen, Media Producer
- Tom Resek, Media Consultant
- Bob Hunt, Media Consultant
- Tim Schulte, Media Consultant
- Joel Fredericksen, Media Consultant
- Joan Rohde, Media Consultant
- Anne Merydith-Wolf, Editor

Funded by:

Extension Service, USDA, Washington, DC
Farm Credit Corporation of America, Denver, CO
Chicago Mercantile Exchange, Chicago, IL
Farm Credit Services, St. Paul, MN

Sponsored by:

Cooperative Extension Services of:
Oregon State University
University of Minnesota

Presented by:

Kim Anderson, Extension Grain Marketing Specialist,
Oklahoma State University, Stillwater, OK

J. Roy Black, Agricultural Economist,
Michigan State University, East Lansing, MI

Jim Graham, Director, Commodity Marketing &
Education, Chicago Mercantile Exchange, Chicago, IL

Gary Hachfeld, County Extension Agent,
Agriculture, Nicollet County, St. Peter, MN

John Ikerd, Head, Extension Agricultural Economics,
University of Georgia, Athens, GA

Robert King, Professor, Agricultural & Applied
Economics, University of Minnesota, St. Paul, MN

Michael Martin, Professor, Agricultural & Resource
Economics, Oregon State University, Corvallis, OR

Carl O'Connor, Extension Marketing Economist,
Oregon State University, Corvallis, OR

Gerald Schwab, Agricultural Economist,
Michigan State University, East Lansing, MI

Susan Weymann Agency, Minneapolis, MN

- Hal Atkinson
- Amy Powell
- Cliff Rakerd
- Mary Alette Davis

Advised by:

Dee Von Bailey, Dept. of Economics
Utah State University, Logan, UT

Ray Brueggemeier
Norwest Banks, Minneapolis, MN

Russ Farrow
Farm Credit Banks, Baltimore, MD

Paul Freeman
Farm Credit Banks, Louisville, KY

Carl German, Dept. of Agricultural Economics,
University of Delaware, Newark, DE

Mike Gorham
Chicago Mercantile Exchange, Chicago, IL

John Gunderson
Farm Credit Corporation of America, Denver, CO

Paul Gutierrez, Agricultural & Natural Resource
Economics, Colorado State University, Fort Collins, CO

Clint Hakes
Chicago Mercantile Exchange, Chicago, IL

Randall Jackson
Farm Credit Services, Wichita, KS

David Kettering
Farm Credit Services, St. Paul, MN

David Lambert, Dept. of Agricultural Economics,
University of Nevada, Reno, NV

Buel Lanpher, Extension Service,
USDA, Washington, DC

Don Nitchie
Chicago Mercantile Exchange, Chicago, IL

Ron Plain, Dept. of Agricultural Economics,
University of Missouri, Columbia, MO

Roger Shaffer
Farm Credit Corporation of America, Denver, CO

Dick Shane, Dept. of Economics,
South Dakota State University, Brookings, SD

Joy Upchurch
Farm Credit Banks of Columbia, Columbia, SC

Gayle Willett, Dept. of Agricultural Economics,
Washington State University, Pullman, WA

Acknowledgements:

Oklahoma State University Media for providing video
footage of agricultural operations.

Minneapolis Grain Exchange, Minneapolis MN for the
location of "Using agricultural futures."

Marketing livestock

A marketing strategy for livestock

Video Presenter
Ken Egertson

A Marketing Strategy for Livestock

- calculating production costs
- evaluating price objectives
- consequences
- six-step strategy
- determining price objectives
- net price level and price risk
- reevaluation

This is one module of the *Agricultural Marketing* series and is intended to be used with its corresponding videotape. The script may vary from the actual videotape text.

Ken Egertson is a Professor of Agricultural and Applied Economics at the University of Minnesota - Twin Cities.

He is also an Extension Marketing Economist for the Agricultural Extension Service, University of Minnesota.

Egertson holds an M.S. degree in Agricultural Economics from the University of Minnesota.

He has also done advanced graduate work beyond the Master's degree level in Agricultural Economics at the University of Minnesota.

Purpose

At the end of this session, you will be able to:

- 1) calculate costs of production for livestock produced.
- 2) describe three different levels of price objectives and evaluate their commodity production costs in relation to these objectives.
- 3) determine consequences if certain price objectives are not reached.
- 4) develop a strategy for marketing livestock in six distinct steps.
- 5) determine realistic annual and intermediate range price objectives for specific operations.
- 6) identify the net price level and price risk associated with each pricing alternative.
- 7) describe the need for regular reevaluation of their marketing plan.

Video Time: 38:42
July 1985

Video script

By Ken Egertson

Hello, I'm Ken Egertson. I'm a livestock marketing economist at the University of Minnesota.

The purpose of this unit is to present a foundation for developing, implementing, and evaluating a marketing strategy for livestock. It is a companion piece to the grain marketing unit presented by Pat Cantlon. You will note many similarities in the two approaches; the major difference being that livestock is not storable, so the range in time for pricing is somewhat shorter. However most of the suggested techniques in planning can be used interchangeably between livestock and grain. It is essential to study both units since certain common principles are developed more strongly in one unit than the other. (See Appendix A.)

Importance planning

Two quotations will help to focus on the importance of a marketing plan for livestock. The first states that: "If you don't know where you are going, any road will take you there." What we learn from the quotation, in a marketing sense, is that a livestock producer must know what he or she wants to accomplish and have a general rule to follow before an optimum route can be selected from the alternatives.

The other quotation worthy of our consideration is that, "an unrealistic goal and plan can only lead to frustration and defeat." So, whereas the first quotation emphasized the **need** for a marketing goal, the second cautions livestock marketers to keep the goal **realistic**.

As livestock producers develop their marketing plan, it must be matched to their individual capabilities, resources and the realities of the market.

Techniques used to develop a marketing plan can be generalized to fit a number of individuals; however, the final marketing plan must be tailored to fit the individual producer. Unique factors such as how many head of livestock a producer sells at any one time, how often they sell them, and how the producer reacts to risk-taking are examples of specific adjustments to the generalized plan. A marketing and pricing plan does not always have to be sophisticated and complicated to be useful. In fact, simple plans often best fit the stated objective and many times out-perform more complex plans. Remember! More complex plans can be developed as individual marketing skills improve.

A Good Marketing Plan

1. Focuses on realistic goals
2. Compares pricing alternatives
3. Appraises odds of meeting goals
4. Assesses levels of risk
5. Identifies price decision model
6. Encourages periodic evaluation

Components of a sound marketing plan

Sound marketing plans have these characteristics:

1. They focus on an objective goal which is measurable and realistic. For example, a goal to peak the market every year is probably unrealistic. But a goal to improve the average price received for hogs by 10 percent above the average over a period of 5 years, is attainable.
2. They compare marketing or pricing alternatives. Generally, an economic problem does not exist unless a person has to make a choice. Regardless of the marketing question faced by livestock producers, more than one feasible alternative is generally available.
3. They appraise the odds or probabilities of reaching the goals under the various marketing alternatives available. It's always important to calculate the chances of getting a stated price under various pricing alternatives. This is especially true when one of the options is to sell in the cash market at some predicted price, delay pricing under a forward contract, or use the futures market and hedge.
4. They assess the desire and ability of the producer to assume and deal with the levels of risk associated with each marketing alternative. This assessment should include a review of the consequences of risk on the financial, physical, and psychological well-being of the producer.
5. They identify a price decision model or mechanism which will eventually lead the decision-maker to the **most realistic** or pricing action.
6. They evaluate the outcome of the marketing plan. If a goal is not met, needed changes can be identified through evaluation. Actually, evaluation of a plan is a continuous process, not one just done at the time the livestock is delivered. Marketing plans are not static but dynamic and flexible. They are constantly in need of review and possible change.

Marketing questions which require a decision model

Livestock producers are faced with a number of marketing questions which can be answered by the use of the six-step planning process just outlined. They are:

1. **At what price level should I market?** By asking this question, a livestock producer is perhaps taking the most critical step in planning. It suggests an

**Marketing Questions
Faced by Livestock
Producers:**

1. Price level to market?
2. When to price?
3. Where to market?
4. What to market?

Marketing Rule:

If the price difference between point A and point B is equal to or greater than the shipping cost, then ship to A.

attempt to identify where he or she wants to go. By so doing, the numerous alternatives available are significantly reduced. A good chance exists that the optimum can be identified. Considerations needed to answer this question will be discussed later.

2. **When should I price?** This question is related to the previous one. Producers no longer are limited to taking the price offered at the time livestock are delivered to market. Futures markets and direct forward contracts have greatly expanded the time frame in which to price. For most livestock commodities, it can span a period of about 15 months before the market delivery date. Unfortunately, this greater range of time means greater risk, and the task of developing a pricing plan is made much more difficult than if the livestock producer merely accepts the cash price at delivery.

These two marketing questions are unique in that they deal exclusively with pricing decisions related to the price level. They are intimately tied to the time dimension of the market, with all of its uncertainties and risks. All livestock producers are keenly aware that conditions can change between the time these pricing decisions are made and the time the product is actually delivered.

We will spend more time focusing on these two pricing questions and the planning process needed to make rational pricing decisions; but before we do, let's briefly identify two other marketing questions which also require planning. They include:

3. **Where should I market?** Generally, the secret here is to be able to select the highest price, minus transportation and handling costs, from among the outlets available. **A rule to follow in this decision is:** If the price difference between point A and point B is equal to or more than the costs of shipping, **then** ship to A. Although information is needed to develop this plan, the steps are far easier than for the two pricing questions.

Marketing Rule:

If the price difference between weights B and A is equal to or more than the cost of producing weight B versus A, then put on more weight.

Pricing Questions are Related to:

1. Production schedule/volume
2. Financial condition, goals and needs
3. Attitude of producer
4. Economic conditions of market

4. **What should I market also needs to be determined.** Within a given marketing year, most livestock producers will face the question of what grade and what weight to sell livestock. As was the case with the question of where to market, this decision should involve a comparison of price and cost differences. For example, it would pay a livestock producer to improve grade or increase weight of an animal if the additional (marginal) cost of the added feed to increase grade or weight is less than the additional (marginal) return. **A rule to follow for this decision would be:** If the price difference between weight B and weight A is equal to or more than the additional cost of producing weight B versus A, then put on more weight. The marketing decision needed to answer this question is rather straightforward and not too difficult.

Let's now return to an illustration of the steps needed to develop, implement, and evaluate a marketing plan which deals with the two pricing decisions: **at what level to price and when to price.** Plans to effectively deal with these questions are generally the most complex, and perhaps the most frustrating of the four questions and deserve the major bulk of our remaining time.

Stop
1

Important planning areas

These two important pricing questions are related to the analysis, understanding and linkage of four important areas. These include:

1. The production schedule to be followed and volume produced. For example, are hogs going to be marketed once a year, twice a year or every six weeks? And how many hogs will be marketed in a single group? This information will help you select from among the alternatives available to meet your pricing goals.
2. The financial condition, goals, and needs of the livestock operation provide a source of objectives to guide the planning process as well as to assist producers in evaluating contract and outlook prices. The financial analysis will often suggest potentially good prices and profits.
3. The attitude of the livestock producers regarding risk and their ability to assume it is knowledge that helps avoid potential dangers in waiting too long to price and setting a price goal too high.

4. The economic conditions of the market as suggested from either fundamental or technical analysis of the market, including the probabilities of attaining given price levels and pricing goals interjects realism into the planning process. It helps avoid the setting of pricing goals which are either too high or too low.

It is entirely possible, even though not advisable, to make pricing decisions by focusing on only one of these important areas in developing a pricing plan. For example, a livestock producer could choose to cover all costs plus a 20 percent return on investment without even considering the analysis of the market. But this goal might be unrealistically high, given the situation in the market. A producer might set price goals based entirely on technical analysis of the market. But without financial knowledge of the operation, good prices and profits might be by-passed in an effort to peak the market.

Sound planning, by asking the questions of at **what level** and **when** to price require a systems approach using all four of the items we just discussed. The development of plans should not be done in a vacuum. Market planning should be consistent with farm and family financial goals. Those goals, in turn, should be consistent with the realities of the market. Livestock producers should know what prices are necessary to achieve specific farm and enterprise financial goals. Such knowledge gives them confidence to make decisions when price goals are reached and reduces the frustration when prices go higher after a decision is made.

Let us now focus more sharply on the development of a specific pricing plan for a livestock producer. The two most important components of the individualized pricing plan are, first, some stated **goals** which can be used as criteria to judge the ultimate success or failure of a plan and, second, a specific **pricing decision model** or mechanism which triggers action on the part of the decision-maker when those goals (criteria) are reached.

As has been mentioned before, pricing goals should be realistic enough so they can be attainable. A goal to improve the price level for hogs by 10 percent is probably attainable; whereas, a goal to peak the market every year is foolhardy. A goal to achieve the increase over a 3 to 5-year period is likely; whereas, a goal to reach it every year is likely to be unrealistic.

A specific pricing plan has:

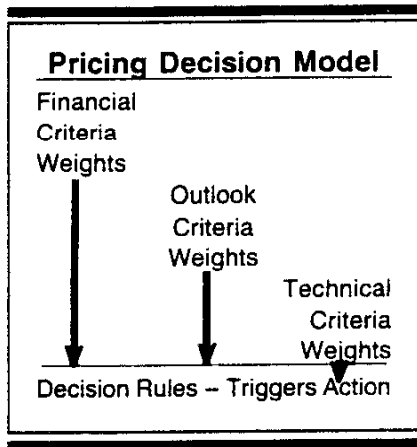
- Specific goals that can serve as criteria for judgement
- A pricing mechanism which triggers action when goals are reached

Developing a pricing decision model

Perhaps the most important step in developing a pricing plan is to use a decision model which triggers action. Without a specific rule, livestock producers easily stand by and watch prices climb to a peak and then fall back. It's human nature to not want to price when prices are moving up. To avoid this indecision, producers need a set of rules that dictate which day to price and how much to price.

A pricing decision model should be made up of three major components. These components include (1) some decision criteria, (2) a way to place relative weights of importance on these criteria, and (3) a set of decision rules based on these weighted criteria which will trigger pricing action.

Criteria for making a pricing decision can come from a number of areas of analysis. They could be related to the (1) financial conditions and needs of the farm or enterprise, (2) contract and cash pricing opportunities, known as outlook information, and (3) technical conditions in the market. All have an important bearing on sound decisions (see Appendix B Price Decision Model). Let's look at each set of criteria more closely.



Stop
2

Financial conditions and needs of the enterprise

A useful criteria which should be weighted into any pricing decision is the financial needs or cash flow requirements of the enterprise. These needs can eventually be expressed in terms of dollars per hundredweight.

More than one cash flow need level should be calculated or problems can develop. For example, a single cash flow (income) level calculated to cover every conceivable cost in livestock production could cause frustrations some years if market conditions reveal that the chance of obtaining that single goal is rather low. Therefore, to hold too tightly to it and, thus, delay pricing at some lower level could be a mistake.

These cash flow needs should be listed from some minimum level needed to just keep the livestock operation from failing to higher levels which would cover annual operation expenses, such as allowing for debt repayment, increases in standard of family living, and major expansion of the operation. By calculating a number of cash flow needs, the livestock producer can develop a feel for not attaining certain price levels.

Examples of Cash Flow Needs

- Keep operation afloat
- Plus debt repayment
- Plus min. family living
- Plus higher family living
- Plus operation expansion

Examples of Cash Needs

- Keep operation afloat \$28,750
- Plus:
- Debt repayment 30,000
- Minimum family living 31,250
- High level family living 32,500
- Expansion of operation 33,750

Examples of Cash Flow Needs

- Keep operation afloat \$46/CWT
- Plus:
- Debt retirement 48/CWT
- Minimum family living 50/CWT
- High level family living 52/CWT
- Expansion of operation 54/CWT
- 250 hogs at 250 pounds--625 CWT

Livestock Marketing Alternatives Are:

1. Forward Contract
2. Futures Contract
3. Cash Market

An example of this step might be helpful. Suppose a hog producer sells 250 hogs four times a year. The hog producer is attempting to develop a pricing plan on one lot of 250 hogs which will average about 250 pounds. The producer calculates cash flow or income needs as shown here. To keep the operation afloat, the family calculates that it would take \$28,750; if some debt repayment were to occur, they would need \$30,000. To allow some income for family living would call for \$31,250 and \$32,500 and to expand the operation would likely require \$33,750. (See Appendix C.)

It is likely that each individual livestock producer would have unique cash flow descriptions and levels of cash flow needs, depending on production efficiency, financial situation and the individual's interest in calculating a number of cash flow needs and goal levels. Your facilitator may want to help you calculate some cash flow projections for your own farm at this point.

It is generally easier to use these cash flow needs as criteria for pricing decisions if they are expressed in dollars per cwt. These prices can be referred to as threshold prices. They represent minimum price levels needed to obtain the various cash flow levels. In the example, these threshold prices can be calculated by dividing the various cash flow needs by the total pounds of hogs sold. The threshold prices associated with the various cash flow need levels would range from \$46.00 to \$54.00 per cwt. (See Appendix D.)

It is important to realize that the calculated prices at this point are merely threshold prices and should not be thought of as objectives. They are only prices needed to cover certain projected cash flow needs. One of them might eventually become a price objective after all steps of the pricing decision are completed.

Stop
3

Analyzing contract and cash price prospects

Contract and cash price prospects and probabilities are the next set of criteria which should be included in the decision model. The alternatives available which must be assessed should the producer enter into a forward contract with a meat packer or commission firm, should he/she hedge livestock using a futures market contract or option and assume basis risk or should he/she wait to price in the cash market at the time the livestock are delivered to market.

In order to make a sound pricing decision consistent with stated goals, livestock producers need to be able to place some bounds (odds) on what the future basis and cash price are likely to be. The analysis needed to attain these bounds (odds) can be complex or relatively simple. It can

Bounds for Making Decisions:	
Step 1	
Determining Today's Prices:	
Forward contract	\$50
Futures contract	\$52

Bounds for Making Decisions:	
Step 2	
Estimating Basis:	
Widest possible	\$2.50
Narrowest possible	1.50
Most likely	2.00

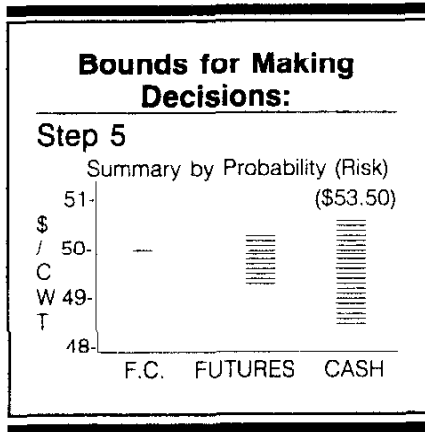
Bounds for Making Decisions:			
Step 3			
Estimating Net Hedge Return:			
	WIDE	NARROW	LIKELY
FUTURES	\$52.00	\$52.00	\$52.00
- BASIS	2.50	1.50	2.00
NET	49.50	50.50	50.00

include an analysis of the fundamental factors affecting price or technical analysis of the market. An illustration of a relatively simple approach is shown here. (See Appendix E.) The first step is to determine what the forward contract and futures market bid prices are. In this case, let's assume that the local packer will pay \$50.00 per cwt. for delivery of hogs in four months. In addition, the producer knows through a local newspaper or commodities broker that he or she can sell a Chicago Mercantile Exchange futures contract which calls for delivery at about delivery time for \$52.00 per cwt.

The next step is for the livestock producer to determine what the local basis might be at about delivery time. Basis is defined as the estimated difference between the expected futures contract price and the local price for livestock at the time the livestock are ready for market. Specifically, the producer at least needs to state what he or she thinks will be the widest possible basis at delivery, the narrowest possible basis, and the most likely basis. If the producer is familiar with the history of local basis, he or she should be able to arrive at a reasonably specific projection of what these basis levels will be. If not, such a history of basis can often be obtained from a local county agent or from a farm neighbor who is known to be a good marketer. In any case, it might pay the producers to start keeping records of basis for their own use by simply making a call to a packer once a week (on the same day) and ask for the cash bids and the corresponding settlement for the nearby futures price for that day. If there is any question on basis at this point, your facilitator can help you understand this important concept.

Once basis is known, the third step can be taken. This is to determine the net cash price the producer could expect to receive from hedging on the futures market. Remember that the price he or she anticipates receiving from hedging on the futures market is simply the difference between the price at which the futures contract is sold and the expected future basis. In our example then, if we subtract the three different basis figures from the futures price of \$52.00, and arrives at a range of net futures hedging prices of from \$49.50 to \$50.50 per cwt. When all is said and done, the widest possible basis becomes the lowest possible net cash price, the narrowest possible basis becomes the highest possible net cash price and, of course, the most likely basis also becomes our most likely net cash price.

Bounds for Making Decisions:	
Step 4	
Estimating Delivery Cash Price:	
Highest possible	\$53.50
Lowest possible	48.50
Most likely	49.75



Bounds for Making Decisions:	
Step 5	
Risk in Price Ranges	
Forward	<input type="checkbox"/> No Risk
Contract	\$50.00
Price	
Futures	<input type="checkbox"/> ——— <input type="checkbox"/> Mod. Risk
Prices	\$49.50 \$50.50
Expected	<input type="checkbox"/> ——— <input type="checkbox"/>
Cash	\$48.50 \$53.50
Prices	High Risk

The fourth step is to determine what the producer expects cash outlook prices will be at the desired time of delivery. Producers need not be experts on forecasting prices to have an opinion about the highest possible price, the lowest possible price, or even the most likely. It would be difficult to find a farmer who has absolutely no opinion on these prices on the basis of materials they have read from the U.S. Department of Agriculture, their state Extension specialists, their farm advisory service or discussion down at the local coffee shop. The main concern here is that the producer be honest with himself or herself in expressing his or her price expectations. In our example, it is expected that the highest possible price to be received in the cash market is \$53.50 per cwt., the lowest possible price is \$48.50 per cwt., and the most likely is \$49.75 per cwt.

The fifth and final step is to summarize this in a table or graph. In step 5, the producer has now been provided with better estimates of the prices that might be received by each pricing method and their associated risk or probability. For example, it is still a virtual certainty to receive \$50.00 per cwt. on a cash forward contract with the local packer. But the prices expected by hedging in the future market would be less certain because of basis risk. In this example, the net hedging price estimate could range from the lowest possible price of \$49.50 per cwt. to \$50.50 per cwt. with the associated risk of not receiving each of these prices ranging from low to high.

The predicted outlook price to be received by making a cash sale at a later date are even less certain than hedging. Here the seller is subjected to both price level and basis risk. In this example the price predictions range from a low of \$48.50 per cwt. with a low risk of not receiving it to \$53.50 per cwt. with a rather high risk of not receiving it.

It is important to note one thing about these ranges. Typically, the range on the net futures price will be considerably narrower than the range on the expected cash price, especially if the producer has been realistic in expressing cash price expectations with his or her ability to forecast. The wideness of the range, of course, illustrates the degree of risk associated with each pricing method. The wider the range in prices he or she might expect to receive, the greater the risk will be involved in obtaining a particular price in that range. Again, in this example, the decision to price on cash sale at a later date would have the greatest risk associated with it in contrast to forward contracting which has virtually no risk or hedging which has some risk associated with the basis.

Probabilities of Min. Price Levels From Various Markets			
Thres- Hold Levels	Probability		
	Cash Market	Forward Cont.	Futures Hedge
CWT	Percent		
\$46	80	100	100
48	75	100	100
50	70	100	98
52	65	65	67
54	60	60	60

Rather than the subjective probabilities of high, low and moderate, one can use specific probabilities depending on whether a livestock producer has the ability to calculate these or a source to attain them. If available, it is possible to construct a table similar to the one shown here. (See Appendix F.)

Column 1 is a series of different price levels net the farm. The range of these can approximate the range of the calculated threshold prices. Column 2 shows the calculated odds on a given day of cash prices being at these levels at market time. Column 3 shows the odds of getting certain prices under forward contracts, assuming that a contract is offered at \$50 per cwt. on that day (\$52.00 Chicago futures contract less an estimated \$2.00 basis). If a contract offer is not accepted, the odds of the contract price going higher generally takes on about the same odds as speculating in cash. Column 4 shows the odds of attaining the prices under a futures contract hedge. As indicated, this contract would be expected to be slightly more risky than a direct contract because the estimated \$2.00 basis might not be exactly at that level when the hedge is lifted.



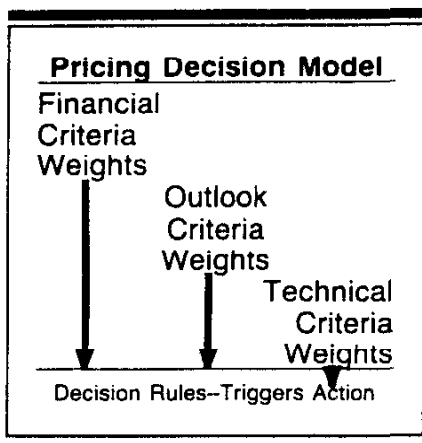
Technical analysis results as criteria

In addition to using financial and fundamental outlook criteria as a basis for pricing decisions, some decision-makers are also using technical analysis. Technical analysis focuses on price movements and patterns as a source of price signals. These patterns include trends, cycles, and seasonal movements as well as shorter term price patterns. They can be useful in making price predictions, in calculating odds or as buy-sell signals in the market.

Those people interested in technical analysis might best start with subscriptions to some professional market service. This service will provide weekly updates on price charts and the interpretation of these charts. Unless livestock producers are experienced in the use of technical analysis, they should put less weight on this criteria than upon the financial, contract and outlook criteria discussed earlier.

Placing weights on criteria factors

A major problem a decision-maker faces in making pricing decisions is determining how much weight to place on each criteria. This is an individualized decision. Some livestock producers will want to place more weight on pricing when a contract price tends to cover a selected



Examples of Pricing Model Criteria & Weight Comparisons

Current Contract Prices Versus:

- A. Financial needs of the enterprise (Threshold Price)
- B. Outlook prices
- C. Signals from tech. analysis

Example Criteria and Weights

A. Current Contract Price vs. Financial Need

WGT CONTRACT PRICE IS:

- 1 Much below (5%) threshold
- 2 Some below (5%) threshold
- 3 Equal to threshold
- 4 Mod. over (2-3%) threshold
- 5 Well over (5%) threshold

Threshold price; others will want to take more risk and "wait" for the market to increase as perhaps suggested by technical signals.

Regardless of the weighting process, all decision-makers need something against which to measure the various criteria. In this unit we are using current contract prices available from meal packers or commission firms as the measuring stick. In other words, this question is always asked: how do the current contract prices compare with the level of cash flow needs, and outlook predictions and technical signals.

Let's look at an example of how these criteria might be stated and weights assigned to each. (See Appendix G.) First, you will recognize the three categories which we have been dealing with. We will now develop further the notion of criteria and weights of them in order to make marketing decisions and trigger pricing action. The comparisons of criteria we will make are: the current contract pricing opportunities versus financial needs of the enterprise (threshold prices), the current pricing opportunities versus outlook prices, and the current contract prices versus current signals from technical analysis.

Let's take a look at A more closely - - current contract prices versus financial needs of the enterprise. The livestock producer has assigned the following criteria factors and weights as influenced by the degree to which the criteria relates to the current contract price. For example, a weight of 1 is assigned to a situation where the current contract price is well below a specified cash flow need. In contrast, a 5 is assigned where the contract price is well above the threshold price.

Similar criteria factors and weights are developed for B in comparing current contract prices versus outlook prices with weights of 1 through 4 serving as decision making criteria.

Category C as it relates to current pricing opportunities versus rank according to signals from technical analysis have in this example three weights relating to upward stable or downward trends in charting the markets.

As was mentioned before, individual livestock producers can leave out certain criteria or assign different weights to each. For example, a producer who has no experience in technical analysis can still develop a marketing plan by using only the first two categories and by leaving out technical analysis entirely.



Example Criteria and Weights

B. Current Contract Price vs. Outlook

WGT CONTRACT PRICE IS:

- 1 Much below outlook price
- 2 Mod below outlook price
- 3 About equal to outlook
- 4 Mod Above outlook price

Example Criteria and Weights

C. Current Contract Price vs. Technical Signals

WGT CONTRACT PRICE IS:

- 1 Short term uptrend
- 2 Sideways trend
- 3 Short term downtrend

Making Pricing Decisions

OPTIONS	CRITERIA		
	A Only	A&B	A,B&C
	AGGREGATE SUM-WGTS		
No Forward Pricing	1-2	2-5	3-7
Price Some Production	3	6	8
Scale Up Amt. To Be Priced	4	6	9-10
Price Remain. Of Production	5	9	11-12

Developing decision rules

Perhaps the most difficult step in pricing for the average livestock producer is to take specific action on pricing. The problem is generally associated with the failure to lay out some definite decision rules based on the weighted criteria just developed. This is illustrated in the following table. (See Appendix H.)

Notice the pricing options that the producer has defined in the left hand column. With criteria weighted, the producer can use this table to make decisions on whether or not to forward price based on the aggregate sum of the weighted scores. If the weighted aggregate score increase a little more, then the producer can price some of his/her products during this time period. Let's take some specific examples to illustrate this further.

Suppose a livestock producer used the weighted criteria calculated in the previous diagram, but only used criteria A in the first column (a comparison of the current contract price with needed threshold prices) as a basis for developing a pricing rule. If this aggregate sum of the weights of factors in criteria A are 1 or 2, meaning that the contract price is below a given threshold price, this livestock producer would do no contract pricing. If the weights summed to 3, meaning that the contract price is equal to the objective threshold price, he or she would decide that some pricing should be done. If the weighted score is 4, meaning that the contract price is above the objective threshold price, a decision could be made to scale up pricing in that period. If the score is 5, he or she would decide to price everything at this time for later delivery.

Now suppose another livestock producer uses both the financial needs of the enterprise (A) plus some outlook predictions (B) as criteria for developing a pricing decision rule. The procedure is the same as outlined for the first farmer but the weighted sums are different. For example, if the aggregate sum of criteria factor weights in the table are between 2 and 5, no forward pricing is done. An aggregate score of 6 would elicit some pricing and so on to a point where a total score of 9 would trigger complete output pricing.

Now suppose a livestock producer uses the first two criteria A, B plus C which is some technical analysis. The aggregate sum to trigger pricing action would be more than where only two criteria were used. They would be as shown in the table. By using a decision rule model such as this, definite actions could be taken. Your facilitator will want to help you understand this final step further with some situational exercises in a few moments.

Whatever the criteria used, some objective method must be pre-specified that will result in getting the pricing task accomplished. Producers should start with a system they can feel comfortable with. Then make modifications in it as they learn of its weaknesses and strengths. If the scoring system does not trigger any sales during a period, a time criteria should be used to force producers to make some sales before the end of the period.

Now, how often should this decision process be carried on: once a day?; once a week?; once a month?; etc. The answer again is that it depends on the individual. Some producers follow the markets at least once a day and make pricing decisions at least this often. Others don't have the time or desire to make these decisions that often. One must remember, however, that unless it is done daily some pricing opportunities can be lost.

Summary

It has been pointed out in this unit that livestock market pricing decisions should be based on weighted criteria and a decision rule. The criteria for making pricing decisions can be farm financial information expressed as threshold prices, personal information relating to the ability of the individual to handle risk and, finally, market information regarding contract and outlook situations. These are all weighted to various degrees in coming up with a decision rule which can be used to trigger action on the part of livestock producers.

Even with the best laid plans, marketing is not easy. But it will be more successful and less frustrating if planning precedes action.



The marketing management decision approach used in this video script is patterned after an approach developed by the author in cooperation with Professor Paul Hasbargen and Professor Earl Fuller, University of Minnesota and Dr. Hal Everett, formerly from the University of Minnesota in a marketing management study letter series developed in 1983.

Exercise 1 - case example

Exercise 1 - case example

Let's assume our case farm to be a hog producer in southern Minnesota. We will assume that this hog producer sells 1,000 hogs per year in four equal bunches of 250 hogs. Sales are made in all four quarters of the year. The case example will be for one group of 250 sold in the third quarter (July) of the year weighing 250 pounds per hog.

Worksheet #1 is used to calculate cash flow requirements. Step 1 of Worksheet 1 shows the assumed production costs for this bunch of hogs.

The best source for these costs is from the records of the individual producer. If these are not available, estimates can be made based on the information available from your Cooperative Extension Service at your Land Grant University. University of Minnesota factsheet on hog operation costs is attached as an example (Appendix A). Others available are:

- FM-501 Cattle Feeder's Planning Guide - Should I Feed Cattle?
- FM-530N Beef Cow Herd Planning Guide - Should I Produce Feeder Cattle in Northern Minnesota?
- FM-530S Beef Cow Herd Planning Guide - Should I Produce Feeder Cattle in Southern Minnesota?
- AG-FO-2276 Farming in Southern Minnesota: Opportunities and Requirements

In our case farm example, the sale would have to generate a total cash flow of \$22,501 for the entire lot to cover these cash production costs. This would work out to be \$90 per head and \$36 per cwt. Complete the calculations in Columns 2 and 3 of step 1.

Step 2 shows additional cash flows that would be needed. These are estimates by the livestock producer of the cash flow needs in order to meet the desired goals (returns) to labor and investment capital. Additional cash flow levels can be added to the worksheet if desired. Step 2 shows these amounts ranging from \$6,250 to \$11,250 more needed. Calculate the figures for Columns 2 and 3 step 2.

Step 3 in the worksheet sums the cash flow needs from steps 1 and 2, giving a number of different cash flow levels or goals. These will become threshold prices in the next worksheet and will eventually be compared with pricing opportunities in later worksheets to make pricing decisions. Definitions of these terms are in the footnote to Worksheet 1. Complete the calculations in Columns 1-3 step 3. Compare your worksheet with worksheet 1 page 33.

Exercise 1 - worksheet

CASH FLOW REQUIREMENTS FOR LIVESTOCK ENTERPRISES

Type of livestock _____
 Approximate sale date _____
 Approximate sale number in lot _____
 Approximate sale weight per head _____

WHAT ARE MY CASH FLOW NEEDS?

	<u>Total \$/Lot</u>	<u>\$ Per Head</u>	<u>\$ Per Cwt. Sold</u>
STEP 1. CASH FLOW TO COVER PRODUCTION COSTS OF:			
Feeder animals purchased	0	_____	_____
Feed: (purchased and/or raised) (breakout if desired)	14,850	_____	_____
Marketing and hauling	938	_____	_____
Equipment and power	2,025	_____	_____
Veterinary and medicine	1,250	_____	_____
Interest on lvst. & operating capital	1,563	_____	_____
Hired labor	625	_____	_____
Other	1,250	_____	_____
Total	22,501	_____	_____
STEP 2. CASH FLOW TO COVER ADDED RETURNS TO FAMILY LABOR AND INVESTMENT CAPITAL:*			
a. Sub par	6,250	_____	_____
b. Minimum	7,500	_____	_____
c. Desired	8,750	_____	_____
d. Hoped for	10,000	_____	_____
e. Hoped for +	11,250	_____	_____
STEP 3. TOTAL CASH FLOW NEEDS:			
Sub par return (1 + 2a)	_____	_____	_____
Minimum return (1 + 2b)	_____	_____	_____
Desired return (1 + 2c)	_____	_____	_____
Hoped for return (1 + 2d)	_____	_____	_____
Other return levels (1 + 2e)	_____	_____	_____

* These are defined as follows:

- Sub par - covers production costs, capital investment, but no return to labor
- Minimum - covers the above costs plus a minimum return to labor (family living)
- Desired - covers the above plus labor returns high enough to maintain family living and/or farm business expansion.
- Hoped for - covers the above plus increase in family living and/or further expansion in farm business
- Hoped for + - covers the above plus further increases in family living

A marketing strategy for livestock

Exercise 2 - case example

Exercise 2 - case example

Worksheet 2 is used to calculate the corresponding threshold prices which are associated with the cash flow need levels. They are expressed in price per cwt. so that they can eventually be compared with the calculated prices available under the various pricing alternatives. The word "threshold" is used here to suggest that these prices are just sufficient enough to allow a producer to cover the desired obligations and/or goals calculated in Worksheet 1. At this point, they are not price objectives and should not be thought of as that until market conditions are analyzed (Exercise -5) and a decision rule (Exercise -6) is specified. For our case farm hog producer, the threshold price range is from \$46 per cwt. for a sub par return to \$54 per cwt. for a hoped for return. Enter all figures on worksheet 2 taking appropriate figures from worksheet 1. Compare your worksheet with Worksheet 2 page 34.

Exercise 2 - worksheet

CALCULATING THRESHOLD PRICE EQUIVALENTS

HOW CASH FLOW AND EXPENSE NEEDS TRANSLATE TO NEEDED PRICE LEVELS FOR THE COMMODITY

Cash Flow Needs and Threshold Prices

Return To Cover Cash Flow Needs	(1)	(2)	(3)
<u>Threshold Description*</u>	<u>Total \$**</u>	<u>Amount To Be Sold</u>	<u>Equivalent Threshold Price For Product Sold***</u>
		cwt.	\$ per cwt.
Sub par return	28,750	625	_____
Minimum return	30,000	625	_____
Desired return	31,250	625	_____
Hoped for return	32,500	625	_____
Hoped for + return	33,750	625	_____
Hoped for + + return	35,000	625	_____

*Terms used to describe the cash flow/income needs of the livestock enterprise. The definitions of these terms are as follows:

- threshold S (sub par return) = covers production costs, capital investment, but no return to labor (family living)
- threshold M (minimum return) = covers the above costs plus a minimum return to labor (family living)
- threshold D (desired return) = covers the above labor returns high enough to maintain family living and/or farm business expansion
- threshold H (hoped for return) = covers the above increases in family living and/or further expansion in farm business
- Threshold H+ & H+ + (hoped for returns +) = covers the above plus further increases in family living and/or further expansion in farm business

**From Worksheet I, section 3, rounded off to the nearest \$5.

***Divide column one (Total \$) by column two (Amount To Be Sold). These threshold levels constitute price levels needed to cover various cash flow needs as calculated in Worksheet 1.

Exercise 3 - case example

Exercise 3 - case example

Market price information in the case example is shown in example Worksheet 3. The analysis needed to make price predictions and probabilities can be as complex as the decision-maker wants to make it. It can involve rather elaborate predictive models using both fundamental (supply and demand) analysis or technical analysis (price patterns). Probabilities of a predicted price event actually happening in the future can be based on historical records of trends, seasonal patterns or cycles or it can involve statistical computer models. Regardless of the type of analysis used, it is essential to try to determine what price will be forthcoming under the various pricing alternatives to a producer, but also what are the odds or probability of attaining that price. In other words, it's one thing to predict that the price will be \$60 per cwt. but, if the odds are only 1 in 10 of that happening, it may not be a very useful prediction for price decision purposes.

For our case study example, the contract price from the local packer will be \$50 per hundred (Step 1). A range of expected basis (Step 2) gives us price estimates for pricing under a hedge ranging from \$49.50 per cwt. to \$50.50 per cwt (Step 3). Make step 3 calculations at this time. The assumed outlook predicted prices (Step 4) range from a low of \$49.75 per cwt. to a high of \$53.50 per cwt. If actual probabilities were used rather than the subjective terms of most likely, etc., we would assume them to be as shown in this table.

Example--Probabilities or Odds of Receiving Minimum Price Levels Using Alternative Pricing Methods

Price Level Net to Farm	Probabilities of Attaining Price Levels		
	Speculation in Cash	Direct Contract	Futures Hedge Contract
cwt.	percent		
\$46	80	100	100
48	75	100	100
50	70	100	98
52	65	65	67
54	60	60	60

Summarize data in Step 5. Compare your worksheet with worksheet 3 page 35.

Exercise 3 - worksheet

DETERMINING PRICE EXPECTATIONS AND ASSOCIATED RISK

WILL MARKET CONDITIONS MEET THE VARIOUS THRESHOLD PRICES?

Step 1. Determine the forward contract and futures market prices as of today.

Forward contract	\$	50.00
Futures contract		52.00

Step 2. Determine the basis you expect to exist at the time the commodity is sold and hedge is lifted.

Widest possible basis	\$	2.50
Narrowest possible basis		1.50
Most likely basis		2.00

Step 3. Calculate your expected net cash price from futures hedge.

	<u>Widest Basis</u>	<u>Narrowest Basis</u>	<u>Most Likely Basis</u>
Futures contract price (step 1)	\$ _____	\$ _____	\$ _____
- Expected basis (step 2)	_____	_____	_____
Expected net futures price	\$ _____ (lowest) price	\$ _____ (highest) price	\$ _____ (most likely) price

Step 4. Determine the cash price you expect to exist at the time of delivery.

Highest possible price	\$	53.50	(highest risk)
Lowest possible price		48.50	(lowest risk)
Most likely price		49.75	(moderate risk)

Step 5. Summarize price information in table below.

	<u>100% Probability</u>	<u>Lowest Possible Price and Low Risk</u>	<u>Most Likely Price and Mod. Risk</u>	<u>Highest Possible Price and High Risk</u>
Forward contract	\$ _____			
(from step 1 above)				
Net cash from futures hedge	\$ _____	\$ _____	\$ _____	\$ _____
(from step 3 above)				
Cash at delivery or contract prices later	_____	_____	_____	_____
(from step 4 above)				

Exercise 4 - case example

Exercise 4 - case example

This worksheet is a summary of information determined in the other worksheets or from outside sources. It will serve as a record of the price information needed for the decision-making models to come in Exercise 6.

More than one entry is shown on the worksheet. How often this is filled in depends on the frequency with which the decision-maker updates outlook predictions. Some farmers will do it daily, others once a week, etc.

Long range planning prices can be used in the pricing decision process as a basis for evaluating short-term contract and outlook prices. These should be entered in column 2. Long-run prices are generally thought of as average price over a five-year period. They are published periodically by your Land Grant Institution Extension Service for several locations. A copy of the University of Minnesota report is attached as an example (Appendix B). The \$49.00 price comes from there. Adjustments can be made from these central points to local points by subtracting transportation costs or normal price differences between a local area and the central point.

Columns 4a-4c (outlook price predictions) can contain outlook predictions made by university analysts as well as advisory services and other private sources.

The individual's outlook predictions (columns 5a-5c) are those taken from Worksheet 3 (Step 4). The subjective probabilities of lowest possible, most likely and highest possible are used here. Transfer these figures from worksheet 3.

Columns 6a-6d allows the price predictor to assign more precise objective probabilities to various price predictions if his/her skills or sources permit it. Prices approximating the threshold price range or market possibility range should be filled in the blanks in the heading. Various probabilities of attaining these price levels should be filled in the blanks under the heading. This information substitutes for the information in columns 5a-5c if it is used. Make your estimates and compare your worksheet with worksheet 4 page 36.

A marketing strategy for livestock

Exercise 4 - worksheet

SUMMARY OF PRICE INFORMATION

(1) Delivery Month Or Period	(2) Local Long-Run Planning Price		(3) Local Contract Price		(4a) Outlook Price Pred.		(4c) Others		(5a) Outlook Price Level			(5c) Individual's Possible Likely Highest		(6a) Individual Outlook Price Level Pricing Price Levels**		(6d)		
	Univ.	1	2	1	2	Lowest	Likely	Highest	--probability of attaining--									
Feb.																		
May																		
July	49.00		49.50			52.50	48.00											
Nov.																		

* To be filled in next time predictions are made in: next hour, next day, next week, next month.
 ** Fill in prices ranging from threshold price and/or market potential.

A marketing strategy for livestock

Exercise 5 - case example

Exercise 5 - case example

In this worksheet the livestock producer must use some individual judgment in specifying the criteria he/she wishes to use in developing the decision model criteria and in assigning given weights to each criteria. As was indicated in video script, these criteria factors should be stated in comparison to the current contract prices for the commodity being analyzed. Generally, the weights placed on these criteria factors are from 1 to 4 or higher depending on the number of criteria used, but could also be less than or more than these numbers for any one criteria. For example, .5 or 2.5 could be used. In this worksheet six spaces are provided for criteria factors. More can be added if desired. Five examples are given on Worksheet 5. Develop 8 additional examples and compare your worksheet with worksheet 5 page 36.

As was pointed out in the video script, all price decision-makers do not use all of the criteria shown in the worksheet, especially technical analysis. Even though it is not necessary to use all of the criteria (financial needs, outlook, technical analysis), it is recommended that the financial criteria and contract opportunities be used by all decision-makers in making pricing decisions. As skills improve, decision-makers can move to the other criteria.

This worksheet forces a decision-maker to think through and write down how important various financial, contract, outlook and technical conditions are to that person. It helps to avoid the problem of "putting all your eggs in one basket."

Our case farm hog feeder does some technical analysis of charts and price patterns, so we will assume that he will use all three criteria in coming up with a decision.

Descriptions of the various decision rules are assumed to be as specified in Worksheet 5 for the case example. The decision rule allows the hog producer to delay any pricing on any one decision date or to pricing all planned output for the third quarter of the assumed year.

Exercise 5 - worksheet

IDENTIFYING DECISION RULE CRITERIA AND ASSOCIATED WEIGHTS

PRICING DECISION MODEL CRITERIA AND WEIGHTS

- A. Current contract pricing opportunities versus financial needs.

<i>Weights</i>	<i>Criteria Description</i>
1.5	significantly below (8 percent) desired (D) threshold price
_____	_____
_____	_____
_____	_____
5.5	well above (8 percent) desired (D) threshold price
_____	_____

- B. Current contract pricing opportunities versus outlook price prediction.

<i>Weights</i>	<i>Criteria Description</i>
1.5	significantly below updated "most likely" outlook price
_____	_____
_____	_____
_____	_____
5.5	well above "most likely" outlook price
_____	_____

- C. Current contract pricing opportunities versus rank according to current signals from technical analysis.

<i>Weights</i>	<i>Criteria Description</i>
2.0	about equal to sideways trend pattern
_____	_____
_____	_____
_____	_____
_____	_____

Exercise 6 - case example

Exercise 6 - case example

This worksheet provides the triggering mechanism in the pricing decision process. It uses the weighted decision factors developed in the previous worksheet.

The decision statements in column 1 can be stated differently than the examples used here. There can also be more terms used than those stated here. Again, this is an individual decision which will ultimately depend on the goals of the individual, skills in financial and price analysis and complexity desired in the marketing plans.

The decision which has to be made in completing this worksheet is what aggregate sums of the weighted criteria will be used to trigger actions to price. This again must be an individual decision even though sums used will generally approximate the sums shown in the video script example and the case study.

Remember these are aggregate numbers. Even though they increase as the number of criteria increase, i.e. A or AB or ABC, they tend to trigger the same decisions.

However, as more criteria are used, it is likely that both the soundness and accuracy of the decision will increase.

We will assume that the aggregate sum of all factors for the three criteria for our case farm hog producer totals 10 (Worksheet 5). The total score comes from a score of 3.5 for criteria A (current contract price equal to desired level of cash flow); a score of 3.5 for criteria B (current contract price about equal to current outlook price), and a score of 3 from criteria C (a trend signal that current contract pricing alternatives will begin to trend downward).

Based on this aggregate score, this hog producer has a strong urge to price a portion of his/her 250 hogs at this time at the \$50 per cwt. contract price or the hedge price since he/she cannot afford to take a great deal of price risk.

Additional Exercise:

A set of blank worksheets -1-6 (pages 39-44) is attached so producers can develop a marketing plan unique to their own farm.

Exercise 6 - worksheet

DEVELOPING THE PRICING DECISION RULE

Pricing Decision Rule

Decision Statements	Criteria Used In Decision Rule		
	A Only*	A & B*	A, B & C*
	-----sum of criteria weights-----		
No forward pricing of future sales	1.5 - 2.5	_____	_____
Price some of futures sales in this time period	_____	_____	_____
Increase in amount to be priced during this time period	_____	_____	_____
Price remainder of amount that can be priced during this time period	_____	_____	_____

* Criteria defined:

A = current contract pricing opportunities versus financial needs

B = current contract pricing opportunities versus outlook price prediction

C = current contract pricing opportunities versus rank according to current signals from technical analysis

Video questions

Answer the following questions by indicating whether you feel they are true (T) or false (F).

- _____ 1. A marketing plan should integrate production and marketing information.
- _____ 2. Peaking the market should be the ultimate goal for any livestock producer.
- _____ 3. A net price in a hedge can be predicted with 100 percent accuracy.
- _____ 4. Reducing risk can be as much an acceptable goal in pricing as peaking the market.
- _____ 5. Calculation of potential net returns in a livestock hedge only requires the use of the basis (expected or actual) at the end of the hedge.
- _____ 6. Knowledge of financial goals and cash flow needs helps livestock producers evaluate whether market prices are good or bad.
- _____ 7. Estimating financial returns in a livestock hedge requires knowledge of what the basis will be in the future when the livestock are sold.
- _____ 8. Livestock producers should always contract whenever the contract price equals the breakeven price in livestock production.
- _____ 9. Pricing goals can be generalized from one producer to the next.
- _____ 10. The ability of a livestock producer to take price risk along with the producer's financial condition should be weighted into a price decision model.
- _____ 11. The odds of attaining a certain price level are generally better under a forward contract with a packer than for either hedging or delayed selling in the cash market

Exercise 1 - worksheet key

CASH FLOW REQUIREMENTS FOR LIVESTOCK ENTERPRISES

Type of livestock	complete hog
Approximate sale date	July
Approximate sale number in lot	250
Approximate sale weight per head	250

WHAT ARE MY CASH FLOW NEEDS?

	<u>Total \$/Lot</u>	<u>\$ Per Head</u>	<u>\$ Per Cwt. Sold</u>
STEP 1. CASH FLOW TO COVER PRODUCTION COSTS OF:			
Feeder animals purchased	0	0	0
Feed: (purchased and/or raised) (breakout if desired)	14,850	59.40	23.75
Marketing and hauling	938	3.75	1.50
Equipment and power	2,025	8.10	3.25
Veterinary and medicine	1,250	5.00	2.00
Interest on lvst. & operating capital	1,563	6.25	2.50
Hired labor	625	2.50	1.00
Other	1,250	5.00	2.00
Total	22,501	90.00	36.00
STEP 2. CASH FLOW TO COVER ADDED RETURNS TO FAMILY LABOR AND INVESTMENT CAPITAL:*			
a. Sub par	6,250	25.00	10.00
b. Minimum	7,500	30.00	12.00
c. Desired	8,750	35.00	14.00
d. Hoped for	10,000	40.00	16.00
e. Hoped for +	11,250	45.00	18.00
STEP 3. TOTAL CASH FLOW NEEDS:			
Sub par return (1 + 2a)	28,751	115.00	46.00
Minimum return (1 + 2b)	30,001	120.00	48.00
Desired return (1 + 2c)	31,251	125.00	50.00
Hoped for return (1 + 2d)	32,501	130.00	52.00
Other return levels (1 + 2e)	33,751	135.00	54.00

* These are defined as follows:

- Sub par - covers production costs, capital investment, but no return to labor
- Minimum - covers the above costs plus a minimum return to labor (family living)
- Desired - covers the above plus labor returns high enough to maintain family living and/or farm business expansion.
- Hoped for - covers the above plus increase in family living and/or further expansion in farm business
- Hoped for + - covers the above plus further increases in family living

Exercise 2 - worksheet key

CALCULATING THRESHOLD PRICE EQUIVALENTS

Type of livestock	hogs
Approximate sale date	July
Approximate sale number in lot	250
Approximate sale weight per head	250

HOW CASH FLOW AND EXPENSE NEEDS TRANSLATE TO NEEDED PRICE LEVELS FOR THE COMMODITY

*Cash Flow Needs and Threshold Prices**

Return To Cover Cash Flow Needs	(1)	(2)	(3)
<u>Threshold Description</u>	<u>Total \$</u>	<u>Amount To Be Sold</u>	<u>Equivalent Threshold Price For Product Sold</u>
		cwt.	\$ per cwt.**
Sub par return	28,750	625	46.00
Minimum return	30,000	625	48.00
Desired return	31,250	625	50.00
Hoped for return	32,500	625	52.00
Hoped for + return	33,750	625	54.00
Hoped for ++ return	35,000	625	56.00

* From Worksheet 1, section 3.

** If not already calculated on Worksheet 1, divide column one in Worksheet 2 (Total \$) by column two (Amount To Be Sold). These threshold levels constitute price levels needed to cover various cash flow needs as calculated in Worksheet 1.

Exercise 3 - worksheet key

DETERMINING PRICE EXPECTATIONS AND ASSOCIATED RISK

WILL MARKET CONDITIONS MEET THE VARIOUS THRESHOLD PRICES?

Step 1. Determine the forward contract and futures market prices as of today.

Forward contract	\$	50.00
Futures contract		52.00

Step 2. Determine the basis you expect to exist at the time the commodity is sold and hedge is lifted.

Widest possible basis	\$	2.50
Narrowest possible basis		1.50
Most likely basis		2.00

Step 3. Calculate your expected net cash price from futures hedge.

		<u>Widest Basis</u>		<u>Narrowest Basis</u>		<u>Most Likely Basis</u>
Futures contract price (step 1)	\$	52.00	\$	52.00	\$	52.00
- Expected basis (step 2)		2.50		1.50		2.00
Expected net futures price	\$	49.50	\$	50.50	\$	50.00
		(lowest price)		(highest) price		(most likely) price

Step 4. Determine the cash price you expect to exist at the time of delivery.

Highest possible price	\$	53.50		(highest risk)
Lowest possible price		48.50		(lowest risk)
Most likely price		49.75		(moderate risk)

Step 5. Summarize price information in table below.

		<u>100% Probability</u>		<u>Lowest Possible Price and Low Risk</u>		<u>Most Likely Price and Mod. Risk</u>		<u>Highest Possible Price and High Risk</u>
Forward contract	\$	50.00						
(from step 1 above)								
Net cash from futures hedge	\$	49.50	\$	50.00	\$	50.50		
(from step 3 above)								
Cash at delivery or contract prices later		48.50		49.50		53.50		
(from step 4 above)								

A marketing strategy for livestock

Exercise 4 - worksheet key

SUMMARY OF PRICE INFORMATION

(1) Delivery Month Or Period	(2) Local Long-Run Planning Price	(3) Local Contract Price	(4) Outlook Price Pred.		(5a) Lowest	(5b) Individual's Outlook Price Level		(5c) Highest	(6a) 46.00	(6b) 48.00	(6c) 50.00	(6d) 52.00
			Univ.	Others		Possible	Likely					
			1	2								
					Date May 10							
Feb.												
May												
July	49.00	49.50	52.50	48.00	48.50	49.75	53.50	80%	75%	70%	65%	
Nov.												
					Date* May 17							
July	49.00	50.00	52.00	48.00	48.50	49.75	53.50	75%	65%	60%	55%	

* To be filled in next time predictions are made in: next hour, next day, next week, next month.
 ** Fill in prices ranging from threshold price and/or market potential.

Exercise 5 - worksheet key

IDENTIFYING DECISION RULE CRITERIA AND ASSOCIATED WEIGHTS

PRICING DECISION MODEL CRITERIA AND WEIGHTS

- A. Current contract pricing opportunities versus financial needs.

<i>Weights</i>	<i>Criteria Description</i>
1.5	significantly below (8 percent) desired (D) threshold price
2.5	moderately below (4 percent) desired (D) threshold price
3.5	equal to desired (D) threshold price
4.5	moderately above (4 percent) desired (D) threshold price
5.5	well above (8 percent) desired (D) threshold price

- B. Current contract pricing opportunities versus outlook price prediction.

<i>Weights</i>	<i>Criteria Description</i>
1.5	significantly below updated "most likely" outlook price
2.5	moderately below updated "most likely" outlook price
3.5	about equal to "most likely" outlook price
4.5	moderately above "most likely" outlook price
5.5	well above "most likely" outlook price

- C. Current contract pricing opportunities versus rank according to current signals from technical analysis.

<i>Weights</i>	<i>Criteria Description</i>
1.0	significantly below indicated short term upward trend
2.0	about equal to sideways trend pattern
3.0	above indicated short term downward trend

Exercise 6 - worksheet key

DEVELOPING THE PRICING DECISION RULE

Pricing Decision Rule

Decision Statements	Criteria Used In Decision Rule		
	A Only*	A & B*	A, B & C*
	-----sum of criteria weights-----		
No forward pricing of future sales	1 to 2	2 to 5	2 to 7
Price some of futures sales in this time period	3	6	8
Increase in amount to be priced during this time period	4	7 to 8	9 to 10
Price remainder of amount that can be priced during this time period	5	9	11 to 12

* Criteria defined:

A = current contract pricing opportunities versus financial needs

B = current contract pricing opportunities versus outlook price prediction

C = current contract pricing opportunities versus rank according to current signals from technical analysis

Video questions - key

Answer the following questions by indicating whether you feel they are true (T) or false (F).

T _____ 1. A marketing plan should integrate production and marketing information.

F _____ 2. Peaking the market should be the ultimate goal for any livestock producer.

COMMENT: False

F _____ 3. A net price in a hedge can be predicted with 100 percent accuracy.

COMMENT: False. The hedges will still have basis risk to contend with.

T _____ 4. Reducing risk can be as much an acceptable goal in pricing as peaking the market.

T _____ 5. Calculation of potential net returns in a livestock hedge only requires the use of the basis (expected or actual) at the end of the hedge.

T _____ 6. Knowledge of financial goals and cash flow needs helps livestock producers evaluate whether market prices are good or bad.

T _____ 7. Estimating financial returns in a livestock hedge requires knowledge of what the basis will be in the future when the livestock are sold.

F _____ 8. Livestock producers should always contract whenever the contract price equals the breakeven price in livestock production.

COMMENT: False. Not always. It will depend on the producer's goals and potential in the market.

F _____ 9. Pricing goals can be generalized from one producer to the next.

COMMENT: False. They must be individualized to the person's goals and risk attitudes.

T _____ 10. The ability of a livestock producer to take price risk along with the producer's financial condition should be weighted into a price decision model.

T _____ 11. The odds of attaining a certain price level are generally better under a forward contract with a packer than for either hedging or delayed selling in the cash market

A marketing strategy for livestock

Worksheet 1

CASH FLOW REQUIREMENTS FOR LIVESTOCK ENTERPRISES

Type of livestock _____
 Approximate sale date _____
 Approximate sale number in lot _____
 Approximate sale weight per head _____

WHAT ARE MY CASH FLOW NEEDS?

	<u>Total \$/Lot</u>	<u>\$ Per Head</u>	<u>\$ Per Cwt. Sold</u>
STEP 1. CASH FLOW TO COVER PRODUCTION COSTS OF:			
Feeder animals purchased	_____	_____	_____
Feed: (purchased and/or raised) (breakout if desired)	_____	_____	_____
Marketing and hauling	_____	_____	_____
Equipment and power	_____	_____	_____
Veterinary and medicine	_____	_____	_____
Interest on lvst. & operating capital	_____	_____	_____
Hired labor	_____	_____	_____
Other	_____	_____	_____
Total	_____	_____	_____
STEP 2. CASH FLOW TO COVER ADDED RETURNS TO FAMILY LABOR AND INVESTMENT CAPITAL:*			
a. Sub par	_____	_____	_____
b. Minimum	_____	_____	_____
c. Desired	_____	_____	_____
d. Hoped for	_____	_____	_____
e. Hoped for +	_____	_____	_____
STEP 3. TOTAL CASH FLOW NEEDS:			
Sub par return (1 + 2a)	_____	_____	_____
Minimum return (1 + 2b)	_____	_____	_____
Desired return (1 + 2c)	_____	_____	_____
Hoped for return (1 + 2d)	_____	_____	_____
Other return levels (1 + 2e)	_____	_____	_____

* These are defined as follows:

- Sub par - covers production costs, capital investment, but no return to labor
- Minimum - covers the above costs plus a minimum return to labor (family living)
- Desired - covers the above plus labor returns high enough to maintain family living and/or farm business expansion.
- Hoped for - covers the above plus increase in family living and/or further expansion in farm business
- Hoped for + - covers the above plus further increases in family living

Worksheet 2

CALCULATING THRESHOLD PRICE EQUIVALENTS

Type of commodity _____
 Approximate sale date _____
 Approximate sale number in lot _____
 Approximate sale weight per head _____

HOW CASH FLOW AND EXPENSE NEEDS TRANSLATE TO NEEDED PRICE LEVELS FOR THE COMMODITY

Cash Flow Needs and Threshold Prices*

Return To Cover Cash Flow Needs	(1)	(2)	(3)
<u>Threshold Description</u>	<u>Total \$</u>	<u>Amount To Be Sold</u>	<u>Equivalent Threshold Price For Product Sold</u>
		cwt.	\$ per cwt.**
Sub par return	_____	_____	_____
Minimum return	_____	_____	_____
Desired return	_____	_____	_____
Hoped for return	_____	_____	_____
Hoped for + return	_____	_____	_____
Hoped for + + return	_____	_____	_____

* From Worksheet I, section 3.

** If not already calculated on Worksheet 1, divide column one in Worksheet 2 (Total \$) by column two (Amount To Be Sold). These threshold levels constitute price levels needed to cover various cash flow needs as calculated in Worksheet 1.

Worksheet 3

DETERMINING PRICE EXPECTATIONS AND ASSOCIATED RISK

WILL MARKET CONDITIONS MEET THE VARIOUS THRESHOLD PRICES?

Step 1. Determine the forward contract and futures market prices as of today.

Forward contract	\$ _____
Futures contract	_____

Step 2. Determine the basis you expect to exist at the time the commodity is sold and hedge is lifted.

Widest possible basis	\$ _____
Narrowest possible basis	_____
Most likely basis	_____

Step 3. Calculate your expected net cash price from futures hedge.

	<u>Widest Basis</u>	<u>Narrowest Basis</u>	<u>Most Likely Basis</u>
Futures contract price (step 1)	\$ _____	\$ _____	\$ _____
- Expected basis (step 2)	_____	_____	_____
Expected net futures price	\$ _____ (lowest) price	\$ _____ (highest) price	\$ _____ (most likely) price

Step 4. Determine the cash price you expect to exist at the time of delivery.

Highest possible price	\$ _____	(highest risk)
Lowest possible price	_____	(lowest risk)
Most likely price	_____	(moderate risk)

Step 5. Summarize price information in table below.

	<u>100% Probability</u>	<u>Lowest Possible Price and Low Risk</u>	<u>Most Likely Price and Mod. Risk</u>	<u>Highest Possible Price and High Risk</u>
Forward contract	\$ _____			
(from step 1 above)				
Net cash from futures hedge	\$ _____	\$ _____	\$ _____	\$ _____
(from step 3 above)				
Cash at delivery or contract prices later	_____	_____	_____	_____
(from step 4 above)				

A marketing strategy for livestock

Worksheet 4

SUMMARY OF PRICE INFORMATION

(1) Delivery Month Or Period	(2) Local Long-Run Planning Price	(3) Local Contract Price	(4) Outlook Price Pred.		(5a) Lowest	(5b) Individual's Outlook Price Level		(5c) Highest	(6a)	(6b) Individual Outlook Price Level Pricing	(6c) Individual Outlook Price Levels**	(6d)
			Univ.	Others		Possible	Likely					
			1	2								

--probability of attaining--

* To be filled in next time predictions are made in: next hour, next day, next week, next month.
 ** Fill in prices ranging from threshold price and/or market potential.

Worksheet 5

IDENTIFYING DECISION RULE CRITERIA AND ASSOCIATED WEIGHTS

PRICING DECISION MODEL CRITERIA AND WEIGHTS

- A. Current contract pricing opportunities versus financial needs.

<i>Weights</i>	<i>Criteria Description</i>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- B. Current contract pricing opportunities versus outlook price prediction.

<i>Weights</i>	<i>Criteria Description</i>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- C. Current contract pricing opportunities versus rank according to current signals from technical analysis.

<i>Weights</i>	<i>Criteria Description</i>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Worksheet 6

DEVELOPING THE PRICING DECISION RULE

Pricing Decision Rule

Decision Statements	Criteria Used In Decision Rule		
	A Only*	A & B*	A, B & C*
	-----sum of criteria weights-----		
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

* Criteria defined:

A = current contract pricing opportunities versus financial needs

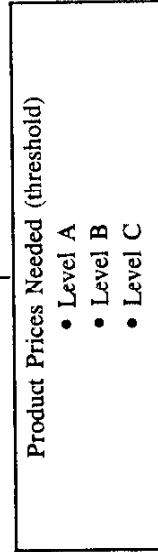
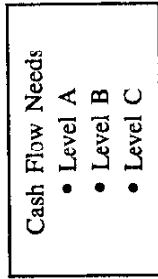
B = current contract pricing opportunities versus outlook price prediction

C = current contract pricing opportunities versus rank according to current signals from technical analysis

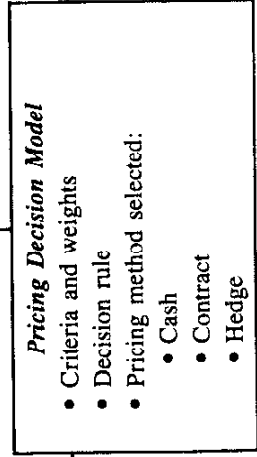
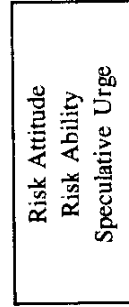
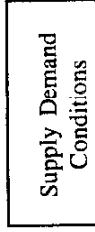
Appendix A

Components of Pricing Plan

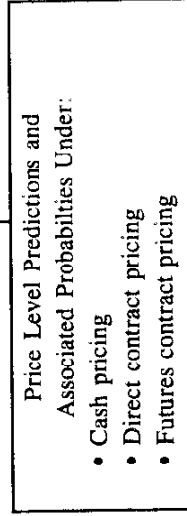
Farm Financial Information



Personal Information

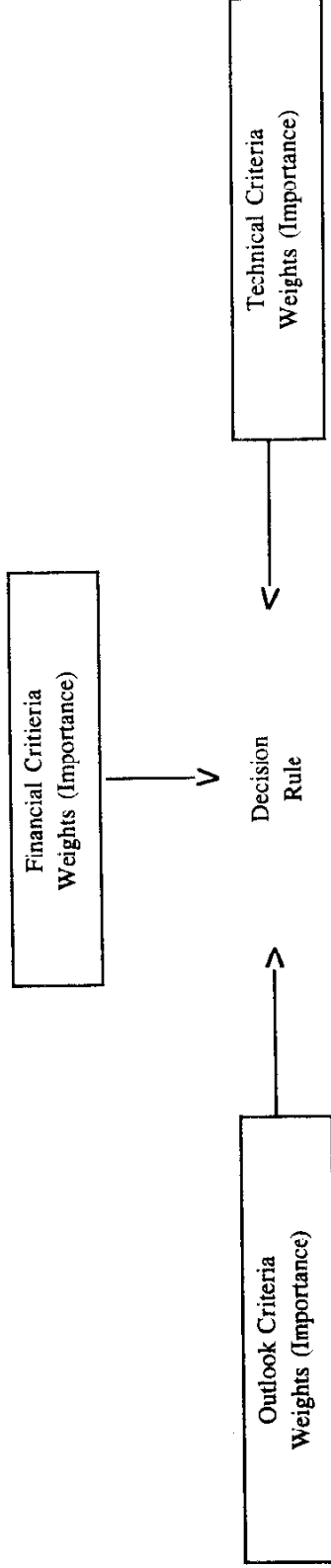


Marketing Information



Appendix B

PRICE DECISION MODEL



Appendix C

Examples of Cash Flow Needs

<u>Cash-Flow Level</u>		<u>Amount</u>
A	Keep operation afloat	\$28,750
B	Cover all annual operating expenses plus debt obligation	30,000
C	Cover all above plus minimum family living	31,250
D	Cover above plus desired higher standard of living	32,500
E	Cover all above plus desired expansion of hog operation	33,750

Appendix D

Example of Threshold Price Levels

<u>Cash Flow Levels</u>	<u>Threshold Price Needed to Cover Cash Flow Need Levels</u>
	----- per cwt. -----
A	\$46.00
B	48.00
C	50.00
D	52.00
E	54.00

Appendix E

DETERMINING PRICE EXPECTATIONS AND ASSOCIATED RISK FOR HOGS IN 1985

Step 1. Determine the forward contract and futures market prices as of today.

Forward contract	\$	50.00
Futures contract		52.00

Step 2. Determine the basis you expect to exist at the time the commodity is sold and hedge is lifted.

Widest possible basis	\$	2.50
Narrowest possible basis		1.50
Most likely basis		2.00

Step 3. Calculate your expected net cash price from futures hedge.

		<u>Widest Basis</u>	<u>Narrowest Basis</u>	<u>Most Likely Basis</u>
Futures contract price (step 1)	\$	52.00	\$ 52.00	\$ 52.00
- Expected basis (step 2)	\$	2.50	\$ 1.50	\$ 2.00
Expected net futures price	\$	49.50	\$ 50.50	\$ 50.00
		(lowest) price	(highest) price	(most likely) price

Step 4. Determine the cash price you expect to exist at the time of delivery.

Highest possible price	\$	53.50	(highest risk)
Lowest possible price		48.50	(lowest risk)
Most likely price		49.75	(moderate risk)

Step 5. Summarize price information in table below.

	<u>100% Probability</u>	<u>Lowest Possible Price and Low Risk</u>	<u>Most Likely Price and Mod. Risk</u>	<u>Highest Possible Price and High Risk</u>
Forward contract	\$ 50.00	***	***	***
(from step 1 above)				
Net cash from futures	***	\$ 49.50	\$ 50.00	\$ 50.50
hedge (from step 3 above)				
Cash at delivery or	***	\$ 48.50	\$ 49.75	\$ 53.50
contract prices later (from step 4 above)				

Appendix F

**Example - Probabilities or Odds of Receiving
Minimum Price Levels Using Alternative Pricing Methods**

Threshold Price Levels -----cwt.-----	Probabilities (Risk) of Getting		
	<u>Cash Market</u>	<u>Forward Contract</u>	<u>Futures Hedge Contract</u>
		-----percent-----	
\$46	80	100	100
48	75	100	100
50	70	10	98
52	65	65	67
54	60	60	60

Appendix G

Illustrating Pricing Model Criteria and Weights

- A. Current contract pricing opportunities versus financial needs (rank 1 to 5 as follows)

Weights

- 1 - significantly below (5%) specified threshold pricing and price objectives
- 2 - moderately below (2-3%) specified threshold prices and price objectives
- 3 - equal to specified threshold prices and price objectives
- 4 - moderately over (2-3 percent) specified threshold prices
- 5 - well above (5 percent) specified threshold prices

- B. Current pricing opportunity versus outlook price prediction (rank 1 to 4 on following basis)

Weights

- 1 - significantly below updated "most likely" outlook price for same period
- 2 - moderately below "most likely" outlook price
- 3 - about equal to outlook price
- 4 - moderately above outlook price

- C. Current pricing opportunities versus rank according to current signals from technical analysis

Weights

- 1 - when continued short term uptrend is evident (buy signals)
- 2 - when a sideways trend is evident
- 3 - when a short term downtrend becomes evident (sell signals)

Appendix H

Illustrating A Pricing Decision Rule

Decision Statements	Criteria Used In Decision Rule		
	<u>A Only</u>	<u>A & B</u>	<u>A, B & C</u>
	-----sum of criteria weights-----		
No forward pricing of future sales	1 - 2	2 to 5	3 to 7
Price some of futures sales in this time period	3	6	8
Increase in amount to be priced during this time period	4	7 to 8	9 to 10
Price remainder of amount that can be priced during this time period	5	9	11 to 12

Appendix I

Should I Produce Hogs

Over time the hog enterprise has been the most profitable livestock enterprise on Minnesota farms. It has yielded higher returns per dollar invested as well as higher returns per hour of labor than other livestock enterprises.

Hog production fits well on most Minnesota farms.

- The feeder pig production enterprise fits on smaller farms where labor is plentiful relative to feedgrains.
- The other half of the hog production program--finishing feeder pigs--fits well on farms where feedgrains are plentiful but labor for farrowing is limited.
- The complete hog program fits well on most all intermediate size farms where feedgrains are available and the operator has an interest in hog production.

PLANNING INFORMATION

The tables on the next three pages show expected feed requirements, operating costs and building investment costs for the above three different types of hog programs. Costs and return budgets are shown for 1985 and for the longer term. Prices and profits will vary by years, but we suggest a long run planning price of \$48 to \$50 for market hogs with corn at \$2.60 to \$2.80 per bushel. Prices and profits likely peaked in the 1983/84 marketing year followed by another cyclical decline as hog production increases in 1985 and 1986.

Paul Hasbargen and Richard Hawkins
Extension Economists
Dept. of Agricultural & Applied Economics

Erlin Weness
Area Extension Agent
Southwestern Minnesota

Jerry Hawton
Extension Animal Husbandman
Department of Animal Science

Agricultural Extension Service
UNIVERSITY OF MINNESOTA
St. Paul, Minnesota 55108

The University of Minnesota, including the Agricultural Extension Service, is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, creed, color, sex, national origin, or handicap.

COMPLETE HOG PROGRAM - ONE LITTER TO MARKET (225 POUNDS)*

Value Produced	For 1985			Long Term		
	Per Litter*	Per Cwt		Per Litter	Per Cwt	
7.3 pigs - 225# @ \$52/cwt	\$854		@ \$49	\$805		
.3 sows - 450# @ \$43/cwt	58		@ \$38	51		
Total (1,778 pounds)	\$912	\$51.29		\$856	\$48.14	
<u>Feed Requirements And Costs</u>						
Corn @ \$2.65/bu 105 bu	\$252	330 lbs	\$14.17	@ \$2.65	\$278	\$15.63
Suppl. @ \$13/cwt 1,267 lbs	165	70 lbs	9.28	@ \$15	190	10.69
Total Feed	\$417	400 lbs	\$23.45		\$468	\$26.32
<u>Operating Costs</u>						
Hired labor	\$ 10		\$.56	\$ 10	\$.56	
Marketing and hauling	15		.84	15	.84	
Breeding	4		.22	4	.22	
Veterinary and medicine	17		.96	17	.96	
Electricity and fuel	35		1.97	35	1.97	
Tractor and equipment repair	23		1.29	23	1.29	
Insurance and supplies	25		1.35	25	1.35	
Interest on livestock	18		1.01	20	1.12	
Interest on operating capital	18		1.01	20	1.12	
Total Operating	\$165		\$ 9.28	\$169	\$ 9.50	
Total Feed And Operating	\$582		\$32.73	\$637	\$35.83	
Return For Labor And Facilities	\$330		\$18.56	\$219	\$12.3	

* Under typical management, each sow and gilt kept will produce about 1.7 litters per year. Well managed, early weaning systems can produce 2 litters per sow per year.

BUILDING COST ESTIMATES*

Use	Type Of Building	Unit Size	Cost/Unit Capacity**
Farrow-Finish	All buildings, slotted floors	100-200 sows	\$1,900 per sow
Farrowing	Pasture A-frame huts	16 huts	\$250 per hut
	Remodel dairy barn	16 sows	\$600 per crate
	Partially slotted floor - crates	20 sows	\$1,500 per crate
Gestation	Portable on pasture	16 sows	\$200 per sow
	Open shelter & paved lot	16 sows	\$450 per sow
	Enclosed - total slot	32 sows	\$450 per sow
Nursery	Open shelter - drylot	200 weanlings	\$40 per pig
	Enclosed - total slot	200 weanlings	\$60 per pig
Finishing	Portable on pasture	100 market hogs	\$40 per hog
	Open shelter - drylot	200 market hogs	\$70 per hog
	Modified open front - partial slot	200 market hogs	\$125 per hog
	Enclosed - total slot	200 market hogs	\$150 per hog

* Note - additional investments will be required for manure handling equipment & fencing.

** Investment costs will likely be lower in northern Minnesota; higher in southeastern Minnesota. They will also vary by the amount of labor supplied by the farmer.

FEEDER PIG PRODUCTION - ONE LITTER TO MARKET AT 40 POUNDS

	For 1985		Long Term	
	Per Litter*	Per Pig Sold	Per Litter	Per Pig Sold
<u>Value Produced</u>				
7.8 pigs @ \$42/head	\$328	\$42.05	\$343	\$44.00
.2 sow - 450# @ \$43/cwt	39	5.00	34	4.35
Total	\$367	\$47.05	\$377	\$48.35
<u>Feed Requirements And Costs</u>				
Corn @ \$2.65/bu	\$ 80	\$10.26	\$ 80	\$10.25
Suppl. @ \$14/cwt	84	10.77	102	13.08
Total Feed	\$164	\$21.03	\$182	\$23.33
<u>Operating Costs</u>				
Marketing and hauling	\$ 8	\$ 1.03	\$ 8	\$ 1.03
Breeding	3	.38	3	.38
Veterinary and medicine	14	1.79	14	1.79
Electricity and fuel	15	1.92	15	1.92
Tractor and equipment repair	10	1.28	10	1.28
Insurance and supplies	18	2.31	18	2.31
Interest on livestock	12	1.54	12	1.54
Interest on operating capital	6	.77	6	.77
Total Operating	\$ 86	\$11.02	\$ 86	\$11.02
Total Feed And Operating	\$250	\$32.05	\$268	\$34.36
Return For Labor And Facilities	\$117	\$15.00	\$109	\$14.00

* Typical management will produce about 1.75 litters per sow per year. If early weaning is practiced, 2 to 2.2 litters per sow per year can be produced. Average sow in feeder pig enterprise farrows 5 litters prior to culling.

SPACE REQUIREMENT ESTIMATES*

Weight of Pig	Total Space Per Pig (sq. ft.)**	
	Slotted Floors (partial or total)	Solid Floors (no slats)
25 to 40 pounds	3	4
41 to 100 pounds	4	6
101 to 150 pounds	6	8
151 to 230 pounds	8	11
Sows	15	20

* Jensen, et al., found these space requirements conducive to maximum gains. Somewhat less space would be more economical.

** Free floor space, excluding space for feeders and waterers.

FINISHING FEEDER PIGS - ONE PIG FROM 40 TO 235 POUNDS

	<u>Current</u>	<u>Long Term</u>	
		<u>Head</u>	<u>Cwt. Gain</u>
<u>Performance</u>			
Total gain, pounds	See the	195.00	
Pounds feed per pound of gain	latest	3.77	
Average daily gain, pounds	PIGFIN	1.62	
	computer		
	printout		
	and/or	115.15	
	tables at	45.00	
	bottom of	1.87	.96
	page.	\$68.27	\$35.01
<u>Value Produced</u>			
Sale value at \$49 per cwt.			
Purchase cost at \$45 per head			
Death loss (4%)			
Gross Margin			
<u>Feed Requirements And Costs</u>			
Corn - 10.51 bu. @ \$2.65		\$27.85	\$14.28
Prosup 40% - 1.23 cwt. @ \$12.50		15.37	7.88
(min., vit., antib. included in prot. sup.)			
Total Feed Cost		\$43.22	\$22.16
<u>Operating Costs</u>			
Interest on animals (15%)		\$2.31	\$1.19
Selling and buying costs		4.22	2.16
Other operating costs		6.00	3.08
Total Operating Costs		\$12.53	\$6.43
Total Feed & Operating Costs		\$55.75	\$28.59
Return For Labor And Facilities		\$12.52	\$6.42

RETURN PER HEAD FOR LABOR AND FACILITIES AT DIFFERENT HOG PRICES (CORN AT \$2.65/BU.)

<u>Selling Price</u> <u>Per Cwt.</u>	<u>When Purchase Cost Per Head Is:</u>				
	<u>\$35.00</u>	<u>\$40.00</u>	<u>\$45.00</u>	<u>\$50.00</u>	<u>\$55.00</u>
\$40.00	2.30	-3.17	-8.63	-14.10	-19.56
43.00	9.35	3.88	-1.58	-7.05	-12.51
46.00	16.40	10.93	5.47	.00	-5.46
49.00	23.45	17.98	12.52	7.05	1.59
52.00	30.50	25.03	19.57	14.10	8.64
55.00	37.55	32.08	26.62	21.15	15.69
58.00	44.60	39.13	33.67	28.20	22.74

BREAKEVEN SELLING PRICES TO COVER FEED, OPERATING & \$12 RETURN FOR LABOR & FACILITIES

<u>Purchase Price</u> <u>Per Head</u>	<u>When Corn Price Per Bushel Is:</u>				
	<u>\$2.15</u>	<u>\$2.40</u>	<u>\$2.65</u>	<u>\$2.90</u>	<u>\$3.15</u>
\$30.00	\$39.57	\$40.69	\$41.80	\$42.92	\$44.04
35.00	41.89	43.01	44.13	45.25	46.37
40.00	44.22	45.34	46.45	47.57	48.69
45.00	46.54	47.66	48.78	49.90	51.02
50.00	48.87	49.99	51.11	52.22	53.34
55.00	51.20	52.31	53.43	54.55	55.67
60.00	53.52	54.64	55.76	56.88	57.99

A marketing strategy for livestock

Appendix I

RETURNS ABOVE FEED COSTS FOR MINNESOTA LIVESTOCK ENTERPRISES*

Year	Enterprise Including Breeding Herds				Feeding Enterprises	
	Dairy (cow)	Hogs (cwt.)	Beef (cow)	Sheep (ewe)	Feeder Pigs (cwt.)	Feeder Cattle (cwt.)
1960	\$155.52	\$10.16	\$71.65	\$ 5.30	\$10.16	\$ 5.77
1961	156.03	5.44	23.81	2.93	5.44	2.48
1962	115.38	4.92	27.49	4.80	2.40	6.18
1963	129.56	2.43	19.05	12.27	- .22	-6.09
1964	<u>148.35</u>	<u>3.62</u>	<u>11.87</u>	<u>6.88</u>	<u>3.05</u>	<u>1.38</u>
Avg. 1960-64	140.96	5.29	30.77	6.44	4.17	1.94
1965	141.25	11.90	10.75	11.06	7.75	7.12
1966	197.29	8.37	52.76	12.20	5.84	.68
1967	245.53	6.11	33.28	6.49	.85	4.87
1968	273.02	7.07	43.02	10.32	2.37	8.22
1969	<u>276.88</u>	<u>13.37</u>	<u>35.11</u>	<u>11.32</u>	<u>6.87</u>	<u>-.95</u>
Avg. 1965-69	226.79	9.36	34.98	10.27	4.73	4.37
1970	321.62	4.70	46.22	9.24	-.29	3.28
1971	324.89	5.68	48.06	11.63	3.95	12.65
1972	331.38	15.53	106.38	11.67	10.04	12.26
1973	371.53	21.34	106.05	13.24	13.29	7.54
1974	<u>303.48</u>	<u>7.76</u>	<u>-138.58</u>	<u>-1.63</u>	<u>3.80</u>	<u>-21.16</u>
Avg. 1970-74	330.58	11.00	33.62	8.83	6.16	2.91
1975	301.13	24.16	-77.73	4.56	14.75	8.77
1976	523.31	13.38	-46.45	12.99	5.64	-7.43
1977	612.46	17.72	18.76	34.58	10.92	8.99
1978	873.74	27.75	224.42	23.83	13.37	29.88
1979	<u>1,049.52</u>	<u>11.38</u>	<u>148.20</u>	<u>34.41</u>	<u>.56</u>	<u>17.49</u>
Avg. 1975-79	672.03	18.88	53.44	22.02	9.05	11.54
1980	1,063.27	13.12	128.31	20.51	4.12	3.72
1981	1,098.22	11.98	-3.64	32.16	4.42	5.13
1982	1,192.46	32.13	110.00	4.15	14.04	22.27
1983	<u>865.37</u>	<u>10.74</u>	<u>2.10</u>	<u>-19.60</u>	<u>7.33</u>	<u>11.80</u>
Avg. 1980-83	1,054.83	17.00	56.19	9.31	7.48	10.73
Current direct** operating costs	500.00	10.00	125.00	19.00	7.00	17.00

* Historical returns are from the summaries of records kept by farmer members of the Southwest Farm Management Association.

** Excludes family labor and facility replacement costs.

A marketing strategy for livestock

Farm planning prices

projected by
agricultural economists, U of Minn.

Appendix J

	Unit	1 Year Planning Price		Long Range Planning Prices ^{1/}	
		10/1/84 to 10/1/85	My Locality ^{2/}	Mpls.	My Local Farm Price ^{2/}
CROPS					
Corn	bu.	\$ 2.90	_____	\$ 2.90	_____
Oats	bu.	1.90	_____	1.80	_____
Wheat, 13% protein	bu.	4.00	_____	4.10	_____
Soybeans	bu.	6.60	_____	6.80	_____
Barley, all	bu.	2.50	_____	2.60	_____
Sunflowers	cwt.	11.80	_____	11.00	_____
		<u>Local</u>		<u>Local</u>	
Mixed hay	ton	\$40-60	_____	\$40-60	_____
Alfalfa hay	ton	55-85	_____	50-80	_____
Straw, grain	ton	40-70	_____	40-70	_____
LIVESTOCK					
		<u>Terminals</u>		<u>Terminals</u>	
Hogs	cwt.	\$50.00	_____	\$49.00	_____
Feeder pigs, 40 pounds	head	42.00	_____	44.00	_____
Hog feeding margin/cwt. gain ^{3/}	cwt.	40.00	_____	38.00	_____
Choice steer calves	cwt.	68.00	_____	75.00	_____
Beef cow herd sales ^{4/}	cow	260.00	_____	275.00	_____
Choice yearling steers	cwt.	64.00	_____	70.00	_____
Choice slaughter steers	cwt.	63.00	_____	67.00	_____
Beef feeding margin/cwt. gain ^{3/}					
Calves	cwt. of	62.00	_____	62.00	_____
Yearlings	gain	65.00	_____	65.00	_____
Slaughter lambs	cwt.	63.00	_____	64.00	_____
PRODUCE					
		<u>Local</u>		<u>Local</u>	
Milk, grade A, 3.5% butterfat	cwt.	12.40-12.80	_____	12.40-12.80	_____
Milk, grade B	cwt.	12.00-12.40	_____	12.00-12.40	_____
Eggs	doz.	.62-.67	_____	.60-.65	_____
Wool (with incentive)	lb.	1.35	_____	1.35	_____

^{1/} Long range planning prices do not include any allowance for future inflation. They are based on current cost structures but do not include government "deficiency" payments since these would require "set aside" acres. Future inflation may increase both costs and commodity prices above these levels. If future inflation is included in cost projections, it should also be added to these planning prices.

^{2/} Adjust terminal price as necessary for normal locational differentials when selecting a local planning price. Thus, a long-range planning price of \$2.65 might be appropriate in the surplus corn areas of southern Minnesota compared to \$3.00 for the deficit areas of north central Minnesota. Since a terminal market does not exist for some commodities (hay and milk) we suggest a probable range in outstate market prices.

^{3/} The hog and beef feeding margins are determined by subtracting the purchase cost of a feeder from the sale receipts of one finished animal and dividing by the cwt. of gain.

^{4/} Assumes average sales per cow of: steer calf - 190 lbs., heifer calf - 105 lbs., cow - 170 lbs.