



Fact Sheet 493

Evaluating Grain Marketing Alternatives

Introduction

Marketing conditions and price outlook often change. However, the grain marketer should not use this as an excuse not to make selling decisions. This fact sheet formulates two worksheets to help a farmer in selecting the most profitable marketing alternative at anytime. The information would enable a farmer to implement a marketing plan in a logical, businesslike fashion.

The worksheets use information and concepts developed in other fact sheets. Therefore, the reader is encouraged to review, in particular, Fact Sheets 487, 488, 490 and 492, which deal with storing grain, the futures market, marketing alternatives and options trading, respectively.

Worksheets 1 and 2 are designed to analyze pre-harvest and postharvest marketing alternatives. Worksheet 1 analyzes preharvest choices, such as: delaying the pricing decision, forward contracting, short futures hedging, and buying put options. Worksheet 2 examines these postharvest alternatives: selling at harvest, storing without pricing, storing and short futures hedging, storing and buying put options, not storing and buying call options, storing with deferred pricing contracts, and storing with basis contracts.

Blank worksheets are provided at the end of this fact sheet. The farmer may copy and use them for his or her own grain marketing evaluations.

Preharvest Evaluation

Worksheet 1 is filled out for a farmer on the Eastern Shore who is evaluating corn marketing alternatives on July 25, 19XX. The projected harvest date is October.

Marketing Alternatives

Project Prices. The farmer's first task is to project prices for October. Currently, the December futures is trading at \$3.24. In October on the Eastern Shore, the 5-year historical basis average is +14 cents. This number was taken from Table 5 in Fact Sheet 495 Maryland Corn: Historical Basis and Price Information. There is no guarantee that \$3.24 will be the price of the December futures contract in October or that the 5-year basis average will hold true. Yet, \$3.38 (\$3.24 + \$0.14) is the most accurate forecast of cash prices available to the farmer at this time. Consequently, if these conditions prevail, it is the price the producer receives at harvest if he or she delays pricing the grain.

Forward Contract. The farmer can take advantage of the \$3.34 forward contract bid offered by the local elevator. Typically, buyers make their bids a few cents less than the projected price to cover

expenses. The farmer's principal disadvantage with this strategy is the production risk associated with having the grain to deliver.

Hedge the Grain. The farmer's third alternative is to hedge the grain by selling a December futures contract. If the basis estimate is accurate, the farmer can establish an effective selling price of \$3.35 per bushel. If the futures price goes up, the producer has to cover these losses through additional margin requirements. Theoretically, however, he or she should recapture these losses through gains in the cash market (again, assuming an accurate basis estimate). If prices drop, the gains in the futures market will match the losses in the cash market. Either way, the farmer receives \$3.35, assuming payment of 2 cents in commission costs and a 1-cent cost associated with margin requirements.

Postharvest Evaluation

Worksheet 2 is filled out for a farmer on the Eastern Shore who is evaluating corn marketing alternatives at harvest. The farmer has storage facilities and considers selling the corn in February. These alternatives revolve around the concept of selling at harvest or storing the corn. To help his or her decision, the reader should review Fact Sheet 487 which discusses calculating storage costs.

Marketing Alternatives

Sell at Harvest. Typically, prices are lowest at this time. As a result, many farmers have constructed storage bins to allow them to market their grain later when prices may be higher. While prices usually go up after harvest, the farmer should make sure that the projected increase in price exceeds the storage cost. In this case, the harvest price is \$2.90 per bushel at a moisture rate of 15.5 percent.

Store Unpriced drain and Sell Later. This practice is common but risky. On October 23, the May futures price is \$2.95. Again, using Table 5 in Fact Sheet 495, the farmer notes that in March (the projected selling date), cash prices average 21 cents above the May futures (5-year basis average). If the May futures remains at \$2.95 and the basis estimate proves accurate, the farmer should be able to sell the corn for \$3.16 per bushel in March. After subtracting storage costs of 17 cents, the net price is \$2.99. It is unlikely that both assumptions about the futures prices and basis will hold, yet they provide the most reliable estimate of prices available to the farmer.

Forward Contract and Deliver in March. The farmer can obtain a bid of \$3.13 per bushel. After subtracting the cost of storage, the net price is \$2.96. Forward contracts after harvest, as opposed to pre-harvest, are not subject to production risk.

Hedge by Selling a Hay Futures Contract. If the basis estimate (cash prices minus the May futures) in March is accurate, the farmer can establish an effective selling price of \$3.16. After subtracting storage, commission and interest costs, the grower receives \$2.96. This is a less risky strategy than storing unpriced corn, because hedging depends on the narrowing of the basis after harvest. The movement of the basis after harvest is much more dependable than the movement of prices.

Buy a Put Option. Additionally, the farmer should establish a minimum effective selling price. In this case, the farmer buys a May put option with a strike price of \$2.90 at the cost of 28 cents per bushel (premium).

If the ending basis estimate is accurate and after all costs are subtracted, the minimum net price is \$2.63. This is an expensive alternative, yet it reduces risk considerably, and allows the producer to capture any significant upwards movement in the market. If risk avoidance is the goal, forward contracting can be a more profitable strategy since forward contracts establish a fixed price. Put options are more attractive if the producer expects prices to increase significantly during the storage season, since put options only establish a minimum price.

Sell at Harvest and Buy a Call Option. Also known as storing paper, this is considered speculating in the options market since there is no offsetting position in the cash market (stored grain). There must be a strong upwards movement in the futures market after harvest for this strategy to be profitable. To calculate the net price, the grower must estimate the final premium at which the call option can be sold. It is a difficult task to make this estimate accurately. In this example, it is assumed to be 39 cents. After subtracting the initial premium and other costs, the net price is \$2.94.

Sell With Deferred Pricing Contract. The grower sells the corn under a deferred pricing contract with an elevator. The grain is stored at the elevator, and the farmer has the option of pricing the grain before a final predetermined date. Since the grain passes legally into the buyer's possession, the producer has a financial risk should the buyer go bankrupt. Storing costs are optional depending on the individual transaction. In this case it is assumed to be set at 10 cents. The projected price received is calculated identically to the projected cash price under the second alternative.

Choose a Basis Contract. Like the deferred pricing contract, the requirements can vary depending on the buyer. In this situation, it is assumed that the grain passes into the buyer's possession at harvest, and storage costs are preset at 10 cents. The principal difference between the two alternatives is that with the basis contract the basis is set. In this case, the farmer is guaranteed a basis of 15 cents (contract basis) above the May futures. To evaluate the profitability of this option, the farmer should compare the contract basis with the 5-year expected basis average. The strategy is not as attractive in this example (\$0.15 compared to \$0.21).

As with preharvest strategies, the farmer should follow several guidelines when using postharvest marketing alternatives. The farmer must make marketing decisions appropriate to the individual situation. In addition, he or she should employ several different strategies to reduce his or her chances of making a major marketing mistake.

The grower should follow short-term price cycles in executing these options so as to maximize profits. At the peak of the cycle, if possible, a farmer should sell his grain at harvest, forward contract, initiate hedging by selling futures contracts, initiate options by buying puts, execute deferred pricing contracts, and execute basis contracts. At the trough of the cycle, the farmer should buy back the futures contracts and sell the put options. Call options should be purchased at the trough of the cycle to initiate that strategy, and sold at the peak of the cycle.

Buy Put Options. The farmer chooses a December put because of the October harvest date. Several strike prices are available, but in this example, a \$3.20 strike price is chosen. The premium or cost of this put option is 30 cents. Assuming a basis of +14 cents, the farmer's minimum effective selling price is \$3.01. This strategy eliminates margin calls and reduces the emotional cost associated with the futures market. Once the 30 cents is paid, there are no other costs besides commission and interest. However, this strategy is costly. Options are insurance, and "peace of mind" costs money.

In deciding which marketing strategy to employ, the farmer should follow these guidelines:

- Consider the farmer's individual situation. For the producer with cash flow problems, for example, he or she may not be able to cover the margin calls associated with futures trading or afford the cost of options. That grower may lean more heavily on forward contracting.
- Spread the marketing risk among the different alternatives; that is, employ all the strategies by increments throughout the growing season. For the producer who only forward contracts, he or she should sell small portions of the crop at different times of the season.
- Follow the short-term price cycles. While difficult to achieve, the producer can gain a few extra cents by selling futures contracts, buying put options, or forward contracting at the peak of the short-term cycles. In the same way, the farmer should attempt to buy back his or her futures contract, or sell the put option at the trough of the short-term cycle. To do both successfully, the

farmer should chart the futures markets daily or subscribe to a reputable marketing advisory service.

Worksheet 1.

Evaluating Preharvest Marketing Alternatives

Crop Corn Crop Year XX/XX Harvest Date Oct Location Eastern SH

Current Date 7/25/2	<u>XX</u> <u>\$/bush</u>
Projected Cash Price:	DecFuturesPrice 3.24 + Ending Basis $.14$ Net Price = 3.38
Forward Contract Price:	Net Price = 3.34
Short Futures Hedge:	DecFuturesPrice 3.24 + Ending Basis $.14$ - Comission $.02$ - Interest $.01$ Net Price= 3.35
Buy Put Option:	DecPut OutputStrike Price3.20+ Ending Basis.14- Premium.30- Comission.02- Interest.01Net Price=3.01

Worksheet 1.

Crop	Crop Year	_ Harvest Date	Location	
	Current Date		<u>\$/bushel</u>	
	Projected Cash Price:	Futures Price + Ending Basis Net Price =		
	Forward Contract Price:	Net Price =		
	Short Futures Hedge:	Futures Price + Ending Basis - Comission - Interest Net Price=		
	Buy Put Option:	Put Outp Strike Price + Ending Basis - Premium - Comission - Interest Net Price=	ut	

Evaluating Preharvest Marketing Alternatives

Worksheet 2.

Eval	Evaluating Postharvest Marketing Alternatives						
Crop Corn Crop Year XX/XX Location Eastern SH							
Current Date <u>10/23/XX</u> Projected Selling Date <u>03/31/XX</u>							
-		\$/bushel			\$/bushel		
Harvest	Net Price =	2.90	Buy	May Call Option			
Price:			Call Option	: Strike Price 2.90			
				Harvest Price	<u>2.90</u>		
Projected	May Futures			+ Final Premium	<u>.39</u>		
Cash	Price	<u>2.95</u>		- Initial Premium	.32		
Price:	+ Ending Basis	<u>.21</u>		- Commision	<u>.02</u>		
	- Storage	<u>.17</u>		- Interest	<u>.01</u>		
	Net Price=	<u>2.99</u>		Net Price =	<u>2.94</u>		
Forward	Price	<u>3.13</u>	Deferred	May Futures			
Contract	- Storage	.17	Pricing	Price	<u>2.95</u>		
Price:	Net Price=	<u>2.96</u>	Contract:	+ Ending Basis	<u>.21</u>		
				- Storage (opt)	<u>.10</u>		
Short	May Futures	• • •		Net Price =	<u>3.06</u>		
Futures	Price	<u>2.95</u>					
Hedge:	+ Ending Basis	<u>.21</u>	Basis	May Futures			
	- Comission	<u>.02</u>	Contract:	Price	<u>2.95</u>		
	- Interest	<u>.01</u>		+ Contract Basis	<u>.15</u>		
	- Storage	<u>.17</u>		- Storage (opt)	<u>.10</u>		
	Net Price =	<u>2.96</u>		Net Price =	<u>3.00</u>		
D	Mara Dati Onti						
Buy	May Put Option	2.00					
Put Option:	Strike Price	<u>2.90</u>					
	+ Ending Basis	<u>.21</u> 20					
	- Premium	<u>.28</u>					
	- Comission	<u>.02</u>					
	- Interest	<u>.01</u>					
	- Storage	.17					
	Net Price =	<u>2.63</u>					

Worksheet 2.

Evaluating Postharvest Marketing Alternatives					
Crop	Crop Year Location				
Current Date Projected Selling Date					
		<u>\$/bushel</u>			<u>\$/bushel</u>
Harvest	Net Price =		Buy	Call Option	
Price:			Call Option	n: Strike Price	
				Harvest Price	
Projected	Futures			+ Final Premium	
Cash	Price			- Initial Premium	
Price:	+ Ending Basis			- Commision	
	- Storage			- Interest	
	Net Price=			Net Price =	
Forward	Price		Deferred	Futures	
Contract	- Storage		Pricing	Price	
Price:	Net Price=		Contract:	+ Ending Basis	
				- Storage (opt)	
Short	Futures			Net Price =	
Futures	Price				
Hedge:	+ Ending Basis		Basis	Futures	
	- Comission		Contract:	Price	
	- Interest			+ Contract Basis	
	- Storage			- Storage (opt)	
	Net Price =			Net Price =	
Ruy	Put Option				
Put Ontion	• Strike Price	1			
	+ Ending Rasis				
	- Premium				
	- Comission				
	- Interest				
	- Storage				
	Net Price =				

Summary

This fact sheet has approached the evaluation of marketing alternatives as if preharvest and post-harvest decisions were mutually exclusive; they are not. For example, a farmer can hedge projected stored grain by selling the May futures contract during the previous summer. There is no need to wait until October to hedge stored grain if market conditions warrant an earlier decision. It is also possible to hedge next year's crop one year in advance. Thus, during the summer of 1988, a farmer can sell the 1989 December futures contract to secure a good price. Worksheets 1 and 2 are adaptable to these more extended marketing decisions.

This Extension fact sheet is one in a series of grain marketing fact sheets. The series is designed to cover many topics essential to effective grain marketing. Other fact sheets in the series are:

FS 484 Developing a Grain Marketing Plan FS 485 Grain Marketing: Using Balance Sheets FS 486 Grain Marketing: Helpful Hints FS 487 Grain Marketing: Storage Decisions FS 488 Grain Marketing: The Futures Market FS 489 Understanding Grain Basis FS 490 Grain Marketing Alternatives FS 491 Grain Futures: Questions and Answers FS 492 Grain Marketing: Using Options FS 492 Grain Marketing: Using Options FS 495 Maryland Corn: Historical Basis and Price Information FS 496 Maryland Wheat: Historical Basis and Price Information FS 498 Producers' Guide to Grain Marketing Terminology

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Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, University of Maryland, College Park, and local governments, Thomas A. Fretz, Director of Maryland Cooperative Extension, University of Maryland.

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