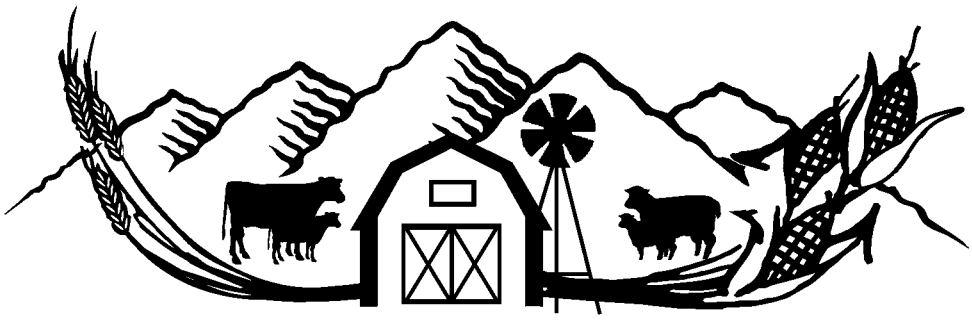

Risk and Resilience in Agriculture

Producer Marketing Management: Primer on Agricultural Options[1]

By Gerald Campbell
Reviewers: Dave Holder and Randy Corley,
Edited for this publication by Duane Griffith and Stephen Koontz[2]

When Congress passed the Futures Trading Act of 1982, it paved the way for a new marketing management tool for farmers and others who market agricultural products. This law authorized the development of a pilot program for organized trading of agricultural commodity options. This overturned a 4-year-old ban on commodity options trading in agricultural products.

The discussion that follows is intended to introduce newcomers to agricultural options trading. It defines some options terms, outlines differences between options and futures contracts and explores applications of options for agricultural producers.

What is an Agricultural Commodity Option?

It is easy to be confused by the term "option," because the term means several different things in the jargon of the commodity industries. For example, marketers might refer to a particular futures contract as the "December corn option" or simply the "December option." But there is an important difference between a futures *contract* and a commodity *option*.

[1] This publication has been modified slightly from its original version. The glossary has also been removed and two sections were added on Hedging and Trading Strategies.

[2] By **Gerald Campbell**, College of Agricultural and Life Sciences, University of Wisconsin-Madison and the University of Wisconsin Cooperative Extension Service; Reviewers: **David Holder,** ES, USDA and **Randy Corley,** ES USDA; NCR Extension Publication No. 217. Sponsored by the Extension services of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin in cooperation with ES-USDA. Edited for this publication by Duane Griffith, Montana State University, and Stephen Koontz, Colorado State University.

A futures contract traded on the nation's commodity exchanges carries a joint obligation for both buyer and seller. The contract buyer must take delivery or take an offsetting position. The seller must make delivery or take an offsetting position. With a commodity option, however, there is no joint obligation. The seller of a commodity option sells the buyer the right—or option—to take or make delivery, but the buyer has no obligation to do so. The buyer of the commodity option may exercise this option, but the seller cannot force him to do so. This distinction is important in understanding why someone would find options more useful than futures contracts for accomplishing a particular marketing purpose.

Options and futures do have common features: Both are concerned with actions that will occur in the future. Both options and futures have limited economic life. A futures contract has a delivery date and a commodity option has an expiration date. Both dates limit the time period in which these instruments have economic value.

Puts, Calls, Strike Prices and Premiums

The buyer of an agricultural option must determine what "right" he wishes to buy. If the buyer buys the *right to sell* at a specific price, this is a *put* option. In this case, if the option is exercised, the option seller must provide the option buyer with a sell position in the underlying futures contract at the price specified in the option.

> **Put** = Right to sell a futures contract some time in the future.
>
> (**PS** or Put equals Sell)

If the buyer buys the *right to buy* at a specific price, he has bought a *call* option. The buyer of the call option has purchased the right to buy a commodity futures contract from the seller of the call at a specified price. The seller of options is sometimes called an option *writer* or *grantor*. This comes from the fact that historically it was the seller who determined

> **Call** = Right to buy a futures contract some time in the future.
>
> (**CB** or Call equals Buy)

what rights would be sold. There are both buyers and sellers of puts and buyers and sellers of calls. So there are separate but related markets for put options and call options.

Agricultural option markets are developed by organized commodity exchanges, and option contracts are based on existing futures contracts. So trading takes a form similar to futures trading: the exchange proposes to trade options on futures contracts for a particular agricultural commodity— soybeans, for example. The exchange defines the quantity associated with each option, the quality characteristics, the delivery times and the delivery locations. In other words, each exchange develops standardized options contracts so that all traders understand what is being traded.

In addition to these specifications, the exchange also proposes trading option contracts at several *strike prices.* **Options derive their value from the price specified in the option contract.** This is called the *strike price* and is specified when an option is first made available for trading.

For example, suppose that an exchange has approval to trade options for soybean futures contracts, and that the option specifies a contract for 5,000 bu. of No. 1 yellow soybeans, deliverable in Chicago on January 1st at a strike price of $7.00 per bushel. The exchange would allow simultaneous trading in both put and call options, with buyers and sellers for each. The price someone pays for an option is called the *premium.* The premium is established through competitive bids and offers. The value of the premium depends on how high or low buyers think the price of the commodity will go, how volatile the market for that commodity has been, and how soon the option will expire.

How Much is an Option Worth?

In order to understand how a buyer might decide how large a premium he is willing to pay, consider the soybean option outlined above. Suppose the trader thinks soybean prices will rise during the next six months. Our trader also knows that soybean prices have been quite volatile recently, and thinks they could go over $8.00 per bushel. He knows that six months is plenty of time for the soybean market to reach his price objective. So he concludes that he should be a buyer. As a buyer, he thinks he could make a profit by buying a call option with a termination date six months from now and a strike price of $7.00. If he expects beans to go to over $8.00 per bu. he might be willing to pay nearly $1.00 per bushel in premium. If he does so, it should be profitable to exercise the option when the price of soybeans goes over $8.00. Generally, as the exercise date for the option approaches, the option premium will approach the difference between the cash price of the commodity and the strike price of the option.

We would expect that most traders who owned an option and could profit if they exercised that option would sell the option to someone else and profit from the sale. A trader who paid a $1.00 premium for a soybean call option (the right to buy) with a strike price of $8.00 per bushel might watch the premium go over $1.00 as soybean prices rise. He could then sell the option to someone else and make his profit by "offset" rather than exercise. As an option, trader he would watch the movement in options premiums to determine his profit or loss. The table on page four and at the end of this article show a typical listing for options premiums on a given day.

One important point about options premiums: When the buyer purchases either a put or call option, his dollar commitment is fixed for the life of the option. He knows with certainty the cost of the right he has purchased. He does not have to worry about margin accounts. This is an important difference between trading options and trading futures contracts. In trading futures contracts, the size of the obligation for buyers and sellers changes as the price of the commodity changes. So margin accounts change in value and additional deposits may be required. In options trading the buyer is assured that the initial cost of the option is the limit of the buyers cost. The buyer can lose no more than the amount paid to purchase the option. This is not true for the option seller, as will become clear later.

In the Money, Out of the Money

Because the prices of the underlying commodities can move over a wide range, commodity exchanges offer options with several strike prices. This gives traders a range of options. If an option's strike price is such that exercise of the option would give positive returns, it is said to be *in the money.*

For example, a put option for corn futures with a strike price of $3.00 per bushel is in the money whenever corn futures prices are below $3.00 per bushel. The buyer of this put can sell corn futures for less than $3.00 per bushel, exercise the option and force the seller to take the corn futures at $3.00 per bushel. Similarly, a call option for corn futures at $3.00 per bushel

Sep 22, 1998 3:30 pm CST - Daytime

	Corn				Wheat				Oats	
	98Dec	99Mar	99May	99Jul	98Dec	99Mar	99May	99Jul	98Dec	99Mar
Opening	2050 9:00 pm	2176 9:00 pm	2252 9:02 pm	2312 9:00 pm	2710 9:04 pm	2862 9:04 pm	2960 3:15 am	3070 3080 9:31 am	1164 9:11 pm	1242 9:32 am
Session High/Low	2072 9:41 am 2046 9:30 am	2196 9:41 am 2170 11:48 am	2272 9:41 am 2246 11:47 am	2332 9:43 am 2310 11:45 am	2746 1:14 pm 2712 10:32 am	2896 1:14 pm 2864 10:33 am	2990 10:03 am 2964 10:32 am	3090 1:14 pm 3064 9:32 am	1164 9:41 am 1150 9:31 am	1252 9:43 am a 1240 10:35 am
Composite High/Low	2072 9:41 am 2044 9:05 pm	2196 9:41 am 2170 11:48 am	2272 9:41 am 2246 11:47 am	2332 9:43 am 2304 11:22 pm	2746 1:14 pm 2710 9:04 pm	2896 1:14 pm 2862 9:04 pm	2990 10:03 am 2960 3:15 am	3090 1:14 pm 3064 9:32 am	1164 9:11 pm 1150 9:31 am	1252 9:43 am a 1240 10:35 am
Net Chg	+ 12	+ 6	+ 10	+ 10	+ 34	+ 30	+ 40	+ 34	- 4	- 4
Close	2064 2066 1:18 pm	2190 2184 1:18 pm	2264 2266 1:18 pm	2324 2330 1:18 pm	2740 2746 1:17 pm	2894 2890 1:17 pm	2990 1:17 pm	3090 1:17 pm	1154 1152 1:19 pm	1242 1:19 pm
Settle	2064	2186	2264	2326	2742	2892	2990	3090	1154	1242
Prv Setl	2052	2180	2254	2316	2706	2862	2950	3054	1160	1246
High/Low Limits	2184 1944	2306 2066	2384 2144	2446 2206	2942 2542	3092 2692	3190 2790	3290 2890	1254 1054	1342 1142
Resume	2046 2052 9:30 am	2176 2180 9:30 am	2254 2252 9:31 am	2314 9:31 am	2720 2734 9:31 am	2874 2890 9:31 am	2970 2974 9:31 am		1152 1150 9:31 am	
	Corn				Wheat				Oats	
	98Dec	99Mar	99May	99Jul	98Dec	99Mar	99May	99Jul	98Dec	99Mar

is in the money when corn futures prices are over $3.00 per bushel. The buyer of the call could force the option seller to deliver corn futures (establish a position in the futures market) priced at $3.00 per bushel, which the buyer could sell at the higher prevailing price.

It is easy to see that an option in the money could have value. In fact, an in-the-money

Put = Right to sell a futures contract some time in the future.

(**PS** or Put equals Sell)

option has both *intrinsic value* from the return if it were exercised immediately and *time value* from the chance that it will gain in value between now and the exercise date.

> **Call** = Right to buy a futures contract some time in the future.
>
> (**CB** or Call equals Buy)

It is less easy to see why anyone would pay money for an option that is *out of the money*—that is, an option that, if exercised, would give negative return. For example, take a put option for corn with a strike price of $2.75 per bushel. Suppose the option has six months until the exercise date and the current price of corn futures is $3.00 per bushel. This option is out of the money. If it were exercised, the buyer would stand to lose $0.25 per bushel. Why would anyone pay a premium of any amount for this option? The answer lies in price expectations. If the price of corn futures falls drastically within the next six months, the option could be *in the money* before the exercise date. A trader might buy the option with the expectation that such a price move would occur. The premium on an out-of-the-money option measures its *time value.*

Why Buy Agricultural Options?

Traders both inside and outside of agriculture will find new opportunities in the market for options on agricultural futures contracts. The discussion here, however, focuses on how *farmers* might use options on futures as part of their strategy for pricing agricultural commodities.

One of the primary pricing strategies used by farmers today is *forward pricing.* This involves using forward contracts with local buyers or hedging with futures contracts to lock in the price they get for a product in advance of delivery. In either a forward contract or a hedge, the price of the commodity is "fixed." The price in the contract remains the same, whether prices in the marketplace go up or down. A forward sale protects the farmer from price declines in the marketplace. However, if the market goes up after the forward sale, the farmer can't take advantage of the higher price. He is still obligated to sell his commodity for the contract price. Having a fixed price forward contract is an advantage when prices fall, but a disadvantage when they rise.

Therein lies the advantage of agricultural options: fixed prices in one direction but variable prices in the other. Since the option buyer is the one who decides whether the option will be exercised, he will only exercise the option when it pays to do so. A farmer who buys a $65.00 live cattle put option for a premium of $1.00 would only exercise the option if the live cattle price were below $65.00. If the price were higher than $65.00 the farmer would let the option expire and sell the cattle for the higher price. In a sense the premium is the cost of having a contract that can be exercised only when price moves against you. This may be a very attractive opportunity for many farmers who have avoided forward pricing for fear of missing out on price increases.

Pricing Outputs

An organized agricultural options market allows farmers to "hedge" their forward sales by buying a put option. Having a put option at a certain strike price means they have the opportunity to make a short futures sale at that price. (They would not likely actually need to exercise the option and take a short position. They should be able to sell the option at a profit equivalent to that gained from exercising the option.) If the futures price rose, they would not

have to exercise their option. They would have spent the cost of the premium for the right to hedge later. **Whether or not this is a good deal clearly depends on the size of the premium.**

Consider the following example: John Jones buys a $3.00 December corn put option for a premium of $.10 per bushel. If prices rise between now and the time he is ready to sell corn such that the future price goes above $3.00, Jones has no incentive to exercise the option. He could sell the corn and deduct the $.10 from the price as a cost of doing business. If the price fell however, then Jones could exercise the option (or offset) and use the proceeds to support his price. He would still have the premium cost as a part of the cost of doing business.

Compare this to an ordinary hedge with futures contracts. If Jones hedges by selling a futures contract at $3.00, then as cash prices go up he gains on the cash commodity and loses on the futures position. If prices fall he gains on the futures position and loses on the cash commodity. With either rising or falling prices in a conventional hedge, he realizes his price objective to the extent cash and futures prices move in parallel, i.e. the basis is estimated accurately. So while he avoids price declines, he misses the benefits of price increases. With the option he retains the opportunity to benefit from price improvements while being shielded from the impact of negative price changes. For this opportunity he pays the cost of the premium.

Pricing Inputs

Farmers also use forward contracts and hedging with futures to price inputs, such as feed grain or feeder cattle. This way, they know in advance the price they'll have to pay for the input. Buying a call option would give the farmer the right to buy the input at a known price but leave open the opportunity to buy the input at a lower price if the market moved in that direction. The farmer would know the maximum price to be paid for the input but still be open for lower prices. Suppose, for example, that a cattle feeder needs to buy corn. By buying a $3.00 corn call option, he could be sure he wouldn't have to pay more than $3.00 for corn. If corn prices fell to $2.50, he could let the option expire and buy the corn at the cheaper price. Either way he would add the cost of the option premium to his corn price as a cost of doing business. The advisability of using options, as opposed to other methods, depends on the objective to be achieved and the size of the option premium.

Exposure to Loss in Options and Futures

Proponents of options trading often focus on the buyer's exposure to loss. They point out that for option buyers the economic losses are limited to the cost of the premium plus trading costs. This is because buyers alone have the authority to decide whether to exercise the option rights. If, by exercising the option, the buyer cannot at least recover some of the premium and trading costs, the buyer would not exercise the option. If the buyer did not exercise the option the, maximum loss would be the premium paid plus trading costs.

The potential *gain to* the buyer from exercise of the option is reduced only by the cost of the premium and trading costs. If the value of the option rises, the buyer could gain either by exercising the option or by selling the option at the higher premium. Normally the buyer pays the premium and the commission costs when the option is purchased. This eliminates any uncertainty over what it will cost the buyer to trade.

Opponents of options trading sometimes point to the potential loss the option writer could incur. After receiving the premium from the buyer at the initial transaction, the writer is entirely exposed to the buyer's decision to exercise. The writer's potential loss is unlimited.

He gets the option premium, but it is generally quite small compared to the potential cost of fulfilling the option obligation. This exposure to economic loss is of special concern when the writer does not "own" the underlying commodity position. This is referred to as writing a "naked option," reflecting the fact that the writer is exposed. Opponents of options trading argue that the writing of naked options threatens the integrity of the options market. The solution is to require that option writers put down a margin deposit to prove their financial ability. Margin deposits are required for writers of exchange-traded options on agricultural futures.

Two Options Trading Examples

In order to clearly portray how a farmer could use the agricultural options market, the following two examples are given. One involves forward pricing soybeans. The second involves forward pricing for hogs.

John Bean, cash grain producer. John is thinking about pricing his soybean crop. He expects to harvest 20,000 bushels in October. John sees that the current price for the November futures contract is $7.00, which he thinks offers an acceptable return (he assumes a basis $.50 under Nov. futures at harvest for a $6.50 expected price). But he really believes that the price will go up over the next few months. His bank wants him to start pricing some beans to assure his ability to pay his loan.

John calls his commodity broker to discuss the current market situation and learns that he can buy a $7.00 November soybean put for a premium of $.30 per bushel. John calculates that this would mean a minimum local price of $6.20 ($7.00-$.50-$.30). Given the circumstances, John is willing to pay the $.30 premium for the put option. He buys put options for 20,000 bu. of soybeans at $.30 per bushel. He sends his broker a check for $6,000 plus a small commission cost. In mid-October John harvests his soybeans and markets them locally for $7.50 per bushel. On the same date the futures price is $8.00 for Nov. beans (his $.50 basis forecast is correct). The $7.00 Nov. soybean put option is now trading at $.01 per bushel (less than the commission to sell an option) so John allows the option to expire. John's return from soybean pricing is $7.50 minus the $.30 premium and minus the commission cost. John accomplished his objective: He guaranteed himself a minimum price without limiting gains from upward price improvements.

Harvey Hogg, hog feeder. Harvey has a very high debt load from a recent expansion of his feeding facilities. He is under pressure to make sure he prices his hogs above production costs. His next lot of 125 head is just going on feed. Current live hog futures for his next marketing period are selling for $53.00 per hundred, and Harvey expects a basis of $2.00 per hundred. So with hedging he expects a local cash price of $51.00. This will provide a $5.00 return above his total production costs. Harvey expects pricing opportunities to improve and he'd like to take advantage of them. His wife and his son encourage him to price now to lock in the $5.00 return. His commodity broker says Harvey can buy a $53.00 live hog put option for $1.00 per hundred. Harvey realizes that if he bought the put option it would reduce his expected price to $50.00 ($53.00— $2.00—$1.00 = $50.00) and his expected return above costs to $4.00. But he is convinced that prices will improve, so he decides to buy the put option for $1.00 and sends a check to his broker.

When Harvey's hogs are ready for market he sells them locally for $44.00 per hundred. On the same day the live hog futures are trading for $47.00 and the $53.00 put option is trading for a $6.00 premium. John calls his broker and sells (offsets) the $53.00 put for $6.00. Thus, his price for the hogs is $44.00 + $6.00 (from the put)—$1.00 (cost of the put) = a total of $49.00.

With a hedge in futures Harvey would have gotten $50.00 ($44.00 + $6.00 = $50.00) for his hogs. Harvey protected his price, but he paid the $1.00 premium for the opportunity to profit from higher prices—had there been any.

In both examples the farmers used the options market to assure a minimum price for their product while retaining the opportunity to benefit if prices improved. For this opportunity they paid the option premium plus the commission costs for the transaction. These costs reduced their expected return as compared to conventional hedging or cash forward contracts. This may, however, be a small price to pay for the opportunity to gain from improving prices.

Summary

An organized market for options on agricultural futures contracts adds another tool to the farmers marketing kit. Using options will not always result in the highest returns. However, being able to trade options means farmers can buy protection from negative price changes and still be able to take advantage of positive price changes.

This primer gives a quick look at the basics of agricultural options. It does not cover selling options, which may be useful to some producers. It also doesn't discuss the importance of relationships between cash and futures prices, or models that can be used to examine option premiums. Information on these and other aspects of agricultural options is available in publications listed at the end of this bulletin. Farmers will also find publications and workshops on options available from the Cooperative Extension Service, commodity futures brokers, and the commodity exchanges.

The use of options to enhance agricultural marketing alternatives may be the marketing opportunity farmers have long been waiting for. In any case farmers should take a careful look at the agricultural options market to discover how it fits into their marketing management plans.

For More Information

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Feeder Cattle Opts Prices as of 09/22/98 03:36 PM

MTH/ STRIKE	OPEN	--- SESSION --- HIGH	LOW	LAST	SETT	PT CHGE	EST VOL	---- PRIOR DAY ---- SETT	VOL	INT
ZF SEP98 FEEDER CATTLE OPTS CALL										
6500	----	----	----	3.500	3.500	UNCH		3.500		2
6600	----	----	----	2.500	2.500	UNCH		2.500		23
6700	----	----	----	1.500	1.500	UNCH		1.500		160
6750	----	----	----	1.000	1.000	UNCH		1.000		5
6800	.500	.500	.500	.500	.500	-50	5	.550		604
6850	.050	.050	.050	.050	.050	-75	5	.125	60	115
6900	----	----	----	----	----	UNCH		.025	78	320
6950	----	----	----	----	----	UNCH		.025		120
7000	----	----	----	----	----	UNCH		.025	102	604
7050	----	----	----	----	----	UNCH		CAB		40
7100	----	----	----	----	----	UNCH		CAB		280
7200	----	----	----	----	----	UNCH		CAB		304
7300	----	----	----	----	----	UNCH		CAB		87
7400	----	----	----	----	----	UNCH		CAB		680
7500	----	----	----	----	----	UNCH		CAB		199
7600	----	----	----	----	----	UNCH		CAB		219
7800	----	----	----	----	----	UNCH		CAB		354
8000	----	----	----	----	----	UNCH		CAB		94
8200	----	----	----	----	----	UNCH		CAB		146
8400	----	----	----	----	----	UNCH		CAB		32
8600	----	----	----	----	----	UNCH		CAB		73
ZF OCT98 FEEDER CATTLE OPTS CALL										
6600	----	----	4.625	4.625	4.625	-125		4.750		140
6700	----	----	3.750	3.750	3.750	-100		3.850		10
6800	----	----	2.925	2.925	2.925	-125		3.050		84
6900	----	----	2.200	2.200	2.200	-125		2.325		2
7000	1.600	1.650	1.500	1.600	1.600	-100	15	1.700	30	267
7200	.600	.700	.500	.700	.700	-100	10	.800	139	416
7400	.275	.275	.250A	.275	.275	-75	5	.350	8	408
7600	.075	.100	.075	.100	.100	-25	5	.125		171
7800	----	----	----	.025	.025	UNCH		.025		285
8000	----	----	----	----	----	UNCH		CAB		299
8200	----	----	----	----	----	UNCH		CAB		26
8400	----	----	----	----	----	UNCH		CAB		32
8600	----	----	----	----	----	UNCH		CAB		8
ZF NOV98 FEEDER CATTLE OPTS CALL										
6800	----	----	4.350	4.350	4.350	-75		4.425		27
7000	2.850	2.850	2.750A	2.850	2.850	UNCH	5	2.850		140
7200	1.700	1.800	1.650	1.800	1.800	UNCH	10	1.800	23	235
7400	.900	.900	.850	.900	.900	-100	15	1.000	10	181
7600	----	----	----	.500	.500	UNCH		.500	1	99
7800	----	----	----	.225	.225	UNCH		.225		54
8000	----	----	----	.050	.050	UNCH		.050		16
8200	----	----	----	.025	.025	UNCH		.025		58
8400	----	----	----	----	----	UNCH		CAB		77
ZF JAN99 FEEDER CATTLE OPTS CALL										
6800	----	----	----	5.575	5.575	+175		5.400		4
7000	----	----	----	4.200	4.200	+100		4.100	2	48
7200	2.850	3.100	2.850	3.100	3.100	+100	5	3.000	15	110
7400	----	----	----	2.000	2.000	UNCH		2.000	16	90
7600	----	----	----	1.400	1.400	UNCH		1.400	2	122
7800	.850	1.000	.850	1.000	1.000	UNCH	5	1.000		76
8400	----	----	----	.250	.250	UNCH		.250		43

8600	----	----	----	.150	.150	UNCH		.150			43
ZF MAR99 FEEDER CATTLE OPTS CALL											
7000	----	----	----	4.625	4.625	+75		4.550			9
7200	----	----	----	3.400	3.400	UNCH		3.400		2	6
7400	----	----	2.500	2.500	2.500	-50		2.550			2
7600	----	----	1.800	1.800	1.800	-50		1.850		10	115
7800	----	----	1.250	1.250	1.250	-150		1.400		51	84
ZF APR99 FEEDER CATTLE OPTS CALL											
7800	----	----	----	1.450	1.450	+75		1.375			4
TOTAL							EST.VOL		VOL	OPEN	INT.
TOTAL							85		549		8252

Feeder Cattle Opts Prices as of 09/22/98 03:36 PM (Continued)

ZF SEP98 FEEDER CATTLE OPTS PUT											
6200	----	----	----	----	----	UNCH		CAB			45
6300	----	----	----	----	----	UNCH		CAB			40
6400	----	----	----	----	----	UNCH		CAB			199
6450	----	----	----	----	----	UNCH		CAB			10
6500	----	----	----	----	----	UNCH		CAB			101
6600	----	----	----	----	----	UNCH		CAB			352
6650	----	----	----	----	----	UNCH		CAB			15
6700	----	----	----	----	----	UNCH		CAB		2	191
6750	----	----	----	----	----	UNCH		CAB			45
6800	.025	.025	----	----	----	UNCH	5	.050		26	526
6850	----	----	.050	.050	.050	-75		.125		96	106
6900	.500	.500	.500	.500	.500	-25	5	.525		1	76
6950	----	----	1.000	1.000	1.000	-25		1.025			15
7000	1.500	1.500	1.500	1.500	1.500	-25	5	1.525		19	495
7100	----	----	----	2.500	2.500	UNCH		2.500			6
7200	3.500	3.500	3.500	3.500	3.500	UNCH	5	3.500			623
7300	----	----	----	4.500	4.500	UNCH		4.500			5
7400	5.400	5.500	5.400	5.500	5.500	UNCH	5	5.500		2	71
7500	----	----	----	6.500	6.500	UNCH		6.500			9
7600	7.500	7.500	7.500	7.500	7.500	UNCH	5	7.500			252
7800	----	----	----	9.500	9.500	UNCH		9.500			2
8000	----	----	----	11.500	11.500	UNCH		11.500			2
ZF OCT98 FEEDER CATTLE OPTS PUT											
6400	----	----	.100	.100	.100	-25		.125		27	329
6500	.200	.200	.175	.175	.175	-25	10	.200		2	31
6600	.300	.300	.300	.300	.300	-50	5	.350		102	422
6700	----	----	.425	.425	.425	-25		.450			1
6800	.500	.600	.500	.600	.600	-50	10	.650		111	425
6900	----	----	.850	.850	.850	-50		.900		1	13
7000	1.400	1.400	1.250	1.250	1.250	-50	10	1.300		3	359
7200	2.600	2.600	2.350	2.350	2.350	-25	5	2.375		25	142
7400	4.100	4.100	3.900	3.900	3.900	UNCH	5	3.900			119
7600	----	5.900B	----	5.725	5.725	+50		5.675			190
7800	----	----	----	7.650	7.650	+75		7.575			6
ZF NOV98 FEEDER CATTLE OPTS PUT											
6000	----	----	.075	.075	.075	-25		.100			40
6200	----	----	.125	.125	.125	-25		.150			75
6400	.200	.200	.150	.150	.150	-50	5	.200			106
6600	.400	.400	.350	.350	.350	-50	10	.400		60	244
6800	.725	.725	.600	.600	.600	-150	15	.750		2	436
7000	1.200	1.300	1.100	1.100	1.100	-50	15	1.150		17	120
7200	2.100	2.100	2.025	2.025	2.025	-75	5	2.100		1	95
7400	----	----	3.100	3.100	3.100	-175		3.275			51
7600	----	----	4.700	4.700	4.700	-50		4.750			9
7800	----	----	6.400	6.400	6.400	-75		6.475			2
ZF JAN99 FEEDER CATTLE OPTS PUT											
6000	----	----	.200	.200	.200	-25		.225			51
6200	.375	.375	.375	.375	.375	-50	5	.425		1	45

6400	.600	.600	.600	.600	.600	-50	5	.650	1	144
6600	.950	.950	.800	.875	.875	-125	20	1.000	31	369
6800	1.400	1.400	1.250	1.250	1.250	-150	30	1.400	2	216
7000	----	----	1.850	1.850	1.850	-225		2.075		100
7200	----	----	2.700	2.700	2.700	-250		2.950	1	41
7400	----	----	3.575	3.575	3.575	-325		3.900		26
7600	----	----	4.925	4.925	4.925	-325		5.250		5
ZF MAR99 FEEDER CATTLE OPTS PUT										
6000	----	----	.400	.400	.400	-25		.425	10	86
6200	----	----	.600	.600	.600	-50		.650		37
6400	1.000	1.000	.850	.850	.850	-175	10	1.025	3	201
6600	1.350	1.350	1.275	1.275	1.275	-75	10	1.350	25	164
6800	1.950	1.950	1.750	1.750	1.750	-200	5	1.950	13	68
7000	----	----	2.500	2.500	2.500	-200		2.700	14	69
ZF APR99 FEEDER CATTLE OPTS PUT										
6600	----	----	1.500	1.500	1.500	-100		1.600		5
TOTAL							EST.VOL		VOL	OPEN INT.
TOTAL							210		598	8028

Live Cattle Options Prices as of 09/23/98 09:17 AM

MTH/	--- SESSION ---					PT	EST	---- PRIOR	DAY ----	
STRIKE	OPEN	HIGH	LOW	LAST	SETT	CHGE	VOL	SETT	VOL	INT
OK OCT98 LIVE CATTLE OPTIONS CALL										
56	----	----	----	----	----	UNCH		5.825		115
57	----	----	----	----	----	UNCH		4.850		54
58	----	----	----	----	----	UNCH		3.875		64
59	----	2.450	2.450	2.450	----	-500	5	2.950		1749
60	----	----	1.750A	1.750A	----	-325		2.075	3	1914
61	----	1.100	1.000	1.000	----	-300	10	1.300	5	847
62	----	.450	.450	.450	----	-275	20	.725	337	2253
63	----	.300	.225	.225	----	-150	20	.375	115	1610
64	----	.125	.125	.125	----	-25	5	.150	283	1840
65	----	----	----	----	----	UNCH		.050	200	876
66	----	----	----	----	----	UNCH		.025	1	610
67	----	----	----	----	----	UNCH		CAB	1	522
68	----	----	----	----	----	UNCH		CAB		775
69	----	----	----	----	----	UNCH		CAB		381
70	----	----	----	----	----	UNCH		CAB		1332
71	----	----	----	----	----	UNCH		CAB		40
72	----	----	----	----	----	UNCH		CAB		592
74	----	----	----	----	----	UNCH		CAB		301
76	----	----	----	----	----	UNCH		CAB		156
78	----	----	----	----	----	UNCH		CAB		156
OK DEC98 LIVE CATTLE OPTIONS CALL										
60	----	----	4.300A	4.300A	----	-275		4.575		47
61	----	3.300	3.300	3.300	----	-525	5	3.825		57
62	----	----	----	----	----	UNCH		3.100	2	191
63	----	----	----	----	----	UNCH		2.450	27	522
64	----	1.700	1.550A	1.550A	----	-325	10	1.875	42	1681
65	----	1.150	1.150	1.150	----	-250	5	1.400	12	616
66	----	.900	.800	.800	----	-150	10	.950	172	1620
67	----	----	.550A	.550A	----	-50		.600	83	302
68	----	.250	.250	.250	----	-125	5	.375	39	1388
69	----	----	----	----	----	UNCH		.250		18
70	----	----	----	----	----	UNCH		.150		476
72	----	----	----	----	----	UNCH		.050		897
74	----	----	----	----	----	UNCH		CAB		168
76	----	----	----	----	----	UNCH		CAB		59
OK FEB99 LIVE CATTLE OPTIONS CALL										
60	----	----	----	----	----	UNCH		5.350		15
62	----	----	----	----	----	UNCH		3.950		309
64	----	2.500	2.400A	2.400A	----	-175	10	2.575	1	1513
66	----	1.450	1.450	1.450	----	+50	5	1.400	6	1193

68	----	.650	.600	.650	----	UNCH	10	.650	24	958
70	----	----	----	----	----	UNCH		.400	1	404
72	----	----	----	----	----	UNCH		.250		255
74	----	----	----	----	----	UNCH		.175		149
76	----	----	----	----	----	UNCH		.100		59
OK APR99 LIVE CATTLE OPTIONS CALL										
64	----	----	----	----	----	UNCH		3.875		230
66	----	----	2.225A	2.225A	----	-100		2.325	68	451
68	----	----	----	----	----	UNCH		1.400	73	877
70	----	.750	.650A	.650A	----	-100	10	.750	68	704
72	----	----	----	----	----	UNCH		.450	1	230
74	----	----	----	----	----	UNCH		.325		94
76	----	----	----	----	----	UNCH		.200		14
OK JUN99 LIVE CATTLE OPTIONS CALL										
64	----	----	----	----	----	UNCH		2.275		12
66	----	----	----	----	----	UNCH		1.350	7	133
68	----	----	----	----	----	UNCH		.900	3	22
70	----	----	----	----	----	UNCH		.450		16
76	----	----	----	----	----	UNCH		.250		15
OK AUG99 LIVE CATTLE OPTIONS CALL										
66	----	----	----	----	----	UNCH		1.575		1
TOTAL							EST.VOL	VOL	OPEN INT.	
TOTAL							130	1574	31883	

Live Cattle Options Prices as of 09/23/98 09:17 AM (Continued)

OK OCT98 LIVE CATTLE OPTIONS PUT										
54	----	----	----	----	----	UNCH		CAB		42
56	----	----	----	----	----	UNCH		.025	65	531
57	----	.050	.050	.050	----	UNCH	10	.050	62	691
58	----	.125	.100	.125	----	+50	10	.075	128	1386
59	----	.175	.150	.175	----	+25	10	.150	32	1871
60	----	.325B	.300	.325B	----	+50	5	.275	252	1708
61	----	.800	.650	.750	----	+250	20	.500	129	953
62	----	1.250	1.150	1.250	----	+325	15	.925	436	2004
63	----	1.900	1.900	1.900	----	+325	5	1.575	35	752
64	----	----	----	----	----	UNCH		2.350	4	1989
65	----	----	----	----	----	UNCH		3.250	11	110
66	----	4.700	4.700	4.700	----	+475	10	4.225	2	927
67	----	----	----	----	----	UNCH		5.200		11
68	----	----	----	----	----	UNCH		6.200		485
70	----	----	----	----	----	UNCH		8.200		223
72	----	----	----	----	----	UNCH		10.200		6
74	----	----	----	----	----	UNCH		12.200		5
76	----	----	----	----	----	UNCH		14.200		
OK DEC98 LIVE CATTLE OPTIONS PUT										
52	----	----	----	----	----	UNCH		.100		40
54	----	----	----	----	----	UNCH		.150		45
55	----	----	----	----	----	UNCH		.200		92
56	----	----	----	----	----	UNCH		.275	2	812
57	----	----	----	----	----	UNCH		.350		173
58	----	----	----	----	----	UNCH		.425		1402
59	----	.550	.550	.550	----	UNCH	5	.550	12	779
60	----	.850	.750	.850	----	+125	15	.725	144	2846
61	----	1.100	1.100	1.100	----	+150	5	.950	34	253
62	----	1.400	1.400	1.400	----	+175	10	1.225	41	2685
63	----	1.750B	----	1.750B	----	+200		1.550	75	230
64	----	2.200	2.200	2.200	----	+225	5	1.975	25	1221
65	----	----	----	----	----	UNCH		2.475		1
66	----	----	----	----	----	UNCH		3.025	3	783
68	----	----	----	----	----	UNCH		4.425		421
70	----	----	----	----	----	UNCH		6.200		14
74	----	----	----	----	----	UNCH		10.100		1
OK FEB99 LIVE CATTLE OPTIONS PUT										
52	----	----	----	----	----	UNCH		.200		44

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54        ----     ----     ----     ----     ----  UNCH            .325            52
56        ----     ----     ----     ----     ----  UNCH            .500      15    657
58        ----     .850B    .750     .850A    ----    +75      5    .775      39   1026
60        ----    1.300    1.150    1.225A    ----   +125     15   1.100      46   2144
62        ----    1.700    1.700    1.700     ----  UNCH       5   1.700      25   1015
64        ----     ----     ----     ----     ----  UNCH           2.250      13    593
66        ----     ----     ----     ----     ----  UNCH           3.100       6    386
68        ----     ----     ----     ----     ----  UNCH           4.250            79
70        ----     ----     ----     ----     ----  UNCH           5.975            29

OK APR99 LIVE CATTLE OPTIONS PUT
54        ----     ----     ----     ----     ----  UNCH            .300            77
56        ----     ----     ----     ----     ----  UNCH            .450       5    486
58        ----     ----     ----     ----     ----  UNCH            .750      55    490
60        ----    1.100B    ----    1.100B    ----    +25           1.075      25   1233
62        ----    1.700    1.500    1.700     ----   +275     15   1.425      82    880
64        ----     ----     ----     ----     ----  UNCH           2.150      35    516
66        ----    2.750B    ----    2.750B    ----   +225           2.525       3    242
68        ----     ----     ----     ----     ----  UNCH           3.575            29

OK JUN99 LIVE CATTLE OPTIONS PUT
56        ----     ----     ----     ----     ----  UNCH            .800       2     25
58        ----     ----     ----     ----     ----  UNCH           1.200            10
60        ----     ----     ----     ----     ----  UNCH           1.800       5     66
62        ----     ----     ----     ----     ----  UNCH           2.550       2    109
64        ----     ----     ----     ----     ----  UNCH           3.425            16
TOTAL                                                      EST.VOL      VOL  OPEN INT.
TOTAL                                                        165       1850      35696
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Daily Grain Price/Volume/Open Interest SummaryFor Kansas City

KC Wheat Summary

Futures Prices							Open Interest			
Quotes for September 21, 1998							Quotes for September 18, 1998			
Contract	**Open**	**High**	**Low**	**Close**	**Chg**		**Contract**	**Volume**	**Open**	**Change**
September	285.6	285.6	285.4	285.4	+4.4		September	6	8	-1
December	290.4-90.6	299.4	290.2	299.2	+7.0		December	3,956	34,152	-153
March	305.0	313.0	304.4	313.0	+6.2		March	566	12,165	+43
May	312.0	319.0	312.0	318.4	+5.4		May	75	3,511	+2
July	318.0	326.4	318.0	326.4	+5.2		July	212	6,771	+91
							Total	4,815	57,296	-18

KC Wheat Options

Calls							Puts					
Strk	**Cls**	**Prev**	**Vol**	**Open**	**Chg**		**Strk**	**Cls**	**Prev**	**Vol**	**Open**	**Chg**
Dec Calls							Dec Puts					
310	6.7	4.7	4	873	0		300	0.0	0.0	0	1,269	-2
320	4.3	3.5	28	1,739	+25		310	17.4	22.3	0	633	0
330	2.6	2.2	50	1,411	+50		320	25.0	30.6	0	1,219	0
340	1.6	1.1	0	429	0		330	33.2	39.4	0	2,784	-10
350	1.0	0.5	0	469	0		340	42.1	48.4	0	370	-20
360	0.5	0.3	0	130	0		350	0.0	0.0	0	0	0

370	0.3	0.2	0	233	0		360	0.0	0.0	0	0	0
							370	0.0	0.0	0	0	0
Mar Calls							Mar Puts					
310	19.1	15.7	4	994	+2		290	8.0	9.5	0	637	-3
320	15.2	12.2	1	998	+1		300	11.5	13.7	0	520	0
330	11.6	9.4	0	814	0		310	16.2	19.0	0	466	0
340	9.1	7.3	0	292	0		320	21.7	25.2	0	551	0
350	7.1	5.5	0	82	0		330	28.3	32.2	0	1,139	0
360	5.4	4.3	0	205	0		340	35.5	39.7	0	317	0
370	4.3	3.3	0	82	0		350	0.0	0.0	0	0	0
May Calls							May Puts					
310	24.3	21.6	2	138	+1		280	0.0	0.0	0	0	0
320	19.6	17.0	2	298	+1		290	0.0	0.0	0	0	0
330	16.0	13.4	1	36	+1		300	0.0	0.0	0	0	0
340	12.7	10.6	2	21	+2		310	17.0	18.0	1	6	+1
360	8.2	6.6	0	10	0		320	0.0	0.0	0	0	0
Total Calls			141	12,575	+101		Total Puts			14	12,125	-50