Introduction to Agricultural Options

Using Risk to Profit Workshop

January 5, 1999

OPTION

Contract Between Two Parties That Conveys A Right But Not An Obligation To Buy Or Sell A Specific Commodity Futures Contract At A Specific Price Within Specific Time Period For A Premium.

OPTION COMPONENTS

- Underlying Futures Contract
- Strike Price
- Expiration Date
- Seller
- Buyer
- Premium

COMPONENTS OF OPTION PREMIUM

Intrinsic Value

\+ Time Value

TOTAL VALUE

INTRINSIC VALUE

- Strike Price
- Underlying Futures Price

PUT

Out-of-the-money

Strike Price < Futures Price

At-the-money

Strike Price = Futures Price

In-the-money

Strike Price > Futures Price

CALL

In-the-money

Strike Price < Futures Price

At-the-money

Strike Price = Futures Price

Out-of-the-money

Strike Price > Futures Price

TIME VALUE

- Volatility Of Underlying Futures
- Interest Rates
- Option Classification
- Time

OPTIONS ON FUTURES CONTRACTS

1. Options on futures represent the RIGHT, (but not the obligation) to enter a designated contract at a specific price

   - main focus is that options give the RIGHT to a futures position, but the option owner is not required to enter a futures position

2. Types of Options

   a. "put" option represents the right to sell
   b. "call" option represents the right to buy

OPTIONS ON FUTURES CONTRACTS *(cont'd)*

3. Strike price is the price at which the option buyer has the right to sell (for a put) or buy (for a call) the underlying contract

4. Option premium is the market value of the right
   - quoted in cents per bushel (5000 bu.)

5. Option Expiration
   a. expire about the 25th day of month before the underlying futures contract month

OPTION EXAMPLES
(Focus on Puts)

Mid January - Puts on CBT Sep 99 wheat

CBT Sep wheat futures price = 335.00 cents/bu.

Strike Price	Premium (cents/bu.)
300	12.25
310	16.25
320	21.25
330	27.00
340	33.50

OPTION EXAMPLES
(Focus on Puts)
(cont'd)

Know:

1. can purchase right to sell CBT Sep futures
2. right to sell at several different strike prices above or
   below the current market price
3. premiums vary by strike price
   - right to sell is more expensive as strike price goes up
4. option on Sep wheat expires about 25 Aug 99

OPTION EXAMPLES
(Focus on Puts)
(cont'd)

Option premium influenced by:

1. strike price relative to the current futures price:
   - a. intrinsic value if above futures price
     - 300 put has 0 cents of intrinsic value
     - 340 put has 5 cents of intrinsic value

2. time until expiration:
   - a. futures price can change
     - 300 put can have intrinsic value if futures price goes below 300
   - b. more time to expiration = more time value
   - c. more market volatility = more time value

OPTION EXAMPLES
(Focus on Puts)
(cont'd)

Closing a put position:

a.“sell” at the current premium
- premium changes over time as futures price changes and expiration approaches

b. let option expire if worthless
- option expires with no intrinsic value

c. exercise and obtain futures position
- may be automatic if expires with value

CALL OPTION EXAMPLE
Sell Cash Wheat and Purchase Call

1. Mid Jan. - Grain producer has 30,000 bushels of wheat in storage. Current cash price is 310 cents/bu. Wants to eliminate holding costs, but feels some potential for price gain between now and mid-Apr. Premium on 300 CBT May wheat call = 10 cents

2. Evaluate potential for gain:

   Cost of holding cash wheat = 12
   Cost of buying 300 Chi May Call = 10

CALL OPTION EXAMPLE
Sell Cash Wheat
(cont'd)

3. Compare to other alternatives:

   - decides to use call option alternative
   - sell cash wheat at 310 cents/bu.
   - buys 6 Chicago 300 May wheat
     calls (5000 bu. each) at 10 cents

PURCHASE WHEAT CALL OUTCOME
Mid-Apr and Price Increases

A. Local price increases to 350 cents/bu.

Cash Market	Futures Market	Actual Basis
Sold wheat	Sep Futures price = 360	
at 310	300 Call premium = 60	-10
	(intrinsic value)	
	Sell call for premium	

Outcome

Sale of cash wheat = 310 (+)
Premium paid for 300 call = 10 (-)
Storage cost savings = 12 (+)
Proceeds from sale of call = 60 (+)

Net Price = 372 cents/bu.

PURCHASE WHEAT CALL OUTCOME
Mid-Apr and Price Decreases

B. Local price decreases to 260 cents/bu.

Cash Market	Futures Market	Actual Basis
Sold wheat at 310	Sep Futures price = 280 300 Call premium = 0 (no intrinsic value) Call expires worthless	-10

Outcome

Sale of cash wheat = 310 (+)
Premium paid for 300 call = 10 (-)
Storage cost savings = 12 (+)
Proceeds from sale of call = 0 (+)

Net Price = 312 cents/bu.