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Disclaimer: This web page is designed to aid farmers with their marketing and risk management decisions. The risk of loss in trading futures, options, forward contracts, and hedge-to-arrive can be substantial and no warranty is given or implied by the author or any other party. Each farmer must consider whether such marketing strategies are appropriate for his or her situation. This web page does not represent the views of Kansas State University.

RMA's Method for Setting Volatile Factors[1]

Dear Art,

Do you have any updated info on the volatility factors, or are you still using 24 on beans and 33 on corn?

Crop Insurance Agent

Dear Agent,

RMA has started posting the daily prices and volatility to set revenue guarantees at:
http://www3.rma.usda.gov/apps/pricediscoveryweb/ActiveDiscoveryPeriods.aspx

For most of the Corn Belt, the corn volatility is current at 30 and beans at 23.

Below is the method RMA uses to set volatility. The formula is posted and the link to RMA is:
http://www.rma.usda.gov/pubs/2011/volatilitymethodology.pdf

Art

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RMA's Volatility Factor Calculation Methodology

RMA uses a measure of price volatility based on the Black-Scholes Model, which is commonly used and accepted in finance. This model provides a formula that translates options prices (the amount the market charges to 'lock-in' a future price) into an implied volatility of the price of the commodity. This price volatility is used in the calculation of RMA's premium rates for revenue coverage. The result is that the premium rate RMA charges to lock-in a future (harvest time) price through crop insurance is equivalent to what the market charges to lock in a price through an options contract.

Implied volatility, being a common market measure, is provided by a number of financial reporting services. RMA utilizes the services of barchart.com as its source for market data. For this calculation, RMA downloads the appropriate closing implied volatility for the contract, for the day, as defined in the Commodity Exchange Price Provisions (CEPP) of the Common Crop Insurance Policy Basic Provisions (11-BR). The implied volatility is then adjusted to take into account the time difference between the expiration of the options contract and the time period RMA uses to establish the harvest price. The RMA Volatility Factor for a given crop is based on the average of the time-adjusted volatility factors for the last 5 days of the projected pricing period.

STEPS USED BY RMA TO ESTABLISH THE VOLATILITY FACTOR

Determine the Projected Price and Harvest Price monitoring periods from the CEPP.

For each of the last 5 days of the Projected Price discovery period:

Determine the number of days from that date until the midpoint of the Harvest Price discovery period (the 16th day of the Harvest Price discovery month), and divide that number by 365;

Take the square root of that quotient;

Multiply by the implied volatility for the contract for the day; and

Determine the simple average of the last five RMA calculated volatility factors for the projected pricing period, rounded to 2 decimals.

EXAMPLE: Iowa corn

-Futures contract is CZ10 (December 2010 corn)
-Projected Price monitoring period is February 1-28, 2010
-Harvest Price monitoring period is November 1-30, 2010

So for example, for 2/22/2010, the logic is as follows:
.287=(((DATE(2010,11,16)-DATE(2010,2,22))/365)^0.5)*.336

Contract	Date	Implied Volatility	RMA calculated volatility factor
CZ10	2/22/2010	0.336	0.287
CZ10	2/23/2010	0.323	0.276
CZ10	2/24/2010	0.323	0.275
CZ10	2/25/2010	0.323	0.275
CZ10	2/26/2010	0.326	0.277

Simple average of the 5 RMA calculated volatility factors, rounded to 2 decimals = .28