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### **Soybean Prices have a Downside Price Risk of \$2.46 with RA Only<sup>1</sup>**

*Thanks Art,*

*I saw the one posting but wasn't sure if it was exactly the same question as mine. You aren't giving up the market prices with RA without the HPO are you? It seems to me that you are only gambling on whether the harvest price will be higher. Otherwise, as the insured you are saying I am happy with this guarantee per acre. I don't care what the harvest price does. I am just trying to make sure that I am not missing something. It seems to me that we want to use Revenue per acre on CRC and RA as a sales tool but yet when it comes to RA without HPO we want to go back to our MPC I way of thinking and use the bushel scenario. I think it should be a revenue per acre...end of conversation. With the insured understanding that without HPO they are giving up all upside potential and accepting the first offer as the only offer. Just give me your take on this or if I am truly missing something.*

*Crop insurance agent*

Another comment:

*Art,*

*Don't you purchase HPO for the higher than base price swing? If you are sure prices will be below base, Ohio is 6.72 you can take chance and not purchase HPO. But if we see what happened in fall of 2003 you could lose bushels below trigger and still not collect.*

*Agent*

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Dear Agents,

The easy questions first, the RA provides more coverage than MPCl this year because of the higher base prices. If harvest prices are higher than base prices and there is an insurable yield loss then it is possible the MPCl would pay more than RA with no HPO. In some locations the RA rate is also lower than MPCl but the premiums per acre are higher because of the higher RA price elections. But those higher RA price elections also increase the dollars of coverage per acre.

*“You aren’t giving up the market prices with RA without the HPO are you?”* Yes, growers are giving up market prices if they buy crop insurance and don’t combine it with a marketing tool, assuming price falls from current levels.

*“It seems to me that you are only gambling on whether the harvest price will be higher”.* Only if prices are equal or below the base price would I agree with your argument. But soybean prices are already 78 cents above the RA base price. That is the point, growers who take just crop insurance are giving up higher market prices that are currently being offered for new crop corn, soybeans, and spring wheat. A 75% RA insured soybean grower with an average yield (the most likely yield) would need harvest time futures prices to fall below \$5.04 to trigger indemnity payments. That means insured soybean growers with average yields could suffer a \$2.46 price decline and the RA would do nothing to protect that price decline. This downside price risk is greater this year on RA because the RA soybean base price is 78 cents out of the money.

With an average yield 75% insured growers are subject to downside price risk of \$2.46 on soybeans, 84.5 cents on corn and \$1.00 on spring wheat from current market levels. Those lower prices are not covered with RA unless yields are also low. However, if harvest prices are higher than current market prices then growers are better off doing no preharvest sales and buying the HPO would only generate larger indemnity payments if yields are below the insurable yields.

These are “big” price drops (see table 1). However, if the grower has reason to believe they will not produce a crop then RA with no HPO is likely the better option (planted in an area that will not grow the crop, “planting with seed box empty”, etc.) but most growers would expect an average yield. Buying just RA means that one is betting that prices will not fall at harvest time from current levels because the most likely outcome is an average yield.

If growers were to buy RA-HPO combined with put options on soybeans they would increase their net minimum revenue<sup>2</sup>. For example a soybean grower with a 50 bushel APH yield that combines 75% RA-HPO with put options on their guaranteed bushels and a 25 cent under basis would increase their minimum revenue from \$239.50 to \$304.19 per acre (table 1). If prices

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<sup>2</sup>Buying puts at the current premiums is probably not the better alternative. Returns are likely to be higher with some selling of futures (or an open basis contract at the elevator) and taking greater advantage of the HPO in the RA contract. Depending on the level of sales, some growers may want to cover some of those sales with out of the money call options. If prices go higher they will capture some of the price increase from the calls and many growers would sell more bushels. One may also want to cover some sales with call options because the price increase in CRC and the HPO on RA does not attach until the crop is planted.

increase then growers would sell their bushels for more money but the put will expire worthless; if growers have bushels to sell. If the bushels are lost then HPO will kick in and help cover the put premium losses and crop production expenses. Growers that buy RA only are betting on higher prices and they will have a crop. Is it more likely to have a normal crop and higher prices or a poor crop and higher prices? Beats me but that is the risk growers must consider.

If growers are not going to take any price protection, then they might be better off to buy higher levels of RA coverage without the HPO. With an average yield that would increase the “minimum” price to \$5.71 for soybeans, \$2.41 for corn and \$3.40 for spring wheat at the 85% coverage level (table 1). Growers buying higher coverages of RA with out HPO might also want to consider the enterprise discount.

Given the “low” level of price protection in the RA contract, I still think the better alternative is buying the HPO and combine it with a marketing tool(s). As table 1 shows, even growers with high levels of RA protection, they still have a lot of downside price risk. But if the grower is not going to use any marketing tools, then RA without the HPO is likely the better alternative. The MPCI is the least attractive because of the higher base price in RA.

Growers who make no preharvest sales are speculating on higher cash prices. If prices fall they take the loss. Growers who buy no crop insurance are speculating on their yield. Doing nothing has never eliminated the price risk or yield risk, it is just a different set of risks. If these growers are correct and they produce a yield combined with higher prices, then clearly they made the right decision by no preharvest sales and no crop insurance. However, is this bet one that most growers expect to win?

Prevented planting is probably the greatest risk currently faced by growers. The HPO does attach to the prevented planting payment but the coverage is reduced from the coverage provided after planting<sup>3</sup>. Therefore if preharvest sales exceed 50% of the APH, then one may want to buy some out of the money calls to cover those additional sales before the crop is planted.

All grower marketing plans assume production at harvest. If the plan does not assume production then anyone could execute the plan including a Chicago speculative trader. **A grower with preharvest sales and a crop failure is in exactly the same financial position as a Chicago speculative trader, neither have any bushels to offset margins or option premium losses!** RA-HPO will guarantee those bushels at market value to offset growers’ marketing plans. The RA-HPO does not guarantee price and that is especially true with base prices in RA that are way out of the money<sup>4</sup>. Revenue insurance is not a substitute for marketing and marketing is not a substitute for crop insurance.

ART

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<sup>3</sup>CRC’s replacement coverage is also applied to prevented planting. This is a change from the original CRC.

<sup>4</sup>These comments on RA-HPO also apply to CRC. However, CRC does not have the option to delete the replacement coverage like RA. Also RA-HPO has unlimited coverage while CRC has limits of \$3.00 on soybeans, \$1.50 on corn, and \$2.00 on wheat. One might also be willing to pay more for RA-HPO than CRC this year on soybeans because the market is very volatile and would allow growers “to sleep at night” if they forward price some or all of their expected production.

**Table 1. Comparison of the Fall Price Necessary to Meet the Revenue Insurance Guarantee with an Average Yield**

	Soybeans					
	75 % RA Coverage			85 % RA Coverage		
	Current Price			Current Price		
Current Price <sup>1</sup>	<b>7.4975</b>			<b>7.4975</b>		
RA Base or Expected Price	6.72	6.72	6.72	6.72	6.72	6.72
APH	50.0	50.0	50.0	50.0	50.0	50.0
Coverage Percentage	75%	75%	75%	85%	85%	85%
Minimum Revenue Guarantee	252.00	252.00	252.00	285.60	285.60	285.60
Price Necessary to Meet Guarantee	\$5.04	\$5.04	\$5.04	\$5.71	\$5.71	\$5.71
Harvest Yield (average)	50	50	50	50	50	50
Harvest Price	6.72	6.50	5.04	6.72	6.50	5.04
Basis	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
Indemnity Payment	0.00	0.00	0.00	0.00	0.00	33.60
Cash Sales	323.50	312.50	239.50	323.50	312.50	239.50
Total Revenue before Crop Insurance Premium	\$323.50	\$312.50	<b>\$239.50</b>	\$323.50	\$312.50	<b>\$273.10</b>
<b>Add Puts</b>						
Strike Price	\$7.40	\$7.40	\$7.40	\$7.40	\$7.40	\$7.40
Put Premium <sup>2</sup>	\$0.6350	\$0.6350	\$0.6350	\$0.6350	\$0.6350	\$0.6350
Net Put Premium with falling Price	\$0.05	\$0.27	\$1.73	\$0.05	\$0.27	\$1.73
Puts on Guaranteed bushel only	\$1.69	\$9.94	\$64.69	\$1.91	\$11.26	\$73.31
Total Revenue before Crop Insurance Premium	\$325.19	\$322.44	<b>\$304.19</b>	\$325.41	\$323.76	<b>\$312.81</b>

  

	Corn					
	75 % RA Coverage			85 % RA Coverage		
	Current Price			Current Price		
Current Price <sup>1</sup>	<b>2.9650</b>			<b>2.9650</b>		
RA Base or Expected Price	2.83	2.83	2.83	2.83	2.83	2.83
APH	133.3	133.3	133.3	133.3	133.3	133.3
Coverage Percentage	75%	75%	75%	85%	85%	85%
Minimum Revenue Guarantee	283.00	283.00	283.00	320.73	320.73	320.73
Price Necessary to Meet Guarantee	\$2.12	\$2.12	\$2.12	\$2.41	\$2.41	\$2.41
Harvest Yield (average)	133.3	133.3	133.3	133.3	133.3	133.3
<b>Harvest Price</b>	<b>2.83</b>	<b>2.33</b>	<b>2.12</b>	<b>2.83</b>	<b>2.33</b>	<b>2.12</b>
Basis	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15
Indemnity Payment	0.00	0.00	0.33	0.00	10.07	38.07
Cash Sales	357.33	290.67	262.67	357.33	290.67	262.67
Total Revenue before Crop Insurance Premium	\$357.33	\$290.67	<b>\$263.00</b>	\$357.33	\$300.73	<b>\$300.73</b>
<b>Add Puts</b>						
Strike Price	\$3.00	\$3.00	\$3.00	\$3.00	\$3.00	\$3.00
Put Premium <sup>2</sup>	\$0.2850	\$0.2850	\$0.2850	\$0.2850	\$0.2850	\$0.2850
Net Put Premium with falling Price	-\$0.12	\$0.39	\$0.60	-\$0.12	\$0.39	\$0.60
Puts on Guaranteed bushel only	-\$11.50	\$38.50	\$59.50	-\$13.03	\$43.63	\$67.43
Total Revenue before Crop Insurance Premium	\$345.83	\$329.17	<b>\$322.17</b>	\$344.30	\$334.30	<b>\$330.10</b>

<sup>1</sup>Closing Market prices for March 1, 2004.

<sup>2</sup>Premium for the at the money put on March 1, 2004

**Table 1 Continued. Comparison of the Fall Price Necessary to Meet the Revenue Insurance Guarantee with an Average Yield**

	Spring Wheat					
	75 % RA Coverage			85 % RA Coverage		
	Current Price			Current Price		
Current Price <sup>1</sup>	<b>2.9650</b>			<b>2.9650</b>		
RA Base or Expected Price	4.00	4.00	4.00	4.00	4.00	4.00
APH	50.0	50.0	50.0	50.0	50.0	50.0
Coverage Percentage	75%	75%	75%	85%	85%	85%
Minimum Revenue Guarantee	150.00	150.00	150.00	170.00	170.00	170.00
Price Necessary to Meet Guarantee	\$3.00	\$3.00	\$3.00	\$3.40	\$3.40	\$3.40
Harvest Yield (average)	50.0	50.0	50.0	50.0	50.0	50.0
<b>Harvest Price</b>	<b>4.00</b>	<b>3.50</b>	<b>3.00</b>	<b>4.00</b>	<b>3.50</b>	<b>3.00</b>
Basis	-0.20	-0.20	-0.20	-0.20	-0.20	-0.20
Indemnity Payment	0.00	0.00	0.00	0.00	0.00	20.00
Cash Sales	190.00	165.00	140.00	190.00	165.00	140.00
Total Revenue before Crop Insurance Premium	\$190.00	\$165.00	<b>\$140.00</b>	\$190.00	\$165.00	<b>\$160.00</b>
<b>Add Puts</b>						
Strike Price	\$4.10	\$4.10	\$4.10	\$4.10	\$4.10	\$4.10
Put Premium <sup>3</sup>	\$0.2600	\$0.2600	\$0.2600	\$0.2600	\$0.2600	\$0.2600
Net Put Premium with falling Price	-\$0.16	\$0.34	\$0.84	-\$0.16	\$0.34	\$0.84
Puts on Guaranteed bushel only	-\$6.00	\$12.75	\$31.50	-\$6.80	\$14.45	\$35.70
Total Revenue before Crop Insurance Premium	\$184.00	\$177.75	<b>\$171.50</b>	\$183.20	\$179.45	<b>\$175.70</b>

<sup>1</sup>Closing Market prices for March 1, 2004.

<sup>3</sup>The at the money put did not trade on March 1, 2004 so the out of put strike premium was used.