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Investigating Your Crop Insurance Policy in Front of a Drought

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Conditions in Western Kentucky are dire as a prolonged drought and extreme temperature at the most critical time for pollination are most certain to reduce corn yields significantly. These conditions may also affect soybeans. However, soybeans have a longer window of tolerance and rains during July can still make the soybean crop. These conditions are creating the demand for information regarding how crop insurance works. Some growers will undoubtedly face crop losses that will trigger payments. Thus, if you have a crop or revenue insurance plan, it is highly likely that you have question about how your policy may work. This note is not meant to answer all of these questions. Rather, the purpose of this article is to provide guidance on assessing the policy you have when estimating potential payments (i.e., indemnities).However, it is a prudent practice to consult your crop insurance agent for more complete responses regarding your specific policy.

As a starting point, determining your downside risk protection point is important. With a yield policy, you need to locate the per acre bushel "guarantee" in your schedule of insurance. Your schedule of insurance is like your credit report; it tells you everything you need to know about your insurance policy. The (per acre) bushel guarantee represents the point at which any further yield loss will be paid to you by the crop insurance company.

When purchasing crop insurance each producer makes three decisions: coverage level, insurance type, and unit type. Each one of these decisions impacts the calculation of payments. Thus, there is more to consider. Let's consider the

Box 1. Yield Insurance

Assume: APH of 155 bushels/acre. 80% coverage level. 100% share of crop goes to producer.

Guarantee = 124 (155*.8) bushels/acre

Expected or actual yield = 95

Loss = 124-95 = 29 bushels/acre

Projected price = $5.68/bushel

Payment = 29 bushels/acre*$5.68 = $164.72 per acre

Payment at 65% coverage level = $5.75

pure yield policy choices first. Next we will consider the revenue insurance policy choice where you protect revenue shortfalls that use your actual yield and the differences in the national price from expectations that were set in the spring of this year. Again, your contract decision choices can be found in the schedule of insurance.

In the most direct example represented in Box 1, if you have corn a guarantee of 124 (Actual Production History (APH) yield of 155 bushels per acre, 80% coverage level) bushels per acre and your actual yield is 95, you will be paid on 29 bushels (124-95). Now this is where things get a little dicey. The acre guarantee will likely change by field and how the final payment is calculated will depend upon the contract selection decision you made earlier this spring.

Let's first talk about the coverage level selection decision. Higher coverage levels imply a higher bushel guarantee and therefore payments will start earlier than someone with a lower coverage level. Using the example found in Box 1 where the guarantee was 124 bushels per acre with an 80% coverage level, any reduction in coverage level would lead to a lower bushel guarantee. For example, if a 65% coverage level had been selected the guarantee would be 100.75 bushels per acre. Payments to the producer start when the actual yield drops below the guarantee. Consequently payments start much earlier for the 80% coverage level than the 65% coverage level since the guarantee is 23.25 bushels higher (see last line in Box 1).

Another contract selection, and probably one of the most confusing decisions, is the unit type selection. Four unit type selections are available but two remain the dominant selections. The two dominant unit type choices are "optional units," where every field (i.e., FSA number) is insured independently, and "enterprise units," where all units, by crop, are averaged to one insurable unit, per county. To estimate payments for a crop with enterprise units the producer must estimate average production for all units within the county. Since all units is averaged into one unit chances of payments decrease – losses in one field, where a payment would have been made, could be offset by high yield in another field. Enterprise units are generally less expensive and represent a

Box 2. Revenue Insurance with Harvest Price Greater than Base Price

Assume: APH of 155 bushels/acre. 80% coverage level. 100% share of crop goes to producer.

Guarantee = 124 (155*.8) bushels/acre

Projected price = $5.68

Revenue guarantee = 124 bushels/acre*$5.68 = 704.32

Expected or actual yield = 95 bushels/acre

Harvest price = $6.20/ bushel

Since harvest price is greater than projected price the revenue guarantee is recalculated using the harvest price

New revenue guarantee = 124 bushels/acre*6.20 = $768.80

Loss = 124-95 = 29 bushels/acre

Payment = 29 bushels/acre*$6.20 = $179.80 per acre

good risk management strategy as your main goal is to protect your revenue base and not losses from field to field. Since enterprise unites are less expensive and involve averaging all of your fields into a single yield, producers also generally select higher coverage levels when they chose enterprise units. Nonetheless, during a widespread drought that is more likely to negatively affect yields on all of your fields, both optional units and enterprise units should work well.

The final decision is the plan code selection. Plan code represents the type of insurance purchased. There are three primary types – yield protection, revenue protection and revenue protection with the harvest price exclusion.

Box 1 gives you examples of yield insurance only, in this case given a 29 bushel loss the producer would be paid based on the corn projected price (or base price) for 2012 of $5.68 per bushel or $164.72 per acre.

For revenue protection the outcome depends upon the relationship of the harvest price and base price. Given that Kentucky is an extension of the Midwest, when Kentucky suffers a major drought it is also likely that National corn yields will be lower and corn prices will be higher than spring price expectations. For that reason, in Box 2 we use price that is greater than $5.68 to illustrate how revenue insurance may work.

If you have a revenue insurance policy, your payments are no longer only triggered by your yield shortfalls. They are based on your yield and the national price. You have a revenue guarantee. Thus, extending the example in Box 1, the revenue guarantee is still driven by the 125 bushels (which are based on your APH and the 80 percent coverage). However, if you have purchased the harvest price option, your revenue guarantee is recalculated based on the new price (in this example it increases to $768.80). Thus, any combination of your actual yield multiplied by the $6.20 price that gives a result below $768.80 will trigger a payment. Box 2 demonstrates the payment with the same actual yield as Box 1 should you have the revenue protection insurance policy.

Unlike yield insurance where size of the indemnity only depends upon actual yield, payments under revenue protection also depends upon harvest price. With two unknowns, actual yields and harvest price, it is difficult to predict the insurance payment. Revenue protection with the harvest price exclusion does not allow for the yield guarantee to increase when harvest price is higher than base price. Under the previous example a RP-HPE policy would have a payment of $115.32. Under drought conditions and assuming we have a higher harvest price the revenue protection policy will provide more payments but it does cost more in premiums than yield protection or revenue protection with the harvest price exclusion.

County plans such as Group Risk Plan (GRP) and Group Risk Income Protection (GRIP) are also available for purchase for select counties in Kentucky. Payments from these plans come from losses at

the county level. These plans are especially good when a very strong correlation exists between farm yields and county yields. Please contact your insurance agent for estimating losses under GRP/GRIP.

Share of crop owned by the producer will also influence your payments. Crop insurance uses the term 'interest' as share of crop owned by the producer. In an owned land or cash rent situation the producer has 100% interest and therefore is entitled to 100% of the payment. Under crop share the producer can only insure their interest in the crop and therefore is entitled to only that interest of the payment.

In summary, size of insurance payments will depend heavily upon contract components. Higher coverage levels imply a higher bushel guarantee and therefore a higher possibility of payments. Unit type impacts averaging between FSA farm numbers. However, producers who selected enterprise units often countered the averaging with the selection of a higher coverage level. Insurance type decision impacts the use of the harvest price, which could result in more payment it is significantly higher than the projected price. Calculating expected indemnities under revenue insurance at this point is more difficult because it involves estimating two unknowns: yield and the harvest price.

Under severe drought conditions almost all insurance contract combinations will provide payments. A few exceptions do exist. Catastrophic coverage (CAT) is less likely to pay since it insures at 50% of APH yield and at 55% of projected price. Payments from CAT policies imply losses greater than 50% of APH yield and for each bushel loss they pay 55% of projected price. Consequently coverage under CAT if a total loss were to occur is a very low 27.5% (.5*.55) of expected revenue. Benefit is that CAT per acre premiums are zero with a filing fee of $250 per crop. Another exception is when APH yields do not match expected yields. For further information see my publication titled "Trend Adjusted Actual Production History Yield Endorsement", which can be found in the University of Kentucky Ag Econ Extension Grains webpage (http://www.ca.uky.edu/cmspubsclass/files/TA-APH_2-20-12_%20%282%29.pdf), or try searching using the title and Cory Walters.

If yield expectations are thought to be below the yield guarantees or if you are uncertain about your insurance contract it is advised that you contact your insurance agent to discuss your situation. Crop insurance is complicated and therefore you should ask your agent for guidance on the fine details. Performance of the insurance contract should be reevaluated each year and adjustments can be made up to the sales closing date – March 15th for corn and soybeans and September 30th for wheat.