**AAE 320 Problem Set #8 Due December 14, 2022 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Below are several questions that will ask you to demonstrate your understanding of how crop insurance works. You will likely have to use the class overheads and/or the materials posted on the class web page to answer some of them.

**A. Yield Insurance**

Suppose a farm has 90 acres of corn in one insured basic unit with an actual production history (APH) average yield of 170 bu/ac.

1. If the farmer buys 80% Yield Protection (YP) crop insurance, what would be the per acre yield guarantee? What would be the yield guarantee for the whole 90 acre unit?
2. If the farmer actually harvested 11,700 bushels from the unit (an average of 130 bu/ac), what would be the YP indemnity, assuming a 100% price election of $5.90/bu?
3. How would the YP indemnity for question 2 change if the farmer actually sold the corn for $5.50/bu?
4. If instead the farmer actually harvested 12,600 bushels from the unit (an average of 140 bu/ac) and sold the corn for $5.40/bu, what would be the YP indemnity, assuming a 100% price election of $5.90/bu?

Suppose the farmer instead bought a corn Area Yield Protection (AYP) policy in a county with an average yield of 180 bu/ac. The farmer buys a AYP policy with a 90% coverage level, so the county yield guarantee is 90% x 180 bu/ac = 162 bu/ac. The farmer enrolls all 90 corn acres.

1. If the county average yield is 150 bu/ac and the farmer chose the $5.90/bu price election, what would be the AYP indemnity?
2. How would the AYP indemnity change if the farmer’s actual yield was 140 bu/ac and sold the corn for $5.50/bu?

**B. Revenue Insurance**

Suppose a farm has 110 acres of soybeans in one insured unit with an actual production history (APH) average yield of 50 bu/ac and the Revenue Protection (RP) base price is $14.33/bu.

1. If the farm buys 70% Revenue Protection crop insurance, what would be the initial per acre revenue guarantee? What would be the initial revenue guarantee for the 110 acre unit?
2. What is the final per acre revenue guarantee and unit guarantee if the officially announced harvest price is $14.40/bu? What if the officially announced harvest price were $13.81/bu?

Suppose the farm actually harvests 3,520 bushels from the unit (an average of 32 bu/ac).

1. If the officially announced harvest price is $14.40/bu, what would be the RP indemnity?
2. Suppose the farm locked in a forward contract and sold the soybeans for $14.28/bu with March delivery, how does the RP indemnity change?

Suppose the farm instead bought a soybean Area Revenue Protection (ARP) policy in a county with an approved average yield of 52 bu/ac and the farmer chose a 90% coverage level. If the base price is $14.33/bu, then the initial county revenue guarantee is 90% x 52 bu/ac x $14.33/bu = $670.64/ac. The farmer enrolls all 110 soybean acres.

1. If the actual county average yield for the year is 46 bu/ac and the officially announced ARP harvest price is $13.81/bu, what would be the ARP indemnity?
2. How would the ARP indemnity change if the farm’s actual yield was 35 bu/ac and it sold its grain for $13.76/bu? How would the ARP indemnity change if the farm’s actual yield was 55 bu/ac and it sold its grain for $15.75/bu?