

## **AN EVALUATION OF THE SUPPLEMENTAL REVENUE ASSISTANCE (SURE) PROGRAM AND IMPACT ON COTTON FARMS OF THE TEXAS HIGH PLAINS**

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### **Abstract**

The enactment of the 2008 Farm Bill brought with it a new permanent disaster program to replace what had become a biennial exercise of passing ad hoc disaster legislation. This new approach, known as the Supplemental Revenue Assistance (SURE) Program requires a fresh look at producers' risk management decisions to maximize returns while maintaining eligibility in the program. Eligibility issues are complicated by the requirement to purchase at least a bare minimum of catastrophic (CAT) coverage or Non-insurable Assistance (NAP) for every crop of economic significance on the producer's operation. This study looks at the impact of various combinations of crop insurance purchase decisions and projected yields to determine the returns from all sources. The SURE Program Payment Estimator spreadsheet, developed by the authors, was used to evaluate the returns from various yield levels on a real Texas High Plains dryland cotton farm of purchasing CAT, APH and CRC crop insurance coverage, at levels from 50% to 70%. Additionally, the same scenarios were run with one farm unit irrigated to achieve a two-bale yield representing approximately 10% of the total acres. The results of this study indicate that the SURE Program works best at filling in coverage gaps at higher levels of insurance and that the purchase of CAT insurance for the purpose of maintaining program eligibility guarantees little to no SURE payment. This study reveals that if the intent of the legislation was to encourage the purchase of more complete coverage by producers it is working properly.

### **Introduction**

The 2008 cotton growing season on the Texas High Plains was challenging, to say the least. According to the Texas Agricultural Statistics Service (TASS) December 2008 crop estimate, 1.32 million acres, or 40%, of the cotton crop was abandoned from planting time until harvest in the Texas High Plains region as represented by TASS Districts 1-N and 1-S. Combine with that the fact that all counties in this region, except for Roberts County which has no significant acreage of cotton, received disaster designations from the Secretary of Agriculture and we see that there is the potential for many farms to qualify for payments under the new Supplemental Revenue Assistance (SURE) Program. The new law only requires that a producer have at least a ten percent overall loss to a crop of economic significance to the farm if the county has a disaster designation. Since virtually all counties in the region carry that distinction, this study will focus on looking at whole farm losses from 10% to 100% under various insurance purchase decisions. The three basic types of crop insurance products that were available in 2008 for the majority of these counties were catastrophic (CAT), APH and crop revenue coverage (CRC). Coverage levels from 50% to 70% were compared because it has been the observation of the authors that most producers purchase within this range. The objective of this study is simply to demonstrate the effect of those decisions on the revenue of the farming operation. We also intend to demonstrate how the "whole farm" nature of the SURE Program impacts payments when even a small amount of irrigated production is included at normal yields.

### **Materials and Methods**

The SURE Program Payment Estimator spreadsheet, developed by the authors, was used to calculate expected payments for each of eighty-eight yield and insurance coverage combinations. Two other spreadsheets were constructed to calculate insurance indemnities and premiums quoted from the Risk Management Agency (RMA) website and to summarize and graph the results obtained from the SURE Payment Estimator. A real Texas High Plains dryland cotton farm was selected from the FARM Assistance database to perform the analysis to give more realistic results. The analysis was performed using yields of zero, half of the guarantee, the full guarantee and ninety percent of the APH (A farm must have at least a 10% loss to qualify for SURE Payment).

The three insurance products evaluated were Catastrophic (CAT), APH and Crop Revenue Coverage (CRC). The administrative fee for CAT coverage for the 2008 crop year was \$100 (In 2009-12 the fee will be \$300 per crop per county). All farm units were in the same county, therefore only one administrative fee was used as the “premium” in this analysis. CAT coverage is for 50% of the APH yield at 55% of the price election for APH insurance, which resulted in a price of \$0.37 per pound. APH and CRC crop insurance were evaluated at yield coverage levels of 50%, 55%, 60%, 65% and 70%. The price election was 100% for both APH and CRC. The APH price was \$0.66 per pound and the CRC spring and harvest prices were \$0.77 and \$0.42 cents per pound, respectively. A market year average price was estimated at \$0.50 per pound for all scenarios.

The farm used in this example was all dryland in 2008 with a weighted average APH of 303 pounds per acre and a weighted average CCP yield of 408 pounds per acre. A total of 1,214 acres were planted to non-irrigated cotton. For the sake of comparing what happens when a portion of the farm is irrigated and the majority is not, one unit of 121 acres (10% of the total) was changed to irrigated. This unit was chosen because it had the highest APH and roughly matches the size of a typical center pivot irrigation system. For the irrigated comparison, the APH yield was assumed to be double what the non-irrigated APH was. All other factors remain the same as in the original. Dawson County was used as the farm location to calculate premiums and it had a secretarial disaster declaration due to drought during the 2008 crop year.

### Results and Discussion

The results of this study demonstrate that the Supplemental Revenue Assistance (SURE) Program does indeed help fill in the gap left by the purchase of crop insurance alone. It also indicates that the gap is filled more effectively at higher levels of coverage. Further, the purchase of CAT coverage to maintain eligibility, with 50% yield and 55% price guarantee, creates a situation in which little to no SURE payment would ever be received.

With so many points of observation, the results can best be understood from the following comparative graphs. Figure 1 displays the crop revenue generated at each of the four previously mention yield levels at the six different coverage levels given the estimated \$0.50 market year average price.

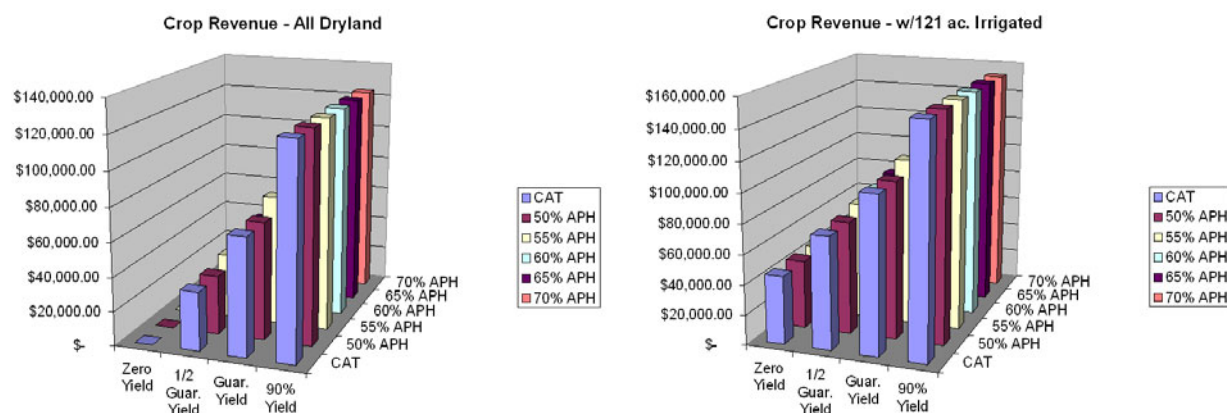


Figure 1. Crop Revenue at Various Yield/Coverage Combinations for Both Dryland and Partially Irrigated.

Figures 2-4 display the differences between APH and CRC coverage for crop insurance indemnities, SURE payments and total revenue. CRC generates a larger indemnity at all levels due to the higher spring price of \$0.72 compared to the \$0.66 price election for APH. Since the harvest time price for CRC was only \$0.42 indemnities are earned even when the yield is equal to or greater than the yield guarantee. The SURE guarantee is based on the insurance price election. Therefore, estimated SURE payments in 2008 are greater for CRC than APH. Since CRC indemnities are greater at higher yield levels, the SURE payments decline as yield increases. With APH the SURE payments get larger due to the fact that indemnities and crop values both decline to their combined lowest level at the insurance guarantee. Conversely the SURE payments increase to their maximum at this same point.

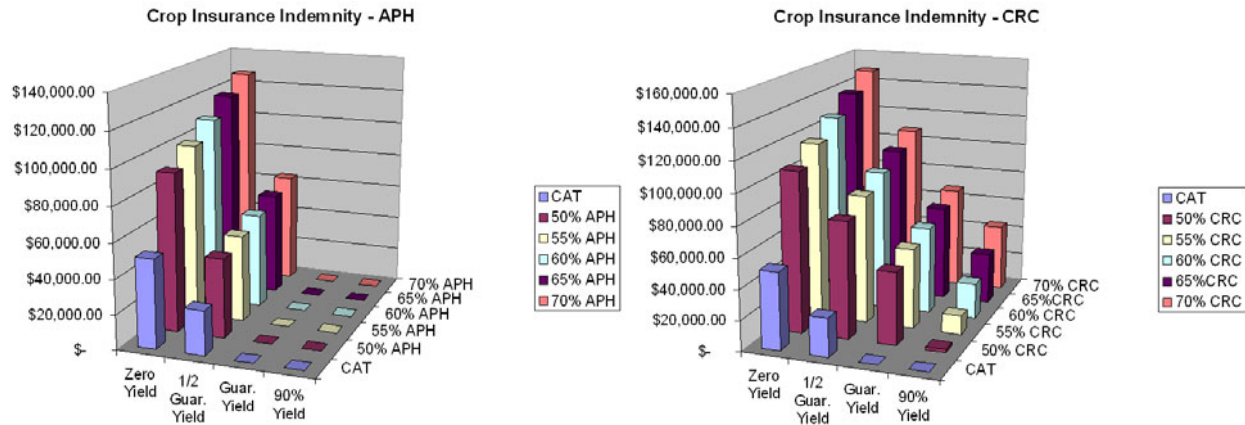


Figure 2. Crop Insurance Indemnities Received – Whole Farm Dryland.

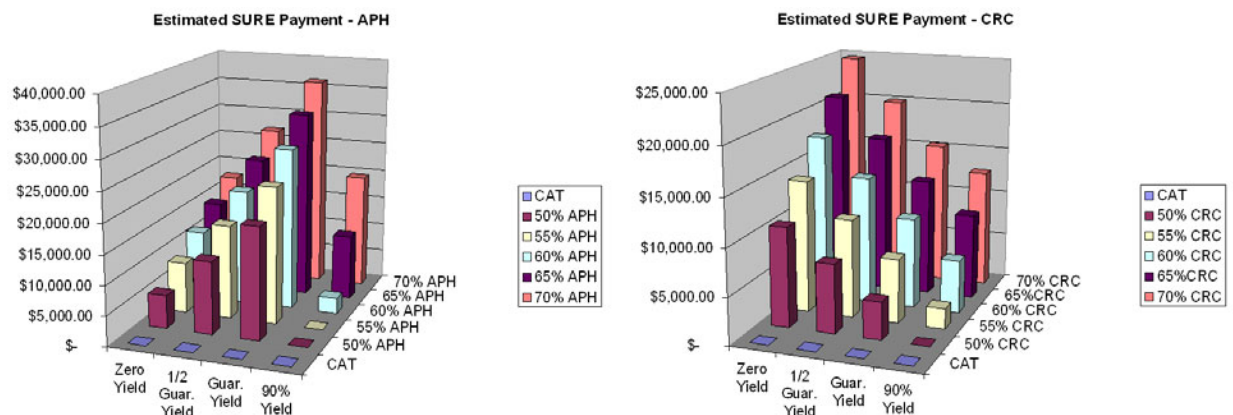


Figure 3. Estimated SURE Program Payment Received - Whole Farm Dryland.

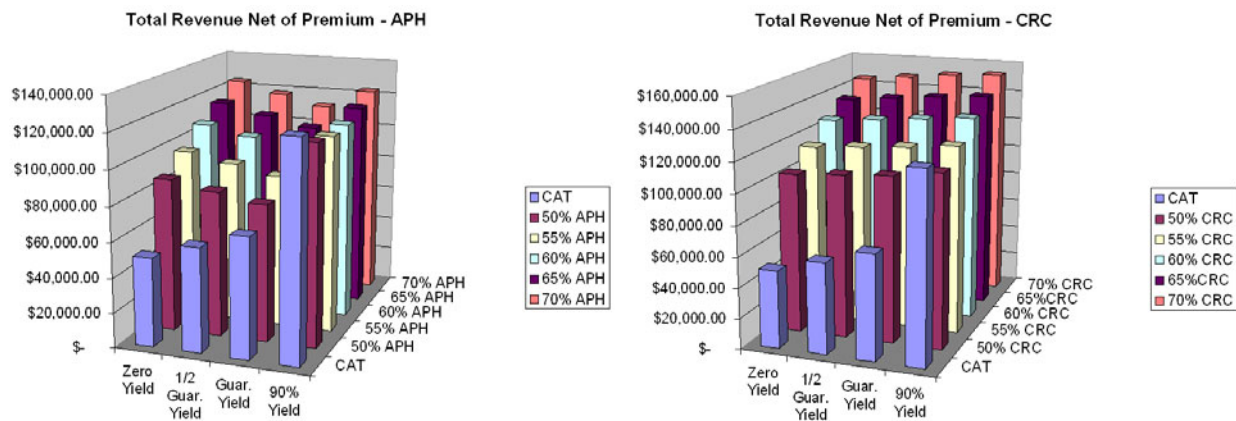


Figure 4. Total Estimated Revenue Net of Insurance Premiums Paid - Whole Farm Dryland.

Figures 5-7 show the impact of changing 121 acres, roughly 10% of the land, from dryland to irrigated. It should be noted that the peak estimated SURE payments occur at the same points on the graphs, zero yield for CRC and the guarantee yield for APH. However, the estimated SURE payments are zero at most yield and coverage combinations.

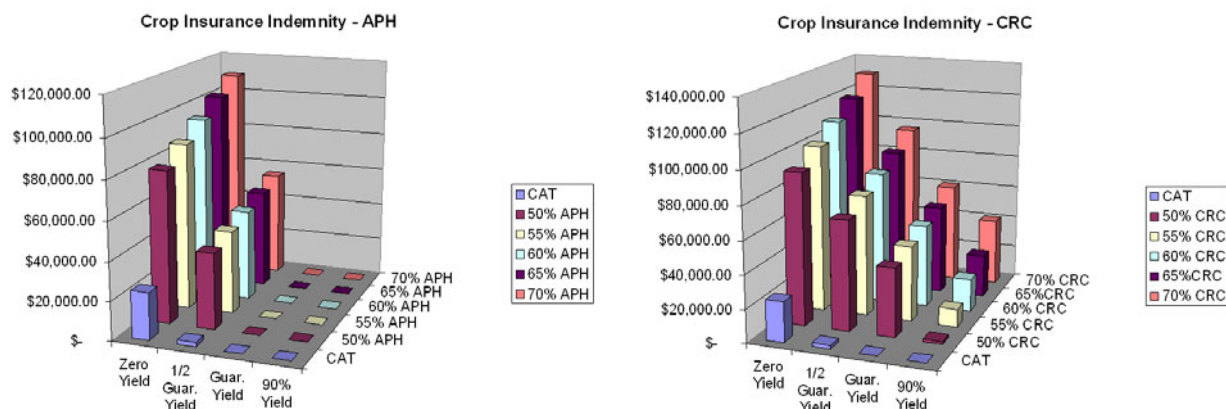


Figure 5. Crop Insurance Indemnities Received – Partially Irrigated.

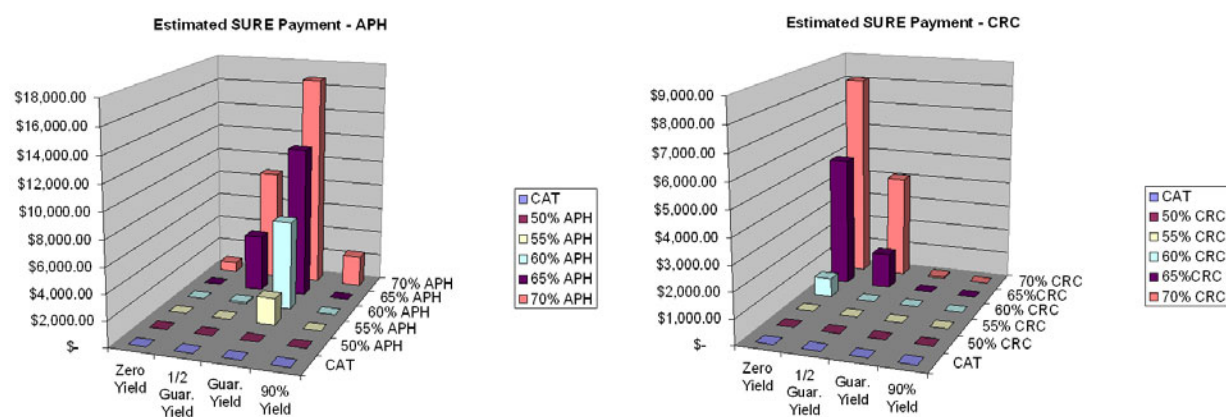


Figure 6. Estimated SURE Program Payment Received – Partially Irrigated.

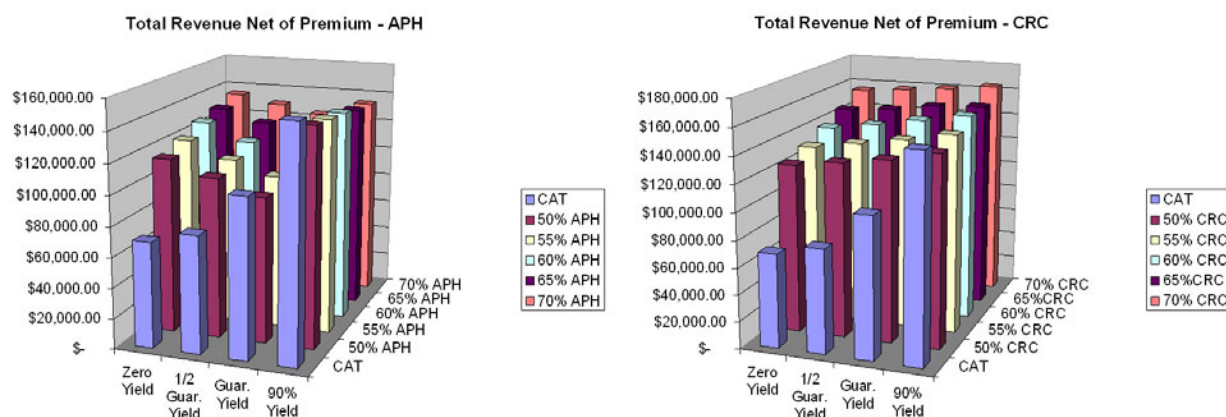


Figure 7. Total Estimated Revenue Net of Insurance Premiums Paid – Partially Irrigated.

### Summary

The results of this study show some interesting and somewhat unexpected outcomes based on the level of crop insurance selected. First is the fact that only taking CAT coverage to maintain program eligibility always results in no SURE payment because the guarantee is based on 50% of the APH yield and 55% of the APH price election. Second, the more complete revenue coverage a producer has, the lower the SURE payment will be. However, at higher crop revenue coverage levels the SURE payment serves to even out total revenue at all yield levels. Third is the fact that even a small addition of irrigated land at full yield with a complete failure of the dryland crop results in

the loss of a SURE payment at most levels of APH and CRC crop insurance due to the “whole Farm” nature of the program.

Many other interesting findings are more related to the 2008 crop year than to the workings of the SURE Program. First, in a year of declining prices, the farm is better off with a total loss than producing at the guaranteed yield when APH coverage is selected. Second, due to the dramatic fall from the spring price to the fall price for CRC insurance, indemnities are earned at yields well above the guarantee. Third, an estimated market year average price significantly below the insurance price election dramatically changes the amount of SURE payments.

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