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CRITICAL DECISIONS AND ECONOMICS ON ABANDONMENT AND HARVEST OF THE 2006 COTTON CROP

Don Shurley, Professor and Economist- Cotton
Department of Agricultural and Applied Economics
University of Georgia

Georgia farmers planted 1.4 million acres of cotton for 2006-- the largest acreage and first increase in acreage since 2002. This year's crop, however, has suffered from drought conditions. As of August 13, 40% of the crop is in poor or very poor condition with another 32% only in fair condition (USDA/NASS- Ga Ag Statistics Service). Despite improved rainfall over the past 3 weeks, crop conditions have not improved (have actually deteriorated slightly).

USDA currently estimates that 70,000 acres (5%) of the Georgia cotton crop will not be harvested (1.4 million planted and 1.33 million acres to be harvested). The state average yield is estimated at 632 lbs/acre-- down from 849 lbs/acre last year (USDA- August 11, 2006).

Recent rains may have been temporarily beneficial (provided much needed moisture to the non-irrigated crop and welcome relief from pumping costs for the irrigated crop) but some of the state's non-irrigated crop may be beyond help.

The yield situation and outlook can vary greatly from farm to farm and even field to field on a farm. Yield potentials may be so low, that some farmers are considering abandoning and not harvesting the crop. The decision on what to do is not easy and should not be approached casually. For producers facing this decision, factors that must be taken into account include:

- Current assessment of yield
- Final/actual yield
- Costs saved if the crop is abandoned
- Cost incurred if the crop is abandoned
- Costs incurred if the crop is continued and harvested
- Crop insurance coverage
- Price of cotton

In 2005, 96% of the states cotton crop was insured. Of the acres insured, 43% was CRC (Crop Revenue Coverage) and 37% was APHBU (Actual Production History, Buyup Coverage), and 19% CAT (Catastrophic Coverage). Preliminary data for 2006 shows that 96% of the states cotton acres are insured and of this amount- 50% of cotton acres insured are CRC, 31% APHBU, and 18% CAT (USDA-RMA).

When a producer decides to abandon or not harvest the crop, he/she is essentially saying "I would rather receive a crop insurance indemnity rather than make the crop".

Before abandoning the crop, the producer should first and foremost contact their crop insurance provider/agent. The insurance provider will then assign an adjuster to work the loss. The adjuster will follow approved RMA (USDA Risk Management Agency) procedure to determine the yield potential of the crop.

Producers should not abandon and destroy the crop and/or decide to not harvest the crop without first giving an adjuster the opportunity to access the crop. Based on the adjuster's appraisal, the producer can then and only then make the best economic decision on what to do with the crop.

While there is no firm policy, FCIC (Federal Crop Insurance Corporation) generally operates under the assumption that blooms set by the first week of September will be able to mature and contribute to yield. Prior to this time, however, the adjusters appraised yield will be based on stand establishment rather than boll count (which may not be the best early test of yield).

If the producer agrees with (is willing to accept) the adjusters appraised yield, the crop may be "released" (meaning the crop may be put to another use—abandoned, destroyed, grazed, etc.) and the claim is settled. If the producer feels the appraised yield is too high or if the potential of the crop cannot be determined, the producer can either (a) continue with production or (b) can leave representative strips which must be managed and will be used for a later appraisal. If choosing to leave representative strips, the crop is not released and the claim is still open until a final yield is determined.

If the crop is abandoned/not harvested, will this result in higher income or should production continue and the crop harvested?

If the crop is abandoned, the factors to consider are:

- crop insurance indemnity to be received
- costs of abandonment (to destroy the crop)
- costs of maintaining representative strips, if applicable
- fees saved, if applicable
- value of the abandoned crop (for hay, grazing, etc.), if applicable

If the crop were to be carried to harvest, the factors to consider are:

- crop income
- crop insurance indemnity to be received
- costs of continuing production, harvest, and marketing

The crop insurance indemnity is payment for the yield loss (if insured on an APH or CAT policy) or revenue loss (if insured on a CRC policy). The price election (payment rate for loss) is 60 cents per lb base price for CRC, 53 cents per lb for APH, and 30 cents per lb for CAT. If the producer had an APH yield of 700 lbs per acre and was insured at 70%, an indemnity of 53 cents per pound would be paid for each pound of yield below 490 lbs per acre (700 x 70%). If the appraised yield was 200 lbs per acre, the indemnity received

would be \$153.70 per acre (290 lbs/acre loss x 53 cents).

Crop Revenue Coverage (CRC) price is the mid-January to mid-February average price for December cotton futures (referred to as the base price) or the November average for December cotton futures (referred to as the harvest price), whichever is greatest. Using the same numbers as with the APH case, the producer is guaranteed \$294 minimum revenue per acre (700 lb APH x 70% insured level x 60 cents base price). If the appraised yield was 200 lbs per acre and the base price used, the indemnity received would be \$174 per acre ($\$294 - (200 \text{ lbs/acre} \times 60 \text{ cents})$).

For producers with CRC coverage, the loss payment for early released acreage will be made using the base price. If the harvest price is higher than the base price, an additional payment would be made for the difference.

It is profitable to abandon/not harvest the crop only if the net return from abandonment is greater than the net return of continuing production.

If abandoning the crop, the net return will be the crop insurance indemnity paid, plus any fees saved (such as BWEP and seed technology fees, if applicable), minus the costs of abandoning and destroying the crop, minus the costs of maintaining representative strips, if applicable.

If continuing production, the net return would be the crop income received, plus crop insurance indemnity, minus the costs of continuing production and harvest of the crop.

The economics of the decision hinge largely on the amount of covered loss, the fees saved and costs of continued production, and the value of actual production if continued and harvested. Fees saved and costs of continued production, and thus the decision and economics to abandon the crop or not, *depend in part on the time at which the decision must be made.*

For example, the lower the appraised yield and the higher the fees and costs to be saved by abandonment, the more likely it will be that abandonment will be the most profitable alternative. Depending on the time of the decision (at what point in the growing season), the lower the costs and fees to be saved, the lower the appraised yield will have to be.

The following is an example analysis for an APH or CAT policy, assuming a 700 pound APH yield, 490 pounds insured yield (70%), 200 pound adjuster appraised yield, and estimated 200 pound actual yield if production were continued. It is assumed that there will be no fees saved and no value use of the abandoned crop. Costs (abandonment, pre-harvest, harvest, and post-harvest) will vary widely from situation to situation and would depend also on the time of the decision. The only costs that should be considered are those from the date of the appraisal and decision through harvest and post-harvest. Costs that have already been incurred are “sunken” and irrelevant to the decision.

ABANDONMENT		CONTINUE PRODUCTION	
APH Yield Per Acre	700	Actual Yield Per Acre	200
Level of Coverage (%)	70	Market Price (cents/lb) *	52
Yield Guarantee	490	Crop Income	104.00
		Per Acre Indemnity For Loss	153.70
Adjusters Appraised Yield	200	Total	257.70
Covered Loss	290	Pre-Harvest Costs Per Acre **	25.00
Price Election (cents/lb)	53	Harvest Costs Per Acre ***	45.00
Per Acre Indemnity For Loss	153.70	Post-Harvest Costs Per Acre ****	6.00
Fees Saved *	0.00	Total	76.00
Value of Abandoned Crop **	0.00	Net Return	181.70
Total	153.70		
Costs of Abandonment ***	18.00		
Costs of Representative Strips ****	0.00		
Net Return	135.70		
* BWEF, seed technology fees, etc.		* Including LDP, less net cost of ginning, warehousing, and marketing. Price should be adjusted for fiber quality discounts, if applicable.	
** If used for grazing, hay, etc.		** Fertilizers, herbicides, insecticides, defoliation, etc. including application.	
*** Total per acre cost for sprays, spraying, disking, mow ing, etc.		*** Picking, boll buggy, and module builder	
**** Cost divided by total acres in the claim.		**** Mow ing stalks, etc.	

From the example, it is clear that the main factors in whether to abandon the crop or not are the level of coverage and appraised yield, fees that could be saved (particularly seed technology fees as they tend to be expensive), the final/actual yield if the crop is produced, the time of the season (as this will determine the amount of costs remaining if production is continued), and harvest costs.

The following is a similar example analysis for a CRC policy.

ABANDONMENT		CONTINUE PRODUCTION	
APH Yield Per Acre	700	Actual Yield Per Acre	200
Level of Coverage (%)	70	Market Price (cents/lb) *	52
Base Price or Expected Harvest Price *	60	Crop Income	104.00
Revenue Guarantee	294.00	Per Acre Indemnity For Loss	174.00
		Total	278.00
Adjusters Appraised Yield	200	Pre-Harvest Costs Per Acre **	25.00
Revenue From Appraised Yield	120.00	Harvest Costs Per Acre ***	45.00
Per Acre Indemnity For Loss	174.00	Post-Harvest Costs Per Acre ****	6.00
Fees Saved **	0.00	Total	76.00
Value of Abandoned Crop ***	0.00	Net Return	202.00
Total	174.00		
Costs of Abandonment ****	18.00		
Costs of Representative Strips *****	0.00		
Net Return	156.00		
* Higher of the base price or expected harvest price		* Including LDP, less net cost of ginning, warehousing, and marketing. Price should be adjusted for fiber quality discounts, if applicable.	
** BWEF, seed technology fees, etc.		** Fertilizers, herbicides, insecticides, defoliation, etc. including application.	
*** If used for grazing, hay, etc.		*** Picking, boll buggy, and module builder	
**** Total per acre cost for sprays, spraying, disking, mow ing, etc.		**** Mow ing stalks, etc.	
***** Cost for maintaining strips divided by total acres in the claim.			

In both examples, the Market Price received if production is continued and harvested should be the expected average selling price and include LDP/Loan Gain/or merchant equity if applicable and should be net of ginning, warehousing, and other charges. The price should also include fiber quality discounts if this is anticipated. Net charges after cottonseed value are generally 6 to 7 cents per pound.

In both examples the crop insurance indemnity received if production is continued and harvested is generated from the Actual Yield rather than the Adjusters Appraisal. In both examples, even at a surprisingly low yield (in this case, only 30% of the APH) it still appears more profitable to continue production rather than abandon the crop. Again, each producer, costs, and crop insurance situation will be different. These tables (worksheets) are available on Excel spreadsheet to assist in the analysis.

Another factor to consider would be Countercyclical payments (CCP). The maximum CCP on cotton is 13.73 cents per pound when the US average market price (MYA) is equal to or less than the loan rate (52 cents per pound). When the MYA increases above 52 cents, the CCP will decline. One “hedge” against the decline in CCP is to have cotton production to sell at the higher price (to offset the decline in CCP). If production is abandoned, there is no market commodity to sell and thus no protection against a decline in the CCP.

When determining costs of abandonment vs. continuing production, this will include not only materials applied but also the costs of machinery and equipment. These costs are highly variable. Costs to be considered are only “variable costs” those incurred only as a result of the decision. For field jobs and harvesting this would include fuel and lube, repairs, and labor. It would not include “fixed costs” such as depreciation, interest, and insurance. If the job is custom done (custom spraying or picking, for example) then the custom charge is considered a variable cost.

The following table provides general guidelines for the per acre cost of some jobs.

Per Acre Cost of Performing Selected Farm Jobs

	Variable Cost ¹	Total Cost ¹	Custom Rates ²		
			Low	High	Average
Spray- Tractor	\$1.75	\$2.58			
Spray- Hiboy	\$2.36	\$4.98	\$4.00	\$10.00	\$7.04
Spray- Air					\$4.94
Disk	\$4.69	\$8.98	\$6.00	\$25.00	\$11.90
Mow (Bush Hog)	\$5.90	\$11.03			\$7.50
Cotton Picker	\$30.16	\$81.21			\$65.00
Boll Buggy	\$4.05	\$10.74			
Module Builder	\$3.06	\$8.92			

1/ Based on 2006 UGA Cotton Enterprise Estimates, Department of Agricultural and Applied Economics.

2/ SOURCE: “Custom Farm Machinery Rates In Georgia, 2005”, AGECON-05-107, Department of Agricultural and Applied Economics, University of Georgia, October 2005.

The yield at which the net return from production would equal the net return from abandonment can be called the "Threshold Yield". In both examples illustrated, a yield of 200 pounds per acre still appears economical to carry to harvest based on the costs and other assumptions made. *These examples are for illustrative purposes only.*

As the production season progresses, more and more costs become "sunk" (thus irrelevant to the decision) and fees may not be refundable. Thus, there comes a "point of no return" at which it may be best to continue production.

The producer must also consider the value of his/her time, the alternative uses and value of other labor and resources, and the risks involved. Abandoning a crop is a critical management decision to be analyzed carefully.