

1993 Cotton Management Economic Notes

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August 9, 1993

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Termination Decisions and Economics

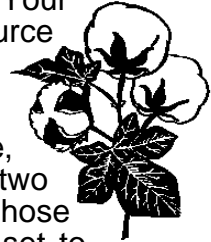
The second week in August is here and so are crop termination decisions. Economic considerations are very important at this decision point. Of course, some very good reading of the "tea leaves" doesn't hurt any either.

Agronomic Potential. The question, as always, is can you make enough cotton by extending the season to justify keeping the crop in the field. The decision is a gamble. But several factors can be weighed in advance to lessen the chances of an unfavorable outcome. Does the planted variety have the potential to produce more cotton if the season is extended? If the potential is not there, the decision is much clearer. Yield potential also depends on the current condition of the crop. Is the crop in good shape and can it be extended? Favorable agronomics must exist or no economic gain will be possible.

Cost of Continuing. Continuing the crop will increase the cost of growing the crop since irrigation water, insect control and perhaps some other inputs will be needed for the longer season.

The table to the right gives an example calculation for the costs of continuing the crop. The costs are representative of those experi-

enced by farmers in Arizona. Your costs are determined by your source of irrigation water and the level of insect infestation.



Irrigation. In the example, continuing the season requires two additional irrigations beyond those required to bring the first fruit set to maturity. Labor cost may be paid or omitted from this calculation depending upon the salaried or hourly arrangements with the irrigator.

Insecticides. Insect control may be vital for protecting the first set and will likely be required to bring the second set to full maturity. For the example, three additional applications are required for an additional cost of \$36. The actual cost varies with the insect control materials used. However, \$12 is an estimated average cost per aerial application. If you expect more or fewer applications, use your estimates.

Defoliation. Increased cost of defolia-

Estimating the Cost of Extending the Cotton Season

Item	Cost per Acre	
	Example	Your Estimate
Insecticide Application	\$12	_____
Insecticide Application	\$12	_____
Insecticide Application	\$12	_____
Irrigation	\$17	_____
Irrigation	\$17	_____
Increased Defoliation	\$12	_____
Other Costs	0	_____
Increase in Harvest & Ginning Cost		
Expected Yield Increase (lbs/acre)	150	_____
Est. Harvest & Ginning /lb	\$0.20	_____
Increase in Harvest & Ginning Cost	\$30	_____
Total Added Cost/Acre	\$112	_____
Increase in Seed Value (\$/acre)		
Expected Yield Increase X 160%	240	_____
Expected Cottonseed price, \$/lb	\$0.05	_____
Value of Cottonseed	\$12	_____
Net Cost of Extending Season =		
Total Added Costs/Acre less		
Value of Cottonseed/Acre	\$100	_____

Recent Prices	August 6, 1993	
	Upland (¢/lb)	Pima (ELS) (¢/lb)
Spot	52.95	93.00
Target Price	72.90	105.70
Loan Rate	51.15	88.12
Dec '93 Futures	57.18	

Note: Upland Spot for Desert SW grade 31, staple 35;
 Pima Spot for grade 03, staple 46, 7/23/93;
 1993 Phoenix Base loan rates without discounts or premiums for quality

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Estimated To-Date Production Costs

\$/lint lb (July 31)

The following table gives estimated production costs/lb to-date. These costs include both growing and fixed or ownership costs and are based on the displayed target yields. Producers with higher yields will have lower costs/lb if input costs are the same. Growers with lower yields will have higher costs/lb.

County	Target Yield	Growing Costs		Fixed Cost	All Costs To Date
		July	To Date		
Yuma	1,300	.05	.16	.25	.41
La Paz	1,300	.06	.19	.27	.46
Mohave	1,100	.07	.19	.23	.42
Maricopa	1,250	.04	.15	.23	.38
Pinal	1,300	.06	.22	.26	.48
Pima	1,100	.06	.19	.28	.47
Cochise	700	.13	.46	.42	.88
Graham	1,050	.04	.24	.31	.55
Greenlee	850	.11	.29	.36	.65

Note: Based on Wade, et al., "1992-93 Arizona Field Crop Budgets", Various Counties, Arizona Cooperative Extension, Tucson, January 1992.

tion result from later application in cooler weather to a ranker plant that is harder to setup for defoliation. Obviously, if this cost does not occur for your farm, omit it from the calculations.

Harvest and Ginning. The costs of harvesting, hauling and ginning increase with the expected yield. These cost and the added costs of assessments total about 20 ¢/lb of lint cotton. In the example, assuming a 150 lb increase in yield, harvesting and ginning costs increase by about \$30. The estimated value of the cottonseed produced (\$12) is subtracted from the total added cost to give an example estimate of \$100 / acre in added cost to extend the season in anticipation of higher yields through a top crop.

Other Costs. You may have other costs that should be added for extending the season. Every cost related to extending the season should be added.

Required Price

The price a farmer must receive to cover the added costs is simply the added cost divided by the added yield. In the ex-

ample, it is anticipated that it will require \$100 to cover the added cost of gaining an additional 150 lbs of yield. Thus, the required price that the farmer must receive to cover the cost is \$100 divided 150 lbs equals 67 ¢/lb. If the expected yield is increased to 250 lbs/acre, the added costs increase to \$112/acre because of increased harvest and ginning costs but the price necessary to cover all costs is only 45 ¢/lb assuming no deterioration in quality.

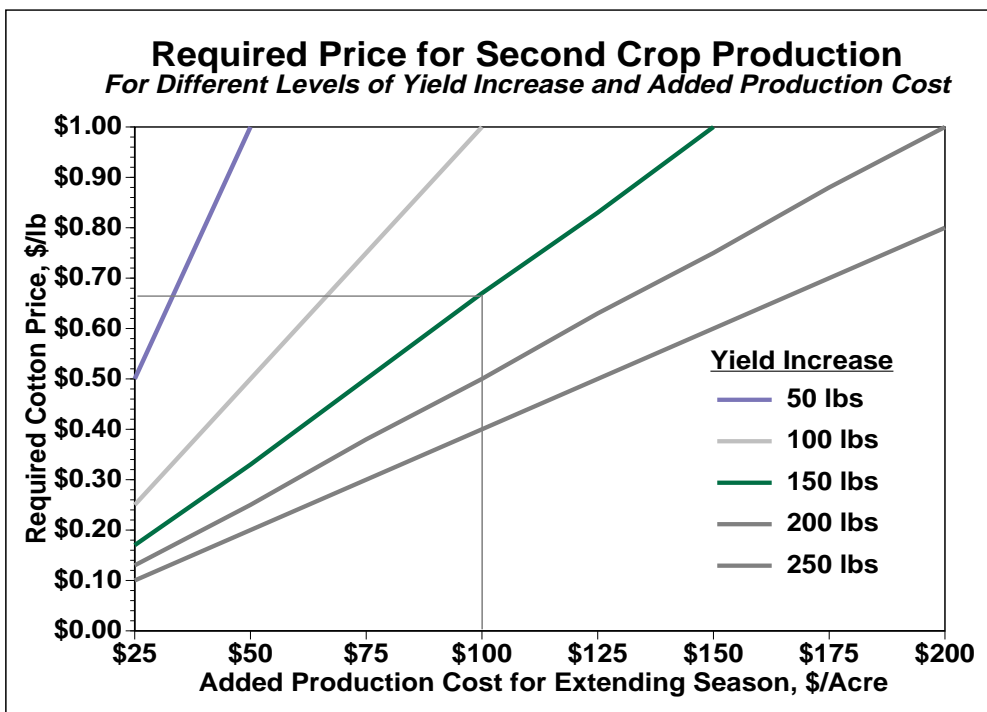
The graph below can be used to estimate the price required to cover added production costs for different added costs. The example discussed above is shown with the dashed lines at \$100/acre added cost and 67¢/lb price.

Other Factors

Several other economic and agronomic factors may effect the farmer's decision.

- Loss of quality First Set
- Deteriorating prices
- Increasing bad weather
- Crop Plow down
- Market Uncertainties
- Increasing Risk
- Lower quality Second Set
- Insect diapause

However, in a time of low prices the economics of the decision are very important. The market price may, in fact, be below the required price at the time for the termination decision. A more critical question maybe what price does the grower expect for the harvest/sale of the second boll set.



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