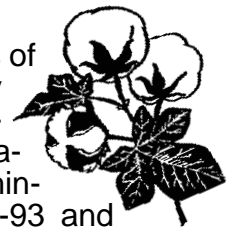


## 1994 Cotton Management Economic Notes

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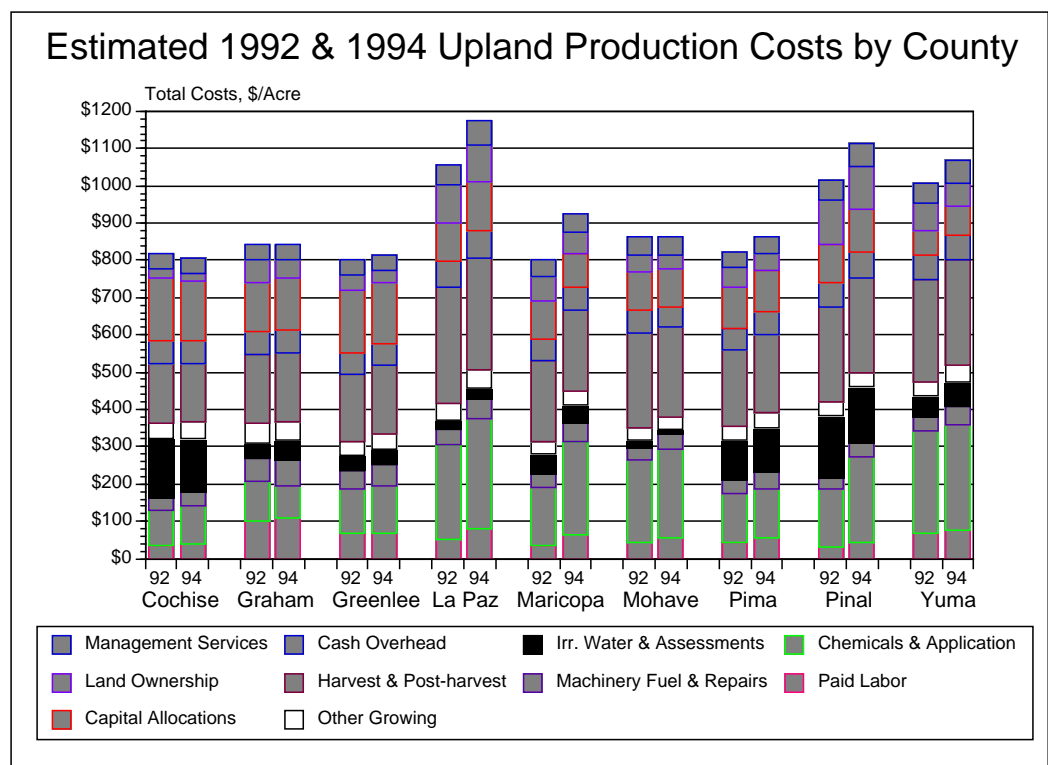


### Where Does the Money Go?

More specifically, what have been some of the major changes regarding production costs in the last two years? Whitefly has emerged as a major new battle and increased production costs for many growers. What has been the change in insecticide and application costs? To examine these questions, the accompanying figure shows the estimated production cost per acre for Upland by county for 1992 and 1994. The graph summarizes data detailed in the 1992-93 and 1994-95 Arizona Field Crop Budgets published by Wade, Daugherty, and others (call 602-621-1713 to order for your county).

Budget estimates are computed using representative cropping and farming practices and are not a statistical sample of farms in a county. Costs for representative prac-

tices are estimated from surveys of input suppliers within the county and throughout the state as appropriate for custom services, labor, materials, utilities, and machinery costs. Estimates for 1992-93 and 1994-95 are based on surveys from 1991 and 1993, respectively. Procedures and methods followed are similar for both years, allowing for a comparison.



### Recent Prices

June 3, 1994

Upland Pima (ELS)

(¢/lb) (¢/lb)

Spot - uncompressed	76.42	92.00
Target Price	72.90	102.00
Loan Rate	50.00	85.03
Dec '94 Futures	76.56	

Note: Upland Spot for Desert SW grade 31-3, staple 35, add 300 points for compressed bales, Pima Spot for grade 03, staple 46, 5/27/94, 1994. Phoenix Base loan rates without discounts or premiums for quality.

The total cost for each county and year is represented by the top of each bar. Total costs for 1994 range from a low of \$806 in Cochise to \$1,173 per acre in La Paz. Total cost is divided into one of ten different categories. The top four components of each bar include ownership or fixed costs of production. These costs include items like depreciation on equipment, taxes, interest on equity, and payments to equity capital. Cash expenditures may not be required for these items immediately if they are paid for. But in the

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## Estimated To-Date Production Costs

\$/lint lb (May 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
		May	To Date		
Yuma	1,250	.02	.08	.26	.34
La Paz	1,300	.01	.08	.30	.38
Mohave	1,000	.01	.08	.22	.30
Maricopa	1,200	.05	.11	.23	.34
Pinal	1,200	.08	.17	.30	.47
Pima	1,100	.02	.10	.24	.34
Cochise	660	.10	.32	.43	.75
Graham	1,000	.03	.15	.32	.47
Greenlee	900	.02	.11	.33	.44

Note: Based on Wade, Daugherty, et al., "1994-95 Arizona Field Crop Budgets", Various Counties, Arizona Cooperative Extension, Tucson, March, 1994.

long-run as capital is replaced and "owner wages" are received, these costs translate to cash expenditures.

The other six components reflect "operating costs." In general, these costs are cash outlays incurred to plant, grow, and harvest the crop. Cash harvest and post-harvest expenses are the largest component of operating costs. Harvest costs shown include defoliation, two pickings, module building, hauling, ginning, crop assessments and plowdown. Chemical and application costs include fertilizers, insecticides, herbicides and other chemicals. For most counties, insecticide costs account for the bulk of this category. Because insect pressures vary greatly geographically this category varies significantly. For example, in 1994 chemical and application costs were estimated at only \$86/acre for Graham but as high as \$283/acre for Yuma. Irrigation water and their assessments also vary greatly by county. Irrigation efficiency and water source can cause water costs to vary greatly within a county too. Thus, there is no single or simple answer to identify where all the money goes in a diverse state of cotton production like Arizona. But looking at representative cost estimates and their changes can provide insights into where your costs may be getting "out-of-line."

### 1992 versus 1994

What have been the major changes in these estimated costs between 1992 and 1994? Some general results are given for the state by

weighting cost changes by the percent of cotton acreage each county makes up in the state. This places the most weight on Maricopa and Pinal counties since they comprised 39% and 32%, respectively, of the cotton acreage in the State for 1992. The largest weighted cost change for Arizona between 1992 and 1994 was for chemical and application costs. This had a \$63.95 per acre cost increase for Arizona's cotton and in large part reflects stepped up efforts to control whitefly populations. Next, paid labor expenses increase by \$16.91 per acre for the state. Although the absolute increase for paid labor is only about one-fourth of that for chemical and application costs, **the percentage increase has been greater for paid labor than any other category.** Paid labor increased 20.0% while insecticide costs increased 15.7%. Machinery fuel and repairs followed closely with a 12.7% increase. Estimated irrigation water and assessment costs were essentially unchanged between 1992 and 1994.

Overall, operating and ownership costs increased by \$92.44 and \$3.53 per acre, respectively. Operating costs increased 7.2% while ownership costs increased very little at .3%. The combined percentage increase comes in at 5.0%. One reason estimated ownership costs increased only slightly is because a lower interest rate was used for 1994 than 1992 (7.5% vs. 6%) to reflect the foregone interest of owner equity. With interest rates higher now, this estimate is probably low.

### Costs/Acre versus Costs/lb.

Cost estimates have been discussed in relation to costs per acre but the most relevant estimate is cost per pound. Per acre costs of production divided by yield gives an indication of your competitive position in the global marketplace. Because yields are often more variable than costs, it can be difficult to make a realistic estimate of your per pound production costs. The table of Estimated To-Date Production Costs uses a target yield estimate close to a five year average. This is a reasonable estimate to use for calculating a break-even price. *Valuable sensitivity information can be obtained by changing yields 10 to 25 percent above and below target yields and then calculating a break-even price.* This sensitivity information is often what determines whether a loan application is thumbs up or down. Similarly, management decisions made at the "margin" during the year such as an additional insecticide application or irrigation can be enhanced with yield sensitivity calculations.