

Costs & Returns for Arizona General Crop Farms

Table 1. Summary Comparison of Per Acre Variable Costs and Returns for Representative General Crop Farms, by County and Crop.^{a/b}

Crop and Item	County				
	Cochise	Graham	Maricopa	Pinal	Yuma
Alfalfa					
Gross Returns	150.70	146.31	191.80	178.10	191.80
Variable Cost	97.55	81.94	142.88	147.94	91.50
Returns Above Variable Cost	53.15	64.37	48.92	30.16	100.30
Barley					
Gross Returns	N.A.	91.42	89.82	80.15	92.66
Variable Cost	N.A.	52.77	53.63	64.99	45.05
Returns Above Variable Cost	N.A.	38.65	36.19	15.16	47.61
Beets					
Gross Returns	249.30	249.30	282.90	282.90	N.A.
Variable Cost	211.08	193.01	184.21	208.36	N.A.
Returns Above Variable Cost	38.22	56.29	98.69	74.54	N.A.
Cantaloups					
Gross Returns	N.A.	N.A.	N.A.	N.A.	967.20
Variable Cost	N.A.	N.A.	N.A.	N.A.	581.34
Returns Above Variable Cost	N.A.	N.A.	N.A.	N.A.	385.86
Cotton					
Gross Returns	307.97	336.86	364.87	374.23	471.43
Variable Cost	189.40	163.45	203.32	243.83	218.35
Returns Above Variable Cost	118.57	173.41	161.55	130.40	258.08
Sorghum					
Gross Returns	109.83	100.67	90.36	90.72	82.73
Variable Cost	95.77	66.77	74.22	81.58	58.32
Returns Above Variable Cost	14.06	33.90	16.14	9.14	24.41
Spring Lettuce					
Gross Returns	N.A.	N.A.	1,017.75	N.A.	1,088.85
Variable Cost	N.A.	N.A.	634.84	N.A.	668.32
Returns Above Variable Cost	N.A.	N.A.	382.91	N.A.	420.53
Wheat					
Gross Returns	N.A.	N.A.	71.28	65.76	79.60
Variable Cost	N.A.	N.A.	54.52	74.25	53.07
Returns Above Variable Cost	N.A.	N.A.	16.76	-8.49	26.53

by John R. Wildermuth & William E. Martin*

Estimation of the profit potential and/or credit needs of a farming operation requires three sets of data. These are (1) the variable costs of producing an acre of a particular crop, (2) the expected returns from the sale of the product of that acre and, (3) the fixed (overhead) costs associated with ownership of the whole farm's land and equipment on which and with which a combination of crops may be grown.

Summary data of these types are presented in Tables 1 and 2 for common field crops and representative farm sizes for five major farming counties in Arizona. Detailed information, from which these summaries were developed, is available in College of Agriculture Report No. 253, COSTS AND RETURNS DATA FOR REPRESENTATIVE GENERAL CROP FARMS IN ARIZONA. The detailed report is available on request either from the

a. The basic crop budgets for Cochise, Maricopa and Pinal Counties reflect alternative water cost categories. The set of cost and returns figures presented in this summary (Cochise — 200 foot lift; Maricopa, Salt River Project and Pinal — 400 foot lifts) are considered to be the most representative for the county as a whole.

b. The letters N.A. stand for not applicable. Budgets were not prepared for these crops in the indicated county because the crops are not typically grown on a representative general crop farm in that county.

*Assistant Professor and Professor, respectively, Department of Agricultural Economics.

Table 2. Summary Comparison of Representative Farm Total Annual Fixed Costs, by County and Farm Size.^a

County	Farm Size		
	160 Acres (dollars)	320 Acres (dollars)	800 Acres (dollars)
Cochise	11,561	23,020	51,451
Graham	16,170	30,931	71,927
Maricopa	19,296	46,150	106,015
Pinal	15,429	29,385	59,764
Yuma	18,982	42,142	94,585

a. Total fixed costs per farm include depreciation, taxes, insurance, interest on the average investment, and certain miscellaneous costs. See the fixed cost budgets in Report No. 253 for details.

Calculation of Returns to Land and Management for a Representative Farm

To illustrate how the data may be used to develop a cost and returns picture for a whole farm, we shall demonstrate the calculation of an expected return to land and management for a representative 320-acre

general crop farm in Pinal County (see Table 3). An assumed rotation is presented in percentages in Column 1 and acres in Column 2 of the top portion of Table 3. The individual crop per acre returns above variable cost are reproduced in Column 3. Acres (Column 2) times the per acre returns above variable cost (Column 3) yields the total returns above variable cost for each crop (Column 4). These results are added to obtain total returns above variable costs for the whole farm. The relevant fixed costs budget is summarized in the middle portion of Table 3. Note that since we are calculating return to land and management, interest on the land investment (including real property affixed to the land) is excluded from the fixed cost calculation. Then total annual fixed costs (excluding interest on the land and real property investment) is subtracted from the total farm returns above variable costs (the bottom portion of Table 3) to derive returns to land and management, \$7,270 for the case in question.

Using this procedure, readers may adapt the data from the detailed report in order to estimate farm costs and returns in particular situations of their own interest.

Agricultural Economics Department or from the College of Agriculture's Publications Office. This report replaces the crop budget data that, until this year, appeared in the annual publication ARIZONA AGRICULTURE.

Table 1 contains per acre gross returns, variable costs and returns above variable costs by county and crop. Not all crops are analyzed in all counties. Budgets were not prepared for a crop unless that crop could be considered part of a typical rotation on a representative general crop farm in the indicated county.

While only one set of variable cost and returns data on each relevant crop-county combination is presented here, the complete budget presentations for Cochise, Maricopa, and Pinal Counties contain alternative cost-returns data as influenced by varying water costs.

Table 2 summarizes the total annual fixed costs associated with a representative 160-, 320-, and 800-acre general crop farm in each of the five counties.

Table 3. Calculation of Returns to Land and Management for a Representative 320-Acre General Crop Farm in Pinal County

Returns above Variable Cost for the Whole Farm:				
Crop	Enterprice Combination		Per Acre Returns Above Variable Cost (dollars)	Total Returns Above Variable Cost (dollars)
	Percent of Total Acreage	Acres		
Alfalfa	15	48	30.16	1,447
Barley	20	64	15.16	970
Beets	15	48	74.54	3,578
Cotton	37	118	130.40	15,387
Sorghum	13	42	9.14	383
Total Returns Above Variable Cost for the Whole Farm				23,215
Fixed Costs:				(dollars)
Depreciation				9,646
Taxes, Insurance and Miscellaneous				2,944
Interest on Investment (Excluding Land)				3,355
Total Fixed Costs for the Whole Farm				15,945
Returns to Land and Management:			(\$23,215 - \$15,945)	7,270