

As of Paul

UNIVERSITY OF CALIFORNIA AGRICULTURAL EXTENSION SERVICE

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BARLEY IN FRESNO COUNTY
COST ANALYSIS WORK SHEETS

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by
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Barley is planted on more acres of tillable land in Fresno County than any other crop. It is grown in all areas of the County. Because of the widely variable conditions under which barley is grown, no one method of soil preparation, irrigation, and management is applicable throughout the County.

Land preparation for planting will vary greatly with the crop sequence (rotation), soil type, rainfall, and terrain. On the westside of the County, large acreages are planted with a minimum of land preparation. On the eastside foothill area, barley is dry-farmed.

VARIETIES:

Over 90% of the barley acreage in Fresno County is planted with California Mariout.

California Mariout, also called blue barley, is an early maturing variety. Its straw is short and weak. California Mariout is susceptible to all the major barley diseases prevalent in this area.

Other varieties planted are Blanco Mariout and Arivat.

Blanco Mariout is very similar in appearance, straw strength, and disease susceptibility to California Mariout, but it has white kernels.

Arivat is later maturing than the Mariouts. It is medium in height and has a stiffer straw.

In trials conducted in Fresno County, California Mariout outyielded both Blanco Mariout and Arivat.

PLANTING TIME AND RATE:

Barley is a cool weather crop. To obtain maximum yields it should be planted from the second half of November to the 15th of January.

Seeding rates of 60 to 100 lbs/A are recommended. Late plantings and broadcast

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seeding will require the higher rates. In preirrigated land when barley is drill planted early winter, 60 lbs of seed per acre is adequate. The seed should be treated with a good fungicide. Barley can be broadcast planted by aircraft or endgate seeders; or planted with a grain drill to a depth of $\frac{1}{2}$ to $1\frac{1}{2}$ inches.

FERTILIZER:

Sixty to eighty pounds per acre of actual nitrogen will produce the most economical yields of barley on irrigated land. Under dry-farming 20 to 30 lbs/A of nitrogen has given economical response.

Barley will respond to phosphorous fertilization in many areas of Fresno County. Soil analysis is the best way to determine the need for it. If need for phosphorous is established, 30 to 40 lbs/A is adequate. In most areas of Fresno County an all water soluble phosphorous fertilizer should be used.

IRRIGATION:

The most serious limiting factor in barley production in Fresno County is lack of moisture at critical times in the development of the plant.

Barley dry-farmed is at the mercy of the elements. The field is cropped in alternate years and if rainfall or moisture conditions are favorable, yields of 1,800 to 2,500 lbs/A can be expected. During the fallow year, the fields should be kept free of weeds to conserve moisture for the crop year.

The amount of water to use should be governed by soil type and rainfall, in areas where barley is irrigated. A preirrigation, wetting the soil to a depth of 4 to 5 feet, is desirable. If only one crop irrigation is planned, it should be applied at late jointing or when the plants are in the boot stage.

On heavy clay soils, growers often plant in dry soil and depend on moisture from rainfall for germination and early seedling growth before they apply the first irrigation.

WEED CONTROL:

Black Mustard, London Rocket, Wild Lettuce, Fiddleneck, Wild Radish, and Wild Oats are troublesome weeds in many areas of the County. Through proper rotation and

management, weed problems can be minimized.

Herbicides are available on the market and if properly used they will effectively control, at very low costs, most of the weeds infesting barley fields in Fresno County.

For broadleaf weed control, 2,4-D amine at 3/4 to 1 lb/A of active chemical is recommended. For wild oat control, barban (Carbyne) used at 1/4 to 1/3 lbs/A is effective. For information regarding the proper timing of the application of these herbicides, please consult a farm advisor or other technically-trained agriculturists.

HARVESTING:

Barley is combine harvested, and in some areas in Fresno County, harvest begins the last week of May. The straw is scattered and worked into the soil. In rare instances it is baled and sold for feed or bedding.

Some growers who doublecrop corn, sorghum, or rice, following barley, burn the straw to facilitate seed-bed preparation.

COST ANALYSIS WORK SHEET:

Yields, as well as cost of production of barley, will vary greatly from field to field. Land values, taxes, water and labor costs vary from one area of the County to another.

Aphid populations build up in certain areas of the County to sufficiently high levels to warrant the application of an insecticide. This cost was not included in the attached cost analysis work sheets, neither is weed control costs included because the need for it varies greatly from field to field.

Four sample cost analysis work sheets are attached. They should be helpful in estimating needed cash and to make production cost comparisons between two or more crops. In the preparation of these cost analysis work sheets, we assumed that good management practices were followed.

C O S T A N A L Y S I S W O R K S H E E T

Irrigated Barley, Fresno County, 1963

Based on a yield of 4000 lbs. per acre, produced by complete tillage, pre-irrigation and one crop irrigation. Man labor at \$1.05 and equipment operator at \$1.30 per hour. Heavy tracklayer and 50 H.P. diesel wheel tractors. Barley charged with fixed costs 8 months per year.

	<u>Sample Costs</u>		<u>My Costs</u>	
	per acre	per cwt	per acre	per cwt
PRE-HARVEST CASH AND LABOR COSTS:				
Disc plow: 1 time, 1 ac/hr., 1 hr. man & tracklayer	3.95			
Disc harrow: 2 times @ 6 ac/hr, 1/3 hr. man & tracklayer	1.32			
Land plane: 1 time, 3 ac/hr, 1/6 cost of 1/3 hr. man & tracklayer	.22			
Ditch and border: 1/8 hr. man & tracklayer	.46			
Irrigate: 1 pre & 1 crop, 18" water power cost 8.50/ft.	12.75			
man labor: 1 hr/acre	1.05			
Disc and harrow: 1 time, 6 ac/hr. 1/6 hr. man & heavy tractor	.66			
Plant: 4 ac/hr - Seed, 100 lbs. @ 3.50 cwt	3.50			
Planting - 1/4 hr. man & wheel tractor	.65			
Fertilizer: 80 lbs. N at 6¢ applied	4.80			
Office, car, operating capital: 5% of cash operating costs	2.25			
Misc. tractor work, filling ditches, etc: 1/3 hr. man & tracklayer	1.32			
County taxes: 75% of \$5.00	3.75			
Repairs to equipment except tractors	2.00			
Total Pre-Harvest Cash and Labor Costs	38.68	.97		
HARVESTING COSTS:				
Custom harvest @ \$4.00/ac + 10¢/hundred lbs. of grain over the first 2,000 lbs/acre	6.00			
Hauling: Field to storage at \$1.50/ton	3.00			
Total Harvesting Costs	9.00	.22		
TOTAL CASH AND LABOR COSTS	47.68	1.19		
DEPRECIATION:				
Tracklayer: 2 hrs. @ \$1.78	3.56			
Wheel tractor: 1/2 hr. @ \$.60	.15			
Irrigation system and well: 2/3 of \$9.00	6.00			
Equipment except tractors	2.00			
Total Depreciation	11.71	.29		
INTEREST ON INVESTMENT AT 6%:				
Tracklayer: 2 hrs. @ \$.80	1.60			
Wheel tractor: 1/2 hr. @ \$.30	.08			
Irrigation system & well: 2/3 of (6% x 1/2 of \$576)	11.52			
Equipment except tractors	.70			
Land at \$500.00: 2/3 annual cost	20.00			
Total Interest on Investment	33.90	.85		
TOTAL COST OF PRODUCTION	\$ 93.29	2.33		

Cost of Production Per Hundred Pounds at Varying Yields

Yield per acre	2500 lbs	3000 lbs	3500 lbs	4000 lbs	4500 lbs	5000 lbs
Cost per cwt	\$.3.63	\$3.05	\$2.64	\$2.33	\$2.09	\$1.90

C O S T A N A L Y S I S W O R K S H E E T

Dry-Land Barley, Fresno County, 1963

Sample costs to produce non-irrigated barley based on a yield of 1,800 lbs. per acre produced every other year. Man labor at \$1.05 per hour and equipment operator at \$1.30. Heavy tracklayer and medium powered wheel tractor.

	Sample Costs		My Costs	
	per Acre	per Cwt	per Acre	per Cwt
PRE-HARVEST CASH AND LABOR COSTS:				
<u>Crop year:</u>				
Disc: 2 times @ 6 ac/hr/time, 1/3 hr. man & heavy tractor	1.32			
Plant: 4 ac/hr - Seed 80 lbs. @ \$3.50 cwt	2.80			
Planting 1/2 hr. man & medium tractor	.65			
Fertilize: 20 lbs. N from dry material source	2.70			
1/6 hr. man & medium tractor	.43			
Taxes & misc. operating expenses	2.25			
<u>Fallow year:</u>				
Disc: 2 times @ 6 ac/hr. 1/3 hr. man & heavy tractor	1.32			
Taxes	1.25			
Total Pre-Harvest Cash and Labor Costs	12.72	.71		
HARVESTING COSTS:				
Custom harvest @ \$5.00/ac + 10¢/100 lbs. over the first 1,000 lbs/ac	5.80			
Hauling: Field to Storage at \$1.50/ton	1.35			
Total Harvesting Costs	7.15	.39		
TOTAL CASH AND LABOR COSTS	19.87	1.10		
DEPRECIATION:				
Heavy tractor: 2/3 hr. at \$1.78	1.18			
Wheel tractor: 1/4 hr. at \$1.08	.27			
Equipment except tractors	.75			
Total Depreciation	2.20	.12		
INTEREST ON INVESTMENT AT 6%:				
Heavy tractor: 2/3 hr. at \$.80	.53			
Wheel tractor: 1/4 hr. at \$.30	.08			
Equipment except tractors	.30			
Land at \$100.00	6.00			
Fallow year: land at \$100.00	6.00			
Total Interest on Investment	12.91	.72		
TOTAL COST OF PRODUCTION	34.98	1.94		

Cost of Production Per 100 Lbs. at Varying Yields

Yield per acre	1400 lbs	1600 lbs	1800 lbs	2000 lbs	2200 lbs	2400 lbs	2600 lbs
Cost per cwt	\$.2.45	\$2.16	\$1.94	\$1.77	\$1.62	\$1.50	\$1.40

C O S T A N A L Y S I S W O R K S H E E T

Irrigated Barley Planted in Disc'd Cotton Land
Fresno County, 1963

Sample costs to produce irrigated barley in Fresno County following cotton, with minimum land preparation. Based on a yield of 3,500 lbs. per acre produced with two sprinkler irrigations.

	<u>Sample Costs</u>		<u>My Costs</u>	
	per acre	per cwt	per acre	per cwt
PRE-HARVEST CASH AND LABOR COSTS:				
Disc cotton field: 2 times @ 3 ac/hr, 2/3 hr. man & heavy tractor		.		
	\$	2.64		
Fertilizer: 80 lbs. N at 6¢ applied		4.80		
Plant: 4 ac/hr - 100 lbs. seed at \$3.50 cwt ½ hr. man & medium tractor		3.50		
		.65		
Irrigate: 2 times with sprinklers, apply 8" water/time, power for 1 1/3 ft. water @ \$8.50	11.34			
Labor: 1 hr. per acre		1.05		
Taxes: 50% of \$5.00		2.50		
Repairs to equipment except tractors		.50		
Misc. operating expenses		1.50		
Total Pre-Harvest Cash and Labor Costs	28.48	.81		
HARVESTING COSTS:				
Custom harvest @ \$4.00/acre + 10¢/100 lbs. over the first 2,000 lbs.		5.50		
Hauling: Field to storage at \$1.50/ton		2.62		
Total Harvesting Costs	8.12	.23		
TOTAL CASH AND LABOR COSTS	36.60	1.24		
DEPRECIATION:				
Heavy tractor: 2/3 hr. at \$1.78		1.18		
Medium tractor: ½ hr. at \$.60		.15		
Equipment except tractors		.55		
Sprinkler irrigation equipment: ½ of \$150 + 10		3.75		
Well		1.25		
Total Depreciation	6.88	.20		
INTEREST ON INVESTMENT AT 6%:				
Heavy tractor: 2/3 hr. at \$.80		.54		
Medium tractor: ½ hr. at \$.30		.80		
Equipment except tractors		.10		
Irrigation system		4.50		
Well		2.50		
Land at \$500.00: 1/3 of annual cost		10.00		
Total Interest on Investment	17.72	.51		
TOTAL COSTS OF PRODUCTION	61.20	1.75		

Costs of Production Per Cwt. at Varying Yields					
Yield - pounds per acre	2500	3000	3500	4000	4500
Cost per cwt	\$2.38	\$2.01	\$1.75	\$1.55	\$1.40

C O S T A N A L Y S I S W O R K S H E E T

Irrigated Barley Planted in Cotton Stalks
Fresno County, 1963

Sample costs to produce barley with no land preparation and one irrigation following a cotton crop. Based on a yield of 3,000 lbs. per acre.

	<u>Sample Costs</u>		<u>My Costs</u>	
	per acre	per cwt	per acre	per cwt
PRE-HARVEST CASH AND LABOR COSTS:				
Fly on 100 lbs seed into stalks: seed cost \$3.50/cwt	\$ 3.50			
Air seeding cost \$.80/cwt	.80			
Shred stalks: 5 ac/hr, 1/5 hr. man & med. tractor	.52			
Irrigate: power for 12" of water	8.50			
labor = 1 hr/acre at \$1.05	1.05			
Fertilize: 60 lbs. N. injected into the water @ 5½¢/lb. applied	3.30			
Taxes: 50% of \$5.00	2.50			
Repairs to equipment except tractor	.10			
Misc. expenses including office, car, operating capital, etc.	1.00			
Total Pre-Harvest Cash and Labor Costs	21.27	.71		
HARVESTING COSTS:				
Custom harvest @ \$5.00/ac + 10¢/cwt over the first 2,000 lbs/ac	6.00			
Hauling: Field to storage at \$1.50/ton	2.25			
Total Harvesting Costs	8.25	.28		
TOTAL CASH AND LABOR COSTS	29.52	.99		
DEPRECIATION:				
Medium tractor: 1/5 hr. at \$1.78	.36			
Equipment except tractors	.10			
Irrigation system and well: 1/6 of \$9.00	1.50			
Total Depreciation	1.96	.06		
INTEREST ON INVESTMENT AT 6%:				
Medium tractor: 1/5 hr. at \$.30	.06			
Equipment except tractor	.02			
Irrigation system & well: 1/6 of (6% x ½ of \$576)	2.88			
Land at \$500.00; 1/3 of annual cost	10.00			
Total Interest on Investment	12.96	.43		
TOTAL COSTS OF PRODUCTION	44.44	1.48		

Cost of Production Per Cwt. at Varying Yields

Yield - pounds per acre	2000	2500	3000	3500	4000	4500
Cost per cwt	\$2.13	\$1.74	\$1.48	\$1.29	\$1.15	\$1.05