

R I C E
P R O D U C T I O N
C O S T S

COLUSA, GLENN
and
YOLO COUNTIES

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ACKNOWLEDGEMENTS

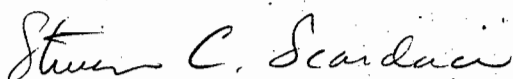
I would like to thank the rice growers in Colusa, Glenn and Yolo Counties, who provided production information for this study. I am also grateful to Lynn Horel, Staff Research Associate of the Agricultural Economics Department at the University of California at Davis, for her fine assistance in the preparation of this study. In addition, I would like to thank many local businesses and organizations for the information they provided. Finally, I would like to thank John F. Williams and Carl Wick, U. C. Farm Advisors in Sutter and Butte Counties, respectively, Jim Hill, U. C. Agronomy Specialist, and the above rice growers for their review of this publication.

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INTRODUCTION:

RICE ACREAGE AND YIELDS

Approximately 90% of the rice produced in California is grown in the Sacramento Valley. A number of factors have contributed to this acreage concentration: 1) need for level land with relatively impermeable soil; 2) need for a suitable climate with warm nights at flowering time; 3) need for an inexpensive, abundant water supply; and 4) federal crop program restrictions.

In 1979, rice production in Colusa, Glenn and Yolo Counties accounted for approximately 49% of the California rice acreage (Table 1). According to Agricultural Stabilization and Conservation Service estimates, Colusa, Glenn and Yolo Counties rank first, fourth and fifth, respectively, in California.

Statewide average rice yields remained fairly constant until the early 1950's when they began to increase (Figure 1). Ten year average yields for the periods ending in 1949, 1959, 1969 and 1979 were 2941, 3664, 5005 and 5637 lbs./acre, respectively.

The average yield in 1979 was 6450 lbs./acre, some 640 lbs./acre above the previous high in 1977. Higher yields in 1979 can be at least partly attributed to the new short stature varieties since 1979 was the first year in which they were widely grown (51% of the acreage). The percentage of the California rice acreage planted to the short stature varieties should increase in future years, since they have a higher yield potential than the tall stature varieties. This trend should lead to higher average yields in the 1980's.

Table 1.

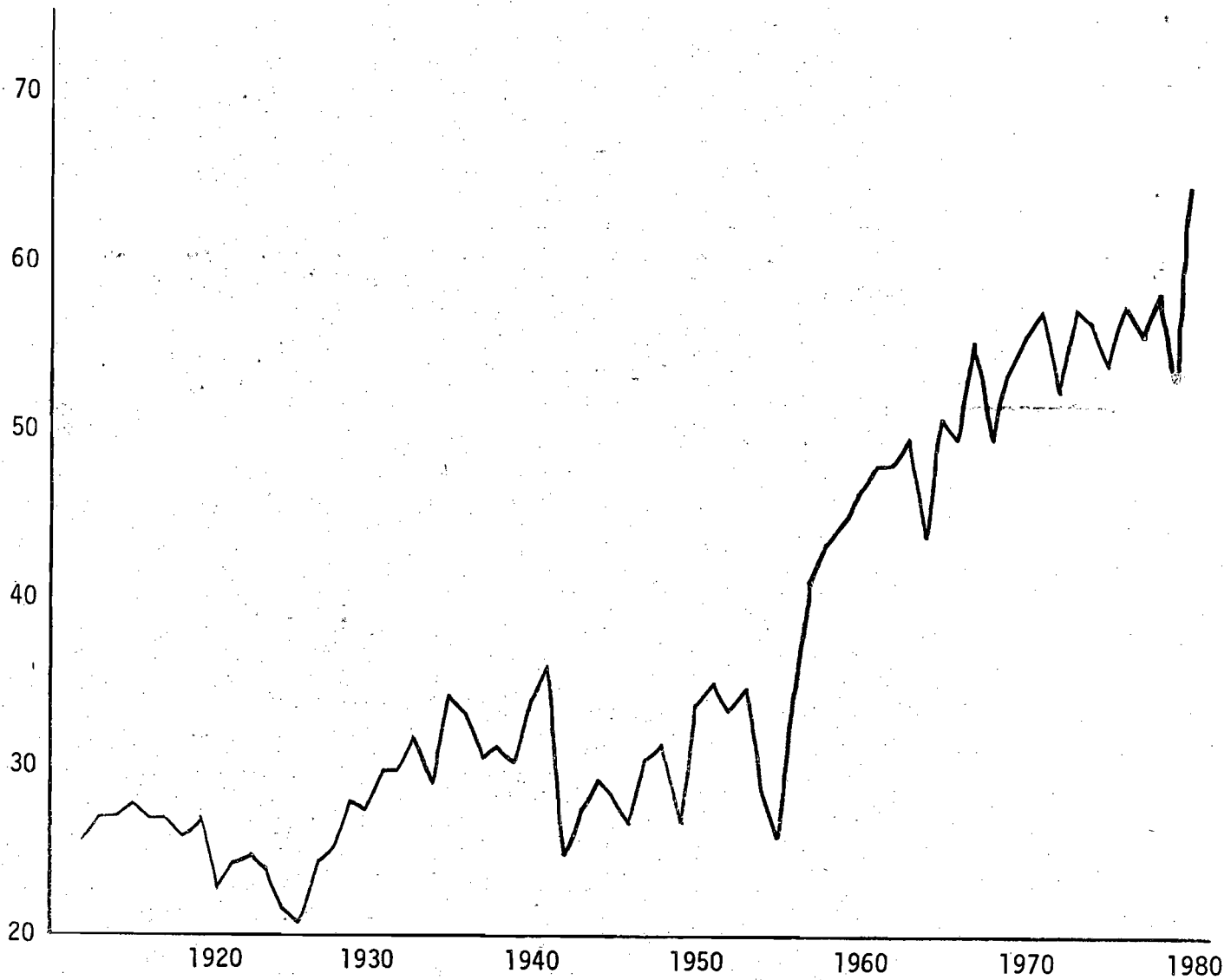
ESTIMATED CALIFORNIA RICE ACREAGE BY COUNTY - 1979¹

<i>County</i>	<i>Acreage</i>	<i>Percentage Of State Total</i>
Colusa	131,249	25.9
Butte	96,645	19.1
Sutter	85,222	16.8
Glenn	69,222	13.8
Yolo	33,968	6.7
Yuba	29,043	5.7
Sacramento	11,668	2.3
Merced	10,872	2.1
Fresno	9,696	1.9
Placer	9,432	1.9
San Joaquin	7,488	1.5
Tulare	4,885	1.0
Other (Stanislaus, Kern Kings & Madera)	6,437	1.3
California Total	505,827	100.0

¹Estimates are based on U.S.D.A. Agricultural Stabilization and Conservation Service (A.S.C.S.) figures. These acreage figures may be slightly lower than the actual acreage since not all growers participate in A.S.C.S. programs.

Figure 1.

AVERAGE CALIFORNIA RICE YIELDS
(cwt/acre)
1912 - 1979



1980 RICE PRODUCTION COSTS

COLUSA, GLENN AND YOLO COUNTIES

The purpose of this sample cost of production study is to provide persons interested in rice production with generalized information on the cost of producing rice. Persons using this study should only use it as a guide. Materials as well as amounts of materials presented here are not provided as recommendations, rather they are considered typical for the area.

Cost of materials, services, equipment and buildings are based on price estimates provided by local companies and organizations. Growers representing Colusa, Glenn and Yolo Counties provided production information for the study.

The sample farm under consideration here is a single enterprise, 600 acres in size (500 acres of rice and 100 acres of wheat) with a yield level of 6200 lbs./acre @ 14% moisture. Two varieties, one early and one late maturing, are grown to spread land preparation and harvest dates. Land is level with straight levees (12/100 acres). Shop and equipment are in close proximity to fields. Production practices used here are considered typical.

Production practices, size of operation, yield level, equipment, land costs (owned or rented) and other factors will vary for each rice operation. Persons using this study should adjust cost figures to suit their own situation.

Labor includes hourly cash wages, social security, compensation insurance, record-keeping, and other benefits. The following labor rates were used in this study:

<u>POSITION</u>	<u>HOURLY WAGE</u>	<u>BENEFITS (30%)</u>	<u>LABOR RATE/HOUR</u>
Combine Operator	\$8.00	\$2.40	\$10.40
Bankout Operator	7.00	2.10	9.10
Tractor Operator/Irrigator	5.00	1.50	6.50
Unskilled Worker	4.00	1.20	5.20

Fuel and Repairs include oil, grease, diesel, parts and labor for repairs. Cost of diesel fuel used in this study was \$0.98/gallon. Equipment repairs were calculated on a per hour of use basis.

Materials and Contracts include the cost of materials and services. Cost of fertilizers, seed, herbicides and insecticides as well as the application of these materials were based on an average of local prices. Drying and hauling costs were also based on averages. Water cost was based on a weighted average in order to account for the acreage different water districts serve.

Management Cost is included as a production cost, however, it is returned to management for time, effort and decisions made for the enterprise.

Equipment Inventory value is adjusted to 60% of current market prices to reflect the affect of inflation on prices.

Interest on equipment and building investments was calculated at 12% of one half their cost. Interest on the production loan was calculated at 12.75% on one half of 75% of cultural and harvest costs. Growers who have invested in rice units may wish to include interest on their investment.

1980
 SAMPLE COSTS TO PRODUCE RICE
 Colusa, Glenn and Yolo Counties

Operation	Hours/ Acre	Cost/Acre			Total
		Labor	Fuel & Repairs	Materials & Contracts	
Cultural					
Chisel 2X - 4WDT	.25	1.63	5.40		7.03
Disc 2X - 4WDT	.20	1.30	5.08		6.38
3 Wheel Plane - 4WDT	.14	.91	2.99		3.90
Fertilization, Aqua-C	.10	.66	1.67	120 lbs. N @ .20/lb., rig	25.50 27.83
Fertilization, 12-20-0				150 lbs. @ .144/lb., aerial applied	24.56 24.56
Harrow - WT	.14	.91	.61		1.52
Close Levees - C	.06	.39	.99	Boxes	.75 2.13
Irrigation	1.26	8.19		Water 7.5 acre ft.	18.70 26.89
Seed, Certified				150 lbs. @ 14.00/cwt.	21.00 21.00
Soaked & Treated				1.70/cwt.	2.55 2.55
Transport to Airstrip				10-15 mile haul .2875/cwt.	.56 .56
Sown				Aerial applied, 2.87/cwt.	5.60 5.60
Insect/Crustacean Control 75%				Methyl Parathion, 1,2 pt, aerial applied	3.53 3.53
Barnyardgrass Control 100%				Molinate 4.5 lbs. aerial applied	22.12 22.12
Broadleaf Weed Control 75%				MCPA 18 oz. aerial applied	7.00 7.00
Topdress (NH ₄) ₂ SO ₄ 75%				200 lbs. @ .067/lb., aerial applied	12.30 12.30
Drain & Open Levees - C	.09	.59	.50		1.09
CULTURAL COSTS	2.24	\$14.58	\$17.24	\$144.17	\$175.99
Harvest					
Combine (2)	.62	6.44	23.75		30.19
Bankout (2)	.62	5.64	5.72		11.36
Transport To Dryer				10-15 mile haul .208/cwt. @ 23% moisture	14.41 14.41
Dry				.45/cwt. @ 23% moisture	31.17 31.17
Post-Harvest Operations	.29	1.66	.29		1.95
HARVEST COSTS	1.53	\$13.74	\$29.76	\$40.80	\$ 89.08
CULTURAL + HARVEST COSTS					\$265.07
Cash Overhead					
Insurance (8.44), Taxes on Buildings and Equipment (6.18)					14.62
Interest on Production Loan					12.67
Rent, 33.33% minus 1/3 fertilizer, 1/3 pesticides, and 1/2 water costs					165.24
Miscellaneous, Office and Pickups					9.58
CASH OVERHEAD COSTS					\$202.11
CASH COSTS					\$467.18
MANAGEMENT - 5% of 62 cwt. @ \$9.68/cwt.					\$ 30.00
Fixed Costs					
		<u>Cost Per Acre</u>	<u>Depreciation</u>	<u>Interest</u>	
Equipment		526.04	51.51	31.56	
Buildings		52.40	1.75	3.14	
Total		578.44	53.26	34.70	\$ 87.96
TOTAL COST PER ACRE					\$585.15
COST PER CWT. @ 62 CWT. PER ACRE					\$ 9.44

SAMPLE COSTS FOR OPTIONAL OPERATIONS

<i>Operation</i>	<i>Cost/Acre</i>		<i>Total</i>
	<i>Materials and Contracts</i>		
Laser Level	85.00/acre, 100 acres/year		\$14.17
Fertilization: Zinc	ZnSO ₄ 30 lbs./acre @ .30/lb., aerial applied		11.20
Rice Water Weevil Control	Carbofuran 10 lbs./acre @ .71 lb., aerial applied		9.29
Weed Control	Bentazon 1 lb./acre @ 20.02/lb., aerial applied		23.22
Equipment Transport	Crawler - 4 moves (212.00), Combine - 4 moves (280.00)		.98

NET INCOME/ACRE AT VARIOUS YIELDS AND PRICES¹

<i>Yield/Acre (cwt.)</i>	<i>Rice Price/Cwt.</i>				
	<i>8.50</i>	<i>9.00</i>	<i>9.50</i>	<i>10.00</i>	<i>10.50</i>
50	-75.38	- 59.98	- 44.58	- 29.11	- 13.73
55	-56.52	- 39.58	- 22.64	- 5.64	+ 11.30
60	-37.65	- 19.17	- 0.69	+ 17.85	+ 36.33
65	-18.80	+ 1.22	+ 21.24	+ 41.33	+ 61.35
70	+ 0.08	+ 21.64	+ 43.20	+ 64.83	+ 86.39
75	+18.92	+ 42.02	+ 65.12	+ 88.30	+111.40
80	+37.79	+ 62.43	+ 87.07	+111.79	+136.43
85	+56.65	+ 82.83	+109.01	+135.28	+161.46
90	+75.51	+103.23	+130.95	+158.76	+186.48

¹Over and above management cost. Harvest, rent, interest on production loan and management cost adjusted for yield and price increases or decreases.

EQUIPMENT INVENTORY

<u>Equipment</u>	<u>1980 Cost Including Tax</u>	<u>Cost Per Acre</u>	<u>Life</u>	<u>Depreciation</u>
1. Wheel Tractor 40 DBHP	14,050	23.41	10	2.34
2. Tractor 4WD 210 DBHP	82,700	137.83	10	13.78
3. Crawler Tractor w/Blade 125 DBHP	104,400	174.00	15	11.60
4. Chisel Plow 16' Pull Type	5,150	8.58	10	.86
5. Stubble Disc 14'	15,600	26.00	10	2.60
6. Offset Disc 21'	13,050	21.75	10	2.18
7. Moldboard Plow 5/18	9,500	15.83	10	1.58
8. Spikedtoothed Harrow 20'	1,000	1.67	10	.17
9. Triplane 16' x 35'	9,100	15.17	15	1.01
10. Mower 7'	1,800	3.00	10	.30
11. Equipment Carrier 30'	4,800	8.00	10	.80
12. Combine 18'	95,000	158.33	10	15.83
13. Combine 18'	95,000	158.33	10	15.83
14. Bankout	35,000	58.33	10	5.83
15. Bankout (used)	15,000	25.00	7	3.57
16. Pickup 4WD 3/4 ton	10,700	17.83	5	3.57
17. Pickup (used)	4,200	7.00	3	2.33
18. Tools and Small Equipment	<u>10,000</u>	<u>16.67</u>	10	<u>1.67</u>
TOTAL	526,050	876.73		85.85
Grower Inventory 60% of Cost	315,630	526.04		51.51

BUILDING INVENTORY

	<u>1980 Cost Including Tax</u>	<u>Cost Per Acre</u>	<u>Life</u>	<u>Depreciation</u>
Steel Shop With Office (40' x 60' x 18')	24,440	40.73	30	1.36
Pole Building (35' x 80' x 16', Open)	<u>7,000</u>	<u>11.67</u>	30	<u>.39</u>
TOTAL	31,440	52.40		1.75