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AN ANALYSIS OF SUDANGRASS SEED PRODUCTION AND COSTS
IN CALIFORNIA

by

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AN ANALYSIS OF SUDANGRASS SEED PRODUCTION AND COSTS

Sudangrass seed production is an important alternate enterprise in many field crop rotations. The fibrous root system of Sudangrass leaves the soil loose and in an excellent condition for following crops. Some plants such as most legumes which require a firm seed bed can be seeded directly into the Sudan stubble with little if any further seed bed preparation.

Statistics on Sudangrass seed acreage, yield, production, and price are available only through 1964. The available information shows rather wide variations in production. Acreage reached a high of 30,000 in 1955 and then dropped to 6,500 in 1958. The latest information available shows 18,000 acres in 1964.

This publication gives cost figures for Glenn, Sacramento, and Yolo counties. These three counties had nearly 20,000 acres of Sudangrass seed in 1965 and 13,000 acres in 1966.

The cost of production figures are not presented as averages for the particular counties but are representative of the costs in those areas under good management. Yields shown are above average but should be attainable with the management practices shown in the costs. The costs include all cash costs, all labor whether hired or family, a management charge, depreciation on the equipment and other depreciable items, and interest on the investment.

SUDANGRASS SEED: ACREAGE, YIELD, PRODUCTION, FARM PRICE AND VALUE IN CALIFORNIA;
PRODUCTION AND FARM PRICE IN THE UNITED STATES, 1940-64

Year	California					United States	
	Acreage harvested	Yield per acre	Production (clean seed)	Average price	Value of production	Production (clean seed)	Average price
	acres	pounds	1,000 pounds	\$ per cwt.	\$1,000	1,000 pounds	\$ per cwt.
1940	3,500	855	3,000	2.20	66	48,800	2.18
1945	5,500	620	3,400	5.75	196	29,500	5.26
1950	11,000	730	8,000	7.00	560	35,260	7.34
1951	15,000	935	14,000	6.80	952	39,380	7.05
1952	10,000	1,000	10,000	11.00	1,100	32,966	10.50
1953	18,000	1,020	18,360	5.40	991	64,298	5.21
1954	13,000	925	12,025	9.80	1,178	42,325	9.01
1955	30,000	1,250	37,500	4.90	1,838	88,970	4.57
1956	17,000	1,380	23,460	6.90	1,619	54,975	6.41
1957	22,000	1,320	29,040	4.30	1,249	104,705	3.07
1958	6,500	1,500	9,750	7.00	682	34,168	4.74
1959	10,000	1,580	15,800	5.60	885	43,338	4.89
1960	11,000	1,530	16,850	6.60	1,111	47,526	5.61
1961	18,000	1,085	19,530	6.00	1,172	65,869	5.51
1962	16,000	1,825	29,200	6.70	1,956	61,495	6.38
1963	17,000	1,750	29,750	6.00	1,785	64,924	5.52
1964	18,000	1,768	31,820	5.10	1,623		
1965 ^{a/}							

a/ Estimates were discontinued in 1965.

Source: California Crop & Livestock Reporting Service.

SUMMARY OF SUDANSEED COST STUDIES

	County		
	Glenn	Sacramento	Yolo
Size of operation - acres	300	400	1,000
Acres of Sudan	100	100	
Yield - pounds	2,500	2,500	2,500
Cultural costs			
Land preparation	\$ 5.75	\$ 7.95	\$ 4.60
Fertilize	9.00	17.40	9.70
Plant	2.80	3.25	3.60
Irrigate	16.55	9.50	15.90
Spray weeds	2.90	2.75	1.47
Spray insects	7.75	--	--
Inspect	--	--	.34
Miscellaneous	4.50	--	1.68
TOTAL CULTURAL COSTS	\$ 49.25	\$ 40.85	\$ 37.29
Harvest costs			
Windrow	\$ 1.70	\$ 5.00	\$ 1.37
Combine	14.00	7.70	6.36
Haul	3.75	3.00	2.50
Cleaning, etc.	26.25	26.25	26.25
Field cleanup	--	3.50	2.15
TOTAL HARVEST COSTS	\$ 45.70	\$ 45.45	\$ 38.63
Overhead costs			
Miscellaneous	\$ 4.75	\$ 5.00	\$ 4.10
Taxes	12.00	.80	17.10
Rent	--	40.00	--
TOTAL OVERHEAD COSTS	\$ 16.75	\$ 45.80	\$ 21.20
Management	\$ 7.50	\$ 7.50	\$ 7.50
Depreciation	20.60	13.50	16.34
Interest	44.60	4.05	59.78
TOTAL COST	\$184.40	\$157.15	\$180.74
Cost per pound	7.4¢	6.3¢	7.2¢

SAMPLE COSTS TO PRODUCE SUDAN SEED

Glenn County - 1967

Based on 100 acres of Sudan on a 300-acre ranch, yield 2,500 pounds. Labor: skilled at \$2.25 and irrigator at \$1.95 including social security and compensation insurance.

Operation	Hours per acre	Cash and labor costs per acre			Total	Cost per pound cents
		Labor	Fuel & repairs	Materials		
<u>Cultural costs</u>		dollars				
Disk - 2 times	.80	1.80	1.60		3.40	
Ridge	.20	.45	.25		.70	
Fertilize				Nitrogen 100 lbs. @ 8¢ Application 1.00	8.00 9.00	
Pre-irrigate	1.00	1.95		Water 3" @ \$2.25 foot .55	2.50	
Springtooth	.20	.45	.40		.85	
Harrow and roll	.20	.45	.35		.80	
Plant	.20	.45	.35	Seed 20 lbs. @ 10¢ 2.00	2.80	
Irrigate - 9 times	4.50	8.80	.50	Water 2.1' @ \$2.25 foot 4.75	14.05	
Spray weeds				2, 4-D 1 lb. applied 2.90	2.90	
Spray worms				Applied 7.75	7.75	
Miscellaneous		1.45	.35		2.70	4.50
TOTAL CULTURAL COSTS		15.80	3.80		29.65	49.25
<u>Harvest costs</u>						
Windrow	.25	.55	1.15		1.70	
Combine				Contract 14.00	14.00	
Haul				Contract @ \$3 ton 3.75	3.75	
Cleaning, bags, etc.				2,500 @ 1.05 cwt. 26.25	26.25	
TOTAL HARVEST COSTS		.55	1.15		44.00	45.70
<u>Cash overhead</u>						
Miscellaneous					4.75	
Taxes					12.00	
TOTAL OVERHEAD COSTS					16.75	16.75
TOTAL CASH COST		16.35	4.95		90.40	111.70
Management 5% of 2,500 lbs. @ 6¢						7.50
						.3
<u>Investment</u>		<u>Per acre</u>	<u>Annual cost</u>			
			<u>Depreciation</u>	<u>Interest at 6%</u>		
Land	\$600.00			\$36.00		
Irrigation system	150.00		\$ 7.50	4.50		
Buildings	10.00		.50	.30		
Equipment	126.00		12.60	3.80		
Total	<u>\$886.00</u>		<u>\$20.60</u>	<u>\$44.60</u>		
TOTAL COST PER ACRE						65.20
						2.6
Cost per pound at 2,500 pound yield						184.40
						7.4

MONTHLY CASH FLOW FOR SUDAN SEED

Glenn County - 1967

Operation	Total	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<u>Cultural costs</u>													
Disk	3.40			1.70	1.70								
Ridge	.70				.70								
Fertilize	9.00				9.00								
Pre-irrigate	2.50				2.50								
Springtooth	.85				.85								
Harrow and roll	.80				.80								
Plant	2.80					2.80							
Irrigate--9 times	14.05					1.55	4.70	4.70	3.10				
Spray weeds	2.90						2.90						
Spray worms	7.75							7.75					
Miscellaneous	4.50			.65	.65	.65	.65	.65	.65	.60			
<u>Harvest costs</u>													
Windrow	1.70									1.70			
Combine	14.00									14.00			
Haul	3.75									3.75			
Cleaning, etc.	26.25									26.25			
<u>Cash overhead</u>													
Miscellaneous	4.75	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.35
Taxes	12.00												12.00
TOTAL CASH COST	111.70	.40	.40	2.75	16.60	5.40	8.65	13.50	4.15	46.70	.40	.40	12.35
NET CASH COST			.80	3.55	20.15	25.55	34.20	47.70	51.85	98.55	98.95	99.35	111.70

EQUIPMENT INVESTMENT FOR SUDAN SEED PRODUCTION

Glenn County - 1967

Item	Cost	Annual use (acres)	Cost per acre
Pickup	\$ 2,500	300	\$ 8.35
Tractor:			
40 HP wheel	7,600	300	25.30
30 HP wheel	5,700	300	19.00
Weed sprayer	1,250	300	4.15
Roller 21'	2,200	300	7.35
Swather	8,000	300	26.65
Miscellaneous	2,550	300	8.50
Springtooth 16'	1,670	200	8.35
Harrow, spike 20'	650	200	3.25
Drill 14'	1,150	200	5.75
Disk 9'	1,200	200	6.00
Ridger	<u>600</u>	200	<u>3.00</u>
 TOTAL INVESTMENT	 \$35,070		 \$125.65

SAMPLE COSTS TO PRODUCE SUDAN SEED

Sacramento County - 1967

Based on 100 acres of Sudan on a 400-acre farm, yield 2,500 pounds per acre. Labor at \$2.75 per hour including social security and workmen's compensation insurance.

Operation	Hours per acre	Cash and labor costs per acre				Cost per pound cents	
		Labor	Fuel & repairs	Materials	Total		
dollars							
<u>Cultural costs</u>							
Disk - 2 times	.80	2.20	1.60		3.80		
Ridge	.20	.55	.30		.85		
Fertilize	.20	.55	.25	Nitrogen 100 lbs. @ 8¢ Rent fert. rig applic. of 60 lbs. P ₂ O ₅ @ 11¢	8.00 8.60	8.80 8.60	
Drag-shape levees	.35	.95	.45			1.40	
Pre-irrigate	.20	.55		3" water @ \$2.50 ac. ft.	.65	1.20	
Springtooth	.20	.55	.45			1.00	
Harrow and roll	.20	.55	.35			.90	
Plant	.25	.70	.55	20 lbs. seed @ 10¢	2.00	3.25	
Irrigate - 7 times	1.20	3.30		2 ac. ft. water @ \$2.50	5.00	8.30	
Weed control				12 oz. 2,4-D Amine applied	2.75	2.75	
TOTAL CULTURAL COSTS		9.90	3.95		27.00	40.85	1.6
<u>Harvest costs</u>							
Swath				Contract	5.00	5.00	
Combine	1.00	2.75	4.95			7.70	
Haul				1.5 tons @ \$2.00 per ton	3.00	3.00	
Cleaning, tags, bags				1.25 tons @ \$1.05 per cwt.	26.25	26.25	
Post-harvest chopping				Contract	3.50	3.50	
TOTAL HARVEST COSTS		2.75	4.95		37.75	45.45	1.8
<u>Overhead costs</u>							
Miscellaneous, office, phone, pickup, road- side weed control					5.00		
Taxes on equipment only					.80		
Rent					40.00		
TOTAL OVERHEAD COSTS					45.80	45.80	1.9
TOTAL CASH COST		12.65	8.90		110.55	132.10	5.3
Management 5% of 2,500 lbs. @ 6¢						7.50	.3
				<u>Annual cost</u>			
<u>Investment</u>	<u>Per acre</u>	<u>Depreciation</u>	<u>Interest at 6%</u>				
Equipment	\$138.00	\$13.50	\$4.05		17.55	.7	
TOTAL COST PER ACRE					157.15		
Cost per pound at 2,500 pound yield						6.3	

MONTHLY CASH FLOW FOR SUDAN SEED

Sacramento County - 1967

Operation	Total	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<u>Cultural costs</u>													
Disk - 2 times	3.80				3.80								
Ridge	.85				.85								
Fertilize .	17.40				17.40								
Form levees	1.40				1.40								
Pre-irrigate	1.20				1.20	----->							
Springtooth	1.00				1.00	----->							
Harrow and roll	.90				.90	----->							
Plant	3.25				3.25	----->							
Irrigate--7 times	8.30					2.30	2.40	2.40	1.20				
Weed control	2.75						2.75						
<u>Harvest costs</u>													
Swath	5.00								5.00	----->			
Combine	7.70								7.70	----->			
Haul	3.00								3.00	----->			
Cleaning, etc.	26.25									26.25			
Chop	3.50									3.50			
<u>Cash overhead</u>													
Miscellaneous	5.00	5.00	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	----->
Taxes	.80												.80
Rent	40.00	40.00	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	----->
TOTAL CASH COST	132.10	45.00			29.80	2.30	5.15	2.40	16.90	29.75			.80
NET CASH COST		45.00	45.00	45.00	74.80	77.10	82.25	84.65	101.55	131.30	131.30	131.30	132.10

EQUIPMENT INVESTMENT FOR SUDAN SEED PRODUCTION

Sacramento County - 1967

Item	Cost	Annual use (acres)	Cost per acre
Tractor	\$ 7,600	400	\$ 19.00
Check breaker	200	100	2.00
Cultipak 12'	840	100	8.40
Disk harrow, offset 9"	1,200	100	12.00
Harrow			
Spike 12'	390	100	3.90
Springtooth 16'	1,670	100	16.70
Grain drill 14'	1,150	100	11.50
Border disc	300	100	3.00
Drag	300	100	3.00
Pickup 3/4 ton	2,800	400	7.25
Truck 1 1/2 ton	3,600	400	9.00
Combine 16'	15,400	400	38.50
Chopper	<u>1,350</u>	400	<u>3.40</u>
Total Investment	\$36,800		\$137.65
Additional equipment required if operator does heavy work:			
Tractor - CD 40	\$13,500	200	\$ 67.50
Disk harrow offset	1,750	100	17.50
Swather 16'	7,500	100	75.00
Landplane 10' x 40'	4,500	100	45.00
Subsoiler 6'	<u>1,875</u>	100	<u>18.75</u>
Total Heavy Equipment	\$29,125		\$223.75
TOTAL INVESTMENT	\$65,925		\$361.40

SAMPLE COSTS TO PRODUCE SUDAN SEED

Yolo County - 1967

Based on 2,500-pound yield.

Operation	Hours per acre	Cash and labor costs per acre			Total	Cost per pound cents	
		Labor	Fuel & repairs	Materials			
<u>Cultural costs</u>		dollars					
Disk - 2 times	.40	.70	1.37		2.07		
Furrow and fertilize	.25	.44	.76	Nitrogen 100 lbs. @ 8¢	8.00		
				Rent for spreader	.50	9.70	
Pre-irrigate	1.50	2.10		Water 6" @ \$3 ac. ft.	1.50	3.60	
Springtooth	.12	.21	.54			.75	
Harrow and roll	.17	.30	.52			.82	
Plant	.33	.58	1.02	Seed 20 lbs. @ 10¢	2.00	3.60	
Ridge	.20	.35	.61			.96	
Irrigate - 3 times	4.50	6.30		Water 2' @ \$3	6.00	12.30	
Spray	.17	.30	.27	2,4-D 1 lb.	.90	1.47	
Inspect	.10	.14		Certification	.20	.34	
Miscellaneous		1.68				1.68	
TOTAL CULTURAL COSTS		13.10	5.09		19.10	37.29	1.5
<u>Harvest costs</u>							
Windrow	.34	.67	.70			1.37	
Thresh	1.00	1.96	4.40			6.36	
Haul				2.25 tons @ \$2	2.50	2.50	
Cleaning, bags, etc.				2,500 lbs. @ \$1.05 cwt.	26.25	26.25	
TOTAL HARVEST COSTS		2.63	5.10		28.75	36.48	1.5
<u>Post-harvest cost</u>							
Disk - 2 times	.40	.78	1.37			2.15	.1
<u>Overhead costs</u>							
Miscellaneous					4.10		
Taxes					17.10		
TOTAL OVERHEAD COSTS					21.20	21.20	.8
TOTAL CASH COST		16.51	11.56		69.05	97.12	3.9
Management 5% of 2,500 lbs. @ 6¢						7.50	.3
<u>Investment</u>		<u>Per acre</u>	<u>Annual cost</u>				
			<u>Depreciation</u>	<u>Interest at 6%</u>			
Land	\$ 900.00			\$54.00			
Irrigation system	41.00		\$ 2.05	1.25			
Buildings	15.00		.75	.45			
Equipment	136.00		13.54	4.08			
Total	\$1,092.00		\$16.34	\$59.78		76.12	3.0
TOTAL COST PER ACRE						180.74	
Cost per pound @ 2,500 pound yield							7.2

Source: Zobel, Melvin P., et al., Sample Cost of Production - Yolo County - 1967, Woodland: University of California Agricultural Extension Service Mimeo, 1967, 25 pp.

MONTHLY CASH FLOW FOR SUDAN SEED

Yolo County - 1967

Operation	Total	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<u>Cultural costs</u>													
Disk - 2 times	2.07				2.07								
Furrow & fertilize	9.70				9.70								
Pre-irrigate	3.60				3.60								
Springtooth	.75				.75								
Harrow and roll	.82				.82								
Plant	3.60				3.60								
Ridge	.96					.96							
Irrigate - 3 times	12.30					4.10	4.10	4.10					
Spray	1.47						1.47						
Inspect	.34							.34					
Miscellaneous	1.68	1.68											
<u>Harvest costs</u>													
Windrow	1.37								1.37				
Thresh	6.36								6.36				
Haul	2.50								2.50				
Cleaning, etc.	26.25									26.25			
Disk - 2 times	2.15									2.15			
<u>Cash overhead</u>													
Miscellaneous	4.10	4.10											
Taxes	17.10												17.10
TOTAL CASH COST	97.12	5.78			20.54	5.06	5.57	4.44	10.23	28.40			17.10
NET CASH COST		5.78	5.78	5.78	26.32	31.38	36.95	41.39	51.62	80.02	80.02	80.02	97.12

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