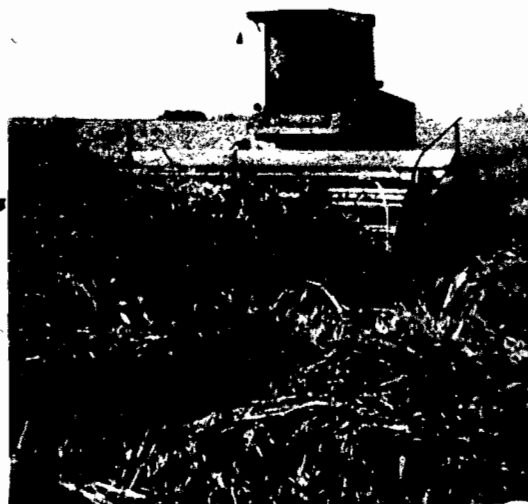


# PRODUCTION COSTS

SU-SV-92

## FOR SUDANGRASS SEED

TENANT  
LANDOWNER  
BASIS



Glenn County

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UC COOPERATIVE EXTENSION

1992  
**U.C. COOPERATIVE EXTENSION  
SAMPLE COSTS TO PRODUCE SUDANGRASS SEED  
IN GLENN COUNTY**

by

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and  
Pete Livingston, Staff Research Associate, U.C. Davis

The detailed costs for sudangrass seed production in Glenn County are presented in this study. The hypothetical farm used in this report consists of 1000 acres of which 100 acres are in sudangrass seed production. The remainder of the farm is planted to different field crops.

Practices described are based on those production procedures considered typical for this crop and area. Sample costs given for labor, materials, equipment and contract services are based on current figures. Some costs and practices detailed in this study may not be applicable to your situation. This study is only intended as a guide and can be used in making production decisions, determining potential returns, preparing budgets and evaluating production loans. A blank *Your Costs* column is provided to enter your actual costs on Table 1, **Costs Per Acre To Produce Sudangrass Seed**.

This study consists of **General Assumptions for Producing Sudangrass Seed** and six tables.

- Table 1. **Costs Per Acre To Produce Sudangrass Seed**
- Table 2. **Monthly Cash Costs Per Acre To Produce Sudangrass Seed**
- Table 3. **Annual Equipment, Investment And Business Overhead Costs**
- Table 4. **Hourly Equipment Costs**
- Table 5. **Ranging Analysis**
- Table 6. **Costs And Returns / Breakeven Analysis.**

For an explanation of calculations used for the study refer to the attached **General Assumptions**, call the Department of Agricultural Economics, Cooperative Extension, University of California, Davis, California, (916) 752-3589 or call the Farm Advisor in the county of interest.

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**University of California and the United States Department of Agriculture cooperating.**

# GENERAL ASSUMPTIONS FOR PRODUCING SUDANGRASS SEED

Glenn County - 1992

U.C. Cooperative Extension

90-SV-92

The following is a description of some general assumptions pertaining to sample costs of sudangrass seed production in Glenn County. These costs are represented on an annual, per acre basis.

## 1. LAND:

This cost of production study is based on a 1000 acre field and row crop farm of which 100 acres are dedicated to growing sudangrass seed. Other crops grown on the same acreage in rotation with sudangrass seed might include small grains, safflower, alfalfa hay, ladino clover seed, sugar beets, grain sorghum, field corn, etc.

## 2. RENT AGREEMENT:

Land used for sudangrass seed production can be rented on a tenant-landowner or cash rent basis. Although the share rent may vary, in this study the landowner receives 20% of the crop receipts from the sale of 2300 pounds per acre of clean sudangrass seed. The tenant pays all cash costs to produce the crop. Interest cost for land is incurred by the landowner.

## 3. CULTURAL PRACTICES:

The cultural, pesticide and fertilizer inputs for the production of sudangrass seed may vary from grower to grower and field to field. The practices and inputs used in this cost study serve only as a sample or a guide. Certified seed production requires isolation from Johnsongrass and other sorghums. Inadequate isolation can result in rejection for certification and the production of uncertified seed, hence reducing the value of the seed produced. Questions regarding isolation requirements can be directed to a seed contractor or University of California farm advisor.

## 4. YIELDS & RETURNS:

The crop yield used in this study is 2556 gross pounds per acre. Ten percent of the gross yield is lost in clean out leaving a net yield of 2300 pounds of sudangrass seed per acre. To estimate the returns to the sudangrass enterprise a price of a \$0.20 per net pound of seed is used. Consult contracting seed companies should you have interest in the price outlook for sudangrass seed.

## 5. HARVEST:

The sudangrass seed is custom harvested in this study. The sudangrass is first swathed and then combined. The custom rates are \$15 per hour for swathing and \$35 per hour for combining. Harvested seed is custom hauled to the seed company at a rate of \$0.25 per pound. Seed charges of \$.04 per pound of clean seed cover the cost of cleaning, certifying, bagging and storing the seed. If a grower harvests his seed, the custom charges should be subtracted from the harvest costs in Table 1 and all harvest equipment and its appropriate costs would then be added to harvest and equipment costs in Table 1.

## 6. LABOR:

Basic hourly wages for workers are \$7.09 and \$5.00 per hour for machine operators and non-machine (irrigators) workers respectively. Adding 34% for SDI, FICA, insurance and other benefits gives the labor rates shown of \$9.50 per hour for machine operators and \$6.70 per hour for non-machine labor. The labor for operations involving machinery are 10% higher than the machine hours to account for the extra labor involved in equipment set-up, moving, maintenance and repair.

## **7. INVESTMENT:**

The investments shown in Table 3 are those that are partially allocated to sudangrass seed production. Investments such as shop buildings and shop tools can be used by the whole farm so only a portion of the costs can be assigned to the sudangrass seed operation and the rest of the costs are distributed to the other farm enterprises. Annual investments shown in Table 1 represent the depreciation and opportunity cost for each investment on an annual per acre basis.

## **8. OVERHEAD:**

County taxes are calculated as 1% of the average of the land, equipment, buildings and improvements. Insurance is charged at 0.5% of the average value of the equipment over its useful life. In this study the equipment insurance and investment repairs are less than one dollar per acre so they do not appear in the cash overhead sections of Tables 1 and 2. Office and business costs are estimated at \$20 per acre for the ranch. These expenses include office supplies, telephones, bookkeeping, accounting, legal fees, road preparation and maintenance, etc.

## **9. INTEREST:**

Interest on operating capital is based on cash costs and is calculated monthly for six months until harvest at the rate of 11.75% per year. Interest is also charged on investment at 12.05% per year to account for income foregone that could be received from an alternative investment (opportunity cost) and is based on the average value of the buildings and equipment.

## **10. EQUIPMENT COSTS:**

In allocating the equipment costs per acre, the following calculations were made and shown in Table 3 and Table 7: (a) **Original Cost** of equipment is the cost of the new equipment plus sales tax. (b) **Depreciation** is straight line with a 10% salvage value. (c) **Interest** on investment is calculated as the average value per acre of the new cost of the equipment during its useful life (average value = (new cost + salvage value)/2 on a per acre basis) multiplied by an interest rate of 12.05%. (d) The total investment costs are also calculated as 60% of the depreciation and the interest costs for all new equipment to reflect a mix of the new and used equipment. These values are also used in Table 1. Most of this equipment is used on the entire 1000 acre ranch.

## **11. FUEL & REPAIR:**

The fuel and repair cost per acre for each operation in Table 1 is determined by multiplying the total hourly operating cost for each piece of equipment in Table 4 by the number of hours per acre for that operation. Prices for on-farm delivery of gasoline and diesel are \$0.79 per gallon and \$1.00 per gallon, respectively

## **11. ACKNOWLEDGEMENT:**

Several Glenn County sudangrass seed producers assisted in furnishing information for this study. Appreciation is expressed to those growers and other individuals who provided assistance.

Table 1.

U.C. COOPERATIVE EXTENSION  
 COSTS PER ACRE TO PRODUCE SUDANGRASS SEED  
 GLENN COUNTY - 1992

SU-SV-92

Labor Rate: \$ 9.50/hr. machine labor Interest Rate: 11.75%  
 \$ 6.70/hr. non-machine labor Yield per Acre: 2300.00 lb

Operation	Operation Time (Hrs/A)	Cash and Labor Costs per Acre					Total Cost	Your Cost
		Labor Cost	Fuel & Repairs	Material Cost	Custom/ Rent			
<b>Cultural:</b>								
Disc	0.33	4	7	0	0	11		
Chisel	0.25	3	5	0	0	8		
Fertilize	0.13	1	2	21	3	27		
Land plane field	0.33	4	6	0	0	10		
Put up ridges	0.05	1	0	0	0	1		
Pre-irrigate	0.20	1	0	10	0	11		
Cultivate	0.10	1	2	0	0	3		
Drill seed with fertilizer	0.20	2	2	23	0	27		
Irrigate	1.05	7	0	40	0	47		
Spray herbicides	0.00	0	0	3	6	9		
Pickup use	0.27	3	1	0	0	4		
<b>TOTAL CULTURAL COSTS</b>	<b>2.91</b>	<b>27</b>	<b>26</b>	<b>96</b>	<b>9</b>	<b>159</b>		
<b>Harvest:</b>								
Swath - custom	0.00	0	0	0	15	15		
Combine - custom	0.00	0	0	0	35	35		
Haul - custom	0.00	0	0	0	6	6		
Clean - certify - bag - store	0.00	0	0	0	92	92		
<b>TOTAL HARVEST COSTS</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>148</b>	<b>148</b>		
Interest on operating capital @ 11.75%							11	
<b>TOTAL OPERATING COSTS/ACRE</b>		<b>27</b>	<b>26</b>	<b>96</b>	<b>157</b>	<b>318</b>		
<b>TOTAL OPERATING COSTS/LB</b>							<b>0.14</b>	
<b>CASH OVERHEAD:</b>								
Landowner share							92	
Office expense							20	
Crop Improvement							1	
Property Taxes							1	
<b>TOTAL CASH OVERHEAD COSTS</b>							<b>114</b>	
<b>TOTAL CASH COSTS/ACRE</b>							<b>432</b>	
<b>TOTAL CASH COSTS/LB</b>							<b>0.19</b>	
<b>NON-CASH OVERHEAD:</b>								
		Per producing Acres	Depreciation	Annual Cost Interest @ 12.05%				
Investment								
Shop Building		37	2	2			4	
Shop tools		10	1	1			1	
Equipment		127	10	8			19	
<b>TOTAL NON-CASH OVERHEAD COSTS</b>		<b>174</b>	<b>13</b>	<b>11</b>			<b>24</b>	
<b>TOTAL COSTS/ACRE</b>							<b>456</b>	
<b>TOTAL COSTS/LB</b>							<b>0.20</b>	

Table 2.

U.C. COOPERATIVE EXTENSION  
MONTHLY CASH COSTS PER ACRE TO PRODUCE SUDANGRASS SEED  
GLENN COUNTY - 1992

SU-SV-92

	OCT 90	NOV 90	DEC 90	JAN 91	FEB 91	MAR 91	APR 91	MAY 91	JUN 91	JUL 91	AUG 91	SEP 91	TOTAL
Planting OCT 90													
Planting SEP 91													
<b>Cultural:</b>													
Disc	11												11
Chisel	8												8
Fertilize							27						27
Land plane field							10						10
Put up ridges							1						1
Pre-irrigate							11						11
Cultivate								3					3
Drill seed w/fert.								27					27
Irrigate								7	20	20			47
Spray herbicides								9					9
Pickup use										4			4
<b>TOTAL CULTURAL COSTS</b>	<b>18</b>						<b>50</b>	<b>46</b>	<b>20</b>	<b>25</b>			<b>159</b>
<b>Harvest:</b>													
Swath - custom											8	8	15
Combine - custom											18	18	35
Haul - custom											3	3	6
Clean, certify, bag & store											46	46	92
<b>TOTAL HARVEST COSTS</b>											<b>74</b>	<b>74</b>	<b>148</b>
Interest on oper. capital	0	0	0	0	0	0	1	1	1	2	2	3	11
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>47</b>	<b>22</b>	<b>26</b>	<b>76</b>	<b>77</b>	<b>318</b>
<b>TOTAL OPERATING COSTS/LB</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>	<b>0.01</b>	<b>0.01</b>	<b>0.03</b>	<b>0.03</b>	<b>0.14</b>
<b>Overhead:</b>													
Landowner share				92									92
Office expense									20				20
Crop Improvement										1			1
Property Taxes				1									1
<b>TOTAL CASH OVERHEAD COSTS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>93</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>114</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>94</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>47</b>	<b>42</b>	<b>27</b>	<b>77</b>	<b>77</b>	<b>432</b>
<b>TOTAL CASH COSTS/LB</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>	<b>0.02</b>	<b>0.01</b>	<b>0.03</b>	<b>0.03</b>	<b>0.19</b>

Table 3.

U.C. COOPERATIVE EXTENSION  
ANNUAL EQUIPMENT, INVESTMENT AND BUSINESS OVERHEAD COSTS  
GLENN COUNTY - 1992

SU-SV-92

Yr	Description	Price	Yrs Life	- Non-Cash Over. -		- Cash Overhead -		Total
				Depre- ciation	Interest	Insur- ance	Taxes	
90	200 hp 4wd tractor	94000	10	8460	6230	258	517	15465
90	70 hp 2wd Tractor	38000	17	2012	2518	105	209	4844
90	Border disc	1065	15	64	71	3	6	143
90	Chisel - 16' hvy	7500	15	450	497	21	41	1009
91	Cult. field 30'	12440	10	1120	824	34	68	2047
90	Disc - 18' offset	16500	15	990	1094	45	91	2220
90	Grain drill - 12'	8500	7	1093	563	23	47	1726
90	Pickup - 3/4 ton	16000	7	2057	1060	44	88	3250
90	Triplane - 16'	16000	15	960	1060	44	88	2152
TOTAL		210005		17205	13918	578	1155	32856
60% of New Cost *		126003		10323	8351	347	693	19714

\* Used to reflect a mix of new and used equipment.

ANNUAL INVESTMENT COSTS

Yr	Description	Price	Yrs Life	- Non-Cash Over. -		- Cash Overhead -			Total
				Depre- ciation	Interest	Insur- ance	Taxes	Repairs	
INVESTMENT									
	Shop Building	37000	20	1850	2229	93	185	250	4607
	Shop tools	10000	15	600	663	28	55	100	1445
TOTAL INVESTMENT		47000		2450	2892	120	240	350	6052

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Crop Improvement	100.00	acre	0.50	50
Landowner share	100.00	acre	92.00	9200
Office expense	1000.00	acre	20.00	20000

U.C. COOPERATIVE EXTENSION  
 HOURLY EQUIPMENT COSTS  
 GLENN COUNTY - 1992

Table 4.

SU-SV-92

Yr Description	----- COSTS PER HOUR -----								
	Actual Hours Used	-Non-Cash Depre- ciation	Over- Interest	- Cash Insur- ance	Overhead Taxes	----- Repairs	Operating Fuel & Lube	----- Total Oper.	Total Costs/Hr.
90 200 hp 4wd tractor	1306.6	3.88	2.86	0.12	0.24	4.70	10.55	15.25	22.35
90 70 hp 2wd Tractor	766.7	1.57	1.97	0.08	0.16	2.27	3.12	5.39	9.18
90 Border disc	166.0	0.23	0.26	0.01	0.02	0.31	0.00	0.31	0.82
90 Chisel - 16' hvy	166.0	1.63	1.80	0.07	0.15	2.15	0.00	2.15	5.80
91 Cult. field 30'	250.0	2.69	1.98	0.08	0.16	3.58	0.00	3.58	8.49
90 Disc - 18' offset	166.0	3.58	3.95	0.16	0.33	4.74	0.00	4.74	12.76
90 Grain drill - 12'	171.0	3.83	1.98	0.08	0.16	4.26	0.00	4.26	10.32
90 Pickup - 3/4 ton	267.7	4.61	2.38	0.10	0.20	2.83	2.30	5.13	12.42
90 Triplane - 16'	166.3	3.46	3.83	0.16	0.32	2.32	0.00	2.32	10.09



Table 5.

U.C. COOPERATIVE EXTENSION  
RANGING ANALYSIS  
GLENN COUNTY - 1992  
SU-SV-92

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE SUDANGRASS

	1400	1700	2000	2300	2600	2900	3100
<b>OPERATING COSTS/ACRE:</b>							
Cultural Cost	159	159	159	159	159	159	159
Harvest Cost	110	123	136	148	161	174	183
Interest on operating capital	10	11	11	11	11	11	12
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>279</b>	<b>293</b>	<b>306</b>	<b>318</b>	<b>331</b>	<b>344</b>	<b>354</b>
<b>TOTAL OPERATING COSTS/LB</b>	<b>.20</b>	<b>.17</b>	<b>.15</b>	<b>.14</b>	<b>.13</b>	<b>.12</b>	<b>.11</b>
<b>CASH OVERHEAD COSTS/ACRE</b>	<b>78</b>	<b>90</b>	<b>102</b>	<b>114</b>	<b>126</b>	<b>138</b>	<b>146</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>357</b>	<b>383</b>	<b>408</b>	<b>433</b>	<b>457</b>	<b>482</b>	<b>500</b>
<b>TOTAL CASH COSTS/LB</b>	<b>.26</b>	<b>.23</b>	<b>.20</b>	<b>.19</b>	<b>.18</b>	<b>.17</b>	<b>.16</b>
<b>NON-CASH OVERHEAD COSTS/ACRE</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>
<b>TOTAL COSTS/ACRE</b>	<b>381</b>	<b>407</b>	<b>432</b>	<b>457</b>	<b>481</b>	<b>506</b>	<b>524</b>
<b>TOTAL COSTS/LB</b>	<b>.27</b>	<b>.24</b>	<b>.22</b>	<b>.20</b>	<b>.19</b>	<b>.17</b>	<b>.17</b>

U.C. COOPERATIVE EXTENSION  
RANGING ANALYSIS Table 5. continued

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR SUDANGRASS SEED

SU-SV-92

PRICE (DOLLARS PER LB)	YIELD (LB/ACRE)						
	1400	1700	2000	2300	2600	2900	3100
.14	-83	-55	-26	4	33	62	80
.16	-55	-21	14	50	85	120	142
.18	-27	13	54	96	137	178	204
.20	1	47	94	142	189	236	266
.22	29	81	134	188	241	294	328
.24	57	115	174	234	293	352	390
.26	85	149	214	280	345	410	452

NET RETURNS PER ACRE ABOVE CASH COSTS FOR SUDANGRASS

PRICE (DOLLARS PER LB)	YIELD (LB/ACRE)						
	1400	1700	2000	2300	2600	2900	3100
.14	-161	-145	-128	-111	-93	-76	-66
.16	-133	-111	-88	-65	-41	-18	-4
.18	-105	-77	-48	-19	11	40	58
.20	-77	-43	-8	27	63	98	120
.22	-49	-9	32	73	115	156	182
.24	-21	25	72	119	167	214	244
.26	7	59	112	165	219	272	306

NET RETURNS PER ACRE ABOVE TOTAL COSTS FOR SUDANGRASS

PRICE (DOLLARS PER LB)	YIELD (LB/ACRE)						
	1400	1700	2000	2300	2600	2900	3100
.14	-185	-169	-152	-135	-117	-100	-90
.16	-157	-135	-112	-89	-65	-42	-28
.18	-129	-101	-72	-43	-13	16	34
.20	-101	-67	-32	3	39	74	96
.22	-73	-33	8	49	91	132	158
.24	-45	1	48	95	143	190	220
.26	-17	35	88	141	195	248	282

U.C. COOPERATIVE EXTENSION  
 COSTS AND RETURNS / BREAKEVEN ANALYSIS  
 GLENN COUNTY - 1992  
 SU-SV-92

COSTS AND RETURNS - PER ACRE BASIS

Crop	1. Gross Returns	2. Operating Costs	3. Net Returns Above Oper. Costs (1-2)	4. Cash Costs	5. Net Returns Above Cash Costs (1-4)	6. Total Costs	7. Net Returns Above Total Costs (1-6)
Sudangrass seed	460	318	142	432	28	456	4

COSTS AND RETURNS - TOTAL ACREAGE

Crop	1. Gross Returns	2. Operating Costs	3. Net Returns Above Oper. Costs (1-2)	4. Cash Costs	5. Net Returns Above Cash Costs (1-4)	6. Total Costs	7. Net Returns Above Total Costs (1-6)
Sudangrass seed	46000	31794	14206	43219	2781	45624	376
<b>TOTAL</b>	<b>46000</b>	<b>31794</b>	<b>14206</b>	<b>43219</b>	<b>2781</b>	<b>45624</b>	<b>376</b>

BREAKEVEN PRICES PER YIELD UNIT

CROP	Base Yield (Units/Acre)	Yield Units	----- Breakeven Price To Cover -----		
			Operating Costs	Cash Costs	Total Costs
----- \$ per Yield Unit -----					
Sudangrass seed	2300.0	lb	0.14	0.19	0.20

BREAKEVEN YIELDS PER ACRE

CROP	Yield Units	Base Price (\$/Unit)	----- Breakeven Yield To Cover -----		
			Operating Costs	Cash Costs	Total Costs
----- Yield Units / Acre -----					
Sudangrass seed	lb	0.20	1589.7	2161.0	2281.2