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UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

2008

**SAMPLE COSTS TO PRODUCE  
SMALL GRAIN SILAGE**



**SAN JOAQUIN VALLEY - SOUTH**  
**Doublecropped**

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## SAMPLE COSTS TO PRODUCE SMALL GRAIN SILAGE San Joaquin Valley - South 2008

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### INTRODUCTION

Sample costs to produce small grain silage in the southern San Joaquin Valley are shown in this study. The study is intended as a guide only, and can be used to make production decisions, determine potential returns, prepare budgets and evaluate production loans. Practices described are based on the production practices considered typical for this crop and region, but will not apply to every farm situation. Sample costs for labor, materials, equipment and custom services are based on current figures. “Your Costs” columns in Tables 1 and 2 are provided for entering your farm costs.

The hypothetical farm operations, production practices, overhead, and calculations are described under the assumptions. For additional information or an explanation of the calculations used in the study call the Department of Agricultural and Resource Economics, University of California, Davis, California, (530) 752-3589 or the local UC Cooperative Extension office.

Sample Cost of Production Studies for many commodities are available from the Department of Agricultural and Resource Economics’ website <http://coststudies.ucdavis.edu> or by calling, UC Davis, (530) 752-1715. The studies can also be obtained from the local county UC Cooperative Extension offices.

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## ASSUMPTIONS

The assumptions refer to Tables 1 through 7 and pertain to sample costs to produce small grain silage in the southern San Joaquin Valley. Practices described represent production practices and materials considered typical of well-managed small grain silage crop. Costs, materials, and practices in this study will not be applicable to all situations. Cultural practices vary among growers within the region. The data does not represent a single farm and is intended as a guide only. **The use of trade names and cultural practices in this report does not constitute an endorsement or recommendation by the University of California nor is any criticism implied by omission of other similar products or cultural practices.**

**Farm.** The hypothetical farm consists of 1,500 non-contiguous acres of which 750 acres are rented and 750 owned by the grower. Alfalfa is planted on 25% of the acres (375 acres) and small grain silage followed by corn silage on 75% of the acres (1,125 acres). Some annual costs are allocated to the small grain silage (50%) and the corn (50%). The grower owned acres include 10 acres occupied by buildings and homestead.

### Production Operating Costs

**Land Preparation.** In the fall five tons of manure is broadcast on the field. The fields are disked twice to incorporate the manure and to prepare the seedbed. Borders or levees are pulled at planned intervals creating checks for irrigation.

**Planting.** Wheat seed is drilled (planted) at a rate of 130 pounds per acre on flat ground. Planting normally occurs in the fall and in this study the grower drills the seed the last week in November. Wheat is the predominant cultivar planted for small grain silage; other cultivars planted are triticale or oats.

**Fertilization.** In November prior to land preparation, dairy manure at five tons per acre is hauled and applied by a custom operator. Some dairies sell their manure, but a number of dairies in the region give their manure away if the grower pays to haul it. In this study, we assume the dairy charges a minimum of \$1 per ton for the manure based on 2007 county crop reports and personal conversations with county statisticians. A custom operator charges \$12 per ton for hauling and spreading. Hauling charges may vary by location; also additional charges may apply for hauling distances over 25-miles. In February nitrogen (N) as urea is applied top dress at a rate of 50 pounds per acre. In some areas, phosphorous may be required for cereal forages at planting. Growers should apply fertilizer or soil amendments only after soil tests determine nutrient and pH levels.

**Irrigation.** The irrigation costs include the water (\$4.58 per acre-inch) and labor expense (0.15 hours per acre per irrigation). The crop is irrigated once in January, once in March, and twice in April at four acre-inches per irrigation. The water is supplied by an irrigation district, although some growers may use or supplement with well water. Water prices vary among irrigations districts. The authors agreed that \$55 per acre-foot (\$4.58 per acre-inch) is a fair value for this study, based upon information from their respective growers.

**Pest Management.** The pesticides, rates, and application practices mentioned in this cost study are listed in the *UC IPM Pest Management Guidelines, Small Grains*. **Pesticides mentioned in this study are not recommendations, but those commonly used in the region.** For information and pesticide use permits, contact the local county Agricultural Commissioner's office. For information on other pesticides available, pest identification, monitoring, and management, visit the UC IPM website at [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu). **Pest control costs can vary considerably each year depending upon local conditions and pest populations in any given year.** Adjuvants are recommended for use with many pesticides for effective control, but are not included in

the material costs. Pesticide costs will vary by grower location and the grower's purchasing volume. These costs are shown as full retail from a single chemical dealer.

*Pest Control Adviser (PCA).* Written recommendations are required for many commercially applied pesticides and are available from licensed pest control advisers. In addition the PCA or an independent consultant will monitor the field for agronomic problems including irrigation and nutrition. Growers may hire private PCAs or receive the service as part of a service agreement with an agricultural chemical and fertilizer company. The company charges \$8 per acre to monitor the field for nutrition, insects and diseases.

*Weeds.* Shark, Buctril, MCPA, or Clarity are post-emergent herbicides to control broadleaf weeds. They are generally applied in January or when weeds are very small. In this study, Shark is applied at 1.5 ounces per acre to control all weeds listed on the label. Puma is applied one week later at 10.6 fluid ounces for wild oats or canary grass control. The herbicides are applied commercially by air.

**Harvest.** The small grain crop is harvested for silage in May. The grower incurs no harvest costs. The buyer swaths, chops, hauls, and packs the silage. The grain crop is wilted to about 70% moisture before the harvester chops, and packs the forage into a silage pit. A typical custom harvest rate is \$9.25 to \$10.00 per ton for swathing, chopping, and packing in a silage pit located within one mile of the field. Hauling over one mile and up to 10 miles add \$0.20 per ton to the basic charge. Silage packed in bags cost an additional \$6.00 per ton.

**Yields.** The crop is assumed to yield 20 tons per acre at 30% dry matter (DM). Yields are an average high yield based on grower inputs. Grower yields will vary depending on the forage type and/or mixture, and growing conditions.

**Returns.** A price of \$42 per ton for silage is used to calculate returns over a range of yields. The returns are based on the 2007 prices for green chopped wheat forage. Table 4 indicates the effects on grower returns based on varying yields and returns.

**Pickup.** The pickup travels 7.12 miles per acre for small grain silage production use or a total of 2,137 miles per year. Costs are estimated and not based on any specific data.

### **Labor, Equipment and Interest Costs**

**Labor.** Labor rates of \$13.94 per hour for machine operators and \$10.88 for general labor includes payroll overhead of 36%. The basic hourly wages are \$10.25 for machine operators and \$8.00 for general labor. The overhead includes the employers' share of federal and California state payroll taxes, workers' compensation insurance for field crops (code 0071), and a percentage for other possible benefits. Workers' compensation costs will vary among growers, but for this study the cost is based upon the average industry final rate as of January 1, 2008 (California Department of Insurance, unreferenced). Labor for operations involving machinery are 20% higher than the operation time given in Table 1 to account for the extra labor involved in equipment set up, moving, maintenance, work breaks, and field repair.

**Interest on Operating Capital.** Interest on operating capital is based on cash operating costs and is calculated monthly until harvest at a nominal rate of 6.75% per year. A nominal interest rate is the typical market cost of borrowed funds. The interest cost of post harvest operations is discounted back to the last harvest month using a negative interest charge. The rate will vary depending upon various factors, but the rate in this study is considered a typical lending rate by a farm lending agency as of April 2008.

**Equipment Operating Costs.** Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by the American Society of Agricultural Engineers (ASAE). Fuel and lubrication costs are also determined by ASAE equations based on maximum power take off (PTO) horsepower and fuel type. Prices for **on-farm delivery** of diesel and gasoline are \$3.54 (excludes excise taxes) and \$3.57 per gallon, respectively. The fuel prices are the average costs from November 2007 through April 2008 derived from American Automobile Association (AAA) and Energy Information Administration monthly data. The cost includes a 2.25% sales tax for diesel fuel, and federal and excise taxes plus an 8% sales tax on gasoline. The federal and state excise tax on gasoline used on the farm can be refunded for on-farm use when filing your income tax. The fuel, lube, and repair cost per acre for each operation in the “Cost Per Acre to Produce” table is determined by multiplying the total hourly operating cost in the “Hourly Equipment Costs” table for each piece of equipment used from the Operation Time (Hrs/A) column by the hours per acre. Tractor time is 10% higher than implement time for a given operation to account for setup, travel and down time.

**Risk.** Production risks should not be minimized. While this study makes every effort to model a production system based on typical, real world practices, it cannot fully represent financial, agronomic and market risks, which affect the profitability and economic viability.

### **Cash Overhead**

Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm, not to a particular operation. Overhead costs where applicable are applied 50% to the forage crop and 50% to the other crop.

**Property Taxes.** Counties charge a base property tax rate of 1% on the assessed value of the property. In some counties special assessment districts exist and charge additional taxes on property including equipment, buildings, and improvements. For this study, county taxes are calculated as 1% of the average value of the property. Average value equals new cost plus salvage value divided by 2 on a per acre basis.

**Insurance.** Insurance for farm investments varies depending on the assets included and the amount of coverage. Property insurance provides coverage for property loss and is charged at 0.74% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs \$1,350 for the entire farm or \$0.90 per producing acre. Fifty percent of the cost or \$0.45 per acre is allocated to the small grain silage.

**Office.** Costs are estimated at \$35 per acre for the ranch and are not based on any specific information, except that there is a cost involved for bookkeeping, payroll, tax preparation, and telephone. Fifty percent of the office expenses are allocated to the small grain silage.

**Land Rent.** Rent for a single crop ranges from \$100 to \$300 per acre. Being the field is being double cropped, \$225 per acre is used in this study with 50% charged to the small grain silage crop.

**Investment Repairs.** Annual repairs on investments or capital recovery items that require maintenance are calculated as 2% of the purchase price. Repairs are not calculated for land costs.

## Non-Cash Overhead

Non-Cash overhead is calculated as the capital recovery cost for equipment and other farm investments. Overhead costs where applicable are applied 50% to the forage crop and 50% to the other crop.

**Capital Recovery Costs.** Capital recovery cost is the annual depreciation and interest costs for a capital investment and is the amount of money required each year to recover the difference between the purchase price and salvage value (unrecovered capital). The capital recovery costs are equivalent to the annual payment on a loan for the investment with the down payment equal to the discounted salvage value. This is a more complex method of calculating ownership costs than straight-line depreciation and opportunity costs, but more accurately represents the annual costs of ownership because it takes the time value of money into account (Boehlje and Eidman). The formula for the calculation of the annual capital recovery costs is  $((\text{Purchase Price} - \text{Salvage Value}) \times \text{Capital Recovery Factor}) + (\text{Salvage Value} \times \text{Interest Rate})$ .

*Salvage Value.* Salvage value is the estimated value of an investment at the end of its useful life. For farm machinery the value is a percentage of the new cost of the investment (Boehlje and Eidman). The value is calculated from equations developed by ASAE based on equipment type and years of life. The life in years is estimated by dividing the wear out life, as given by ASAE, by the annual hours of use in the operation. For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. The salvage value for land is the purchase price because land does not depreciate.

*Capital Recovery Factor.* Capital recovery factor is the amortization factor or annual payment whose present value at compound interest is 1. The amortization factor is a table value that corresponds to the interest rate and equipment life.

*Interest Rate.* The interest rate of 4.25% is used to calculate capital recovery. The rate will vary depending upon size of loan and other lending agency conditions, but is a suggested rate by a farm lending agency in April 2008.

**Tools.** Includes shop equipment/tools and other tools used on the farm and does not recognize any specific inventory.

**Irrigation System.** The permanent irrigation system consists of wells, pumps and motors, and buried mainline with alfalfa valves. The maintenance costs are included in the land rental price.

**Land.** Cropland with district water suitable for small grain silage production typically ranges in value among counties from \$4,500 to \$12,000 per acre. The land in this study that is owned by the grower cost \$8,000 per acre. Costs for the portion of owned land planted to doublecropped small grains are split equally between the two crops.

**Equipment.** Although, farm equipment is purchased new or used, the study shows the current purchase price for new equipment. The new purchase price is adjusted to 60% to indicate a mix of new and used equipment. Equipment costs are composed of three parts: non-cash overhead, cash overhead, and operating costs. Both of the overhead factors have been discussed in previous sections. The operating costs consist of repairs, fuel, and lubrication and are discussed under operating costs.

**Table Values.** Due to rounding, the totals may be slightly different from the sum of the components.

## REFERENCES

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UC COOPERATIVE EXTENSION  
**Table 1. COSTS PER ACRE to PRODUCE SMALL GRAIN SILAGE**  
 SAN JOAQUIN VALLEY - South 2008

Operation	Operation Time (Hrs/A)	Cash and Labor Cost per Acre				Total Cost	Your Cost
		Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent		
<b>Cultural:</b>							
Fertilize: Preplant (dairy manure)	0.00	0	0	5	60	65	
Land Prep: Disk 2X	0.22	4	15	0	0	18	
Land Prep: Pull Borders	0.04	1	2	0	0	2	
Plant: Wheat	0.12	2	5	55	0	62	
Weed: Postemergent (Shark)	0.00	0	0	12	8	20	
Weed: Wild Oats (Puma)	0.00	0	0	22	8	30	
Irrigate: Water & Labor	0.60	7	0	73	0	80	
Fertilize: Top Dress (Urea)	0.00	0	0	56	8	64	
Pest Control Adviser/Consultant	0.00	0	0	0	8	8	
Pickup Truck Use	0.24	4	3	0	0	7	
<b>TOTAL CULTURAL COSTS</b>	<b>1.22</b>	<b>17</b>	<b>24</b>	<b>223</b>	<b>92</b>	<b>356</b>	
<b>Harvest:</b>							
Harvest: Paid by Buyer	0.00	0	0	0	0	0	
<b>TOTAL HARVEST COSTS</b>	<b>0.00</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
Interest on operating capital @ 6.75%						10	
<b>TOTAL OPERATING COSTS/ACRE</b>		<b>17</b>	<b>24</b>	<b>223</b>	<b>92</b>	<b>366</b>	
<b>CASH OVERHEAD*:</b>							
Office Expense						18	
Liability Insurance						0	
Land Rent						113	
Property Taxes						41	
Property Insurance						1	
Investment Repairs						1	
<b>TOTAL CASH OVERHEAD COSTS</b>						<b>173</b>	
<b>TOTAL CASH COSTS/ACRE</b>						<b>539</b>	
<b>NON-CASH OVERHEAD (Capital Recovery)*:</b>							
		Per Producing Acre		Annual Cost Capital Recovery			
Buildings		27		2		2	
Shop Tools		5		0		0	
Fuel Tanks		2		0		0	
Global Positioning System (GPS)		13		3		3	
Land		4,000		170		170	
Equipment		69		8		8	
<b>TOTAL NON-CASH OVERHEAD COSTS</b>		<b>4,117</b>		<b>183</b>		<b>183</b>	
<b>TOTAL COSTS/ACRE</b>						<b>722</b>	

\*50% of total costs allocated to small grain silage



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**Table 2. COSTS and RETURNS PER ACRE to PRODUCE SMALL GRAIN SILAGE**  
 SAN JOAQUIN VALLEY - South 2008

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
<b>GROSS RETURNS</b>					
Small Grain Silage	20.00	ton	42.00	840	
<b>TOTAL RETURNS</b>			42.00	840	
<b>OPERATING COSTS</b>					
<b>Fertilizer:</b>					
Manure (raw)	5.00	ton	1.00	5	
46-0-0 (Urea)	50.00	lb N	1.12	56	
<b>Seed:</b>					
Wheat	130.00	lb	0.42	55	
<b>Herbicide:</b>					
Shark EW	1.50	oz	7.69	12	
Puma 1EC	10.60	floz	2.11	22	
<b>Custom:</b>					
Air Application	3.00	acre	8.00	24	
Deliver & Spread Manure	5.00	ton	12.00	60	
Pest Control Adviser/Consultant	1.00	acre	8.00	8	
<b>Irrigation:</b>					
Water	16.00	acin	4.58	73	
Labor (machine)	0.74	hrs	13.94	10	
Labor (non-machine)	0.60	hrs	10.88	7	
Fuel - Gas	0.60	gal	3.57	2	
Fuel - Diesel	4.25	gal	3.54	15	
Lube				3	
Machinery repair				5	
Interest on operating capital @ 6.75%				10	
<b>TOTAL OPERATING COSTS/ACRE</b>				366	
<b>NET RETURNS ABOVE OPERATING COSTS</b>				474	
<b>CASH OVERHEAD COSTS*:</b>					
Office Expense				18	
Liability Insurance				0	
Land Rent				113	
Property Taxes				41	
Property Insurance				1	
Investment Repairs				1	
<b>TOTAL CASH OVERHEAD COSTS/ACRE</b>				173	
<b>TOTAL CASH COSTS/ACRE</b>				539	
<b>NON-CASH OVERHEAD COSTS (Capital Recovery)*:</b>					
Buildings				2	
Shop Tools				0	
Fuel Tanks				0	
Global Positioning System (GPS)				3	
Land				170	
Equipment				8	
<b>TOTAL NON-CASH OVERHEAD COSTS/ACRE</b>				183	
<b>TOTAL COSTS/ACRE</b>				722	
<b>NET RETURNS ABOVE TOTAL COSTS</b>				118	

\*50% of total costs allocated to small grain silage

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**Table 3. MONTHLY CASH COSTS PER ACRE to PRODUCE SMALL GRAIN SILAGE**  
 SAN JOAQUIN VALLEY - South 2008

Beginning NOV 07 Ending OCT 08	NOV 07	DEC 07	JAN 08	FEB 08	MAR 08	APR 08	MAY 08	JUN 08	JUL 08	AUG 08	SEP 08	OCT 08	TOTAL
Fertilize: Preplant (Manure)	65												65
Land Prep: Disk 2X	18												18
Land Prep: Pull Borders	2												2
Plant: Wheat	62												62
Weed: Postemergent (Shark)			20										20
Weed: Wild Oats (Puma)			30										30
Irrigate: Water & Labor			20		20	40							80
Fertilize: Top Dress (Urea)				64									64
Pest Control Adviser/Consultant	1	1	1	1	1	1	1						8
Pickup Truck Use	1	1	1	1	1	1	1						7
<b>TOTAL CULTURAL COSTS</b>	<b>150</b>	<b>2</b>	<b>72</b>	<b>66</b>	<b>22</b>	<b>42</b>	<b>2</b>						<b>356</b>
Harvest:													
Harvest: Paid by Buyer							0						0
<b>TOTAL HARVEST COSTS</b>							<b>0</b>						<b>0</b>
Interest on operating capital @ 6.75%	1	1	1	2	2	2	2						10
<b>TOTAL OPERATING COSTS/ACRE</b>	<b>150</b>	<b>3</b>	<b>73</b>	<b>68</b>	<b>24</b>	<b>44</b>	<b>4</b>						<b>366</b>
CASH OVERHEAD:													
Office Expense	3	3	3	3	3	3	3						18
Liability Insurance				0									0
Land Rent							113						113
Property Taxes				20					20				41
Property Insurance				1									1
Investment Repairs	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>TOTAL CASH OVERHEAD COSTS</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>24</b>	<b>3</b>	<b>3</b>	<b>116</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>173</b>
<b>TOTAL CASH COSTS/ACRE</b>	<b>153</b>	<b>6</b>	<b>76</b>	<b>92</b>	<b>26</b>	<b>47</b>	<b>120</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>539</b>

\*50% of total costs allocated to small grain silage

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**Table 4. RANGING ANALYSIS**  
 SAN JOAQUIN VALLEY - South 2008

COSTS PER ACRE AT VARYING YIELDS TO PRODUCE SMALL GRAIN SILAGE

	YIELD (ton/acre)							
	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00
<b>OPERATING COSTS:</b>								
Cultural Cost	356	356	356	356	356	356	356	356
Harvest Cost (Paid by Buyer)	0	0	0	0	0	0	0	0
Interest on operating capital @ 6.75%	10	10	10	10	10	10	10	10
<b>TOTAL OPERATING COSTS/acre</b>	<b>366</b>	<b>366</b>	<b>366</b>	<b>366</b>	<b>366</b>	<b>366</b>	<b>366</b>	<b>366</b>
Total Operating Cost/ton	26	23	20	18	17	15	14	13
<b>CASH OVERHEAD COSTS</b>								
<b>TOTAL CASH COSTS/acre</b>	<b>539</b>	<b>539</b>	<b>539</b>	<b>539</b>	<b>539</b>	<b>539</b>	<b>539</b>	<b>539</b>
Total Cash Costs/ton	39	34	30	27	25	22	21	19
<b>NON-CASH OVERHEAD COSTS</b>								
<b>TOTAL COSTS/acre</b>	<b>722</b>	<b>722</b>	<b>722</b>	<b>722</b>	<b>722</b>	<b>722</b>	<b>722</b>	<b>722</b>
Total Costs/ton	52	45	40	36	33	30	28	26

NET RETURNS PER ACRE ABOVE OPERATING COSTS

PRICE \$/ton	YIELD (ton/acre)							
	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00
34.00	110	178	246	314	382	450	518	586
36.00	138	210	282	354	426	498	570	642
38.00	166	242	318	394	470	546	622	698
40.00	194	274	354	434	514	594	674	754
42.00	222	306	390	474	558	642	726	810
44.00	250	338	426	514	602	690	778	866
46.00	278	370	462	554	646	738	830	922

NET RETURNS PER ACRE ABOVE CASH COSTS

PRICE \$/ton	YIELD (ton/acre)							
	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00
34.00	-63	5	73	141	209	277	345	413
36.00	-35	37	109	181	253	325	397	469
38.00	-7	69	145	221	297	373	449	525
40.00	21	101	181	261	341	421	501	581
42.00	49	133	217	301	385	469	553	637
44.00	77	165	253	341	429	517	605	693
46.00	105	197	289	381	473	565	657	749

NET RETURNS PER ACRE ABOVE TOTAL COSTS

PRICE \$/ton	YIELD (ton/acre)							
	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00
34.00	-246	-178	-110	-42	26	94	162	230
36.00	-218	-146	-74	-2	70	142	214	286
38.00	-190	-114	-38	38	114	190	266	342
40.00	-162	-82	-2	78	158	238	318	398
42.00	-134	-50	34	118	202	286	370	454
44.00	-106	-18	70	158	246	334	422	510
46.00	-78	14	106	198	290	382	474	566

UC COOPERATIVE EXTENSION  
**Table 5. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, and BUSINESS OVERHEAD COSTS**  
 SAN JOAQUIN VALLEY - South 2008

ANNUAL EQUIPMENT COSTS

Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead		Total
						Insur- ance	Taxes	
08	125HP 2WD Tractor	108,450	10	32,034	10,900	520	702	12,123
08	215HP Trac Tractor	206,704	10	61,057	20,776	991	1,339	23,106
08	Disc - Border	2,150	10	380	237	9	13	259
08	Disc - Finish 21'	34,000	8	7,677	4,276	154	208	4,639
08	Pickup 1/2 Ton	28,000	5	12,549	4,028	150	203	4,381
08	Planter-Drill 20'	24,000	10	4,244	2,647	105	141	2,892
<b>TOTAL</b>		<b>403,304</b>		<b>117,941</b>	<b>42,865</b>	<b>1,929</b>	<b>2,606</b>	<b>47,400</b>
60% of New Cost *		241,982		70,765	25,719	1,157	1,564	28,440

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

ANNUAL INVESTMENT COSTS

Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead			Total
					Insur- ance	Taxes	Repairs	
Fuel Tanks in Containment	6,514	20		490	24	33	130	677
Shop Building, 2400 sqft	80,000	25		5,257	296	400	1,600	7,553
Land (750 acres)	6,000,000	30	6,000,000	255,000	0	60,000	0	315,000
Shop & Field Tools	15,000	20	1,200	1,089	60	81	300	1,530
Global Positioning System (GPS)	40,000	5		9,048	148	200	800	10,196
<b>TOTAL INVESTMENT</b>	<b>6,141,514</b>		<b>6,001,200</b>	<b>270,884</b>	<b>528</b>	<b>60,714</b>	<b>2,830</b>	<b>334,956</b>

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Land Rent (750 acres)	750.00	acre	225.00	168,750
Liability Insurance	1,500.00	acre	0.90	1,350
Office Expense	1,500.00	acre	35.00	52,500

UC COOPERATIVE EXTENSION  
**Table 6. HOURLY EQUIPMENT COSTS**  
 SAN JOAQUIN VALLEY - South 2008

Yr	Description	COSTS PER HOUR							Total Costs/Hr.
		Actual Hours Used	Cash Overhead			Operating			
			Capital Recovery	Insur- ance	Taxes	Repairs	Fuel & Lube	Total Oper.	
08	125HP 2WD Tractor	1,200	5.45	0.26	0.35	5.09	29.53	34.62	40.68
08	215HP Trac Tractor	1,600	7.79	0.37	0.50	5.54	50.80	56.34	65.00
08	Disc - Border	200	0.71	0.03	0.04	0.36	0.00	0.36	1.14
08	Disc - Finish 21'	250	10.27	0.37	0.50	5.71	0.00	5.71	16.85
08	Pickup 1/2 Ton	285	8.50	0.32	0.43	1.83	10.26	12.09	21.34
08	Planter-Drill 20'	150	10.60	0.42	0.57	6.67	0.00	6.67	18.26

UC COOPERATIVE EXTENSION  
**Table 7. OPERATIONS WITH EQUIPMENT and MATERIALS**  
 SAN JOAQUIN VALLEY - SOUTH 2008

Operation	Operation Month	Equipment		Non-Machine			Unit
		Tractor	Implement	Labor	Material	Rate/acre*	
Fertilize: Preplant	November	Custom			Manure	5.00	ton
Fertilize: Topdress	February	Custom (air)			46-0-0	50.00	lb N
Land Prep: Disk 2X	November	215 HP	Disc - Finish				
Land Prep: Pull Borders	November	125 HP	Disc - Border				
Plant	November	125 HP	Planter-Drill		Grain Mix	130.00	lb
Weed: Post Emergence	January	Custom (air)			Shark	1.50	oz
Weed: Wild Oats	January	Custom (air)			Puma	10.60	floz
Irrigate:	January			0.15	Water	4.00	acin
	March			0.15	Water	4.00	acin
	April			0.15	Water	4.00	acin
	April			0.15	Water	4.00	acin
Harvest:	May	Custom	Paid by Buyer				