UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

2002

SAMPLE COSTS TO PRODUCE

ONION SEED

Intermountain Region

Shasta and Lassen Counties

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Intermountain – Shasta and Lassen Counties - 2002

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INTRODUCTION

Sample costs to produce onion seed in the Intermountain Region – Shasta and Lassen counties are presented in this study. This 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 production practices considered typical for the crop and area, but these same practices will not apply to every situation. The sample costs for labor, materials, equipment and custom services are based on current figures. A blank column, "*Your Costs*", in Tables 1 and 2 is provided for entering your costs.

The hypothetical farm operation, 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, (530) 752-3589 or the UC Cooperative Extension office in Shasta-Lassen counties (530) 336-5784.

Sample Cost of Production Studies for many commodities are available and can be requested through the Department of Agricultural and Resource Economics, UC Davis, (530) 752-3589. Current studies can be downloaded from the department website at http://coststudies.ucdavis.edu or obtained from selected county UC Cooperative Extension offices.

ASSUMPTIONS

The assumptions refer to Tables 1 to 7 and pertain to sample costs to produce onion seed in the Intermountain Region – Shasta and Lassen counties. Practices described are not University of California recommendations, but represent production practices and materials considered typical for onion production in the region. The costs, materials, and practices shown in this study will not be applicable to all situations. Cultural practices vary by grower and the differences can be significant. *The use of trade names 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.*

Farm. The hypothetical field and row-crop farm consists of 200 acres. Onion seed is produced on 10 acres and the remaining acres are planted to alfalfa hay, small grains (wheat, barley, oats or triticale), dry beans, garlic, peppermint, and/or strawberry nursery. Common crop rotations are long rotation crops such as alfalfa or peppermint followed by small grains, and short rotation crops such as garlic, dry beans, onion seed or carrot seed followed by small grains. The strawberry nursery is usually rotated only with winter wheat for erosion control. The grower also owns a shop and an equipment yard.

Production Operating Cost

Land Preparation. In August after the cereal crop is harvested, the land is ripped, disked twice, and landplaned. In September, preplant fertilizer is broadcast, and 40-inch beds listed/pulled. The field is sprinkler irrigated to stimulate weed germination. After a week, the soil is mulched and beds rebuilt.

Planting. Seed onions may be grown from either sets or seed. Sets are planted in the spring and seed is planted in the fall, both methods produce seed in September. In this study, onions are produced from seed. Seed is provided by the company contracting for seed production. In September seed, provided by the seed company, is planted two plant rows per bed using Planter Juniors. Four beds are planted at a time, one outside bed with male plants, a blank bed, and two female beds resulting in two beds of males and four of females and a space bed.

Fertilization. Prior to planting 16-20-0-15S (48 lb N/acre) at 300 pounds per acre and zinc sulfate at 30 pounds per acre is broadcast. Gypsum at 1,000 pounds per acre is also broadcast prior to planting to prevent crusting. Six monthly applications of UN-32 at 100 pounds per month is injected through the irrigation system from March through August for a total of 240 pounds of N per acre per year.

Irrigation. Wheel line sprinklers are used to apply 2-acre inches of water for weed germination prior to planting. After planting a solid set sprinkler system rented for $250/acre is laid out. The electric energy costs for pumping is estimated at $2.50 per acre-inch using PG&E energy.

In this study, two-acre-inches per irrigation are applied in September prior to planting for weed germination, post plant for seed germination, and once in October. Irrigations at 2-inches per irrigation are applied once in March and April for the purpose of applying fungicides and/or nitrogen. After April evapotranspiration (Eto) exceeds rainfall. Seven irrigations at 4-acres inches per irrigation are applied from May through July to produce the crop. Seven 4-inch irrigations are applied from May through July. Thus, a total of 38-acre inches of water is applied to the crop.

Pest Management. The pesticides and rates mentioned in this cost study are listed in *UC Integrated Pest Management Guidelines, Onion and Garlic.* **Pesticides mentioned in the study are not recommendations, but those commonly used in the region.** For information on other pesticides available, pest identification, monitoring, and management visit the UC IPM website at www.ipm.ucdavis.edu. Pesticide labels can be obtained from pesticide dealers or from the websites www.cdms.net and www.greenbook.com. For information and pesticide use permits, contact the local county agricultural commissioner's office.

Pest Control Advisor (PCA). Written recommendations are required for many pesticides and are made by licensed pest control advisors. In addition the PCA will monitor the field for agronomic problems including pests and nutrition. Growers may hire private PCA's or receive the service as part of a service agreement with an agricultural chemical and fertilizer company.

Weeds. Irrigation in September followed by tillage is the first line of weed control. After planting, but before onion emergence, a combination of Roundup and Prowl is used for preemergence and postemergence weed control. In November, Goal at 4 ounces per acre is applied to weeds missed by Roundup and unaffected by Prowl. In February a second application of Prowl is applied to maintain adequate preemergence weed control. In April, Goal at 12 ounces per acre is applied again to control weeds not controlled by Prowl. Hand weeding is done in June.

Insects and Diseases. The primary insect problems in seed onions are onion maggot and cutworms. Control is achieved by banding Lorsban 15G at 6 lb/acre with a Gandy mounted on the planter. Pounce is applied in June for thrip control. Botrytis is expected during cool weather; Bravo Weather Stik is applied in October and April for Botrytis control.

Pollination. Rented hives for pollination, five per acre, are placed in the field in May and removed in July. A beekeeper service delivers, maintains and removes the hives.

Harvest. Male plants are destroyed by hand in August to prepare for harvest. Female plants are hand cut and placed on tarps for drying in September. The plants are turned by hand twice. When dried the plants are manually placed in a standard combine with screens sized for onion seed.

Yields. Onion seed yields are variable ranging from 80 pounds per acre to over 200 pounds. In this study projected yield is 200 pounds per acre.

Returns. Growers received an average of $25 per pound for the first 80 pounds per acre of seed (seed 1) and $11 per pound for additional seed produced (seed 2).

Labor. Hourly wages for workers are $10.50 for machine operators and $6.75 per hour for non-machine labor. Adding 34% for the employers share of federal and state payroll taxes, insurance, and other possible benefits gives the labor rates shown of $14.07 and $9.05 per hour for machine labor and non-machine labor, respectively. 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.

Equipment Operating Costs. Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by ASAE. Fuel and lubrication costs are also determined by ASAE equations based on maximum PTO horsepower, and fuel type. Prices for on-farm delivery of diesel and gasoline are $1.26 and $1.51 per gallon, respectively. The fuel, lube, and repair cost per acre for each operation in Table 1 is determined by multiplying the total hourly operating cost in Table 5 for each piece of equipment used for the selected operation 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.

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 7.40% 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.

Risk. The risks associated with crop production 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 profitability and economic viability. Onion seed in this study is contracted prior to planting and no excess acres are grown to fulfill contracts.

Cash Overhead Costs

(Tables 1-7)

Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm and not to a particular operation. These costs include property taxes, interest on operating capital, office expense, liability and property insurance, sanitation services, equipment repairs, and management.

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 0.660% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs $698 for the entire farm.

Office Expense. Office and business expenses are estimated at $50 per acre. These expenses include office supplies, telephones, bookkeeping, accounting, legal fees, road maintenance, etc. Cash overhead costs are found in Tables 1, 2, 3 and 4.

Investment Repairs. Annual maintenance is calculated as 2 percent of the purchase price.

Non-cash Overhead Costs

Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments.

Capital Recovery Costs. Capital recovery cost is the annual depreciation and interest costs for a capital investment. It is the amount of money required each year to recover the difference between the purchase price and salvage value (unrecovered capital). It is 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 ((Purchase Price – Salvage Value) x Capital Recovery Factor) + (Salvage Value x Interest Rate).

Salvage Value. Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery (tractors and implements) the remaining value is a percentage of the new cost

of the investment (Boehlje and Eidman). The percent remaining value is calculated from equations developed by the American Society of Agricultural Engineers (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 this 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. The purchase price and salvage value for equipment and investments are shown in Table 5.

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 used and the life of the machine.

Interest Rate. The interest rate of 6.41% used to calculate capital recovery cost is the USDA-ERS's ten-year average of California's agricultural sector long-run rate of return to production assets from current income. It is used to reflect the long-term realized rate of return to these specialized resources that can only be used effectively in the agricultural sector. In other words, the next best alternative use for these resources is in another agricultural enterprise.

Equipment. Farm equipment is purchased new or used, but the study shows the current purchase price for new equipment. The new purchase price is adjusted to 50% to indicate a mix of new and used equipment. Annual ownership costs for equipment and other investments are shown in Table 4. 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.

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For information concerning the above or other University of California publications, contact UC DANR Communications Services at 1-800-994-8849, online at www.ucop.edu, or your local county UC Cooperative Extension office.

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Table 1. COSTS PER ACRE to PRODUCE ONION SEED

INTERMOUNTAIN - Lassen and Shasta Counties 2002

Operation	Operation Time (Hrs/A)	Cash and Labor Cost per Acre: Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
Preplant:							
Ripping	0.48	6	6	0	0	12	
Disk 2X	0.50	6	5	0	0	12	
Landplane	0.15	2	2	0	0	4	
Fertilize: 16-20-00/ZnSO4	0.00	0	0	40	6	46	
Pull Beds	0.50	6	6	0	0	11	
Irrigate: Move Wheel-Line in	0.25	2	5	0	0	2	
Irrigate	0.25	2	0	5	0	7	
Irrigate: Move Wheel-Line out	0.25	2	0	0	0	2	
Mulch	0.67	9	8	0	0	16	
Fertilize: Gypsum	0.00	0	0	20	6	26	
TOTAL PREPLANT COSTS	3.05	36	26	65	12	139	
Plant:							
Plant/Insecticide: Lorsban	1.00	13	10	11	0	34	
TOTAL PLANT COSTS	1.00	13	10	11	0	34	
Postplant:							
Lay Pipe	0.50	5	0	0	250	255	
Irrigate	2.85	30	0	90	0	120	
Weed: Roundup/Prowl	0.33	4	0	14	0	19	
Inject Bravo @ irrigation	0.00	0	0	28	0	28	
Weed: Goal	0.67	9	1	13	0	23	
Weed: Prowl	0.33	4	0	5	0	10	
Inject N @ irrigation	3.00	39	1	72	0	112	
Insecticide: Pounce	0.00	0	0	5	8	13	
Pollination: Hives	0.00	0	0	0	45	45	
Weed: Hand Weed	4.00	36	0	0	0	36	
Destroy Male Plants	2.00	18	0	0	0	18	
TOTAL POSTPLANT COSTS	13.68	145	3	228	303	679	
Harvest:							
Hand Cut Prior to Harvest	4.00	323	39	0	0	362	
Lay on Tarp	4.00	36	0	0	0	36	
Turn on Tarp 2X	4.00	36	0	0	0	36	
Combine	2.00	98	41	0	0	139	
TOTAL HARVEST COSTS	14.00	493	80	0	0	573	
Interest on operating capital @ 7.40%						52	
TOTAL OPERATING COSTS/ACRE		687	119	305	315	1,478	
TOTAL OPERATING COSTS/LBS						7	
Cash Overhead:							
Office						50	
Pickup: Lease						40	
Liability Insurance						3	
Sanitation Fees						1	
Property Taxes						46	
Property Insurance						30	
Investment Repairs						6	
TOTAL CASH OVERHEAD COSTS						177	
TOTAL CASH COSTS/ACRE						1,655	
TOTAL CASH COSTS/LBS						8	

Non-Cash Overhead:

	Per Producing Acre	Annual Capital Recovery	
Shop	500	44	44
Tools	250	21	21
Land	2,000	128	128
Well and Pump	375	27	27
Main Line	50	3	3
Quad runner	25	6	6
Equipment	3,432	305	305
TOTAL NON-CASH OVERHEAD COSTS	6,632	534	534
TOTAL COSTS/ACRE			2,189
TOTAL COSTS/LBS			11

UC COOPERATIVE EXTENSION

Table 2. COSTS PER ACRE to PRODUCE ONION SEED

INTERMOUNTAIN - Lassen and Shasta Counties 2002

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Seed 1	80.00	lbs	25.00	2,000	
Seed 2	120.00	lbs	11.00	1,320	
TOTAL GROSS RETURNS	200.00	lbs		3,320	
OPERATING COSTS					
Custom:					
Fertilizer Spread	2.00	acre	6.00	12	
Air Application	1.00	acre	8.00	8	
Fertilizer:					
16-20-0	300.00	lbs	0.10	30	
Zinc Sulfate	30.00	lbs	0.34	10	
Gypsum	1,000.00	lbs	0.02	20	
UN-32	600.00	lbs	0.12	72	
Irrigation:					
Water	38.00	acin	2.50	95	
Insecticide:					
Lorsban 15G	6.00	lbs	1.85	11	
Pounce	6.00	oz	0.85	5	
Rent:					
Sprinkler Pipe 3"	1.00	acre	250.00	250	
Hives	5.00	acre	9.00	45	
Herbicides:					
Roundup Ultra	1.50	pint	6.00	9	
Prowl	3.60	pint	3.00	11	
Goal	16.00	oz	0.84	13	
Fungicide:					
Bravo Weather Stik	4.00	pint	7.00	28	
Labor (machine)	16.96	hrs	10.72	182	
Labor (non-machine)	55.85	hrs	9.05	505	
Fuel - Diesel	52.37	gal	1.26	66	
Lube				10	
Machinery repair				43	
Interest on operating capital @ 7.40%				52	
TOTAL OPERATING COSTS/ACRE				1,478	
TOTAL OPERATING COSTS/LBS				7	
NET RETURNS ABOVE OPERATING COSTS				1,842	
CASH OVERHEAD COSTS:					
Office				50	
Pickup Leased				40	
Liability Insurance				3	
Sanitation Fees				1	
Property Taxes				46	
Property Insurance				30	
Investment Repairs				6	
TOTAL CASH OVERHEAD COSTS/ACRE				177	
TOTAL CASH COSTS/ACRE				1,655	
TOTAL CASH COSTS/LBS				8	
NON-CASH OVERHEAD COSTS (Capital Recovery)					
Shop				44	
Tools				21	
Land				128	
Well and Pump				27	
Main Line				3	
Quad runner				6	
Equipment				305	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				534	
TOTAL COSTS/ACRE				2,189	
TOTAL COSTS/LBS				11	
NET RETURNS ABOVE TOTAL COSTS				1,131	

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Table 3. COSTS PER ACRE to PRODUCE ONION SEED

INTERMOUNTAIN - Lassen and Shasta Counties 2002

Beginning AUG 01 Ending SEP 02	AUG 01	SEP 01	OCT 01	NOV 01	DEC 01	JAN 02	FEB 02	MAR 02	APR 02	MAY 02	JUN 02	JUL 02	AUG 02	SEP 02	TOTAL
Preplant:															
Ripping	12														12
Disk 2X	12														12
Landplane	4														4
Fertilize: 16-20-00/ZnSO4		46													46
Pull Beds		11													11
Irrigate: Move Wheel-Line In		2													2
Irrigate		7													7
Irrigate: Move Wheel-Line Out		2													2
Mulch		16													19
Fertilize: Gypsum		26													26
TOTAL PREPLANT COSTS	28	112													139
Plant:															
Plant/Insecticide: Lorsban		34													34
TOTAL PLANT COSTS		34													34
Postplant:															
Irrigate: Lay Pipe		255													255
Irrigate		7	14					7	6	12	25	25	25		120
Weed: Roundup/Prowl			19												19
Insecticide: Bravo w/irrigation			14						14						28
Weed: Goal				8					15						23
Weed: Prowl							10								10
Fertilize: N w/irrigation								19	19	19	19	19	19		112
Insecticide: Pounce											13				13
Pollination: Hives										45					45
Weed: Hand Weed											36				36
Destroy Male Plants													18		18
TOTAL POSTPLANT COSTS		262	47	8			10	26	53	76	92	43	61		679
Harvest:															
Hand Cut Prior to Harvest														362	362
Lay on Tarp														36	36
Turn on Tarp 2X														36	36
Combine														139	139
TOTAL HARVEST COSTS														573	573
Interest on operating capital	0	3	3	3	3	3	3	3	4	4	5	5	5	9	52
TOTAL OPERATING COSTS/ACRE	28	410	50	11	3	3	13	29	57	80	97	48	67	582	1,478
TOTAL OPERATING COSTS/LBS	0	2	0	0	0	0	0	0	0	0	0	0	0	3	7
Overhead:															
Office	4	4	4	4	4	4	4	4	4	4	4	4	4	4	50
Pickup Leased	3	3	3	3	3	3	3	3	3	3	3	3	3	3	40
Liability Insurance								3							3
Sanitation Fees														1	1
Property Taxes									46						46
Property Insurance									30						30
Investment Repairs	1	1	1	1	1	1	1	1	1	1	1	1			6
TOTAL CASH OVERHEAD COSTS	7	7	7	7	7	7	7	10	83	7	7	7	6	7	177
TOTAL CASH COSTS/ACRE	35	417	57	18	10	10	20	40	140	87	104	55	73	590	1,655
TOTAL CASH COSTS/LBS	0	2	0	0	0	0	0	0	1	0	1	0	0	3	8

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Table 4. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, and BUSINESS OVERHEAD COSTS

INTERMOUNTAIN - Lassen and Shasta Counties 2002

ANNUAL EQUIPMENT COSTS

						Cash Overhead		
Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total
02	100 hp 4wd Tractor	75,000	15	14,601	7,322	296	448	8,066
02	13' Power Mulcher	15,000	6	4,324	2,476	64	97	2,637
02	14' Disk	15,000	8	3,387	2,118	61	92	2,270
02	175 hp 4wd Tractor	110,000	15	21,415	10,739	434	657	11,830
02	28' Sprayer	4,500	6	1,297	743	19	29	791
02	4 row lister	5,000	15	480	509	18	27	554
02	8' Flatbed wagon	2,000	10	354	251	8	12	270
02	90 hp 2wd Tractor	65,000	15	12,654	6,346	256	388	6,991
02	Combine	175,000	30	2,868	13,242	587	889	14,719
02	Land Plane	18,750	20	977	1,664	65	99	1,828
02	Nitrogen Injector	1,500	12	208	171	6	9	185
02	Ripper	12,000	20	625	1,065	42	63	1,170
02	Sled w/ Planet Jr	3,000	15	288	305	11	16	333
TOTAL		501,750		63,478	46,952	1,865	2,826	51,644
	50% of New Cost *	250,875		31,739	23,476	933	1,413	25,822

*Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

					Cash Overhead			
Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Repairs	Total
Land	400,000	40	400,000	25,640	2,640	4,000	0	32,280
Main Line	10,000	30	5,000	700	49	75	200	1,024
Quad runner	5,000	5	500	1,112	18	28	100	1,258
Shop	100,000	20	10,000	8,751	363	550	100	9,764
Tools	50,000	20	10,000	4,245	198	300	750	5,493
Well and Pump	75,000	30	22,000	5,431	320	485	50	6,286
TOTAL INVESTMENT	640,000		447,500	45,879	3,589	5,438	1,200	56,105

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Liability Insurance	200	acre	3.49	698
Office/Telephone	200	acre	50.00	10,000
Pickup Leased	200	acre	40.00	8,000
Sanitation Fees	10	acre	19.00	190

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Table 5 HOURLY EQUIPMENT COSTS

INTERMOUNTAIN - Lassen and Shasta Counties 2002

			COSTS PER HOUR						
		Actual		Cash Overhead		Operating			
Yr	Description	Hours Used	Capital Recovery	Insur-ance	Taxes	Repairs	Fuel & Lube	Total Oper.	Total Costs/Hr.
02	100 hp 4wd Tractor	252.50	14.50	0.59	0.89	1.52	7.12	8.65	24.62
02	13' Power Mulcher	99.70	12.42	0.32	0.48	1.52	0.00	1.52	14.75
02	14' Disk	100.00	10.59	0.30	0.46	1.08	0.00	1.08	12.43
02	175 hp 4wd Tractor	232.70	23.08	0.93	1.41	2.24	7.12	9.36	34.78
02	28' Sprayer	99.30	3.74	0.10	0.15	0.78	0.00	0.78	4.76
02	4 row lister	30.00	8.48	0.30	0.46	0.14	0.00	0.14	9.37
02	8' Flatbed wagon	200.00	0.63	0.02	0.03	0.18	0.00	0.18	0.86
02	90 hp 2wd Tractor	202.20	15.69	0.63	0.96	2.31	6.40	8.71	26.00
02	Combine	102.00	64.91	2.88	4.36	8.09	10.51	18.60	90.75
02	Land Plane	97.50	8.53	0.33	0.51	2.28	0.00	2.28	11.65
02	Nitrogen Injector	100.00	0.85	0.03	0.04	0.48	0.00	0.48	1.40
02	Ripper	100.80	5.28	0.21	0.31	2.13	0.00	2.13	7.92
02	Sled w/ Planet Jr	10.00	15.26	0.54	0.82	0.63	0.00	0.63	17.26

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Table 6. RANGING ANALYSIS
INTERMOUNTAIN - Lassen and Shasta Counties 2002

COSTS PER ACRE AT **VARYING YIELD** TO PRODUCE ONION SEED

	YIELD (lbs/acre)						
	80	120	160	200	240	280	320
OPERATING COSTS/ACRE:							
Preplant Cost	139	139	139	139	139	139	139
Plant Cost	34	34	34	34	34	34	34
Postplant Cost	679	679	679	679	679	679	679
Harvest Cost	573	573	573	573	573	573	573
Interest on operating capital	52	52	52	52	52	52	52
TOTAL OPERATING COSTS/ACRE	1,478	1,478	1,478	1,478	1,478	1,478	1,478
TOTAL OPERATING COSTS/LBS	18	12	9	7	6	5	5
CASH OVERHEAD COSTS/ACRE	177	177	177	177	177	177	177
TOTAL CASH COSTS/ACRE	1,655	1,655	1,655	1,655	1,655	1,655	1,655
TOTAL CASH COSTS/LBS	21	14	10	8	7	6	5
NON-CASH OVERHEAD COSTS/ACRE	534	534	534	534	534	534	534
TOTAL COSTS/ACRE	2,189	2,189	2,189	2,189	2,189	2,189	2,189
TOTAL COSTS/LBS	27	18	14	11	9	8	7

NET RETURNS PER ACRE **ABOVE OPERATING COSTS**

$/lb		YIELD (lbs/acre)						
Seed 1		80	80	80	80	80	80	80
	Seed 2	0	40	80	120	160	200	240
22.00	8.00	282	602	922	1,242	1,562	1,882	2,202
23.00	9.00	362	722	1,082	1,442	1,802	2,162	2,522
24.00	10.00	442	842	1,242	1,642	2,042	2,442	2,842
25.00	11.00	522	962	1,402	1,842	2,282	2,722	3,162
26.00	12.00	602	1,082	1,562	2,042	2,522	3,002	3,482
27.00	13.00	682	1,202	1,722	2,242	2,762	3,282	3,802
28.00	14.00	762	1,322	1,882	2,442	3,002	3,562	4,122

NET RETURN PER ACRE **ABOVE CASH COST**

$/lb		YIELD (lbs/acre)						
Seed 1		80	80	80	80	80	80	80
	Seed 2	0	40	80	120	160	200	240
22.00	8.00	105	425	745	1,065	1,385	1,705	2,025
23.00	9.00	185	545	905	1,265	1,625	1,985	2,345
24.00	10.00	265	665	1,065	1,465	1,865	2,265	2,665
25.00	11.00	345	785	1,225	1,665	2,105	2,545	2,985
26.00	12.00	425	905	1,385	1,865	2,345	2,825	3,305
27.00	13.00	505	1,025	1,545	2,065	2,585	3,105	3,625
28.00	14.00	585	1,145	1,705	2,265	2,825	3,385	3,945

NET RETURNS PER ACRE **ABOVE TOTAL COST**

$/lb		YIELD (lbs/acre)						
Seed 1		80	80	80	80	80	80	80
	Seed 2	0	40	80	120	160	200	240
22.00	8.00	-429	-109	211	531	851	1,171	1,491
23.00	9.00	-349	11	371	731	1,091	1,451	1,811
24.00	10.00	-269	131	531	931	1,331	1,731	2,131
25.00	11.00	-189	251	691	1,131	1,571	2,011	2,451
26.00	12.00	-109	371	851	1,331	1,811	2,291	2,771
27.00	13.00	-29	491	1,011	1,531	2,051	2,571	3,091
28.00	14.00	51	611	1,171	1,731	2,291	2,851	3,411

UC COOPERATIVE EXTENSION

Table 7. COSTS AND RETURNS / BREAKEVEN ANALYSIS to PRODUCE ONION SEED

INTERMOUNTAIN - Lassen and Shasta Counties 2002

COSTS AND RETURNS - PER ACRE BASIS

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)
3,320	1,478	1,842	1,655	1,665	2,189	1,131

COST AND RETURNS - TOTAL ACREAGE

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)
33,200	14,781	18,419	16,549	16,651	21,894	11,306

BREAKEVEN PRICES PER YIELD UNIT

		Breakeven Price to Cover		
Base Yield (Units/Acre)	Yield Units	Operating Costs	Cash Costs	Total Costs
		$ per Yield Unit		
80	lbs	11.13	12.46	16.49

BREAKEVEN YIELD PER ACRE

		Breakeven Yield to Cover		
Base Price ($/Unit)	Yield Units	Operating Costs	Cash Costs	Total Costs
		Yield Units/Acre		
25	lbs	35.60	39.90	52.80