# UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

# 2008

# SAMPLE COSTS TO PRODUCE

ONIONS



# For Dehydrating TULELAKE BASIN in the INTERMOUNTAIN REGION

Prepared by:

Harry L. Carlson	UC Cooperative Extension Farm Advisor, Modoc & Siskiyou Counties and
	Director, Intermountain Research & Extension Center
Karen M. Klonsky	UC Cooperative Extension Economist, Department of Agricultural and
	Resource Economics, UC Davis
Pete Livingston	UC Cooperative Extension Staff Research Associate, Department of
	Agricultural and Resource Economics, UC Davis

# **INTRODUCTION**

The sample costs to produce onions for dehydration in the Tulelake Basin of the Intermountain Region are presented in this study. The study is intended as a guide only, and can be used in making production decisions, determining potential returns, preparing budgets and evaluating production loans. The practices described are based on production procedures considered typical for this crop and area but will not apply to every situation. Sample costs for labor, materials, equipment, and custom services are based on current figures. A "*Your Costs*" column in Tables 1 and 2 is provided for you to enter your costs.

The hypothetical farm operation, production practices, overhead, and calculations are described under the assumptions. For additional information or explanation of calculations used in the study call the Department of Agricultural and Resource Economics, University of California, Davis, California, 530-752-2414 or the Intermountain Research and Extension Center, 530-667-5117.

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Sample Cost of Production studies for many commodities are available and can be requested through the Department of Agricultural and Resource Economics, UC Davis, 530-752-1517. Current studies, those produced during the last five years, can be obtained from selected county UC Cooperative Extension offices or downloaded from the department website <a href="http://coststudies.ucdavis.edu">http://coststudies.ucdavis.edu</a>.

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# ASSUMPTIONS

The following assumptions pertain to sample costs to produce onions for the dehydration market in the Tulelake Basin of the Intermountain Region. Practices described should not be considered recommendations by the University of California, but represent production procedures considered typical for this crop and area. Some of the costs and practices may not be applicable to your situation or used during every production year. Other practices not indicated may be needed. Cultural practices and costs to produce onions will vary by grower and region, and can be significant. The practices and inputs used in this cost study serve as a sample or guide, only. The costs are presented on an annual, per acre basis. **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**. This report is based on a hypothetical 1,500 acre farm. Onions are grown on 200 acres of which the grower owns 20% of the onion acreage and rents the other 80%. The whole 1,500 acre farm has 50 acres (10 owned acres and 40 rented acres) in roads, irrigation systems, farmstead, and unused or unusable land. Typically, a grower with this amount of onion acreage will have several non-adjacent fields and the cultural practices will probably vary among fields. Additionally, extra costs may be involved for moving equipment between fields, but are not included in this study. Other crops that might be grown in rotation with the onions include potatoes, small grains, and alfalfa. In this report, practices completed on less than 100% of the acres are denoted as a percentage of the total onion crop acreage.

Owned onion land normally ranges from \$2,000 to \$5,000 per acre. This study uses a value of \$3,500 per acre or \$3,784 per producing acre.

Rented land in this region range between \$300 to \$450 per are with surface water attached to the land, but the water is not paid for by the landowner. The cost of the water is borne by the grower renting the land. A rental price of \$350 per acre is used in this study or \$357 per producing acre.

# CULTURAL PRACTICES AND MATERIAL INPUTS

**Land Preparation**. It is assumed that the ground planted to the onion crop is coming out rotation of another crop. Land preparation begins with plowing 80% of the acreage in the fall. In the spring the fields are burned to remove any heavy plant matter. Borders are put up around the fields followed chiseling half of the ground. Only 40% of the ground is ripped, but that section is ripped 1.5 times. The ground is rotospiked prior to pulling the beds. Once the beds are up and shaped the fields are set with a solid set of sprinklers that pre-irrigates the crop with 2.0 acre-inches of water.

**Irrigation**. Irrigation begins in April with a pre-irrigation of 2.0 acre-inches of water. Growers will place a portable pump with a diesel engine and fuel tank along a canal. With the pump end situated in the canal a solid set of sprinkler pipes is placed in the furrows during the growing season. Onions are irrigated for six months after planting. A total of 33.36 acre-inches of water are sprinkled on during the growing season and sometimes deliver fertilizers and pesticides through the irrigations. Onions are irrigated during April through September. Prior to harvest all of the pipes are removed from the fields and the pump is pull from the canal.

**Fertilization**. A mixed preplant fertilizer with other nutrients is custom applied in April when the beds are pulled. Nitrogen, phosphorus, zinc, manganese, and copper are put directly into the beds prior to planting. Liquid fertilizers are applied through the sprinkler during one of the June irrigations. Towards

the end of the growing season 400 pounds of ammonium sulfate (21-0-0-24) is applied as a topdress to the onions.

**Planting**. Onion seeds are provided by the processor and are treated to prevent disease. A granular pesticide is also applied at planting to manage insects that feed on onion seed in the ground. Growers will plant four lines of onions on a 36 inch-beds using a six-row vacuum planter.

**Pest Management.** The pesticides and rates mentioned in this cost study are listed in UC *Integrated Pest Management Guidelines, Onion.* For more information on pest identification, monitoring, and management visit the UC IPM website at <u>www.ipm.ucdavis.edu</u>. Written recommendations are required for many pesticides, and are made by licensed pest control advisors. For information on pesticide use permits, contact the local county agricultural commissioner's office.

All treatments of onions using pesticides are made by either chemigation or by airplane. Some pesticides are mixed and applied together during the same irrigation. Some of the pesticides are applied to a portion of the onion acreage and others are utilized multiple times.

*Weeds.* Weeds are managed by chemical, mechanical, and hand labor. In June Roundup is spread by air. This study assumes that the first hand hoeing also occurs during June while the second hoeing is in July for a total of 13 hours. Goal is put on twice with irrigations in July. The final two chemical weed treatments are made with Fusilade by air. In September, after the irrigation pipes are removed and just prior to harvest the fields are cultivated once.

*Insects.* At planting a granular insecticide is used to control seed and seedling insects. Later an insecticide is mixed twice with a fungicide and chemigated to manage insects during the growing season. In July and September, two treatments consisting of Warrior is sprayed by aircraft over the entire acreage each time.

*Diseases.* Control of diseases begins in May with an application of Vydate with an irrigation followed by Vydate again mixed with a June irrigation. In July and August Bravo is mixed with an insecticide and applied through the sprinklers. The onions are treated for disease with Quadris applied by air in August. The final disease management spray is put on by aircraft using Reason.

**Harvest.** After sprinkler pipe removal the sides of the beds are cut away to lessen the amount of dirt put through the harvester. The beds are rolled and the tops of the onions are cut by a flail mower to reduce the vegetation for the harvester. The onions are harvested with a large horsepower tractor pulling a two-row digger and conveyed by a belt to a trailer pulled by a tractor.

Growers may choose to own harvesting equipment, purchased either new or used, or hire a custom harvester. Many factors are important in deciding which harvesting option a grower uses. These considerations and appropriate method of analysis are discussed in "Acquiring Alfalfa Hay Harvest Equipment: A Financial Analysis of Alternatives".

**Transportation.** The grower only transports the onions from the harvester to the field's edge. Hauling onions from the field over the road is the responsibility of the dehydrating company.

**Yields**. The crop yield used in this study is 480 hundredweight (cwt) per acre. Yields have varied over the years in the Tulelake Basin of the Intermountain Region and are shown in Table A.

**Returns**. The county averages for the last five years are shown in Table A. The table also includes the weighted average price in the Klamath Basin of the Intermountain Region during 2001 through 2005. A current selling price of \$5.50 per cwt of fresh market onion is used to estimate market income.

**Risk**. Risks associated with onion production are not assigned a production cost. While this study makes an 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 of onion production.

**Labor**. Labor rates of \$19.14 per hour for machine operators and \$12.51 for non-machine workers includes payroll overhead of

Onions (for Dehydration)	Acres	Yields	Price
Year		Cwt/Acre	\$/Cwt
2002	2,184	545	\$5.00
2003	2,107	442	\$5.00
2004	2,148	497	\$5.00
2005	2,488	459	\$4.95
2006	2,650	450	\$4.95
5 Year Average	2,315	479	\$4.98

#### Table A. Average Tulelake onion yields and prices

Source: Tulelake Irrigation District, 2002-2006.

39%. The basic hourly wages are \$13.77 for machine operators and \$9.00 for non-machine labor. The overhead includes the employers' share of federal and California state payroll taxes, workers' compensation insurance for field crops (code 0171), and a percentage for other possible benefits. Workers' compensation insurance costs will vary among growers, but for this study the cost is based upon the average industry final rate as of January 1, 2007 (California Department of Insurance). Labor for operations involving machinery are 20% higher than the operation time given in Table 1 and 4 to account for the extra labor involved in equipment set up, moving, maintenance, work breaks, and field repair.

# **Cash Overhead**

**Cash Overhead**. 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, rents, and investment repairs. Cash overhead costs are included in Tables 1, 2, 3 and 4.

*Property Taxes.* Counties charge a base property tax at the rate of 1% on the assessed value of the property including land, equipment, buildings, and improvements. In some counties special assessment districts exist and charge additional taxes on property. 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. Land value is assumed to remain unchanged.

*Equipment Operating Costs.* Equipment costs are composed of three parts: operating costs, cash overhead, and non-cash overhead. Both of the overhead factors are discussed in later sections. The operating costs consist of repairs, fuel, and lubrication. 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.

Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by 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 \$2.50 and \$3.10 per gallon, respectively. Fuel costs are derived from American Automobile Association (AAA) and Energy Information Administration

(EIA) 2007 monthly data. The cost includes a 2% local sales tax on diesel fuel and 8% sales tax on gasoline. Gasoline also includes federal and state excise tax, which are refundable for on-farm use when filing your income tax. The fuel, lube, and repair cost per acre for each operation in Table 1 are determined by multiplying the total hourly operating cost in Table 6 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 8.75% per year. It is assumed that all cash operations are financed. A nominal interest rate is the typical market cost of borrowed funds. Any postharvest costs of operations are discounted back to the harvest month using a negative interest charge.

*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 0.740% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs \$1,305 for the entire farm or \$0.87 per acre.

*Office Expense.* Office and business expenses are estimated at \$12.00 per acre. These expenses include office supplies, telephones, bookkeeping, accounting and legal fees, road maintenance, and miscellaneous business expenses.

*Rent.* Cash rents range from \$300 to \$450 per producing acre. The grower in this study rents 160 acres of which 158 are producing or planted acres and the grower pays \$350 per rented acre to the landlord. The rent cost is charged to the onion enterprise (160 acres) at \$357 per producing acre. The non-producing acres are roads, irrigation system, and equipment yard.

*Irrigation Pipe Rental.* The irrigation system in this study is a canal with portable powered low lift pump that pumps the water into the irrigation pipes and sprinklers. The irrigation pipe and all of the need parts for a solid set system are rented.

*Investment Repairs*. Annual cash maintenance or repair costs are associated with investments under noncash overhead. Repairs to the fuel tanks and pumps, shop building, shop tools, irrigations system, tool carrier, and fuel wagon are calculated at 10% of new cost distributed over the investment life.

# Non-Cash Overhead Costs

Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments. This study shows the current purchase price for new equipment and then adjusts the price to 40% of new cost to indicate a mix of new and used equipment. Annual ownership costs for equipment and investments are shown in Tables 1, 2, and 4 as the capital recovery cost on an annual per acre basis.

*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). Put another way, 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 calculation for the annual capital recovery costs is as follows:

$$\left[\left(\begin{array}{c} Purchase - Salvage \\ Pr ice & Value \end{array}\right) \times \left(\begin{array}{c} Recovery \\ Factor \end{array}\right)\right] + \left[\begin{array}{c} Salvage \times Interest \\ Value & Rate \end{array}\right]$$

*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 equal to the purchase price because land does not depreciate. The purchase price and salvage value for certain 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 8.75% is used to calculate capital recovery cost is the effective long term interest rate in January 2008. The interest rate is provided by a local farm lending agency and will vary according to risk and amount of loan.

*Equipment.* Other equipment is listed as investments and are used on the entire farm. The cost of these investments shows up as non-cash cost in tables 1 and 2. Each investment current purchase price, assumed years of life, and other costs are listed in table 4.

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

Acknowledgements. The authors appreciate the help provided by those growers and other cooperators who provided information for this study.

# REFERENCES

- American Society of Agricultural Engineers. 2002. American Society of Agricultural Engineers Standards Yearbook. Russell H. Hahn and Evelyn E. Rosentreter (ed.) St. Joseph, MO. 41st edition.
- Boehlje, Michael D., and Vernon R. Eidman. 1984. Farm Management. John Wiley and Sons. New York, NY
- Blank, Steve, Karen Klonsky, Kim Norris, and Steve Orloff. 1992. *Acquiring Alfalfa Hay Equipment: A Financial Analysis of Alternatives*. University of California. Oakland, CA: Giannini Information Series No. 92-1. <u>http://giannini.ucop.edu/InfoSeries/921-HayEquip.pdf</u>. Internet accessed April, 2007.

Tulelake Irrigation District. 2002. 2002 Crop Report.

Tulelake Irrigation District. 2003. 2003 Crop Report.

Tulelake Irrigation District. 2004. 2004 Crop Report.

Tulelake Irrigation District. 2005. 2005 Crop Report.

Tulelake Irrigation District. 2006. 2006 Crop Report.

Integrated Pest Management Education and Publications. 2006. UC IPM Pest Management Guidelines: Onion. In M. L. Flint (ed.) *UC IPM Pest Management Guidelines*. University of California. Division of Agriculture and Natural Resources. Oakland, CA. Publication 3339. <u>http://www.ipm.ucdavis.edu/IPMPROJECT/pestmgmt.html#PMG</u>. Internet accessed March, 2007.

Statewide Integrated Pest Management Project. 1992. *Integrated Pest Management for Onion*. Second Edition. University of California. Division of Agriculture and Natural Resources. Oakland, CA: Publication 3280.

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.

Table 1.

#### UC COOPERATIVE EXTENSION COSTS PER ACRE TO PRODUCE ONIONS FOR DEHYDRATING TULELAKE BASIN IN THE INTERMOUNTAIN REGION- 2008

Labor Rate: \$19.14/hr. machine labor \$12.51/hr. non-machine labor Interest Rate: 8.75% Yield per Acre: 480.0 CWT

	Operation		Cash an	d Labor Costs	per Acre		
	Time	Labor	Fuel Lube	Material	Custom/	Total	Your
Operation	(Hrs/A)	Cost	& Repairs	Cost	Rent	Cost	Cost
Prenlant:	(1115/11)	0000	ce reepuns	0057	num	0000	0000
I and Preparation - Plow 80% of Acres	0.37	9	17	0	0	25	
Land Preparation - Burn 20% of Acres	0.03	0	0	ů 0	0	25	
Land Preparation - Put Un Borders	0.05	1	°2	Ő	Ő	3	
Land Preparation - Chisel 50% of Acres	0.05	1	3	ů 0	0	4	
Land Preparation - Rin 1 5X on 40% of Acres	0.00	2	4	0	0	6	
Land Preparation - Rotosnike	0.22	5	11	0	0	16	
Land Preparation – Rotospike	0.22	3	7	404	0	415	
Land Preparation - Shane Beds 1.5V	0.17	4	8	404	0	413	
Pro irrigata Sot un Solid sot Sprinklars	0.21	2	0	12	0	13	
Land Propagation Pall Pade 2V	0.13	2	0	12	0	14	
TOTAL DEED ANT COSTS	1.54			417	0	505	
Cultural:	1.34	33	55	41/	0	303	
Diant Onione	0.22	5	10	12	0	21	
Plant Onions	0.23	5	12	13	0	51	
Irrigate	8.16	102	0	92	0	194	
Weed Control - Roundup	0.00	0	0	5	9	13	
Irrigate & Insect Control 2X	2.20	28	0	118	0	145	
Weed Control - Goal & Irrigate	0.50	6	0	16	0	22	
Weed Control - Hand Hoe 2X	13.00	163	0	0	0	163	
Weed Control - Goal + Prowl & Irrigate	0.50	6	0	41	0	48	
Irrigate & Fertilize	0.50	6	0	121	0	127	
Cultivate	0.14	3	4	0	0	7	
Weed Control - Fusilade 2X	0.00	0	0	30	17	47	
Insect & Fungal Control & Irrigate	0.76	10	0	81	0	90	
Insect Control - Warrior 2X	0.00	0	0	22	17	39	
Disease Control - Quadris	0.00	0	0	25	9	33	
Take Out Pump & Pipe	3.00	38	0	0	0	38	
Disease Control - Reason	0.00	0	0	32	9	41	
Fertilize - Topdress	0.13	3	4	72	0	79	
Pickup Truck Use (6 Pickups)	0.38	26	12	0	0	39	
ATV Use (2 ATVs)	0.19	9	1	0	0	10	
TOTAL CULTURAL COSTS	29.69	405	34	667	59	1,165	
Harvest:							
Cut Bed Sides	0.14	3	4	0	0	7	
Roll Crop	0.09	2	1	0	0	3	
Top Onions	1.50	34	62	0	0	96	
Lift Out Onions	0.33	15	32	0	0	48	
Field Haul Onions	0.50	60	44	0	0	104	
TOTAL HARVEST COSTS	2.56	115	143	0	0	258	
Interest on Operating Capital @ 8.75%						67	
TOTAL OPERATING COSTS/ACRE		553	231	1,084	59	1,995	
CASH OVERHEAD:							
Liability Insurance						1	
Office Expense						12	
Field Sanitation						1	
Land Rent						357	
Field Supervisors (2)						57	
Irrigation Pipe Rental						105	
Property Taxes						42	
Property Insurance						31	
Investment Repairs						6	
TOTAL CASH OVERHEAD COSTS						612	
TOTAL CASH COSTS/ACRE						2,607	

#### UC COOPERATIVE EXTENSION

#### Table 1 continued

NON-CASH OVERHEAD:			
	Per producing	Annual Cost	
Investment	Acre	Capital Recovery	
Shop Building	50	4	4
Storage Building	20	2	2
Fuel Tanks & Pumps	15	1	1
Shop Tools	10	1	1
Portable Pump	8	1	1
Land	3,784	236	236
Semi Truck & Lowbed Trailer	25	3	3
Tool Carrier	12	1	1
Truck - Service 2 Ton	27	6	6
Pipe Trailers	24	3	3
Fuel Wagons	2	0	0
Equipment	550	69	69
TOTAL NON-CASH OVERHEAD COSTS	4,527	327	327
TOTAL COSTS/ACRE			2,935

#### UC COOPERATIVE EXTENSION COSTS AND RETURNS PER ACRE TO PRODUCE ONIONS FOR DEHYDRATING TULELAKE BASIN IN THE INTERMOUNTAIN REGION- 2008

Labor Rate: \$19.14/hr. machine labor

			Price or	Value or	Your
	Quantity/Acre	Unit	Cost/Unit	Cost/Acre	Cost
GROSS RETURNS	Quantity/Tiere	oint	000001111	000011010	
Onions for Dehydrating	480.0	Cwt	5 50	2,640	
TOTAL GROSS RETURNS FOR ONIONS	100.0	0	0.00	2,640	
OPERATING COSTS				_,	
Fertilizer					
10-34-0	20.00	Gal	2.23	45	
16-20-0	150.00	LbN	1.63	244	
Zinc	20.00	Lb	2.18	44	
Copper	10.00	Lb	5 64	56	
Manganese	10.00	Lb	1 54	15	
UN-32	15.00	Gal	5.21	78	
APS	10.00	Gal	2.46	25	
21-0-0-24	400.00	Lh	0.18	23 72	
Irrigation:	100.00	LU	0.10	12	
Water - Pumped	35 36	AcIn	611	195	
Insecticide:	55.50	7 term	0.11	175	
Lorshan 15G	6 70	Lb	1.96	13	
Lonsoun 1999 L'annate I V	6.00	Pint	6 74	40	
Warrior T	7.68	FlOz	2.90	22	
Custom:	7.00	1102	2.70	22	
Air Application	7.00	Acre	8 50	59	
Herbicide:	7.00	Acic	0.50	57	
Roundun	1.00	Pint	1 614	5	
Goal 2XI	8.00	FlO7	0.826	7	
Prowl H2O	4.00	Pint	4 955	20	
Fusilade DX	20.00	FlOz	1/9	20 30	
Fungicide:	20.00	1102	1.77	50	
Vydate I	8.00	Pint	12.64	101	
Vydale L Pravo Weatheratik	3.00	Dint	5.22	16	
Quadria	3.00 8.00	FlO7	3.08	25	
Reason 500 SC	8.00	FIOZ	1.00	25	
Labor (machina)	8.00	LIFO L	4.00	156	
Labor (machine)	0.13	ПIS Ura	19.14	130	
East (non-machine)	2 42	Cal	2 10	11	
Fuel Diesel	50.04	Gal	2.50	11	
Luba	39.04	Gai	2.50	148	
Machinery repair				40	
Interest on Operating Capital @ 8 75%				47	
TOTAL ODEDATING COSTS/ACDE				1 005	
NET DETUDNS A BOVE ODED ATING COSTS				645	
CASH OVERHEAD COSTS:				045	
Liability Insurance				1	
Office Expense				12	
Field Sanitation				12	
Land Pent				357	
Eald Supervisors (2)				57	
Initial Supervisors (2)				ر د ۱۵۶	
Droperty Taxes				103	
Property Insurance				42	
Investment Renairs				21	
TOTAL CASH OVERHEAD COSTS/ACDE				612	
TOTAL CASH COSTS/ACRE				2 607	

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#### UC COOPERATIVE EXTENSION Table 2 continued

NON-CASH OVERHEAD COSTS (CAPITAL RECOVERY):		
Shop Building	4	
Storage Building	2	
Fuel Tanks & Pumps	1	
Shop Tools	1	
Portable Pump	1	
Land	236	
Semi Truck & Lowbed Trailer	3	
Tool Carrier	1	
Truck - Service 2 Ton	6	
Pipe Trailers	3	
Fuel Wagons	0	
Equipment	69	
TOTAL NON-CASH OVERHEAD COSTS/ACRE	327	
TOTAL COSTS/ACRE	2,935	
NET RETURNS ABOVE TOTAL COSTS	-295	

§ Total returns will vary across farms because of differing support under government programs.

#### Table 3.

#### UC COOPERATIVE EXTENSION MONTHLY CASH COSTS PER ACRE TO PRODUCE ONIONS FOR DEHYDRATING TULELAKE BASIN IN THE INTERMOUNTAIN REGION- 2008

Beginning NOV 07	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	TOTAL
Ending OCT 08	07	07	08	08	08	08	08	08	08	08	08	08	
Preplant:													
Land Prep: Plow 80% of Acres	25												25
Land Prep-Burn Fields 20% of Acres					0								0
Land Prep: Put Up Borders					3								3
Land Prep: Chisel 50% of Acres						4							4
Land Prep: Rip 1 5X on 40% of Acres						6							6
Land Prep: Rotospike						16							16
Land Prep: Pull Beds & Fertilize						415							415
Land Prep: Shape Beds 1 5X						13							13
Pre-irrigate - Set Un Solid-set Sprinklers						14							14
I and Pren: Roll Beds 2X						0							0
TOTAL PREPLANT COSTS	25				3	177							505
Cultural:	23				5	4//							505
Plant Onions						31							31
Imigate						145			20		21		104
Wood Control Roundun						145			29		21		194
Imigate & Incost Control						15	145						15
Imigate & Insect Control							145						145
Weed Control - Goal & Irrigate							22	100	(2				1(2
Weed Control - Hand Hoe 2X								100	63				163
Weed Control - Goal + Prowl & Irrigate								48					48
Irrigate & Fertilize								127					127
Cultivate								1					
Weed Control - Fusilade 2X									23	23			47
Insect & Fungal Control & Irrigate									45	45			90
Insect Control - Warrior 2X									20		20		39
Disease Control - Quadris										33			33
Take Out Pump & Pipe											38		38
Disease Control - Reason											41		41
Fertilize - Topdress											79		79
Pickup Truck Use (6 Pickups)												39	39
ATV Use (2 ATVs)	1	1	1	1	1	1	1	1	1	1	1	1	10
TOTAL CULTURAL COSTS	1	1	1	1	1	189	168	283	181	102	198	40	1,165
Harvest:													
Cut Bed Sides												7	7
Roll Crop												3	3
Top Onions												96	96
Lift Out Onions												48	48
Field Haul Onions												104	104
TOTAL HARVEST COSTS												258	258
Interest on Operating Capital @ 8.75%	0	0	0	0	0	5	6	8	10	10	12	14	67
TOTAL OPERATING COSTS/ACRE	26	1	1	1	4	671	174	291	190	113	210	312	1,995
CASH OVERHEAD:													
Liability Insurance			1										1
Office Expense	1	1	1	1	1	1	1	1	1	1	1	1	12
Field Sanitation	0	0	0	0	0	0	0	0	0	0	0	0	1
Land Rent	357	0	Ū	Ŭ	Ŭ	Ŭ	0	Ū	Ū	0	Ū	Ŭ	357
Field Supervisors (2)	5	5	5	5	5	5	5	5	5	5	5	5	57
Irrigation Pine Rental	9	9	9	0	9	0	9	9	9	9	9	9	105
Property Taxes	,	,	,	21	,		,	,	21	,	,	,	105
Property Insurance				21 16					16				42
Investment Repairs	0	Δ	Δ	10	0	0	0	Δ	10	0	0	0	51 6
TOTAL CASH OVER UEAD COSTS	372	15	16	52	15	15	15	15	52	15	15	15	612
TOTAL CASH COSTS/ACPE	302	15	17	52	10	686	190	306	2/2	12	225	327	2 607
IOTAL CASH COSTS/ACKE	570	10	1/	55	17	000	107	500	∠+∠	120	449	541	2,007

#### UC COOPERATIVE EXTENSION WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS ONIONS FOR DEHYDRATING TULELAKE BASIN IN THE INTERMOUNTAIN REGION- 2008

		111101	IL LQ		00010	<i>a</i> 1	0 1 1	
			••		a	- Cash	Overhead -	
			Yrs	Salvage	Capital	Insur-	_	
Yr	Description	Price	Life	Value	Recovery	ance	Taxes	Total
08	125 HP 4WD Tractor	82,000	10	24,222	9,457	393	531	10,381
08	150 HP 4WD Tractor	115,000	10	33,969	13,263	551	745	14,559
08	175 HP 4WD Tractor	140,000	10	41,354	16,147	671	907	17,724
08	200 HP 4WD Tractor	170,000	10	50,215	19,607	815	1,101	21,522
08	225 HP 4WD Tractor	182,000	10	53,760	20,991	872	1,179	23,042
08	75 HP 4WD Tractor	42,500	10	12,554	4,902	204	275	5,381
08	ATV	4,273	5	1,915	683	23	31	737
08	ATV	4,273	5	1,915	683	23	31	737
08	Bed Shaper 6 Row	13,292	10	2,351	1,651	58	78	1,787
08	Chisel - 20'	28,500	10	5,040	3,540	124	168	3,832
08	Cultivator - Sled 6 Row	4,980	10	881	619	22	29	670
08	Disc - Border 15'	7,984	10	1,412	992	35	47	1,074
08	Fertilizer Applicator 6 Row	3,573	10	632	444	16	21	480
08	Harvester	49,457	10	4,946	6,429	201	272	6,902
08	Lister - 6 Row	20,176	5	6,572	3,662	99	134	3,895
08	Mower - Flail - 15	28,000	10	4,952	3,478	122	165	3,765
08	Pickup - 1/2 Ton	22,757	5	10,199	3,639	122	165	3,926
08	Pickup - 1/2 Ton	22,757	5	10,199	3,639	122	165	3,926
08	Pickup - 1/2 Ton	22,757	5	10,199	3,639	122	165	3,926
08	Pickup - 1/2 Ton	22,757	5	10,199	3,639	122	165	3,926
08	Pickup - 3/4 Ton	27,112	5	12,151	4,335	145	196	4,677
08	Pickup - 3/4 Ton	27,112	5	12,151	4,335	145	196	4,677
08	Planter - Vacuum 6 Row	20,277	10	3,586	2,519	88	119	2,726
08	Plow - 18' Rollover	12,023	10	2,126	1,494	52	71	1,617
08	Flat Roller - 18'	14,139	10	2,500	1,756	62	83	1,901
08	Ripper - 14'	29,000	10	5,128	3,602	126	171	3,899
08	Rotospike - 15"	29,000	10	5,128	3,602	126	171	3,899
08	Saddle Tank - 300 Gal	2,374	10	420	295	10	14	319
08	Trailer Dollie	1,451	15	139	146	6	8	160
08	Trailer Dollie	1,451	15	139	146	6	8	160
	TOTAL	1,150,975		330,954	143,334	5,483	7,410	156,227
	55% of New Cost *	633,036		182,025	78,834	3,016	4,075	85,925

#### ANNUAL EQUIPMENT COSTS

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

ANNUAL INVESTMENT COSTS									
Cash Overhead									
		Yrs	Salvage	Capital	Insur-				
Description	Price	Life	Value	Recovery	ance	Taxes	Repairs	Total	
INVESTMENT									
Fuel Tanks & Pumps	21,949	20	2,195	1,895	89	121	439	2,544	
Fuel Wagons	2,186	10	219	284	9	12	44	349	
Land	140,000	20	140,000	8,750	1,036	1,400	0	11,186	
Pipe Trailers	35,000	10	700	4,759	132	178	700	5,770	
Portable Pump	11,774	20	1,177	1,016	48	65	589	1,718	
Semi Truck & Lowbed Trailer	36,170	15	3,617	3,633	147	199	531	4,510	
Shop Building	72,168	25	7,217	5,653	294	397	722	7,066	
Shop Tools	14,465	20	1,447	1,249	59	80	145	1,532	
Storage Building	29,112	20	2,911	2,513	118	160	586	3,377	
Tool Carrier	16,730	15	1,673	1,680	68	92	837	2,677	
Truck - Service 2 Ton	38,600	5	3,860	8,545	157	212	3,860	12,774	
TOTAL INVESTMENT	418,154		165,016	39,977	2,158	2,916	8,453	53,503	

Table 4.

## UC COOPERATIVE EXTENSION

#### Table 4 continued

	Units/		Price/	Total					
Description	Farm	Unit	Unit	Cost					
Field Sanitation	1,500	Acre	1.00	1,500					
Field Supervisors (2)	1,500	Acre	54.67	82,005					
Irrigation Pipe Rental	1,500	Acre	101.28	151,920					
Land Rent	160	Acre	350.00	56,000					
Liability Insurance	1,500	Acre	0.87	1,305					
Office Expense	1,500	Acre	12.00	18,000					

#### ANNUAL BUSINESS OVERHEAD COSTS

Table 5.

#### UC COOPERATIVE EXTENSION HOURLY EQUIPMENT COSTS ONIONS FOR DEHYDRATING TULELAKE BASIN IN THE INTERMOUNTAIN REGION- 2008

		COSTS PER HOUR							
		Actual		- Cash Ove	rhead -	(	Operating		
		Hours	Capital	Insur-			Fuel &	Total	Total
Yr	Description	Used	Recovery	ance	Taxes	Repairs	Lube	Oper.	Costs/Hr.
08	125 HP 4WD Tractor	1,599.8	3.25	0.14	0.18	1.95	20.86	22.81	26.38
08	150 HP 4WD Tractor	1,599.8	4.56	0.19	0.26	2.73	25.03	27.76	32.77
08	175 HP 4WD Tractor	1,599.2	5.55	0.23	0.31	3.33	29.20	32.53	38.62
08	200 HP 4WD Tractor	1,607.5	6.71	0.28	0.38	4.04	33.37	37.41	44.78
08	225 HP 4WD Tractor	1,599.7	7.22	0.30	0.41	4.33	37.54	41.87	49.79
08	75 HP 4WD Tractor	1,599.3	1.69	0.07	0.09	1.01	10.59	11.60	13.45
08	ATV	149.0	2.52	0.08	0.11	0.25	3.56	3.81	6.53
08	ATV	149.0	2.52	0.08	0.11	0.25	3.56	3.81	6.53
08	Bed Shaper 6 Row	199.4	4.55	0.16	0.22	2.54	0.00	2.54	7.47
08	Chisel - 20'	199.8	9.75	0.34	0.46	5.50	0.00	5.50	16.05
08	Cultivator - Sled 6 Row	199.8	1.70	0.06	0.08	0.95	0.00	0.95	2.79
08	Disc - Border 15'	199.7	2.73	0.10	0.13	1.18	0.00	1.18	4.14
08	Fertilizer Applicator 6 Row	119.5	2.04	0.07	0.10	1.25	0.00	1.25	3.46
08	Harvester	124.5	28.40	0.89	1.20	17.41	33.37	50.78	81.27
08	Lister - 6 Row	399.5	5.04	0.14	0.18	3.86	0.00	3.86	9.22
08	Mower - Flail - 15	292.5	6.54	0.23	0.31	10.61	0.00	10.61	17.69
08	Pickup - 1/2 Ton	284.0	7.05	0.24	0.32	1.35	8.91	10.26	17.86
08	Pickup - 1/2 Ton	284.0	7.05	0.24	0.32	1.35	8.91	10.26	17.86
08	Pickup - 1/2 Ton	284.0	7.05	0.24	0.32	1.35	8.91	10.26	17.86
08	Pickup - 1/2 Ton	284.0	7.05	0.24	0.32	1.35	8.91	10.26	17.86
08	Pickup - 3/4 Ton	284.0	8.39	0.28	0.38	1.61	10.70	12.31	21.37
08	Pickup - 3/4 Ton	284.0	8.39	0.28	0.38	1.61	10.70	12.31	21.37
08	Planter - Vacuum 6 Row	149.8	9.25	0.32	0.44	4.99	0.00	4.99	15.00
08	Plow - 18' Rollover	248.1	3.31	0.12	0.16	3.05	0.00	3.05	6.64
08	Flat Roller - 18'	199.7	4.84	0.17	0.23	1.47	0.00	1.47	6.71
08	Ripper - 14'	199.2	9.95	0.35	0.47	5.99	0.00	5.99	16.76
08	Rotospike - 15"	149.1	13.29	0.47	0.63	7.76	0.00	7.76	22.14
08	Saddle Tank - 300 Gal	149.5	1.08	0.04	0.05	0.58	0.00	0.58	1.76
08	Trailer Dollie	499.5	0.16	0.01	0.01	0.10	0.00	0.10	0.28
08	Trailer Dollie	499.5	0.16	0.01	0.01	0.10	0.00	0.10	0.28

#### UC COOPERATIVE EXTENSION RANGING ANALYSIS ONIONS FOR DEHYDRATING TULELAKE BASIN IN THE INTERMOUNTAIN REGION- 2008

			TIELD	(U W I/A)	UKE)		
	420	440	460	480	500	520	540
OPERATING COSTS/ACRE:							
Preplant Cost	505	505	505	505	505	505	505
Cultural Cost	1,165	1,165	1,165	1,165	1,165	1,165	1,165
Harvest Cost	226	237	247	258	269	280	290
Interest on Operating Capital	67	67	67	67	67	67	67
TOTAL OPERATING COSTS/ACRE	1,962	1,973	1,984	1,995	2,006	2,017	2,027
TOTAL OPERATING COSTS/CWT	4.67	4.48	4.31	4.16	4.01	3.88	3.75
CASH OVERHEAD COSTS/ACRE	612	612	612	612	613	613	613
TOTAL CASH COSTS/ACRE	2,575	2,586	2,596	2,607	2,618	2,629	2,640
TOTAL CASH COSTS/CWT	6.13	5.88	5.64	5.43	5.24	5.06	4.89
NON-CASH OVERHEAD COSTS/ACRE	325	326	326	327	328	329	329
TOTAL COSTS/ACRE	2,899	2,911	2,923	2,935	2,946	2,958	2,970
TOTAL COSTS/CWT	6.90	6.62	6.35	6.11	5.89	5.69	5.50

#### COSTS PER ACRE AT VARYING YIELD TO PRODUCE DEHYDRATING ONIONS VIELD (CWT/ACRE)

NET RETURNS PER ACRE ABOVE OPERATING COSTS FOR DEHYDRATING ONIONS

PRICE				YIELD			
(DOLLARS/CWT)			(CV	VT/ACRE	E)		
Onions	420	440	460	480	500	520	540
4.00	-282	-213	-144	-75	-6	63	133
4.50	-72	7	86	165	244	323	403
5.00	138	227	316	405	494	583	673
5.50	348	447	546	645	744	843	943
6.00	558	667	776	885	994	1,103	1,213
6.50	768	887	1,006	1,125	1,244	1,363	1,483
7.00	978	1,107	1,236	1,365	1,494	1,623	1,753

#### NET RETURN PER ACRE ABOVE CASH COST FOR DEHYDRATING ONIONS

PRICE				YIELD			
(DOLLARS/CWT)			(CW	T/ACRE	)		
Onions	420	440	460	480	500	520	540
4.00	-895	-826	-756	-687	-618	-549	-480
4.50	-685	-606	-526	-447	-368	-289	-210
5.00	-475	-386	-296	-207	-118	-29	60
5.50	-265	-166	-66	33	132	231	330
6.00	-55	54	164	273	382	491	600
6.50	155	274	394	513	632	751	870
7.00	365	494	624	753	882	1,011	1,140

#### NET RETURNS PER ACRE ABOVE TOTAL COST FOR DEHYDRATING ONIONS

PRICE				YIELD			
(DOLLARS/CWT)			(C'	WT/ACRE	.)		
Onions	420	440	460	480	500	520	540
4.00	-1,219	-1,151	-1,083	-1,015	-946	-878	-810
4.50	-1,009	-931	-853	-775	-696	-618	-540
5.00	-799	-711	-623	-535	-446	-358	-270
5.50	-589	-491	-393	-295	-196	-98	0
6.00	-379	-271	-163	-55	54	162	270
6.50	-169	-51	67	185	304	422	540
7.00	41	169	297	425	554	682	810

#### Table 7.

#### UC COOPERATIVE EXTENSION COSTS AND RETURNS/BREAKEVEN ANALYSIS ONIONS FOR DEHYDRATING TULELAKE BASIN IN THE INTERMOUNTAIN REGION- 2008

		COSTS A	ND RETURNS - PI	ER ACRE BAS	IS		
	1. Gross	2. Operating	3. Net Returns	4. Cash	5. Net Returns	6. Total	7. Net Returns
	Returns	Costs	Above Oper.	Costs	Above Cash	Costs	Above Total
Crop			Costs (1-2)		Costs (1-4)		Costs (1-6)
Onions for Dehydrating	2,640	1,995	645	2,607	33	2,935	-295
		COSTS A	ND RETURNS - TO	OTAL ACREAC	ЭЕ		
		COSTS A	ND RETURNS - TO	OTAL ACREAC	<u>BE</u>		
	1. Gross	2. Operating	3. Net Returns	4. Cash	5. Net Returns	6. Total	7. Net Returns
	Returns	Costs	Above Oper.	Costs	Above Cash	Costs	Above Total
Crop			Costs (1-2)		Costs (1-4)		Costs (1-6)
Onions for Dehydrating	514,800	389,007	125,793	508,437	6,363	572,231	-57,431

BREAKEVEN PRICES PER YIELD UNIT									
	Breakeven Price To Cover								
	Base Yield	Yield	Operating	Cash	Total				
CROP	(Units/Acre)	Units	Costs	Costs	Costs				
			\$ pe	\$ per Yield Unit					
Onions for Dehydrating	480.0	Cwt	4.16	5.43	6.11				
	BREAKEV	VEN YIELDS	PER ACRE						
	Breakeven Yield To Cover								
	Yield	Base Price	Operating	Cash	Total				
CROP	Units	(\$/Unit)	Costs	Costs	Costs				
	Yield Units / Acre								

5.50

Cwt

Onions for Dehydrating

474.1

533.5

362.7

Table 8.

#### UC COOPERATIVE EXTENSION DETAILS OF OPERATIONS TO PRODUCE ONION FOR DEHYDRATING TULELAKE BASIN IN THE INTERMOUNTAIN REGION- 2008

OperationMonthPaser UnitImplementMaterialRatesizerUnitLand Preparation - Bive 705 of AcresNorek200 HP 4WD TractorRossysko - 15"NorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNorekNor		Operation	Tractor/			Broadcast	Material
Ind         Plow	Operation	Month	Power Unit	Implement	Material	Rate/acre	Unit
Land Perpartion - Burn Dyen ULP protectMarch101 P4 P4D TractorRologale is 15"Second 15"<	Land Preparation - Plow 80% of Acres	November	200 HP 4WD Tractor	Plow - 18' Rollover			
Land Prognation - Pur Up Rovers Land Prognation - Shie J Sor AutWoor Acce Land Prognation - Shie J Sor AutWoor Acce April1901 PP AVD Tractor Riper - 14' Riper - 14'Norther Accessing Riper - 14'Land Prognation - Shie J Sor AutWoor Acces Land Prognation - Shue J Sor AutWoor Accessing Land Prognation - Shue J Sor AutH AutH AutH AutH AutH AutH AutH AutH	Land Preparation - Burn 20% of Acres	March	200 HP 4WD Tractor	Rotospike - 15"			
Iand Paparation - Chiesi Osi of AworApril201P 4WD Trader 150 PF 4WT and Representation - RotospikeApril201P 4WD Trader 150 PF 4WT and Retrospike - 15"Visit of Awor10-34-020.00Gal 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob 10.00Lob <br< td=""><td>Land Preparation - Put Up Borders</td><td>March</td><td>150 HP 4WD Tractor</td><td>Disc - Border 15'</td><td></td><td></td><td></td></br<>	Land Preparation - Put Up Borders	March	150 HP 4WD Tractor	Disc - Border 15'			
Land Preparation - Reip 1.50 m 4/95 m 200 IIP 4/WD TractorRipper - 14"Land Preparation - StotophicApril200 IIP 4/WD TractorRisconspile - 15"Land Preparation - Pull Bols & FertilizeAprilLister - 6 Row10-34-0150.00ListLand Preparation - Shape Boch 1.5XAprilLister - 6 Row16-20-0150.00ListLand Preparation - Shape Boch 1.5XApril175 IIP 4/WD TractorBed Shaper 6 RowMargenese10.00ListPre-irrigate - Set up Solid-ext SprinklersApril125 IIP 4/WD TractorFlat Roller - 18"Water2.00AclaIand Preparation - Roll Bods 2XApril125 IIP 4/WD TractorFlat Roller - 18"Water2.00AclaIand Preparation - Roll Bods 2XApril125 IIP 4/WD TractorFlat Roller - 18"Water2.00AclaIrrigateApril125 IIP 4/WD TractorPlatter - Vacuum 6 RowLorshan 15G6.70PottIrrigate & Insect ControlAprilLaborWater4.00ProtWeed Control - Gould & IrrigateJuneAir ApplicationRoundup1.00ProtWeed Control - Gould & IrrigateJuneAir ApplicationRoundup1.00ProtWeed Control - Gould & IrrigateJuneLaborWater3.00AclaWeed Control - Gould & IrrigateJuneLaborRoundup1.00PottWeed Control - Gould & IrrigateJuneLaborKinger1.00PottMeed Control - Gould & Irrigate	Land Preparation - Chisel 50% of Acres	April	200 HP 4WD Tractor	Chisel - 20'			
Land Preparation - RotospheApril2014 P4WD TractorRotospike - 15"Land Preparation - Pull Beds & FertilizeAprilStadle Tank - 300 Gal16-20-01600L50Sadde Tank - 300 GalCapper2000L50Capper2000L50Land Preparation - Shape Beds L5XApril152 H4 P4 DT TractorRed Shaper 6 RowWater2000AcfaPre-irrigate - Setus Psolid-set SprinklersApril125 H4 P4 DT TractorFlat Roller - 18'Water8.00AcfaInrigateApril125 H4 P4 DT TractorFlat Roller - 18'Water8.00AcfaPintonosApril125 H4 P4 DT TractorPinter - Vacuum 6 RowLorshan 15GAcfaAcfaTirgateApril125 H4 P4 DT TractorPinter - Vacuum 6 RowWater8.00AcfaInrigateAprilLaborWater9.00AcfaPinter - Vacuum 6 Row9.00AcfaInrigate & Insect ControlMateLaborWater1.00Acfa9.00Pinter - Vacuum 6 Row9.00Pinter - Vacuum 6 Row9.00AcfaWeed Control - Goal & ErrigateJuneLaborWater1.00Acfa9.00Pinter - Vacuum 6 Row9.00AcfaWeed Control - Goal & ErrigateJuneLaborGoal 2244.00Pinter - Vacuum 6 Row9.00AcfaWeed Control - Goal & ErrigateJuneLaborGoal 2244.00Pinter - Vacuum 6 Row9.00AcfaInrigate & FertilizeJune <td>Land Preparation - Rip 1.5X on 40% of Acres</td> <td>April</td> <td>150 HP 4WD Tractor</td> <td>Ripper - 14'</td> <td></td> <td></td> <td></td>	Land Preparation - Rip 1.5X on 40% of Acres	April	150 HP 4WD Tractor	Ripper - 14'			
Land Preparation - Pull Bads & Fertilize April I Sector - 6 Row (10-340) (50.00 IbN) Sadd Tank - 300 Gal (5-0.00 IbN) Sadd Tank - 300 Gal (5-0.00 IbN) Copper (10.00 Ib) Namper Bed 1.5X April 175 IP 4WD Tractor Bed Shaper 6 Row (10.00 Ib) Infigate - 5et up Solid-set Sprinklers April 125 IP 4WD Tractor Fiat Roller - 18' Water 2.00 Acla Part Onions - Roll Bed 2X April 125 IP 4WD Tractor Planter - 18' Water 2.00 Acla September Labor (10.00 Variation Row Users 1.00 Acla September Labor (10.00 Variation Row Users 1.00 Acla September Labor (10.00 Variation Row Users 1.00 Acla September Labor (10.00 Variation Row 1.00 Variation Row 1.00 Acla Water 2.00 Acla September Labor (10.00 Variation Row 1.00 Acla Water 2.00 Acla Water 3.00 Acla Water 3.00 Pint Weed Control - Goal & Irigate May Labor (10.00 Pint Weed Control - Goal & Irigate May Labor (10.00 Pint Weed Control - Goal & Irigate May Labor (10.00 Pint Water 3.00 Acla May Labor (10.00 Pint May Labor (10.00 Pint M	Land Preparation - Rotospike	April	200 HP 4WD Tractor	Rotospike - 15"			
Saddle Tank - 300 Gal         15.000         1.50         2000         1.5           Land Preparation - Shape Beål 1.5X         April         175 IP 4WD Tractor         Beå Shaper 6 Rov         2.000         1.5           Land Preparation - Solape Beål 1.5X         April         1.200         Flat Roller - 18"         2.000         A.5           Pair Oxioos         April         2.25 IP 4WD Tractor         Flat Roller - 18"         Water         2.00         Acla           Irrigate         April         1.240r         Flat Roller - 18"         Water         2.00         Acla           Irrigate         April         1.240r         Flat Roller - 18"         Water         2.00         Acla           Irrigate         April         1.240r         Water         8.00         Pair           Irrigate         Jabor         Vatater         4.00         Pair           Veed Control - Roundup         June         Vir Application         Water         1.00         Prit           Weed Control - Goal & Irrigate         June         Labor         Goal 2.21         4.00         Prit           Weed Control - Goal & Irrigate         June         Labor         Solo         Goal 2.21         4.00         Prit           Weed Con	Land Preparation - Pull Beds & Fertilize	April		Lister - 6 Row	10-34-0	20.00	Gal
Land Preparation - Shape Beds 1.5X         April         175 HP 4WD Tractor         Bed Shaper 6 Row         Uncomposite         10.00         Lb           Pre-irrigate - Scup Solid-set Sprinklers         April         Labor         Water         2.00         Acln           Land Preparation - Roll Beds 2X         April         125 HP 4WD Tractor         Planter - Vacuum 6 Row         Lorsban 15G         6.70         Lb           Irrigate         April         125 HP 4WD Tractor         Planter - Vacuum 6 Row         Lorsban 15G         6.70         Lb           Irrigate         April         Labor         Water         2.00         Acln           September         Labor         Water         3.00         Acln           Trigate & Insect Control         Mar         Labor         Water         1.00         Pint           Weed Control - Roundup         June         Labor         Water         1.00         Acln           Weed Control - Roundup         June         Labor         500         Mar         3.00         Acln           Weed Control - Goal & Irrigate         June         Labor         500         Mar         3.00         Acln           Weed Control - Goal + Prowl & Irrigate         June         Labor         Goal 2XL				Saddle Tank - 300 Gal	16-20-0	150.00	Lb N
Land Preparation -Shape Beds 1.5X         April         175 HP 4WD Trator         Bed Shaper 6 Row         Land Preparation -Shape Beds 1.5X         April         L3T SHP 4WD Trator         Feat Shaper 6 Row         Water         2.00         Acha           Land Preparation -Roll Beds 2X         April         125 HP 4WD Trator         Flat Roller - 18'         Water         6.70         Lab           Pinat Onions         April         Labor         Water         7.00         Acha           Jaily         Labor         Water         7.00         Acha           Irrigate & Insect Control         Mater         1.00         Acha         Pinater         Vydate L         4.00         Pinater           Weed Control - Roundup         Jane         Air Application         Water         6.00         Acha           Weed Control - Roundup         Jane         Labor         Water         2.00         Acha           Weed Control - Roundup         Jane         Labor         Koa         3.00         Acha           Weed Control - Roundup         Jane         Labor         Koa         3.00         Acha           Weed Control - Goal & Irrigate         Jane         Labor         Koa         Acha         1.00         Pinat           Trigate & F					Zinc	20.00	Lb
Land Preparation - Shape Beds 1.5X April 175 HP 4WD Tractor Bed Shaper 6 Row 1845 120 120 120 120 120 120 120 120 120 120					Copper	10.00	Lb
Land Preparation - Shape Beds 1.5X (A pril 15 HP 4WD Tractor 6 Row (Acha Carlor) - Row Solid-act Sprinkers (April 125 HP 4WD Tractor 6 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 20) (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 20) (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 20) (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 20) (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 20) (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 20) (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 20) (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 20) (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (April 25 HP 4WD Tractor 7 Flat Roller - 18' (Apri					Manganese	10.00	Lb
Pre-irrigate - Set up Solid-set Sprinklers April 25 HP 4WD Tractor Falt Roller - 18" Plant Onions - Roll Beds 2X April 25 HP 4WD Tractor Planter - Vacuum 6 Row Lorsban 150 6.7.0 Lb Irrigate Mater - Roll Beds 2X April 25 HP 4WD Tractor Planter - Vacuum 6 Row Lorsban 150 6.7.0 Lb Irrigate Mater - Roll Beds 2X April 25 HP 4WD Tractor Planter - Vacuum 6 Row Lorsban 150 6.7.0 Acln Irrigate Maser Control Mater - Roll Beds - Water - 20.0 Acln Irrigate Maser Control Mater - Roll Beds - Water - 20.0 Acln Irrigate Maser Control Mater - Roll Beds - Water - 1.7.5 Acln Weed Control - Roundup May Labor - Vydate L 400 Prit Weed Control - Roundup May Labor - Water - 1.00 Acln Weed Control - Goal & Irrigate May Labor - Water - 1.00 Acln Weed Control - Goal & Irrigate May Labor - Roll Mater - 1.00 Acln Weed Control - Goal & Irrigate May Labor - Roll Mater - 1.00 Acln Weed Control - Goal + Provi & Irrigate June Labor - Roundup 100 Prit Meed Control - Goal + Provi & Irrigate June Labor - Roundup - 1.00 Frit Meed Control - Goal + Provi & Irrigate June Labor - Roundup - 1.00 Frit Meed Control - Goal + Provi & Irrigate June Labor - Roundup - 1.00 Frit Meed Control - Goal + Provi & Irrigate June Labor - Roundup - 1.00 Frit Meed Control - Goal + Provi & Irrigate June Labor - Roundup - 1.00 Frit Meed Control - Goal + Provi & Irrigate June Labor - Roundup - 1.00 Frit Meed Control - Fusilade 2X July Air Application - Roundup - Roundup - 1.00 Frit Mater - 2.00 Acln Ars - Roundup -	Land Preparation - Shape Beds 1.5X	April	175 HP 4WD Tractor	Bed Shaper 6 Row			
Land Preparation - Koll Beds 2X April 25 HP 4WD Tractor Planter - Vacuum 6 Row Lorsban 156 6.70 LD Irrigate April 25 HP 4WD Tractor Planter - Vacuum 6 Row Lorsban 156 6.70 Acla Labor Water 8.80 Acla July Labor Water 3.00 Acla Irrigate & Insect Control May Labor Water 3.00 Acla Irrigate & Insect Control May Labor Water 1.75 Acla June Labor Water 1.75 Acla Weater 1.75 Acla June Vydate 1. 4.00 Prot Water 4.00 Acla Water 4.00 Flot Para Water 4.00 Prot Water 4.00 Prot Water 4.00 Prot Water 4.00 Flot Prove HLO Acla Water 4.00 Acla Prove HLO Acla Water 4.00 Acla Prove HLO Acla Water 4.00 Flot Prove HLO Acl	Pre-irrigate - Set up Solid-set Sprinklers	April	Labor		Water	2.00	AcIn
Plant Onions         April         225 HP 4WD Tractor         Planter - Vacuum 6 Row         Lorsban 150         6.70         Lb           Irrigate         April         Labor         Water         2.00         Acin           July         Labor         Water         2.00         Acin           Irrigate & Insect Control         May         Vydate L         4.00         Print           Labor         Vydate L         4.00         Print         Water         1.00         Print           Weed Control - Roundup         June         Air Application         Water         1.00         Print           Weed Control - Goal & Irrigate         May         Labor         Water         2.00         Acin           Weed Control - Goal & Irrigate         June         Labor         8.00         Hris           Weed Control - Goal + Prowl & Irrigate         June         Labor         Goal 2XL         4.00         FiOt           Irrigate & Fertilize         June         Labor         Goal 2XL         4.00         FiOt           Irrigate & Fertilize         July         Air Application         Fusilade DX         1.00         FiOt           Irrigate & Fertilize         July         Air Application         Kater         3	Land Preparation - Roll Beds 2X	April	125 HP 4WD Tractor	Flat Roller - 18'			
IrrigateApril JulyLaborWater8.50Acla AclaSeptemberLaborWater3.00AclaIrrigate & Insect ControlMayLaborWater1.05AclaJuneLaborWater1.05AclaMay1.00PintWeed Control - RoundupJuneAir ApplicationRoundup1.00PintWeed Control - Goal & IrrigateJuneLaborGoal 2XL4.00PintWeed Control - Goal & IrrigateJuneLabor8.00PintWeed Control - Goal & Provit & JunyLaborSoloAcla9.00PintWeed Control - Goal + Provit & JunyJuneLaborSoloHins9.00PintWeed Control - Goal + Provit & JunyJuneLaborGoal 2XL4.00PintWeed Control - Goal + Provit & JunyJuneLaborSoloAcla9.00PintWeed Control - Goal + Provit & JunyJuneLaborSoloAcla9.00PintIrrigate & FertilizeJuneLaborRugustSoloGoalAcla9.00PintWeed Control - Fusilade DXJunyAir ApplicationFusilade DX10.00PintIrrigate & FertilizeJulyAir ApplicationFusilade DX10.00PintMugustAir ApplicationKar ApplicationKar ApplicationWater3.00PintBravo WeatherstikJulyAir ApplicationWater3.00Pint <tr< td=""><td>Plant Onions</td><td>April</td><td>225 HP 4WD Tractor</td><td>Planter - Vacuum 6 Row</td><td>Lorsban 15G</td><td>6.70</td><td>Lb</td></tr<>	Plant Onions	April	225 HP 4WD Tractor	Planter - Vacuum 6 Row	Lorsban 15G	6.70	Lb
JulyLaborWater2.00AcInIrrigate & Insect ControlMayIrrigate & Insect ControlMay3.00AcInIaneLaborWater1.00PintWeed Control - RoundupJuneAir ApplicationRoundup1.00PintWeed Control - Goal & IrrigateMayLaborGoal 2XL4.00PintWeed Control - Goal & IrrigateJuneLabor8.00PintWeed Control - Hand Hoe 2XJuneLabor8.00PintWeed Control - Goal + Proval & ItrigateJuneLabor8.00PintWeed Control - Goal + Proval & ItrigateJuneLabor8.00PintIrrigate & FertilizeJuneLaborWater3.00AcInIrrigate & FertilizeJuneLaborWater3.00AcInIrrigate & FertilizeJuneLaborWater3.00AcInIrrigate & FertilizeJuneLaborWater3.00AcInIrrigate & FertilizeJuneLaborWater3.00PintMeed Control - Fusilade ZXJulyAir ApplicationFusilade DX1.00FiOZInsect & Fungal Control & Irrigate 2XJulyAir ApplicationFusilade DX1.00PintBravo WeatherstikJulyAir ApplicationKarpplicationWatrier3.00PintInsect & Scottrol - Warrior ZXJulyAir ApplicationWatrier3.00PintBravo WeatherstikJulyAir A	Irrigate	April	Labor		Water	8.50	AcIn
Image is a problem in the section of the sectin of the section of the section of the section of the se		July	Labor		Water	2.00	Acln
Irrigate & Insect Control May Labor Vydate I, 7.5 AcIn June Labor Water 1.7.5 AcIn Weed Control - Roundup June Air Application Koundup 1.00 Pint Weed Control - Goal & Irrigate May Labor Goal 2XL 4.00 FlOz Water 2.00 AcIn Weed Control - Hand Hoe 2X June Labor Source So		September	Labor		Water	3.00	Acln
Labor         Water         1,75         Ach           Weed Control - Roundup         June         Air Application         Water         1.00         Air           Weed Control - Goal & Irrigate         May         Labor         Roundup         1.00         Pint           Weed Control - Goal & Irrigate         May         Labor         Solo         Hirs           Weed Control - Hand Hoe 2X         June         Labor         Solo         Hirs           Weed Control - Goal + Prowl & Irrigate         June         Labor         Solo         Hirs           Irrigate & Fertilize         June         Labor         Solo         Ach           Irrigate & Fertilize         June         Labor         Water         3.00         Ach           Irrigate & Fertilize         June         Labor         Water         3.00         Ach           Weed Control - Fusilade 2X         July         Air Application         Fusilade DX         10.00         Gol           Insect & Fungal Control & Irrigate 2X         July         Air Application         Fusilade DX         10.00         Floiz           Insect Control - Fusilade ZX         July         Air Application         Water         2.00         Ach           Insect Serungl Contro	Irrigate & Insect Control	May			Vydate L	4.00	Pint
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		June			Vydate L	4.00	Pint
Weed Control - KonnubpJuneAir ApplicationRoundup1.00FindWeed Control - Goal 2XLMayLaborWater2.00AcInWeed Control - Goal + Prowl & IrrigateJuneLabor800HrsWeed Control - Goal + Prowl & IrrigateJuneCoal 2XL4.00FIOZFroundupJuneLaborCoal 2XL4.00FIOZWeed Control - Goal + Prowl & IrrigateJuneCoal 2XL4.00FIOZIrrigate & FertilizeJuneLaborWater3.00AcInWater3.00AcinWater3.00AcinIrrigate & FertilizeJuneLaborWater3.00GalWeed Control - Fusilade 2XJulyAir ApplicationFusilade DX10.00FIOZInsect & Fungal Control & Irrigate 2XJulyAir ApplicationFusilade DX10.00FIOZInsect & Fungal Control & Irrigate 2XJulyAir ApplicationFusilade DX1.00PintBravo Weatherstik1.50PintBravo Weatherstik1.50PintBravo Weatherstik1.50PintBravo Weatherstik1.50PintBravo Weatherstik1.50AcinPintBravo Weatherstik1.50PintBravo Weatherstik1.50AcinPintBravo Weatherstik1.50PintBravo Weatherstik1.50AcinPintBravo Weatherstik1.50PintBravo Weatherstik1.50AcinPintBrav	Weed Control Downlow	Luna	A : A		water	1.00	Acin
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Weed Control - Hand Hoe 2XJuneLabor8.00HrsJulyLabor5.00HrsWeed Control - Goal + Prowl & IrrigateJuneGal 2XL4.00FlOzIrrigate & FertilizeJuneLaborWater3.00AclnIrrigate & FertilizeJuneLaborWater3.00AclnUN-3215.00GalGalGalSetterWeed Control - Fusilade 2XJulyAir ApplicationFusilade DX10.00FlOzInsect & Fungal Control & Irrigate 2XJulyAir ApplicationFusilade DX10.00FlOzInsect & Fungal Control & Irrigate 2XJulyAir ApplicationFusilade DX10.00FlOzInsect & Fungal Control & Irrigate 2XJulyAir ApplicationFusilade DX10.00FlOzInsect Control - Warrior 7JulyAir ApplicationWater2.00AclnSeptemberAir ApplicationWater2.00AclnInsect Control - Warrior 2XJulyAir ApplicationWater3.00PintDisease Control - QuadrisAugustAir ApplicationWater3.00FlOzDisease Control - ReasonSeptemberAir ApplicationReason 500 SC8.00FlOzDisease Control - ReasonSeptemberAir ApplicationReason 500 SC8.00FlOzDisease Control - ReasonSeptemberAir ApplicationReason 500 SC8.00FlOzCultivatorSeptember125 HP 4WD Tracto	weed Control - Goal & Inigate	May	Labor		Wotor	2.00	FIUZ
Veed Control - Indue Toe 2AJule July LaborLabor5.00HrsWeed Control - Goal + Prowl & Irrigate Prowl H <sub>2</sub> OJuneLabor5.00PintWeed Control - Goal + Prowl & IrrigateJuneLaborProwl H <sub>2</sub> O $4.00$ PintWater3.00AclnWater3.00AclnIrrigate & FertilizeJuneLaborWater3.00AclnWeed Control - Fusilade 2XJulyAir ApplicationFusilade DX10.00FIOzAugustAir ApplicationFusilade DX10.00PintAugustAir ApplicationFusilade DX10.00PintBravo Weatherstik1.50PintBravo Weatherstik1.50PintMagustAir ApplicationKarior T3.84FIOzInsect Control - Warrior 2XJulyAir ApplicationWater2.00AclnInsect Control - QuadrisAugustAir ApplicationWater3.00PintDisease Control - QuadrisAugustAir ApplicationWater3.00FIOzDisease Control - QuadrisAugustAir ApplicationReason 500 SC8.00FIOzDisease Control - ReasonSeptember125 HP 4WD TractorFertilizer Applicator Fertilizer Applicator Fertilizer Applicator 60w21-0-0-24400.00LbCultivateSeptember125 HP 4WD TractorFlar Koller - 18'JulyJulyLibLibJulyJulyJulyJulyJulyJulyJulyJuly <td>Wood Control Hand Hoo 2V</td> <td>huno</td> <td>Labor</td> <td></td> <td>water</td> <td>2.00</td> <td>Hro.</td>	Wood Control Hand Hoo 2V	huno	Labor		water	2.00	Hro.
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Need control - Fost a Friorie Control - Fost a Friorie Control - Fusilade DXJuneLaborFroit HQL4000Priorie HQLIrrigate & FertilizeJuneLaborWater3.00AcInWeed Control - Fusilade DXJulyAir ApplicationFusilade DX10.00FIOzAugustAir ApplicationFusilade DX10.00FIOzInsect & Fungal Control & Irrigate 2XJulyJulyLannate LV3.00PintBravo Weatherstik1.50PintBravo Weatherstik1.50Culivator	Weed Control Goal + Prowl & Irrigate	June	Labor		Goal 2VI	4.00	FlO7
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Irrigate & FertilizeJuneLaborNate5.00Ach UN-3215.00Gal GalWeed Control - Fusilade 2XJulyAir ApplicationFusilade DX10.00FilozAugustAir ApplicationFusilade DX10.00FilozInsect & Fungal Control & Irrigate 2XJulyAir ApplicationFusilade DX10.00FilozInsect & Fungal Control & Irrigate 2XJulyImage: State					Water	3.00	AcIn
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Weed Control - Fusilade 2XJulyAir ApplicationFusilade DX10.00FIOzAugustAir ApplicationFusilade DX10.00FIOzInsect & Fungal Control & Irrigate 2XJulyLannate LV3.00PintBravo Weatherstik1.50PintBravo Weatherstik1.50PintBravo Weatherstik1.50PintBravo Weatherstik1.50PintAugust					APS	10.00	Gal
August August AugustAir ApplicationFusilade DX10.00FIOzInsect & Fungal Control & Irrigate 2XJulyLannate LV3.00PintBravo Weatherstik1.50PintWater2.00AcInAugustLannate LV3.00PintAugustLannate LV3.00PintBravo Weatherstik1.50PintBravo Weatherstik1.50<	Weed Control - Fusilade 2X	Julv	Air Application		Fusilade DX	10.00	FlOz
Insect & Fungal Control & Irrigate 2X Insect Control - Warrior 2X Insect Control - Warrior 2X Insect Control - Quadris Insect Control - Quadris August Insect Control - Quadris August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August August A		August	Air Application		Fusilade DX	10.00	FlOz
Bravo Weatherstik1.50Pint Water2.00AcIn WaterAugustLannate LV3.00Pint Bravo Weatherstik1.50Pint Bravo WeatherstikInsect Control - Warrior 2XJulyAir ApplicationWatrior T3.84FIO2Disease Control - QuadrisAugustAir ApplicationWarrior T3.84FIO2Disease Control - QuadrisAugustAir ApplicationQuadris8.00FIO2Take Out Pump & PipeSeptemberLaborReason 500 SC8.00FIO2Disease Control - ReasonSeptemberAir ApplicationCultivator - Sled 6 Row8.00FIO2CultivateSeptember125 HP 4WD TractorCultivator - Sled 6 Row21-0-0-24400.00LbCut Bed SidesOctober125 HP 4WD TractorFlat Roller - 18'5555Cop OnionsOctober150 HP 4WD TractorFlat Roller - 18'55555Lift Out OnionsOctober200 HP 4WD TractorTrailer Dollie555555555555555555555555555555555555555555555555555555555555555 </td <td>Insect &amp; Fungal Control &amp; Irrigate 2X</td> <td>July</td> <td></td> <td></td> <td>Lannate LV</td> <td>3.00</td> <td>Pint</td>	Insect & Fungal Control & Irrigate 2X	July			Lannate LV	3.00	Pint
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		-			Bravo Weatherstik	1.50	Pint
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$					Water	2.00	AcIn
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		August			Lannate LV	3.00	Pint
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$					Bravo Weatherstik	1.50	Pint
Insect Control - Warrior 2X       July       Air Application       Warrior T       3.84       FIOz         September       Air Application       Warrior T       3.84       FIOz         Disease Control - Quadris       August       Air Application       Quadris       8.00       FIOz         Take Out Pump & Pipe       September       Labor       3.00       Hrs         Disease Control - Reason       September       Labor       Reason 500 SC       8.00       FIOz         Cultivate       September       125 HP 4WD Tractor       Cultivator - Sled 6 Row       21-0-0-24       400.00       Lb         Cut Bed Sides       October       125 HP 4WD Tractor       Cultivator - Sled 6 Row       21-0-0-24       400.00       Lb         Roll Crop       October       125 HP 4WD Tractor       Cultivator - Sled 6 Row       21-0-0-24       400.00       Lb         Cut Bed Sides       October       125 HP 4WD Tractor       Flat Roller - 18'       Lift Out Onions       Lift Out Onions       Cotober       200 HP 4WD Tractor       Flat Roller - 18'       Lift Out Onions       Lift Out Onions       Cotober       200 HP 4WD Tractor       Trailer Dollie       Lift Out Onions       Lift Out Onions       Lift Out Onions       Cotober       200 HP 4WD Tractor       Trailer Dollie </td <td></td> <td></td> <td></td> <td></td> <td>Water</td> <td>2.00</td> <td>AcIn</td>					Water	2.00	AcIn
SeptemberAir ApplicationWarrior T3.84FIOzDisease Control - QuadrisAugustAir ApplicationQuadris8.00FIOzTake Out Pump & PipeSeptemberLabor3.00HrsDisease Control - ReasonSeptemberAir ApplicationReason 500 SC8.00FIOzCultivateSeptember125 HP 4WD TractorCultivator - Sled 6 Row21-0-0-24400.00LbCutivateSeptember125 HP 4WD TractorCultivator - Sled 6 Row21-0-0-24400.00LbCut Bed SidesOctober125 HP 4WD TractorCultivator - Sled 6 Row21-0-0-24400.00LbCut Bed SidesOctober150 HP 4WD TractorFlat Roller - 18'	Insect Control - Warrior 2X	July	Air Application		Warrior T	3.84	FlOz
Disease Control - Quadris     August     Air Application     Quadris     8.00     FIOz       Take Out Pump & Pipe     September     Labor     3.00     Hrs       Disease Control - Reason     September     Air Application     Reason 500 SC     8.00     FIOz       Cultivate     September     125 HP 4WD Tractor     Cultivator - Sled 6 Row     21-0-0-24     400.00     Lb       Cut Bed Sides     September     125 HP 4WD Tractor     Fertilizer Applicator 6 Row     21-0-0-24     400.00     Lb       Cut Bed Sides     October     125 HP 4WD Tractor     Flat Roller - 18'     V     V     V       Top Onions     October     150 HP 4WD Tractor     Flat Roller - 18'     V     V     V     V       Field Haul Onions     October     200 HP 4WD Tractor     Harvester     V     V     V       Field Haul Onions     October     200 HP 4WD Tractor     Trailer Dollie     V     V     V       Pickup Truck Use (6 Pickups)     All     Pickup - 1/2 Ton     Pickup - 3/4 Ton     Pickup - 3/4 Ton     Pickup - 3/4 Ton		September	Air Application		Warrior T	3.84	FlOz
Take Out Pump & PipeSeptemberLabor3.00HrsDisease Control - ReasonSeptemberAir ApplicationReason 500 SC8.00FIOzCultivateSeptember125 HP 4WD TractorCultivator - Sled 6 Row21-0-0-24400.00LbCut Bed SidesOctober125 HP 4WD TractorCultivator - Sled 6 Row21-0-0-24400.00LbCut Bed SidesOctober125 HP 4WD TractorCultivator - Sled 6 Row21-0-0-24400.00LbCut Bed SidesOctober125 HP 4WD TractorCultivator - Sled 6 Row10-0-24400.00LbCut Bed SidesOctober150 HP 4WD TractorFlat Roller - 18'10-0-24400.00LbCut DonionsOctober150 HP 4WD TractorMower - Flail - 15151415Lift Out OnionsOctober200 HP 4WD TractorHarvester151414Field Haul OnionsOctober200 HP 4WD TractorTrailer Dollie121414Pickup - 1/2 Ton Pickup - 3/4 TonPickup - 1/2 Ton Pickup - 3/4 TonAllATV1414	Disease Control - Quadris	August	Air Application		Quadris	8.00	FlOz
Disease Control - Reason       September       Air Application       Reason 500 SC       8.00       FIOz         Cultivate       September       125 HP 4WD Tractor       Cultivator - Sled 6 Row       21-0-0-24       400.00       Lb         Fertilize - Topdress       September       150 HP 4WD Tractor       Fertilizer Applicator 6 Row       21-0-0-24       400.00       Lb         Cut Bed Sides       October       125 HP 4WD Tractor       Cultivator - Sled 6 Row       21-0-0-24       400.00       Lb         Cut Bed Sides       October       125 HP 4WD Tractor       Cultivator - Sled 6 Row       21-0-0-24       400.00       Lb         Cut Bed Sides       October       125 HP 4WD Tractor       Flat Roller - 18'       400.00       Lb         Cut Donions       October       150 HP 4WD Tractor       Mower - Flail - 15       400.00       Lb         Lift Out Onions       October       200 HP 4WD Tractor       Harvester       400.00       400.00       400.00       400.00         Field Haul Onions       October       200 HP 4WD Tractor       Trailer Dollie       400.00       400.00       400.00       400.00       400.00       400.00       400.00       400.00       400.00       400.00       400.00       400.00       400.00       400	Take Out Pump & Pipe	September	Labor			3.00	Hrs
Cultivate       September       125 HP 4WD Tractor       Cultivator - Sled 6 Row         Fertilize - Topdress       September       150 HP 4WD Tractor       Fertilizer Applicator 6 Row       21-0-0-24       400.00       Lb         Cut Bed Sides       October       125 HP 4WD Tractor       Cultivator - Sled 6 Row       21-0-0-24       400.00       Lb         Cut Bed Sides       October       125 HP 4WD Tractor       Cultivator - Sled 6 Row       21-0-0-24       400.00       Lb         Roll Crop       October       75 HP 4WD Tractor       Flat Roller - 18'	Disease Control - Reason	September	Air Application		Reason 500 SC	8.00	FlOz
Fertulize - 1 opdress       September       150 HP 4WD Tractor       Fertulizer Applicator 6 Row       21-0-0-24       400.00       Lb         Cut Bed Sides       October       125 HP 4WD Tractor       Cultivator - Sled 6 Row       Cultivator - Sled 6 Row       100.00       Lb         Roll Crop       October       75 HP 4WD Tractor       Flat Roller - 18'       Field Roller - 18'	Cultivate	September	125 HP 4WD Tractor	Cultivator - Sled 6 Row			
Cut Bed Sides     October     125 HP 4WD Tractor     Cultivator - Sled 6 Row       Roll Crop     October     75 HP 4WD Tractor     Flat Roller - 18'       Top Onions     October     150 HP 4WD Tractor     Mower - Flail - 15       Lift Out Onions     October     200 HP 4WD Tractor     Harvester       Field Haul Onions     October     200 HP 4WD Tractor     Trailer Dollie       225 HP 4WD Tractor     Trailer Dollie     225 HP 4WD Tractor       Pickup Truck Use (6 Pickups)     All     Pickup - 3/4 Ton	Fertilize - Topdress	September	150 HP 4WD Tractor	Fertilizer Applicator 6 Row	21-0-0-24	400.00	Lb
Kon Crop     October     /5 HP 4WD Tractor     Flat Koller - 18°       Top Onions     October     150 HP 4WD Tractor     Mower - Flail - 15       Lift Out Onions     October     200 HP 4WD Tractor     Harvester       Field Haul Onions     October     200 HP 4WD Tractor     Trailer Dollie       225 HP 4WD Tractor     Trailer Dollie     225 HP 4WD Tractor     Trailer Dollie       Pickup Truck Use (6 Pickups)     All     Pickup - 3/4 Ton     Pickup - 3/4 Ton	Cut Bed Sides	October	125 HP 4WD Tractor	Cultivator - Sled 6 Row			
Top Onions     October     150 HP 4WD Tractor     Mower - Fail - 15       Lift Out Onions     October     200 HP 4WD Tractor     Harvester       Field Haul Onions     October     200 HP 4WD Tractor     Trailer Dollie       225 HP 4WD Tractor     Trailer Dollie     225 HP 4WD Tractor     Trailer Dollie       Pickup Truck Use (6 Pickups)     All     Pickup - 3/4 Ton     Pickup - 3/4 Ton	Koll Crop	October	/5 HP 4WD Tractor	Flat Roller - 18'			
Lift Out Onions     October     200 HP 4WD Tractor     Harvester       Field Haul Onions     October     200 HP 4WD Tractor     Trailer Dollie       225 HP 4WD Tractor     Trailer Dollie     Trailer Dollie       Pickup Truck Use (6 Pickups)     All     Pickup - 1/2 Ton       Pickup - 3/4 Ton     Pickup - 3/4 Ton	Lip Onions	October	150 HP 4WD Tractor	Mower - Flail - 15			
Fried radio finance     October     Zub HP 4WD fractor     Irailer Dollie       225 HP 4WD Tractor     Trailer Dollie       Pickup Truck Use (6 Pickups)     All     Pickup - 1/2 Ton       Pickup - 3/4 Ton     Pickup - 3/4 Ton	Lift Out Onions	October	200 HP 4WD Tractor	Harvester			
Pickup Truck Use (6 Pickups) All Pickup - 1/2 Ton Pickup - 3/4 Ton	Field Haul Unions	October	200 HP 4 WD Tractor	Trailer Dollie			
ATV Use (2 ATVs) All ATV	Pickup Truck Lice (6 Diskups)	A 11	225 HP 4WD ITactor Dickup 1/2 Top	Traner Donne			
ATV Use (2 ATVs) All ATV	riekup riuek Ose (o riekups)	лп	$\frac{1}{2} \frac{1}{2} \frac{1}$				
	ATV Use (2 ATVs)	All	ATV				