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1995 Estimated Red
Potato Production Costs
For Fresh Market in
Northwest Washington

Richard W. Carkner
Dyvon M. Havens

Preface

Enterprise costs vary from one farm to the next and over time for any particular farm. Variability stems from differences in:

- Capital, labor, and management resources
- Type, size, and age of machinery complement
- Cultural practices
- Size of farm and enterprise
- Crop yields
- Input prices
- Commodity prices

Costs can also be calculated differently depending on the intended use of the cost estimate. The information in this publication serves as a general guide for a modern and well-managed Northwest Washington farm as of late 1994. To avoid drawing unwarranted conclusions about costs for any particular farm or group of farms, the reader must closely examine the assumptions used in this publication. If they are not appropriate for the situation at hand, adjustments in the costs should be made.

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**1995 ESTIMATED RED POTATO PRODUCTION COSTS
FOR FRESH MARKET IN NORTHWEST WASHINGTON**

By Richard W. Carkner and Dyvon M. Havens¹

This publication presents per acre costs for the production of 80 acres of red potatoes for fresh market grown on a 400-acre farm in Northwest Washington. These costs can be used by producers, lenders, processors, or others in making better farm management decisions including financing, crop mix decisions, and resolving numerous related farm business management problems. It is recommended that individual growers use the blank spaces provided to adjust the cost tables to their farm circumstances. Also, local Cooperative Extension Agents and fieldmen should be consulted for recommendations on field operations and farm inputs.

SOURCES OF INFORMATION

Information for this cost study was obtained from interviews with area producers. These interviews served as a basis for identifying field operations and machinery complements commonly used as well as plant nutrient and pest management practices. The producers interviewed were considered to be representative of well-managed farms. The quantities and types of materials are based on observed farm practices. Price information on materials and services was obtained from producers, processors, and local farm input suppliers. For purposes of estimating machinery ownership costs, a 400-acre farm base is assumed.

The acreage assigned to each crop and the page where cost information can be found is outlined below:

COST ASSUMPTIONS

1. The farm where this crop is raised consists of 400 acres, 80 acres of which are devoted to red potato production.
2. Managerial time requirements are not included in the these costs.
3. Machinery fixed costs (depreciation and interest) are based on 1994 new machinery prices.

¹ Extension Economist, WSU Puyallup; County Extension Agent, Skagit County, Mount Vernon, Cooperative Extension, Washington State University.

4. Input prices are based on 1994 prices.
5. Land charges are \$190.00 per acre.
6. The interest rate on operating capital is 10 percent.
7. Labor rates are \$9.00 per hour. This includes industrial insurance, social security, and other benefits.

DISCUSSION OF COST INFORMATION

Crop costs are presented in two tables. The first table is a schedule of field operations and estimated costs per acre. The second table is the summary of costs. Table 2 provides spaces for individual farm adjustments.

SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE--TABLE 1.

This table outlines the schedule of field operations (OPERATION) by calendar month (MTH); the type of machinery used and the number of times used per acre (TOOLING); and includes the costs of inputs for each of those operations. The costs of field operations are divided into two categories. The first category is machinery ownership or fixed costs. The second category, variable costs, is associated with operating machinery, hiring labor, and purchasing services and materials.

Machinery fixed costs include machinery depreciation, interest, and insurance.² These costs do not vary with the crops produced and are incurred whether or not the crop is grown. Machinery fixed costs (TOTAL FIXED COST) for a specific field operation are estimated by multiplying the machine hours (MACH HOURS) per acre times the per hour fixed cost (shown in Appendix Table A).

Costs vary with the crop grown and the number of units or acres produced. Variable costs include fuel, oil, repairs (FUEL, LUBE, & REPAIRS), and all inputs such as plant nutrients, chemicals (MATER.), hand labor, and custom work (SERVICE). Overhead variable cost is a miscellaneous expense category which covers all other non-itemized expenses such as utilities, telephone, hand tools, accounting, legal, subscriptions, memberships, etc. Machine operating labor is also included in variable costs.

² New machinery prices are used; therefore, calculated fixed costs may not necessarily be realized costs. New machinery prices indicate the earnings necessary to replace these assets.

SUMMARY OF COSTS--TABLE 2.

Table 2 identifies variable and fixed production costs.

APPENDIX TABLES

Appendix Table A--Machinery Complement For a 400-Acre Farm.

Appendix Table B--Prices For Selected Inputs, Northwest Washington-
-1994.

TABLE 1. SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR PRODUCING RED POTATOES FOR FRESH MARKET IN WESTERN WASHINGTON YEAR ONE; 80 ACRES ON A 400-ACRE FARM.

OPERATION	TOOLING	MTH YEAR	VARIABLE COST								TOTAL VARIABLE COST	TOTAL COST
			MACH HOURS	MACH LABOR HOURS	MACH FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.		
CHISEL	130HP;10' CHISEL	MAY 1995	\$.21	\$.25	\$ 5.33	\$ 4.11	\$ 2.25	\$.00	\$.00	\$.26	\$ 6.62	\$ 11.95
CULTIVATE	130HP;15' CULTIVATOR 2X	MAY 1995	.23	.28	4.29	5.15	2.50	.00	.00	.32	7.96	12.26
PLOW	130HP;4-16 PLOW	MAY 1995	.39	.47	8.49	12.64	4.21	.00	.00	.70	17.55	26.05
DISK	130HP;15' DISK	MAY 1995	.14	.17	3.18	4.73	1.50	.00	.00	.26	6.49	9.67
PEST CONTROL	CUSTOM SPRAY [1]	MAY 1995	.00	.00	.00	.00	.00	8.00	53.04	2.54	63.58	63.58
CULTIMULCH	130HP;13' CULTIMULCHER	MAY 1995	.16	.19	3.40	3.52	1.73	.00	.00	.22	5.47	8.86
CULTIVATE	130HP;15' CULTIVATOR 2X	MAY 1995	.23	.28	4.29	5.15	2.50	.00	.00	.32	7.96	12.26
CULTIMULCH	130HP;13' CULTIMULCHER	MAY 1995	.16	.19	3.40	3.52	1.73	.00	.00	.22	5.47	8.86
SEED CUTTING	SEED CUTTING/FUNGICID DUST[2]	MAY 1995	.00	.00	.00	.00	.00	20.00	28.00	2.00	50.00	50.00
PLANT POTATOES	100HP;4R PLNTR;FERTILIZE [3]	MAY 1995	.42	.51	41.96	6.38	4.61	.00	535.40	22.77	569.15	611.11
BLIGHT CONTROL	60HP;200G SPRAYER [4]	JUN 1995	.26	.32	2.78	2.55	2.88	.00	5.63	.37	11.42	14.20
ROTOVATE	100HP; ROTOVATOR	JUN 1995	.21	.25	15.76	3.32	2.25	.00	.00	.19	5.75	21.52
CULTIVATE	60HP;4R CULTIVATOR 3X	JUN 1995	.55	.67	4.89	4.35	5.99	.00	.00	.34	10.68	15.57
WEED CONTROL	60HP;200G SPRAYER [5]	JUN 1995	.26	.32	2.78	2.55	2.88	.00	40.60	1.53	47.56	50.34
BLIGHT CONTROL	60 HP;200G SPRAYER [6]	JUL 1995	.26	.32	2.78	2.55	2.88	.00	5.70	.28	11.41	14.19
BLIGHT CONTROL	60HP;200G SPRAYER [7]	JUL 1995	.26	.32	2.78	2.55	2.88	.00	21.50	.67	27.60	30.38
BLIGHT CONTROL	60HP;200G SPRAYER [8]	JUL 1995	.26	.32	2.78	2.55	2.88	.00	7.50	.32	13.25	16.03
IRRIGATION	IRRIGATE 1" 3X	JUL 1995	.00	.00	35.00	.00	.00	54.63	32.00	2.17	88.79	123.79
PEST CONTROL	60HP;200G SPRAYER 4X [9]	JUL 1995	1.06	1.28	11.11	10.20	11.52	.00	63.69	2.14	87.54	98.66
BLIGHT CONTROL	60HP;200G SPRAYER [10]	JUL 1995	.26	.32	2.78	2.55	2.88	.00	5.70	.28	11.41	14.19
BLIGHT CONTROL	60HP;200G SPRAYER [11]	AUG 1995	.26	.32	2.78	2.55	2.88	.00	7.50	.22	13.15	15.92
BLIGHT CONTROL	60HP;200G SPRAYER [12]	AUG 1995	.26	.32	2.78	2.55	2.88	.00	5.70	.19	11.32	14.09
MOW VINES	60HP;FLAIL MOWER	AUG 1995	.90	1.09	9.68	7.18	9.78	.00	.00	.28	17.24	26.92
APPLY DESSICANT	60HP;200G SPRAY 3X [13]	AUG 1995	.79	.96	8.33	7.65	8.64	.00	50.93	1.12	68.33	76.67
HARVEST	130HP;2R DIGGER	SEP 1995	2.75	3.33	75.14	152.86	29.95	.00	.00	1.52	184.33	259.47
HAUL TO STORAGE	TRUCK 20FT	SEP 1995	.20	.22	3.85	3.27	1.98	.00	.00	.04	5.29	9.14
PROCSS/BROKERAGE	GRADE/PRCSS/BOX/BRKRGE	SEP 1995	.00	.00	.00	.00	.00	1260.00	408.00	13.90	1681.90	1681.90
SOIL TESTS	PER ACRE CHARGE	SEP 1995	.00	.00	.00	.00	.00	.75	.00	.01	.76	.76
CHEMICAL TOILET	CHEMICAL TOILET RENTAL	SEP 1995	.00	.00	.00	.00	.00	1.25	.00	.01	1.26	1.26
PICKUP TRUCK	MISCELLANEOUS USE	ANN 1995	2.50	2.75	9.72	19.78	24.75	.00	.00	2.23	46.76	56.47
OVERHEAD	5% VARIABLE COSTS	ANN 1995	.00	.00	.00	.00	.00	154.30	.00	.00	154.30	154.30
LAND RENT	LAND RENT	ANN 1995	.00	.00	190.00	.00	.00	.00	.00	.00	.00	190.00
TOTAL PER ACRE			\$13.00	\$15.43	\$460.05	\$274.21	\$138.90	\$1498.93	\$1270.88	\$57.41	\$3240.33	\$3700.38

[1] 1 GAL/AC DIAZINON AG500; .5 GAL/AC EPTAM 7E [2] 10 LB/AC TOPS 5D [3] 750 LB/AC 12-51-0; 350 LB/AC SUL-PO-MAG; 250 LB/AC SULFATE OF POTASH; 1 LB/AC BORON [4] .75 PT/AC BRAVO 720 [5] .66 LB/AC SENCOR; 2.5 PT/AC DUAL [6] 1.5 LB/AC DITHANE DF [7] 1 PT/AC BRAVO 720 [8] 1.5 LB/AC RIDOMIL MZ58; 1.0 LB/AC MANZATE 200 [9] 1 GAL/AC DIAZINON AG500; .25 GAL/AC MONITOR 4EC; .75 PT/AC AMBUSH 2EC [10] 1.5 LB/AC DITHANE DF [11] 1 PT/AC BRAVO 720 [12] 1.5 LB/AC DITHANE DF [13] 1.5 GAL/AC DESICATE; 10 GAL/AC ENQUICK; 1 PT/AC DIQUAT

1995 RED POTATOES FOR FRESH MARKET, NORTHWEST WASHINGTON
 TABLE 2. ESTIMATED PRODUCTION COSTS, 80 ACRES ON A 400-ACRE FARM.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR YOUR COST	YOUR FARM
VARIABLE COSTS					
CUSTOM SPRAY	ACRE	\$ 8.00	1.00	\$ 8.00	_____
DIAZINON AG500	GAL	36.72	2.00	73.44	_____
EPTAM 7E	GAL	32.64	.50	16.32	_____
SEED CUTTING	TON	20.00	1.00	20.00	_____
TOPS 5D	LB	2.80	10.00	28.00	_____
12-51-0	LB	.17	750.00	131.25	_____
SEED, POTATO	CWT	12.50	25.00	312.50	_____
SUL-PO-MAG	LB	.13	350.00	43.75	_____
SULF.OF POTASH	LB	.19	250.00	47.50	_____
BORON	LB	.40	1.00	.40	_____
SENCOR 75%DF	LB	28.56	.66	18.85	_____
DUAL	PINT	8.70	2.50	21.75	_____
BRAVO 720	PINT	7.50	2.75	20.63	_____
RIDOMIL MZ58	LB	11.80	1.50	17.70	_____
MANZATE 200	LB	3.80	1.00	3.80	_____
DITHANE DF	LB	3.80	4.50	17.10	_____
MONITOR 4EC	GAL	73.44	.25	18.36	_____
AMBUSH 2EC	PT	11.48	.75	8.61	_____
DESICATE	GAL	15.05	1.50	22.58	_____
ENQUICK	GAL	1.75	10.00	17.50	_____
DIQUAT	PINT	10.85	1.00	10.85	_____
SOIL TEST	EACH	20.00	.04	.75	_____
CHEMICAL TOILET	MON	100.00	.01	1.25	_____
STORAGE/HANDLNG	TON	15.00	17.00	255.00	_____
GRADE/CUSTOM	TON	45.00	17.00	765.00	_____
BROKERAGE COSTS	BOX	.50	480.00	240.00	_____
POTATO BOXES	EACH	.85	480.00	408.00	_____
IRRIG. LABOR	HOURL	7.50	6.75	50.62	_____
IRRIG. REPAIRS	ACRE	4.00	1.00	4.00	_____
IRRIG. CHARGE	ACRE	32.00	1.00	32.00	_____
TRACTOR REPAIR	ACRE	40.96	1.00	40.96	_____
TRACTOR FUEL/LUBE	ACRE	79.11	1.00	79.11	_____
MACHINERY REPAIRS	ACRE	137.12	1.00	137.12	_____
MACHINE FUEL/LUBE	ACRE	17.03	1.00	17.03	_____
LABOR(TRAC/MACH)	ACRE	138.90	1.00	138.90	_____
VARIABLE OVERHD	ACRE	154.30	1.00	154.30	_____
INTEREST ON OP. CAP.	DOL.	.10	574.12	57.41	_____
TOTAL VARIABLE COST				\$3240.33	_____
FIXED COSTS					
TRACTOR DEPRECIATION	ACRE	\$ 58.36	1.00	\$ 58.36	_____
TRACTOR INTEREST	ACRE	53.60	1.00	53.60	_____
TRACTOR INSURANCE	ACRE	3.22	1.00	3.22	_____
TRACTOR TAXES	ACRE	9.65	1.00	9.65	_____
TRACTOR HOUSING	ACRE	5.36	1.00	5.36	_____
MACHINE DEPRECIATION	ACRE	52.55	1.00	52.55	_____
MACHINE INTEREST	ACRE	39.04	1.00	39.04	_____
MACHINE INSURANCE	ACRE	2.34	1.00	2.34	_____
MACHINE TAXES	ACRE	7.03	1.00	7.03	_____
MACHINE HOUSING	ACRE	3.90	1.00	3.90	_____
IRRIGATION	ACRE	35.00	1.00	35.00	_____
LAND CHARGE	ACRE	190.00	1.00	190.00	_____
TOTAL FIXED COST				\$ 460.05	_____
TOTAL COST				\$3700.38	_____

APPENDIX TABLE A.

MACHINERY COMPLEMENT FOR A 400-ACRE FARM.

MACHINERY	SIZE	PURCHASE PRICE	HOURS OF ANNUAL USE	TOTAL ³ FIXED COST	TOTAL ⁴ VARIABLE COST	TOTAL COST ⁵
		\$		-----COST PER HOUR-----		
TRACTOR	100HP	38,000	100	59.76	8.10	67.87
TRACTOR, WHEEL	60HP	23,400	600	6.13	5.86	11.99
TRACTOR, WHEEL	130HP	71,000	1000	11.17	6.99	28.16
TRUCK, 20' USED	20'	10,000	150	14.91	.39	15.30
PICKUP USED	3/4 T	10,000	400	3.89	7.91	11.80
CHISEL	10'	4,200	50	13.54	1.24	14.78
CULTIMULCHER	13'	8,500	150	9.13	3.50	12.63
CULTIVATOR, 4R	12'	2,000	150	2.15	1.46	3.61
FIELD CULTIVATOR	15'	4,000	100	6.45	3.78	10.23
CULT W/FERTZR, 4R	14'	3,000	150	3.22	3.20	6.43
ROTOVATOR	13.33'	7,200	100	10.66	7.19	17.85
OFFSET DISK	15'	13,500	200	10.88	15.71	26.59
MOWER, FLAIL	7'	2,500	100	4.03	1.55	5.58
PLOW, MB 4-16 2WY	5.33'	12,000	200	9.67	13.97	23.64
SPRAYER, 200 GAL	12'	3,500	150	3.76	3.20	6.96
LCKWD DIGGER, 2R	6'	28,000	300	15.04	36.89	51.93
PLANTER, 4ROW	13.33'	6,400	40	25.79	3.45	29.23

³ Total fixed costs include depreciation, interest, taxes, insurance, and housing.

⁴ Variable costs include repairs, fuel, and lubrication.

⁵ Total costs are the sum of total fixed and variable costs.

APPENDIX TABLE B.

PRICES FOR SELECTED INPUTS, NORTHWEST WASHINGTON--1994.

<u>ITEM</u>	<u>UNIT</u>	<u>PRICE</u>
<u>FERTILIZERS</u>		
		\$
12-51-0	LB	0.175
Boron	LB	0.40
Sulfate of Potash	LB	0.19
Sul-Po-Mag	LB	0.13
<u>PESTICIDES AND FUNGICIDES</u>		
Ambush 2EC	PINT	11.48
Bravo 720	PINT	7.50
Desiccate	GAL	15.05
Diazinon AG500	GAL	36.72
Diquat	PINT	10.85
Dithane DF	LB	3.80
Dual	PINT	8.70
Enquick	GAL	1.75
Eptam 7E	GAL	32.64
Manzate 200	LB	3.80
Monitor 4EC	GAL	73.44
Ridomil MZ58	LB	11.80
Sencor 75% DF	LB	28.56
Tops 5D	LB	2.80
<u>CUSTOM</u>		
Brokerage Fees, Potato	BOX	.50
Grade/Custom	TON	45.00
Seed Cutting	TON	20.00
Soil Test (for 25 acres)	EACH	20.00
Storage/Handling, Potato	TON	15.00
Custom Spray	ACRE	8.00
<u>FUEL</u>		
Diesel	GAL	1.05
Gas	GAL	1.05
<u>LABOR</u>		
Hand/Irrigation	HOUR	7.50
Machinery	HOUR	9.00
<u>OTHER</u>		
Irrigation	ACRE	35.00
Irrigation repairs	ACRE	4.00
Irrig. charge (elect., water)	ACRE	32.00
Land Rental	ACRE	190.00
Chemical toilet(for 80 acres)	MONTH	100.00
Potato Boxes	EACH	.85
Potato Seed	CWT	12.50
Potatoes (Sale Price)	BOX	9.21

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