

Irrigated Cropping Region, Conventional Tillage



2009 Crop Rotation Budgets for Potatoes and Sweet Corn Irrigated Crop Production in the Columbia Basin, WA Climate Friendly Farming Project: Conventional Tillage



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Budget spreadsheets are available at the following links: http://csanr.wsu.edu/publications/Farmmgmt/FarmMgmtEconomics.html http://www.uidaho.edu/~kpainter

Summary of Returns by Crop and Rotation (\$/acre) for Conventional Tillage Sweet Corn & Potatoes

		Yield	Price*	Revenue	Total Cost (TC) of	Returns over TC	Total Variable Costs (VC)	Returns over VC
By Crop:	Unit	per acre	per unit	per acre	Operation	(\$/acre)	(\$/acre)	(\$/acre)
Sweet Corn, Yr 1	ton	11	\$78.66	\$865	\$838	\$27	\$486	\$380
Sweet Corn, Yr 2	ton	10.5	\$78.66	\$826	\$838	-\$12	\$486	\$340
Potatoes, CT	ton	33.5	\$125.60	\$4,208	\$1,796	\$2,412	\$1,282	\$2,925

				Total	
	Revenue	Total	Returns	Variable	Returns
	per acre	Cost (TC)	over TC	Costs (VC)	over VC
By Rotation:	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)	(\$/acre)
SC, SC, Potatoes	\$1,966	\$1,157	\$809	\$751	\$1,215

Schedule of Operations for Producing Sweet Corn Following Potatoes in the Columbia Basin, Center Pivot Irrigation

Month	Operation	Tooling	Materials/Service
March	Kill wheat	150HP-WT, rented sprayer	18 oz Roundup
Mar	Fertilize	150HP-WT, Valmar spreader	100 lb N, 29.5 lb P, 98.4 lb K
Mar	Pre-plant tillage (2 passes)	200HP-WT, 26' chisel chopper	
Apr	Plant, fertilize sweet corn	200HP-WT, 12-row JD 8760 Min-til planter	48 lb N, 48 lb P, 54 lb S, 0.95 lb B
July	Harvest	Custom	

Schedule of Operations for Producing Sweet Corn Following Sweet Corn in the Columbia Basin, Center Pivot Irrigation

Month	Operation	Tooling	Materials/Service
	•	<u> </u>	100 lb N, 29.5 lb P, 98.4 lb K
Mar	Fertilize	150HP-WT, Valmar spreader	based on soil test
Mar	Pre-plant tillage (2 passes)	200HP-WT, 26' chisel chopper	
			36 lb UN32
Apr	Plant sweet corn	200HP-WT, 12-row JD 8760 Min-til planter	
July	Harvest		

Schedule of Operations for Producing Potatoes Following Sweet Corn in the Columbia Basin, Center Pivot Irrigation

Month	Operation	Tooling	Materials/Service
October	Chop corn residue	200HP-WT, 20' stubble shredder	
Mar	Fertilize	150HP-WT, Valmar spreader	100 lb N, 29.5 lb P, 98.4 lb K based on soil test
Mar	Pre-plant tillage (2 passes)	200HP-WT, 26' chisel chopper	
Mar	Mark out	200HP-WT, 13-shank bed splitter	
Mar	Plant potatoes	200HP-WT, 6-row Harriston pick planter	
Apr	Drag off	150HP-WT, 6-row rodweeder	
Apr	Dammer Diker	200HP-WT, 6-row dammer diker	
Sept	Harvest	200HP-WT, 3-row potato digger	
Oct	Pre-plant tillage (2 passes)	200HP-WT, 26' chisel chopper	
Oct	Plant wheat cover crop	200HP-WT, double-disc drill	

Item	Quantity Per Acre	Unit	Price or Cost	Value or Cost/Acre
Gross Returns				
Sweet Corn	11.00	ton	\$78.66	\$865.26
Variable Costs				
Seed:				\$0.00
Sweet Corn Seed	30,000	seeds	\$0.00	\$0.00
Fertilizer:				\$226.78
Nitrogen (dry) Phosphorous (dry) Potash (dry) Sulfur (dry) Boron (dry) Nitrogen (liquid)	89 30 10 30 10 200	lb lb lb lb lb	\$0.52 \$0.65 \$0.81 \$0.44 \$3.57 \$0.52	\$46.28 \$19.50 \$8.10 \$13.20 \$35.70 \$104.00
Pesticides:				\$21.08
Dual Magnum Atrazine 4L	0.75 0.75	qt qt oz oz	\$25.50 \$2.60	\$19.13 \$1.95 \$0.00 \$0.00
Custom & Consultants:				\$15.00
Custom Ground Spray & Incorp. Rental Fertilizer Applicator	1 1	acre acre	\$12.50 \$2.50	\$12.50 \$2.50
Other:				\$210.68
Crop insurance Overhead	0.5 1	acre acre	\$22.00 \$14.24	\$11.00 \$14.24
Fuel Lubricants Machinery Repairs Storage Facility & Equip. Repairs Machinery Labor Irrigation Labor	7.15 1 1 0.94	gal acre acre acre hour	\$2.25 \$2.84 \$15.73 \$20.00 \$20.00	\$16.09 \$2.84 \$15.73 \$0.00 \$18.78 \$20.00
Irrigation Water Irrigation Power Irrigation Repair	1 1 1	acre acre acre	43.00 55.00 14.00	\$43.00 \$55.00 \$14.00
Operating Interest				\$12.06
Total Variable Costs Variable Costs per Unit				\$485.60 \$44.15
Net Returns Above Variable Costs	3			\$379.66

Item	Quantity Per Acre	Unit	Price or Cost	Value or Cost/Acre
Fixed Costs: Machinery depreciation Machinery interest Machinery insurance, taxes housing,	licance			\$26.74 \$16.97 \$9.07
Land Rent	1	acre	\$300.00	\$300.00
Total Fixed Costs Fixed Costs per Unit				\$352.79 \$32.07
Total Costs per Acre Total Cost per Unit				\$838.38 \$76.22
Returns to Risk				\$26.88

Notes:

Irrigation water, power, and repair charges are based on EB2015, Costs of 2006 Cost of Producing Processing and Fresh Potatoes under Center Pivot Irrigation, Columbia Basin, Washington, by Herbert Hinman, Mark Trent and Mark Pavek. Sweet corn pesticide usage and crop insurance split (shared with contractor) is based on 2007 Southcentral Idaho (Magic Valley) Irrigated Crop Costs and Returns by Paul Patterson et al.

Breakeven Analysis:	_	Base	+
Dieakeven Analysis.	10%	Dase	10%
		Yield	
<u>Price</u>	9.9	11	11.55
Operating Cost Breakeven	\$49.05	\$44.15	\$42.04
Ownership Cost Breakeven	\$35.64	\$32.07	\$30.54
Total Cost Breakeven	\$84.69	\$76.22	\$72.59
		Price	
<u>Yield</u>	\$70.79	\$78.66	\$86.53
Operating Cost Breakeven	6.9	6.2	5.6
Ownership Cost Breakeven	5.0	4.5	4.1
Total Cost Breakeven	11.8	10.7	9.7

Machine Costs for Sweet Corn Production, Paterson Trials, Conventional Tillage

			Taxes Housing	Total					Total	
Type of			Insurance	Fixed					Variable	Total
Machine	Depreciation \$	Interest \$	Licenses \$	Costs \$	Repairs \$	Labor \$	Fuel \$	Lubric.	Costs \$	Costs \$
Valmar Applicator, 150HP-WT	\$0.48	\$0.36	\$0.06	\$0.90	\$0.21	\$1.01	\$0.56	\$0.10	\$1.88	\$2.77
17' Sunflower Chisel Chopper, 200HP-WT	\$2.85	\$1.90	\$0.25	\$5.00	\$1.47	\$2.28	\$2.29	\$0.40	\$6.44	\$11.44
17' Sunflower Chisel Chopper, 200HP-WT	\$2.85	\$1.90	\$0.25	\$5.00	\$1.47	\$2.28	\$2.29	\$0.40	\$6.44	\$11.44
12-row Corn Planter	\$9.56	\$6.30	\$2.16	\$18.02	\$6.19	\$2.82	\$2.81	\$0.50	\$12.32	\$30.35
20' Stubble Shredder (2/3 years)	\$1.39	\$0.89	\$0.22	\$2.51	\$0.74	\$1.19	\$0.65	\$0.11	\$2.69	\$5.20
4WD-ATV	\$0.58	\$0.33	\$0.05	\$0.96	\$0.15	\$4.40	\$0.64	\$0.11	\$5.31	\$6.27
2-Ton Truck	\$2.00	\$1.13	\$1.52	\$4.65	\$2.00	\$2.40	\$0.73	\$0.13	\$5.26	\$9.90
Tandem Axle Truck	\$3.25	\$1.78	\$2.40	\$7.43	\$2.00	\$2.40	\$0.73	\$0.13	\$5.26	\$12.69
3/4-Ton Pickup	\$2.14	\$1.69	\$1.53	\$5.36	\$0.75	\$0.00	\$4.04	\$0.71	\$5.50	\$10.86
3/4-Ton Pickup	\$1.64	\$0.69	\$0.63	\$2.96	\$0.75	\$0.00	\$1.35	\$0.24	\$2.34	\$5.30
Total	\$26.74	\$16.97	\$9.07	\$52.79	\$15.73	\$18.78	\$16.09	\$2.84	\$53.44	\$106.22

Item	11	Quantity	1.130	Price or	Value or
Sweet Corn 10.50 ton \$78.66 \$825.93 Variable Costs Seed: \$0.00 \$0.00 Sweet Corn Seed 30,000 seeds \$0.00 \$0.00 Fertilizer: \$226.78 \$46.28 \$46.	ltem	Per Acre	Unit	Cost	Cost/Acre
Variable Costs Seed: \$0.00 Seeds \$0.00 \$0.00		10.50	ton	¢70 66	¢925.02
Seed:	Sweet Com	10.50	tori	φ/0.00	φο20.93
Sweet Corn Seed 30,000 seeds \$0.00 \$0.00	Variable Costs				
Fertilizer:	Seed:				\$0.00
Nitrogen (dry) 89	Sweet Corn Seed	30,000	seeds	\$0.00	\$0.00
Phosphorous (dry) 30 lb \$0.65 \$19.50 Potash (dry) 10 lb \$0.81 \$8.10 Sulfur (dry) 30 lb \$0.81 \$8.10 Boron (dry) 10 lb \$0.52 \$35.70 Nitrogen (liquid) 200 lb \$0.52 \$104.00 Pesticides: \$21.08 Dual Magnum 0.75 qt \$25.50 \$19.13 Atrazine 4L 0.75 qt \$2.60 \$1.95 Oz oz v \$0.00 Custom & Consultants: \$15.00 \$15.00 Custom Ground Spray & Incorp. 1 acre \$12.50 \$12.50 Rental Fertilizer Applicator 1 acre \$2.20 \$11.00 Other: \$2.50 \$2.50 \$2.50 Other: \$2.50 \$2.50 \$11.00 Crop insurance 0.5 acre \$22.00 \$11.00 Overhead 1 acre \$14.24 \$14	Fertilizer:				\$226.78
Dual Magnum	Phosphorous (dry) Potash (dry) Sulfur (dry) Boron (dry)	30 10 30 10	lb lb lb lb	\$0.65 \$0.81 \$0.44 \$3.57	\$19.50 \$8.10 \$13.20 \$35.70
Dual Magnum	Doctioidos				¢24.00
Custom Ground Spray & Incorp. 1 acre \$12.50 \$12.50 Rental Fertilizer Applicator 1 acre \$2.50 \$2.50 Other: \$210.68 \$210.68 Crop insurance 0.5 acre \$22.00 \$11.00 Overhead 1 acre \$14.24 \$14.24 Fuel 7.15 gal \$2.25 \$16.09 Lubricants 1 acre \$2.84 \$2.84 Machinery Repairs 1 acre \$15.73 \$15.73 Storage Facility & Equip. Repairs \$0.94 acre \$20.00 \$18.78 Irrigation Labor 1 hour \$20.00 \$18.78 Irrigation Water 1 acre 43.00 \$43.00 Irrigation Power 1 acre 55.00 \$55.00 Irrigation Repair 1 acre 14.00 \$14.00 Operating Interest \$46.25	Dual Magnum		qt oz		\$19.13 \$1.95 \$0.00
Rental Fertilizer Applicator 1 acre \$2.50 \$2.50 Other: \$210.68 \$210.68 Crop insurance 0.5 acre \$22.00 \$11.00 Overhead 1 acre \$14.24 \$14.24 Fuel 7.15 gal \$2.25 \$16.09 Lubricants 1 acre \$2.84 \$2.84 Machinery Repairs 1 acre \$15.73 \$15.73 Storage Facility & Equip. Repairs \$0.00 \$18.78 Irrigation Labor 1 hour \$20.00 \$18.78 Irrigation Labor 1 hour \$20.00 \$20.00 Irrigation Water 1 acre 43.00 \$43.00 Irrigation Power 1 acre 55.00 \$55.00 Irrigation Repair 1 acre 14.00 \$14.00 Operating Interest \$485.60 Variable Costs per Unit \$46.25	Custom & Consultants:				\$15.00
Other: \$210.68 Crop insurance 0.5 acre \$22.00 \$11.00 Overhead 1 acre \$14.24 \$14.24 Fuel 7.15 gal \$2.25 \$16.09 Lubricants 1 acre \$2.84 \$2.84 Machinery Repairs 1 acre \$15.73 \$15.73 Storage Facility & Equip. Repairs \$0.00 \$18.78 Machinery Labor 0.94 acre \$20.00 \$18.78 Irrigation Labor 1 hour \$20.00 \$20.00 Irrigation Water 1 acre 43.00 \$43.00 Irrigation Power 1 acre 55.00 \$55.00 Irrigation Repair 1 acre 14.00 \$14.00 Operating Interest \$12.06 Total Variable Costs \$485.60 Variable Costs per Unit \$46.25				•	The state of the s
Crop insurance 0.5 acre \$22.00 \$11.00 Overhead 1 acre \$14.24 \$14.24 Fuel 7.15 gal \$2.25 \$16.09 Lubricants 1 acre \$2.84 \$2.84 Machinery Repairs 1 acre \$15.73 \$15.73 Storage Facility & Equip. Repairs \$0.00 \$18.78 Irrigation Labor 1 hour \$20.00 \$18.78 Irrigation Labor 1 hour \$20.00 \$20.00 Irrigation Water 1 acre 43.00 \$43.00 Irrigation Power 1 acre 55.00 \$55.00 Irrigation Repair 1 acre 14.00 \$14.00 Operating Interest \$12.06 Total Variable Costs \$485.60 Variable Costs per Unit \$46.25	Rental Fertilizer Applicator	1	acre	\$2.50	\$2.50
Overhead 1 acre \$14.24 \$14.24 Fuel 7.15 gal \$2.25 \$16.09 Lubricants 1 acre \$2.84 \$2.84 Machinery Repairs 1 acre \$15.73 \$15.73 Storage Facility & Equip. Repairs \$0.00 \$18.78 Machinery Labor 0.94 acre \$20.00 \$18.78 Irrigation Labor 1 hour \$20.00 \$20.00 Irrigation Water 1 acre 43.00 \$43.00 Irrigation Power 1 acre 55.00 \$55.00 Irrigation Repair 1 acre 14.00 \$14.00 Operating Interest \$12.06 Total Variable Costs \$485.60 Variable Costs per Unit \$46.25					
Fuel 7.15 gal \$2.25 \$16.09 Lubricants 1 acre \$2.84 \$2.84 Machinery Repairs 1 acre \$15.73 \$15.73 Storage Facility & Equip. Repairs \$0.00 \$15.73 \$0.00 Machinery Labor 0.94 acre \$20.00 \$18.78 Irrigation Labor 1 hour \$20.00 \$20.00 Irrigation Water 1 acre 43.00 \$43.00 Irrigation Power 1 acre 55.00 \$55.00 Irrigation Repair 1 acre 14.00 \$14.00 Operating Interest \$12.06 Total Variable Costs \$485.60 Variable Costs per Unit \$46.25	· · · · · · · · · · · · · · · · · · ·			•	
Lubricants 1 acre \$2.84 \$2.84 Machinery Repairs 1 acre \$15.73 \$15.73 Storage Facility & Equip. Repairs \$0.00 \$0.00 \$18.78 Machinery Labor 0.94 acre \$20.00 \$18.78 Irrigation Labor 1 hour \$20.00 \$20.00 Irrigation Water 1 acre 43.00 \$43.00 Irrigation Power 1 acre 55.00 \$55.00 Irrigation Repair 1 acre 14.00 \$14.00 Operating Interest \$12.06 Total Variable Costs \$485.60 Variable Costs per Unit \$46.25	Overneau	,	acie	ψ14.24	ψ14.24
Machinery Labor 0.94 acre \$20.00 \$18.78 Irrigation Labor 1 hour \$20.00 \$20.00 Irrigation Water 1 acre 43.00 \$43.00 Irrigation Power 1 acre 55.00 \$55.00 Irrigation Repair 1 acre 14.00 \$14.00 Operating Interest \$12.06 Total Variable Costs \$485.60 Variable Costs per Unit \$46.25	Lubricants Machinery Repairs	1	acre	\$2.84	\$2.84 \$15.73
Total Variable Costs Variable Costs per Unit \$485.60 \$46.25	Machinery Labor Irrigation Labor Irrigation Water Irrigation Power	1 1 1	hour acre acre	\$20.00 43.00 55.00	\$18.78 \$20.00 \$43.00 \$55.00
Total Variable Costs Variable Costs per Unit \$485.60 \$46.25	Operating Interest				\$12.06
	Total Variable Costs				\$485.60
	·	5			

Item	Quantity Per Acre	Unit	Price or Cost	Value or Cost/Acre
Fixed Costs: Machinery depreciation Machinery interest Machinery insurance, taxes housing,	licence			\$26.74 \$16.97 \$9.07
Land Rent	1	acre	\$300.00	\$300.00
Total Fixed Costs Fixed Costs per Unit				\$352.79 \$33.60
Total Costs per Acre Total Cost per Unit				\$838.38 \$79.85
Returns to Risk				-\$12.45

Notes:

Irrigation water, power, and repair charges are based on EB2015, Costs of 2006 Cost of Producing Processing and Fresh Potatoes under Center Pivot Irrigation, Columbia Basin, Washington, by Herbert Hinman, Mark Trent and Mark Pavek. Sweet corn pesticide usage and crop insurance split (shared with contractor) is based on 2007 Southcentral Idaho (Magic Valley) Irrigated Crop Costs and Returns by Paul Patterson et al.

Burglassa Australia		D	
Breakeven Analysis:	- 10%	Base	+ 10%
	1076	Yield	10 /6
<u>Price</u>	9.45	10.5	11.025
Operating Cost Breakeven	\$51.39	\$46.25	\$44.04
Ownership Cost Breakeven	\$37.33	\$33.60	\$32.00
Total Cost Breakeven	\$88.72	\$79.85	\$76.04
		Price	
<u>Yield</u>	\$70.79	\$78.66	\$86.53
Operating Cost Breakeven	6.9	6.2	5.6
Ownership Cost Breakeven	5.0	4.5	4.1
Total Cost Breakeven	11.8	10.7	9.7

Machine Costs for Sweet Corn Production, Paterson Trials

			Taxes							
			Housing	Total					Total	
Type of			Insurance	Fixed					Variable	Total
Machine	Depreciation	Interest	Licenses	Costs	Repairs	Labor	Fuel	Lubric.	Costs	Costs
	\$	\$	\$	\$	\$	\$	\$		\$	\$
Valmar Applicator, 150HP-WT	\$0.48	\$0.36	\$0.06	\$0.90	\$0.21	\$1.01	\$0.56	\$0.10	\$1.88	\$2.77
17' Sunflower Chisel Chopper, 200HP-WT	\$2.85	\$1.90	\$0.25	\$5.00	\$1.47	\$2.28	\$2.29	\$0.40	\$6.44	\$11.44
17' Sunflower Chisel Chopper, 200HP-WT	\$2.85	\$1.90	\$0.25	\$5.00	\$1.47	\$2.28	\$2.29	\$0.40	\$6.44	\$11.44
12-row Corn Planter	\$9.56	\$6.30	\$2.16	\$18.02	\$6.19	\$2.82	\$2.81	\$0.50	\$12.32	\$30.35
20' Stubble Shredder (2/3 years)	\$1.39	\$0.89	\$0.22	\$2.51	\$0.74	\$1.19	\$0.65	\$0.11	\$2.69	\$5.20
4WD-ATV	\$0.58	\$0.33	\$0.05	\$0.96	\$0.15	\$4.40	\$0.64	\$0.11	\$5.31	\$6.27
2-Ton Truck	\$2.00	\$1.13	\$1.52	\$4.65	\$2.00	\$2.40	\$0.73	\$0.13	\$5.26	\$9.90
Tandem Axle Truck	\$3.25	\$1.78	\$2.40	\$7.43	\$2.00	\$2.40	\$0.73	\$0.13	\$5.26	\$12.69
3/4-Ton Pickup	\$2.14	\$1.69	\$1.53	\$5.36	\$0.75	\$0.00	\$4.04	\$0.71	\$5.50	\$10.86
3/4-Ton Pickup	\$1.64	\$0.69	\$0.63	\$2.96	\$0.75	\$0.00	\$1.35	\$0.24	\$2.34	\$5.30
Total	\$26.74	\$16.97	\$9.07	\$52.79	\$15.73	\$18.78	\$16.09	\$2.84	\$53.44	\$106.22

Item	· · · · · · · · · · · · · · · · · · ·		Price or Cost	Value or Cost/Acre
Gross Returns	1 01 7010	Offic		003(/1010
Potatoes	33.50	tons	\$125.60	\$4,207.60
		- 10.10		, ,,,,
Variable Costs				
Seed:				\$358.50
Potato	23	cwt	\$15.00	\$345.00
Winter Wheat Cover Crop	90	lb	\$0.15	\$13.50
Fertilizer:			•	\$226.78
Nitrogen (dry) Phosphorous (dry)	89 30	lb lb	\$0.52 \$0.65	\$46.28 \$19.50
Potash (dry)	10	lb	\$0.81	\$8.10
Sulfur (dry)	30	lb	\$0.44	\$13.20
Boron (dry)	10	lb	\$3.57	\$35.70
Nitrogen (liquid)	200	lb	\$0.52	\$104.00
Pesticides:				\$105.10
Custom & Consultants:				\$132.50
Other:				\$422.22
Crop insurance	1	acre	\$36.00	\$36.00
Overhead	1	acre	\$31.61	\$31.61
Final	04.04		фо о г	Ф.4. 7. 70.
Fuel Lubricants	21.24 1	gal acre	\$2.25 \$7.87	\$47.78 \$7.87
Machinery Repairs	1	acre	\$32.41	\$32.41
Storage Facility & Equip. Repairs				\$0.00
Machinery Labor	2.47	acre	\$20.00	\$49.32
Irrigation Labor Irrigation Water	1	hour acre	\$20.00 43.00	\$20.00 \$43.00
Irrigation Power	1	acre	55.00	\$55.00
Irrigation Repair	1	acre	14.00	\$14.00
Tanada a dia a				Ф00.40.
Transloading Fees & Assessments				\$33.49 \$51.75
. 555 & 7,655551116116				ψ01.70
Operating Interest				\$37.00
Total Variable Costs				\$1,282.10
Variable Costs per Unit				\$38.27
Net Returns Above Variable Cost	s			\$2,925.50

Item	Quantity Per Acre	Unit	Price or Cost	Value or Cost/Acre
Fixed Costs: Machinery depreciation Machinery interest Machinery insurance, taxes housing	ą, licence			\$59.66 \$40.63 \$13.27
Land Rent	1	acre	\$400.00	\$400.00
Total Fixed Costs Fixed Costs per Unit				\$513.56 \$15.33
Total Costs per Acre Total Cost per Unit				\$1,795.67 \$53.60
Returns to Risk				\$2,411.93

Notes:

Breakeven Analysis:	_	Base	+
Dieakevell Allalysis.	10%	Dase	10%
		Yield	
<u>Price</u>	30.15	33.5	35.175
Operating Cost Breakeven	\$42.52	\$38.27	\$36.45
Ownership Cost Breakeven	\$17.03	\$15.33	\$14.60
Total Cost Breakeven	\$59.56	\$53.60	\$51.05
		Price	
<u>Yield</u>	\$113.04	\$125.60	\$138.16
Operating Cost Breakeven	11.3	10.2	9.3
Ownership Cost Breakeven	4.5	4.1	3.7
Total Cost Breakeven	15.9	14.3	13.0

Machine Costs for Potatoes, Paterson Trials, Conventional Tillage

Type of			Taxes Housing Insurance	Total Fixed					Total Variable	Total
Machine	Depreciation \$	Interest \$	Licenses \$	Costs \$	Repairs \$	Labor \$	Fuel \$	Lubric.	Costs \$	Costs \$
Valmar Applicator, 150HP-WT	\$0.48	\$0.36	\$0.06	\$0.90	\$0.21	\$1.01	\$0.56	\$0.10	\$1.88	\$2.77
17' Sunflower Chisel Chopper, 200HP-WT	\$2.85	\$1.90	\$0.25	\$5.00	\$1.47	\$2.28	\$2.29	\$0.40	\$6.44	\$11.44
17' Sunflower Chisel Chopper, 200HP-WT	\$2.85	\$1.90	\$0.25	\$5.00	\$1.47	\$2.28	\$2.29	\$0.40	\$6.44	\$11.44
6-row Bed Splitter, 200HP-WT	\$2.72	\$1.65	\$0.25	\$4.62	\$1.22	\$2.70	\$2.69	\$0.48	\$7.09	\$11.72
6-row Rodweeder	\$3.11	\$2.42	\$0.34	\$5.87	\$1.91	\$5.00	\$2.75	\$0.48	\$10.14	\$16.01
6-row Potato Planter, 200HP-WT	\$7.66	\$5.52	\$1.67	\$14.85	\$6.88	\$4.23	\$4.23	\$0.75	\$16.09	\$30.92
6-row Dammer-Diker	\$4.09	\$2.77	\$0.35	\$7.21	\$1.79	\$2.97	\$2.97	\$0.52	\$8.25	\$15.44
3-row Potato Harvester	\$23.88	\$16.87	\$3.52	\$44.27	\$10.30	\$17.29	\$21.21	\$3.18	\$51.98	\$96.25
24' Double-Disc Drill, 200HP-WT	\$2.41	\$1.62	\$0.45	\$4.48	\$1.51	\$2.36	\$1.30	\$0.23	\$5.40	\$9.86
4WD-ATV	\$0.58	\$0.33	\$0.05	\$0.96	\$0.15	\$4.40	\$0.64	\$0.11	\$5.31	\$6.27
2-Ton Truck	\$2.00	\$1.13	\$1.52	\$4.65	\$2.00	\$2.40	\$0.73	\$0.13	\$5.26	\$9.90
Tandem Axle Truck	\$3.25	\$1.78	\$2.40	\$7.43	\$2.00	\$2.40	\$0.73	\$0.13	\$5.26	\$12.69
3/4-Ton Pickup	\$2.14	\$1.69	\$1.53	\$5.36	\$0.75	\$0.00	\$4.04	\$0.71	\$5.50	\$10.86
3/4-Ton Pickup	\$1.64	\$0.69	\$0.63	\$2.96	\$0.75	\$0.00	\$1.35	\$0.24	\$2.34	\$5.30
Total	\$59.66	\$40.63	\$13.27	\$113.56	\$32.41	\$49.32	\$47.78	\$7.87	\$137.38	\$250.87

These operations are not done in the reduced tillage system.

Machinery Complement for Potatoes and Corn Production, Paterson Trials, Conventional Tillage

machinery complement				,		Annual		Taxes,		
				Annual		Repairs	Gallons	Housing,		
Type of	Replacement	Age When	Years of	Hours	Salvage	(Materials	of	Insur.,	Labor	Acres
Machine	Value	Purchased	Life	of Use	Value	& Labor)	Fuel/Hr.	Licenses	Multiplier	per Hour
	\$				\$	\$		%		
Tractors, ATVs:	_									
4WD-ATV	7,320	0	10	200	1,500	150	1.2	1.20	1.1	
150HP-WT	100,000	5	15	500	15,000	2,500	6	1.20	1.1	
200HP-WT	125,000	5	10	500	30,000	3,300	10	1.20	1.1	
Equipment:										
24' Double-Disc Drill	22,000	3	15	120	3,000	1,250	6	6.00	1.2	10.18
17' Chisel	12,000	0	15	150	2,000	700	12	0.60	1.1	8.76
18' Tandem disc/harrow	22,000	0	15	150	2,000	1,000	6	0.60	1.1	10.47
18' Packer	8,000	0	15	100	800	150	6	0.60	1.1	11.13
17' Sunflower Chisel Chopper	30,500	0	15	200	5000	1500	10	0.60	1.1	9.63
6-row Dammer-Diker	30,500	0	15	150	5,000	1000	10	0.60	1.1	7.42
6-row Bed Splitter	6,000	0	15	120	1200	500	10	0.60	1.1	8.15
6-row Rodweeder	8,000	0	15	120	1500	500	10	0.60	1.1	4.8
6-row Potato Planter	46,000	0	15	200	8500	3500	12	3.00	1.2	5.2
3-row Potato Harvester	86,620	0	15	125	18,300	2,600	12	2.00	1.2	1.27
20' Stubble Shredder	21,000	0	10	100	4000	1000	10	2.50	1.1	13.58
12-row Min-Til Corn Planter	110,000	0	15	120	5000	10000	12	3.00	1.2	7.8
JD 7720 25' Combine	20000	15	15	250	2500	3000	7	2.60	1.1	6.36
Trucks:				Miles/year:			MPG:			
2-Ton Truck	25,000	10	10	2000	5,000	2,000	6	2.60	1.2	
Tandem Axle Truck	40,000	10	10	2000	7,500	2,000	6	10.10	1.2	
3/4-Ton Pickup	15,000	7	7	6000	3,500	750	12	6.80	1.2	
3/4-Ton Pickup	30,000	0	7	18000	15,000	750	12	6.80	1.2	

Machinery Costs (\$/acre) for Potatoes and Corn Production, Paterson Trials, Conventional Tillage

Washinery Gosts (Washe)	,		Taxes					<u>_</u>		
			Housing	Total					Total	
Type of			Insurance	Fixed					Variable	Total
Machine	Depreciation	Interest	Licenses	Costs	Repairs	Labor	Fuel	Lubric.	Costs	Costs
	\$	\$	\$	\$	\$	\$	\$		\$	\$
150HP-WT with:										
6-row Rodweeder	\$3.11	\$2.42	\$0.34	\$5.87	\$1.91	\$5.00	\$2.75	\$0.48	\$10.14	\$16.01
Rented 70' Sprayer	\$0.32	\$0.24	\$0.04	\$0.60	\$0.14	\$0.67	\$0.38	\$0.06	\$1.25	\$1.84
Valmar Applicator	\$0.48	\$0.36	\$0.06	\$0.90	\$0.21	\$1.01	\$0.56	\$0.10	\$1.88	\$2.77
200HP-WT with:										
24' Double-Disc Drill	\$2.41	\$1.62	\$0.45	\$4.48	\$1.51	\$2.36	\$1.30	\$0.23	\$5.40	\$9.86
17' Sunflower Chisel Chopper	\$2.85	\$1.90	\$0.25	\$5.00	\$1.47	\$2.28	\$2.29	\$0.40	\$6.44	\$11.44
6-row Dammer-Diker	\$4.09	\$2.77	\$0.35	\$7.21	\$1.79	\$2.97	\$2.97	\$0.52	\$8.25	\$15.44
6-row Bed Splitter	\$2.72	\$1.65	\$0.25	\$4.62	\$1.22	\$2.70	\$2.69	\$0.48	\$7.09	\$11.72
6-row Potato Planter	\$7.66	\$5.52	\$1.67	\$14.85	\$6.88	\$4.23	\$4.23	\$0.75	\$16.09	\$30.92
3-row Potato Harvester	\$23.88	\$16.87	\$3.52	\$44.27	\$10.30	\$17.29	\$21.21	\$3.18	\$51.98	\$96.25
20' Stubble Shredder	\$2.08	\$1.33	\$0.33	\$3.74	\$1.11	\$1.77	\$0.97	\$0.17	\$4.02	\$7.76
12-row Corn Planter	\$9.56	\$6.30	\$2.16	\$18.02	\$6.19	\$2.82	\$2.81	\$0.50	\$12.32	\$30.35
Vehicles:										
JD 7720 25' Combine	0.73	0.55	18.00	1.45	1.89	3.46	2.48	0.37	8.19	9.64
4WD-ATV	0.58	0.33	0.05	0.96	0.15	4.40	0.64	0.11	5.31	6.27
2-Ton Truck	\$2.00	\$1.13	\$1.52	\$4.65	\$2.00	\$2.40	\$0.73	\$0.13	\$5.26	\$9.90
Tandem Axle Truck	\$3.25	\$1.78	\$2.40	\$7.43	\$2.00	\$2.40	\$0.73	\$0.13	\$5.26	\$12.69
3/4-Ton Pickup	\$2.14	\$1.69	\$1.53	\$5.36	\$0.75	\$0.00	\$4.04	\$0.71	\$5.50	\$10.86
3/4-Ton Pickup	\$1.64	\$0.69	\$0.63	\$2.96	\$0.75	\$0.00	\$1.35	\$0.24	\$2.34	\$5.30