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	<p>2003 Enterprise Budgets for Spring Barley, Spring Wheat and Winter Wheat Using Direct Seeding Tillage Practices, Lincoln County, Washington</p>	
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PREFACE

Enterprise costs and returns vary from one location to the next and over time for any particular farming operation. Variability stems from differences in the following:

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

Costs can also be calculated differently depending on the intended use of the cost estimate. The information in this publication provides cost of production estimates for wheat and barley producers in Lincoln County, Washington. To avoid drawing unwarranted conclusions for any particular farm or group of farms, the reader must closely examine the assumptions used. If they are not appropriate for the situation under consideration, adjustments in the costs and/or returns should be made.

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**2003 Enterprise Budgets for Spring Barley, Spring
Wheat and Winter Wheat Using Direct Seeding Tillage Practices
Lincoln County, Washington**

Aaron Esser, Herbert Hinman and Tom Platt¹

INTRODUCTION

This publication presents projected costs and returns for spring barley, spring wheat and winter wheat grown under a three-year rotation using direct seeding tillage practices in Lincoln County, Washington. There are representative budgets for both the 12"-14" rainfall area and for the 14"-16" rainfall area of the county. These budgets do not represent a particular farm. Instead, they represent costs and returns anticipated under the specific assumptions adopted for the study. We recommend that individual growers use these budgets as a guide for developing budgets for their own farming operations.²

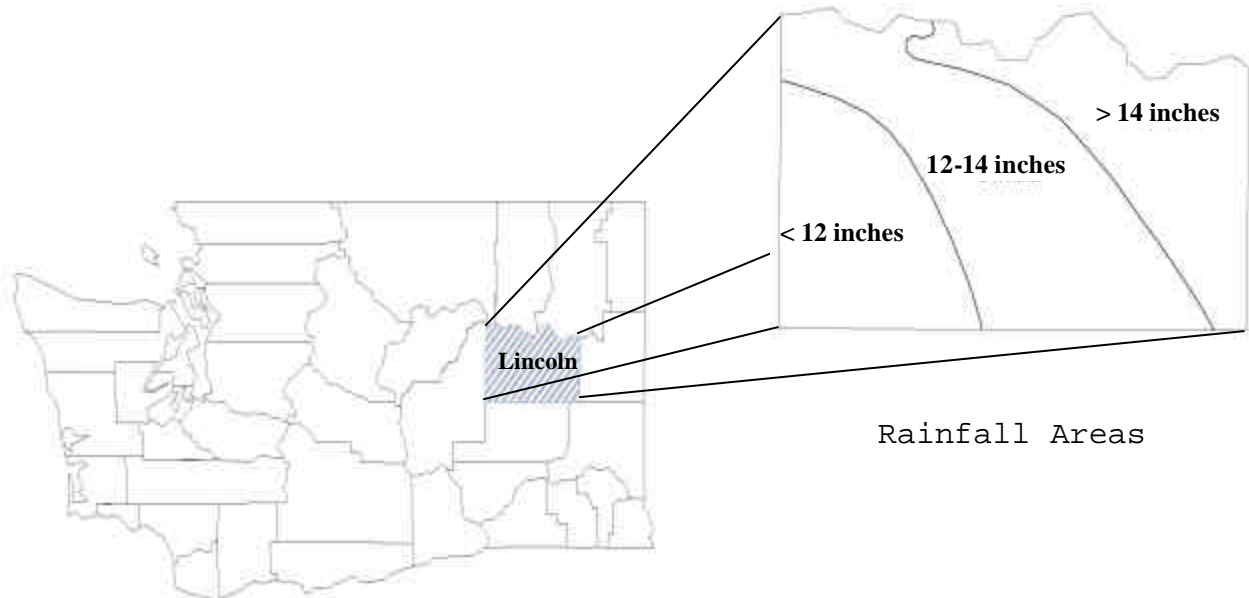


Figure 1. Lincoln County, Washington

¹ Aaron Esser is an area extension agent located in Ritzville, Washington; Herbert Hinman is a farm management specialist located in Pullman, Washington; Tom Platt is an area extension agent located in Davenport, Washington.

² In order to get a better understanding of how to read and use crop budgets distributed by Washington State University, we recommend that you go to the WSU Farm Management Web site at <http://www.farm-mgmt.wsu.edu/> and click on "Publication Links," click on "Unpublished" and then click on and download the manuscript "Understanding and Using WSU Crop Enterprise Budgets."

SOURCES OF INFORMATION

A committee of experienced Lincoln County grain producers was assembled at the request of the area extension agents. This committee identified the machinery complement, field operations, and inputs commonly used on well-managed operations. Local agricultural supply companies were contacted to obtain current price information on materials and services.

BUDGET ASSUMPTIONS

The committee assumed the following in developing the budgets:

1. The representative farm includes 2,000 acres with 666 acres each in spring barley, spring wheat and winter wheat.
2. Since yield variability is quite common in Lincoln County, yields were varied for each enterprise to demonstrate the substantial impact yields can have on per unit costs.
3. Prices received for the budgeted crops, net of marketing costs, are \$3.75 per bushel for both spring and winter wheat, and \$100 per ton for barley.
4. Machinery values and costs vary widely from farm to farm in Lincoln County. When replacing machinery, many producers replace with used equipment. Thus, the machinery complement used in constructing these budgets is a representation of what a machinery complement might look like on a typical Lincoln County farm.
5. The interest rate is 8.5%.
6. The farm is owned, managed and operated by the same person.

The budgets should be viewed as “typical” or “representative,” rather than a mathematical average of a large number of producers. Where such factors as farm size, machinery complement and hourly use, cultural practices and yield differ from those assumed in this publication, substantially different enterprise costs and returns may result. Also, this budget includes only production costs and does not consider storage, handling, transportation and interest costs associated with marketing the crop.

DISCUSSION OF BUDGET INFORMATION

Summaries of the cost and return estimates per acre for spring barley, spring wheat and winter wheat in the 12”-14” rainfall area of Lincoln County are presented in Tables 1, 2 and 3, respectively. For each crop, costs and returns at four different yield levels are presented.

Table 1. Summary of Cost and Return Estimates per Acre for Spring Barley following Winter Wheat or Spring Barley under a Direct Seed Rotation, 12"-14" Rainfall Area.

Production Level (Tons)	1.00	1.25	1.50	1.75
Expected Price (\$/Ton)	100.00	100.00	100.00	100.00
Variable Cost	95.62	96.40	97.18	97.96
Fixed Cost (excl. land cost)	25.37	25.37	25.37	25.37
Total Cost (excl. land cost)	120.99	121.77	122.55	123.33
Returns minus Costs	-20.99	3.23	27.45	51.67
Land Cost	21.00	27.25	33.50	39.75
Total Cost (incl. land cost)	141.99	149.02	156.05	163.08
Returns minus Costs	-41.99	-24.02	-6.05	11.92
Break-Even Price (\$/Ton)	155.99	125.62	105.38	90.92

Table 2. Summary of Cost and Return Estimates per Acre for Spring Wheat following Spring Barley under a Direct Seed Rotation, 12"-14" Rainfall Area.

Production Level (Bushels)	35.00	40.00	45.00	50.00
Expected Price (\$/Bushel)	3.75	3.75	3.75	3.75
Variable Cost	96.35	96.72	97.10	97.47
Fixed Cost (excl. land cost)	25.37	25.37	25.37	25.37
Total Cost (excl. land cost)	121.72	122.09	122.47	122.84
Returns minus Costs	9.54	27.91	46.29	64.66
Land Cost	28.81	33.50	38.19	42.88
Total Cost (incl. land cost)	150.53	155.59	160.65	165.72
Returns minus Costs	-19.28	-5.59	8.10	21.79
Break-Even Price (\$/Bushel)	4.48	3.94	3.51	3.17

Table 3. Summary of Cost and Return Estimates per Acre for Winter Wheat following Spring Wheat under a Direct Seed Rotation, 12"-14" Rainfall Area.

Production Level (Bushels)	35.00	40.00	45.00	50.00
Expected Price (\$/Bushel)	3.75	3.75	3.75	3.75
Variable Cost	93.16	93.53	93.91	94.28
Fixed Cost (excl. land cost)	23.44	23.44	23.44	23.44
Total Cost (excl. land cost)	116.60	116.97	117.35	117.72
Returns minus Costs	14.66	33.03	51.41	69.78
Land Cost	28.81	33.50	38.19	42.88
Total Cost (incl. land cost)	145.41	150.47	155.53	160.60
Returns minus Costs	-14.16	-0.47	13.22	26.91
Break-Even Price (\$/Bushel)	4.29	3.72	3.36	3.03

Table 4. Summary of Cost and Return Estimates per Acre for Spring Barley following Winter Wheat or Spring Barley under a Direct Seed Rotation, 14"-16" Rainfall Area.

Production Level (Tons)	1.00	1.25	1.50	1.75
Expected Price (\$/Ton)	100.00	100.00	100.00	100.00
Variable Cost	96.89	97.67	98.45	99.23
Fixed Cost (excl. land cost)	25.80	25.80	25.80	25.80
Total Cost (excl. land cost)	122.69	123.47	124.25	125.03
Returns minus Costs	-22.69	1.53	25.75	49.97
Land Cost	21.00	27.25	33.50	39.75
Total Cost (incl. land cost)	143.69	150.72	157.75	164.78
Returns minus Costs	-43.69	-25.72	-7.75	10.22
Break-Even Price (\$/Ton)	158.25	127.43	106.89	92.21

Table 5. Summary of Cost and Return Estimates per Acre for Spring Wheat following Spring Barley under a Direct Seed Rotation, 14"-16" Rainfall Area.

Production Level (Bushels)	40.00	45.00	50.00	55.00
Expected Price (\$/Bushel)	3.75	3.75	3.75	3.75
Variable Cost	97.88	98.26	98.63	99.01
Fixed Cost (excl. land cost)	25.81	25.81	25.81	25.81
Total Cost (excl. land cost)	123.69	124.07	124.44	124.82
Returns minus Costs	26.31	44.69	63.06	81.44
Land Cost	33.50	38.19	42.88	47.56
Total Cost (incl. land cost)	157.19	162.25	167.32	172.38
Returns minus Costs	-7.19	6.50	20.19	33.87
Break-Even Price (\$/Bushel)	3.99	3.56	3.21	2.93

Table 6. Summary of Cost and Return Estimates per Acre for Winter Wheat following Spring Wheat under a Direct Seed Rotation, 14"-16" Rainfall Area.

Production Level (Bushels)	45.00	50.00	55.00	60.00
Expected Price (\$/Bushel)	3.35	3.03	3.75	3.75
Variable Cost	94.22	94.59	94.97	95.34
Fixed Cost (excl. land cost)	22.92	22.92	22.92	22.92
Total Cost (excl. land cost)	117.14	117.51	117.89	118.26
Returns minus Costs	33.62	33.99	88.37	106.74
Land Cost	33.69	33.88	47.56	52.25
Total Cost (incl. land cost)	150.82	151.39	165.45	170.51
Returns minus Costs	-0.07	0.11	40.80	54.49
Break-Even Price (\$/Bushel)	3.35	3.03	2.76	2.54

Receipts are broken down as to production levels and assumed price received. Costs are broken down as to variable and fixed cost (excluding land cost), total cost (excluding land cost), land cost and total cost (including land cost). The reason costs are broken down in this manner is to show that cost of production for similar production systems vary little, regardless of production level, when land costs are not taken into consideration. Land costs, included either as real or as opportunity costs, are based on the share rental arrangement typical in the area. In this study, net land rental cost was calculated as:

$$1/4 \text{ Crop Value} - \text{Land Taxes.}$$

The operator pays all other costs of production.

Since the net land rental value is based on production level, land costs vary directly with production level that in turn directly affects the total cost value. For example, for each respective enterprise in Tables 1, 2 and 3, total costs (excluding land cost) are about the same regardless of production level. However, when land costs are included, significant differences in total cost emerge. Thus, by breaking out land costs and showing results with and without land costs one gains a better comparison as to the cost differences. The complete details of schedule of operations, input costs and the machinery complement used for crops direct seeded in the 12"-14" rainfall area are presented in Appendix I. An explanation of how to interpret the tables presented in the appendixes is presented in the next section "Detailed Results."

Summaries of the cost and return estimates per acre for spring barley, spring wheat and winter wheat in the 14"-16" rainfall area of Lincoln County are presented in Tables 4, 5 and 6, respectively. As in the 12"-14" rainfall area, for each crop, costs and returns at four different yield levels are presented. The complete details of schedule of operations, input costs and the machinery complement used for crops direct seeded in the 14"-16" rainfall area are presented in Appendix II.

DETAILED RESULTS

The detailed budgets for each enterprise produced in each rainfall area are presented in the appendixes. Those for the 12"-14" rainfall area are presented in Appendix I and those for the 14"-16" rainfall area are presented in Appendix II.

For each enterprise analyzed there are two tables that outline the cost and returns for producing the crop. The first table, "**Schedule of Operations and Estimated Costs per Acre for . . .**," outlines the schedule of field operations by calendar month, the type of machinery used

and the hours used per acre for wheat or barley being produced. The costs are divided into two categories: machinery and land fixed costs and variable costs associated with operating machinery, labor and purchasing services and materials. Whenever services and/or materials are purchased, details are footnoted at the bottom of the table. Total cost is the sum of fixed and variable cost.

Machinery fixed cost includes depreciation, interest on the investment, property taxes, insurance and housing. For the overall farm operation, these costs do not vary with the crops produced and are incurred whether or not crops are grown. Machinery fixed costs for a specific field operation are determined by multiplying the machine hours per acre times the per hour fixed cost (Appendix I, Table 14; Appendix II, Table 22). The hourly fixed costs are determined by dividing the total fixed cost by the annual hours of machinery use for the representative farm.

Land fixed costs include taxes and net rent which are based on a one-fourth land owner and three-fourth tenant crop share with the land owner paying the land taxes and the tenant paying all production costs. While the owner-operator will not actually experience a land rental cost, the cost represents a fair market return for land ownership. In addition to “net rent return,” an owner-operator also accrues long-term land appreciation that occurs whether or not the owner rents land to a tenant farmer or operates the farm him or herself. To determine the profitability of crop production relative to other business activities, the owner-operator may want to consider land costs along with the usual production expenses.

Variable costs vary directly with the crop grown and the number of acres produced. Variable costs include fuel, oil, repairs, fertilizer, chemicals, custom work, overhead and interest on operating capital. Labor, including that provided by the owner-operator, is also included as a variable cost.

The second table, “**Itemized Cost per Acre for . . .**,” itemizes the costs appearing in the “**Schedule of Operations and Estimated Cost per Acre for . . .**” the respective crop enterprise. Most of the items are self-explanatory or have been explained previously. The entry “Machinery Interest” does, however, warrant some additional explanation. Machinery interest costs are calculated on the average annual investment in the machine. The formula used to calculate the average machine investment is:

$$\frac{\text{Purchase cost} + \text{Salvage value}}{2}$$

The 8.5% interest charge made against this average investment represents an opportunity cost (returns foregone by investing in a given machine implement rather than in an alternative investment) or interest paid on money borrowed to finance machine purchases, or both. Machinery interest cost for one acre of the crop enterprise being analyzed is determined by multiplying the respective machine hours per acre times the per hour interest costs shown in the respective appendix table (Appendix I, Table 14; Appendix II, Table 22).

APPENDIX I

2003 COST OF PRODUCING WHEAT AND BARLEY

UNDER A DIRECT SEEDING TILLAGE SYSTEM

LINCOLN COUNTY, WASHINGTON

12" – 14" RAINFALL AREA

TABLE 7. SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR **SPRING BARLEY** FOLLOWING WINTER WHEAT OR SPRING BARLEY UNDER A DIRECT SEED ROTATION, LINCOLN COUNTY (WILBUR AREA), 12"-14" RAINFALL AREA.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	VARIABLE COST						TOTAL VARIABLE COST	TOTAL COST
						TOTAL FIXED COST	FUEL, LUBE & REPAIRS	MACH LABOR	SERVICE	MATER.	INTER.		
						\$	\$	\$	\$	\$	\$	\$	\$
HARROW	280HP-RBTK W/84' 10-BAR HAR	FALL	2002	.02	.02	1.37	.37	.30	.00	.00	.05	.73	2.10
HAUL WATER	2-TON TRUCK W/SLIP TANK	APR	2003	.01	.02	.15	.15	.33	.00	.00	.02	.49	.64
SPRAY[1]	280HP-RBTK W/80' SPRAYER	APR	2003	.02	.02	.82	.25	.40	1.00	4.65	.22	6.52	7.34
HAUL SEED	2-TON TRUCK	APR	2003	.03	.03	.33	.43	.54	.00	.00	.03	1.01	1.33
SEED/FERT[2]	280HP-RBTK W/36'-10" HOE DRILL	APR	2003	.05	.06	5.86	4.04	.99	.00	33.90	1.38	40.31	46.17
CROP INSURANCE	FIRE AND HAIL	MAY	2003	.00	.00	.00	.00	.00	2.50	.00	.07	2.57	2.57
HAUL WATER	2-TON TRUCK W/SLIP TANK	JUN	2003	.01	.02	.15	.15	.33	.00	.00	.01	.49	.63
SPRAY[3]	280HP-RBTK W/80' SPRAYER	JUN	2003	.02	.02	.82	.25	.40	1.00	19.16	.44	21.25	22.07
HARVEST (25%)	25' ROTARY LEVEL LAND COMBINE	AUG	2003	.02	.02	1.39	.53	.36	.00	.00	.01	.89	2.28
HARVEST (75%)	25' ROTARY HILL-SIDE COMBINE	AUG	2003	.05	.07	6.92	1.94	1.07	.00	.00	.02	3.03	9.95
HAUL BARLEY[4]	7.5 CENTS/BU.	AUG	2003	.00	.00	.00	.00	.00	3.90	.00	.03	3.93	3.93
MISC USE	3/4-TON PICKUP	ANN	2003	.20	.22	1.31	1.79	3.63	.00	.00	.23	5.65	6.95
MISC USE	50HP-WT W/BUCKET	ANN	2003	.05	.06	.84	.36	.91	.00	.00	.05	1.32	2.16
MISC USE	TRUCKS	ANN	2003	.04	.04	.43	.57	.73	.00	.00	.06	1.35	1.79
MISC USE	4WD-ATV	ANN	2003	.04	.04	.27	.10	.73	.00	.00	.03	.86	1.12
MISC USE	TRAP WAGON	ANN	2003	.05	.05	.73	.53	.83	.00	.00	.06	1.41	2.14
OVERHEAD	UTILITIES, LEGAL, ACCT, ETC.	ANN	2003	.00	.00	.00	.00	.00	4.59	.00	.00	4.59	4.59
TAXES	LAND TAXES	ANN	2003	.00	.00	4.00	.00	.00	.00	.00	.00	.00	4.00
LAND COST	NET LAND RENT	ANN	2003	.00	.00	27.25	.00	.00	.00	.00	.00	.00	27.25
TOTAL PER ACRE				.60	.70	52.62	11.45	11.53	12.99	57.71	2.72	96.40	149.02

[1]SPRAYER COST @ \$1.00/ACRE. 16 OUNCES OF GLYPHOSPHATE @ 22¢/OZ., 6.4 OZS. SURFACTANT @ 14.5¢/OZ. AND 1.7 LBS. AMMONIA SULFATE @ 12¢/LB.
 [2]70 LBS. OF BARLEY SEED @ 13¢/LB., 72 LBS. OF 16-20-0-14 @ 15¢/LB., 50 LBS. NITROGEN 28¢/LB.
 [3]SPRAYER COST @ \$1.00/ACRE. 1 PINT MCPA @ \$2.26/PINT AND .52 LB. ACHIEVE @ \$32.50/LB.
 [4]52 BUSHEL (1.25 TONS) @ 7.5¢/BU.

NOTE: RBTK = RUBBER TRACK

TABLE 8. ITEMIZED COST PER ACRE FOR **SPRING BARLEY** FOLLOWING WINTER WHEAT OR SPRING BARLEY UNDER A DIRECT SEED ROTATION, LINCOLN COUNTY (WILBUR AREA), 12"-14" RAINFALL AREA.

		PRICE OR		VALUE OR	YOUR
		UNIT COST/UNIT	QUANTITY	COST	FARM

VARIABLE COSTS		\$		\$	
80' SPRAYER	ACRE	1.00	2.00	2.00	_____
GLYPHOSPATE	OZ.	.22	16.00	3.52	_____
SURFACTANT	OZ.	.14	6.40	.93	_____
AMMONIA SULFATE	LB.	.12	1.70	.20	_____
BARLEY SEED	LB.	.13	70.00	9.10	_____
16-20-0-14	LB.	.15	72.00	10.80	_____
NITROGEN	LB.	.28	50.00	14.00	_____
MCPA	PINT	2.26	1.00	2.26	_____
ACHIEVE	LB.	32.50	.52	16.90	_____
CROP INSURANCE	ACRE	2.50	1.00	2.50	_____
HAUL GRAIN	BU.	.075	52.00	3.90	_____
MACHINERY REPAIRS	ACRE	6.99	1.00	6.99	_____
MACHINE FUEL/LUBE	ACRE	4.46	1.00	4.46	_____
LABOR (TRAC/MACH)	HOUR	16.50	.70	11.53	_____
OVERHEAD	ACRE	4.59	1.00	4.59	_____
INTEREST ON OP. CAP.	ACRE	2.72	1.00	2.72	_____

TOTAL VARIABLE COST				96.40	_____
FIXED COSTS		\$		\$	
MACHINE DEPRECIATION	ACRE	10.59	1.00	10.59	_____
MACHINE INTEREST	ACRE	7.70	1.00	7.70	_____
MACHINE INSURANCE	ACRE	.55	1.00	.55	_____
MACHINE TAXES	ACRE	1.63	1.00	1.63	_____
MACHINE HOUSING	ACRE	.91	1.00	.91	_____
LAND TAXES	ACRE	4.00	1.00	4.00	_____
NET LAND RENT[1]	ACRE	27.25	1.00	27.25	_____

TOTAL FIXED COST				52.62	_____
TOTAL COST				149.02	_____

[1] 1/4 CROP VALUE - LAND TAXES

GROSS RETURNS = 1.25 TONS X \$100

BREAK-EVEN PRICE = \$125.62/TON

TABLE 9. SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR **SPRING WHEAT** FOLLOWING SPRING BARLEY UNDER A DIRECT SEED ROTATION, LINCOLN COUNTY (WILBUR AREA), 12"-14" RAINFALL AREA.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	VARIABLE COST						TOTAL VARIABLE COST	TOTAL COST
						TOTAL FIXED COST	FUEL, LUBE & REPAIRS	MACH LABOR	SERVICE	MATER.	INTER.		
						\$	\$	\$	\$	\$	\$	\$	\$
HARROW	280HP-RBTK W/84' 10-BAR HAR	FALL	2002	.02	.02	1.37	.37	.30	.00	.00	.05	.73	2.10
HAUL WATER	2-TON TRUCK W/SLIP TANK	APR	2003	.01	.02	.15	.15	.33	.00	.00	.02	.49	.64
SPRAY[1]	280HP-RBTK W/80' SPRAYER	APR	2003	.02	.02	.82	.25	.40	1.00	4.65	.22	6.52	7.34
HAUL SEED	2-TON TRUCK	APR	2003	.03	.03	.33	.43	.54	.00	.00	.03	1.01	1.33
SEED/FERT[2]	280HP-CHAL W/36'-10" HOE DRILL	APR	2003	.05	.06	5.86	4.04	.99	.00	32.30	1.32	38.65	44.51
CROP INSURANCE	FIRE AND HAIL	MAY	2003	.00	.00	.00	.00	.00	2.50	.00	.07	2.57	2.57
HAUL WATER	2-TON TRUCK W/SLIP TANK	JUN	2003	.01	.02	.15	.15	.33	.00	.00	.01	.49	.63
SPRAY[3]	280HP-RBTK W/80' SPRAYER	JUN	2003	.02	.02	.82	.25	.40	1.00	21.96	.50	24.11	24.93
HARVEST (25%)	25' ROTARY LEVEL LAND COMBINE	AUG	2003	.02	.02	1.39	.53	.36	.00	.00	.01	.89	2.28
HARVEST (75%)	25' ROTARY HILL-SIDE COMBINE	AUG	2003	.05	.07	6.92	1.94	1.07	.00	.00	.02	3.03	9.95
HAUL WHEAT[4]	7.5 CENTS/BU.	AUG	2003	.00	.00	.00	.00	.00	3.38	.00	.02	3.40	3.40
MISC USE	3/4-TON PICKUP	ANN	2003	.20	.22	1.31	1.79	3.63	.00	.00	.23	5.65	6.95
MISC USE	50HP-WT W/BUCKET	ANN	2003	.05	.06	.84	.36	.91	.00	.00	.05	1.32	2.16
MISC USE	TRUCKS	ANN	2003	.04	.04	.43	.57	.73	.00	.00	.06	1.35	1.79
MISC USE	4WD-ATV	ANN	2003	.04	.04	.27	.10	.73	.00	.00	.03	.86	1.12
MISC USE	TRAP WAGON	ANN	2003	.05	.05	.73	.53	.83	.00	.00	.06	1.41	2.14
OVERHEAD	UTILITIES, LEGAL, ACCT, ETC.	ANN	2003	.00	.00	.00	.00	.00	4.62	.00	.00	4.62	4.62
TAXES	LAND TAXES	ANN	2003	.00	.00	4.00	.00	.00	.00	.00	.00	.00	4.00
LAND COST	NET LAND RENT	ANN	2003	.00	.00	38.19	.00	.00	.00	.00	.00	.00	38.19
TOTAL PER ACRE				.60	.70	63.56	11.45	11.53	12.50	58.91	2.71	97.10	160.66

[1]SPRAYER COST @ \$1.00/ACRE. 16 OUNCES OF GLYPHOSPHATE @ 22¢/OZ., 6.4 OZS. SURFACTANT @ 14.5¢/OZ. AND 1.7 LBS. AMMONIA SULFATE @ 12¢/LB.
 [2]60 LBS. OF WHEAT SEED @ 12.5¢/LB., 72 LBS. OF 16-20-0-14 @ 15¢/LB., 50 LBS. NITROGEN @ 28¢/LB.
 [3]SPRAYER COST @ 1.00/ACRE. .75 PINT OF MCPA @ \$2.26/PINT, 0.4 OUNCE OF HARMONY EXTRA @ \$13.20/OZ., 3.2 OUNCES OF DISCOVER @ \$4.68/OZ.
 [4]45 BUSHEL @ 7.5¢/BU.

NOTE: RBTK = RUBBER TRACK

TABLE 10. ITEMIZED COST PER ACRE FOR **SPRING WHEAT** FOLLOWING
 SPRING BARLEY UNDER A DIRECT SEED ROTATION, LINCOLN
 COUNTY (WILBUR AREA), 12"-14" RAINFALL AREA.

		PRICE OR		VALUE OR	YOUR
		UNIT COST/UNIT	QUANTITY	COST	FARM

VARIABLE COSTS		\$		\$	
80' SPRAYER	ACRE	1.00	2.00	2.00	_____
GLYPHOSPHATE	OZ.	.22	16.00	3.52	_____
SURFACTANT	OZ.	.14	6.40	.93	_____
AMMONIA SULFATE	LB.	.12	1.70	.20	_____
WHEAT SEED	LB.	.13	60.00	7.50	_____
16-20-0-14	LB.	.15	72.00	10.80	_____
NITROGEN	LB.	.28	50.00	14.00	_____
MCPA	PINT	2.26	.75	1.69	_____
HARMONY EXTRA	OZ.	13.22	.40	5.29	_____
DISCOVER	OZ.	4.68	3.20	14.98	_____
CROP INSURANCE	ACRE	2.50	1.00	2.50	_____
HAUL GRAIN	BU.	.075	45.00	3.38	_____
MACHINERY REPAIRS	ACRE	6.99	1.00	6.99	_____
MACHINE FUEL/LUBE	ACRE	4.46	1.00	4.46	_____
LABOR (TRAC/MACH)	HOUR	16.50	.70	11.53	_____
OVERHEAD	ACRE	4.62	1.00	4.62	_____
INTEREST ON OP. CAP.	ACRE	2.71	1.00	2.71	_____

TOTAL VARIABLE COST				97.10	_____
FIXED COSTS		\$		\$	
MACHINE DEPRECIATION	ACRE	10.59	1.00	10.59	_____
MACHINE INTEREST	ACRE	7.70	1.00	7.70	_____
MACHINE INSURANCE	ACRE	.55	1.00	.55	_____
MACHINE TAXES	ACRE	1.63	1.00	1.63	_____
MACHINE HOUSING	ACRE	.91	1.00	.91	_____
LAND TAXES	ACRE	4.00	1.00	4.00	_____
NET LAND RENT[1]	ACRE	38.19	1.00	38.19	_____

TOTAL FIXED COST				63.56	_____
TOTAL COST				160.66	_____

[1] 1/4 CROP VALUE - LAND TAXES

GROSS RETURNS = 45 BUSHEL X \$3.75/BU.

BREAK-EVEN PRICE = \$3.51/BU.

TABLE 11. SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR WINTER WHEAT FOLLOWING SPRING WHEAT UNDER A DIRECT SEED ROTATION, LINCOLN COUNTY (WILBUR AREA), 12"-14" RAINFALL AREA.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	VARIABLE COST						TOTAL VARIABLE COST	TOTAL COST
						TOTAL FIXED COST	FUEL, LUBE & REPAIRS	MACH LABOR	SERVICE	MATER.	INTER.		
						\$	\$	\$	\$	\$	\$	\$	\$
HARROW	280HP-RBTK W/84' 10-BAR HAR	FALL	2002	.02	.02	1.37	.37	.30	.00	.00	.05	.73	2.10
HAUL SEED	2-TON TRUCK	FALL	2002	.03	.03	.33	.43	.54	.00	.00	.08	1.05	1.37
SEED/FERT[1]	280HP-RBTK W/36'-10" HOE DRIL	FALL	2002	.05	.06	5.86	4.04	.99	.00	32.30	2.91	40.24	46.10
SPRAY[2]	AERIAL APPLICATION	MAY	2003	.00	.00	.00	.00	.00	4.25	21.96	.74	26.95	26.95
CROP INSURANCE	FIRE AND HAIL	MAY	2003	.00	.00	.00	.00	.00	2.50	.00	.07	2.57	2.57
HARVEST (25%)	25' ROTARY LEVEL LAND COMBINE	AUG	2003	.02	.02	1.39	.53	.36	.00	.00	.01	.89	2.28
HARVEST (75%)	25' ROTARY HILL-SIDE COMBINE	AUG	2003	.05	.07	6.92	1.94	1.07	.00	.00	.02	3.03	9.95
HAUL WHEAT[3]	7.5 CENTS/BU.	AUG	2003	.00	.00	.00	.00	.00	3.38	.00	.02	3.40	3.40
MISC USE	3/4-TON PICKUP	ANN	2003	.20	.22	1.31	1.79	3.63	.00	.00	.23	5.65	6.95
MISC USE	50HP-WT W/BUCKET	ANN	2003	.05	.06	.84	.36	.91	.00	.00	.05	1.32	2.16
MISC USE	TRUCKS	ANN	2003	.04	.04	.43	.57	.73	.00	.00	.06	1.35	1.79
MISC USE	4WD-ATV	ANN	2003	.04	.04	.27	.10	.73	.00	.00	.03	.86	1.12
MISC USE	TRAP WAGON	ANN	2003	.05	.05	.73	.53	.83	.00	.00	.06	1.41	2.14
OVERHEAD	UTILITIES, LEGAL, ACCT, ETC.	ANN	2003	.00	.00	.00	.00	.00	4.47	.00	.00	4.47	4.47
TAXES	LAND TAXES	ANN	2003	.00	.00	4.00	.00	.00	.00	.00	.00	.00	4.00
LAND COST	NET LAND RENT	ANN	2003	.00	.00	38.19	.00	.00	.00	.00	.00	.00	38.19
TOTAL PER ACRE				.54	.61	61.63	10.64	10.08	14.60	54.26	4.33	93.91	155.54

[1] 60 LBS. OF WHEAT SEED @ 12.5¢/LB., 72 LBS. OF 16-20-0-14 @ 15¢/LB., 50 LBS. NITROGEN @ 28¢/LB.

[2] CUSTOM AERIAL @ \$4.25/ACRE. .75 PINT OF MCPA @ \$2.26/PINT, 0.4 OUNCE OF HARMONY EXTRA @ \$13.20/OZ., 3.2 OUNCES OF DISCOVER @ \$4.68/OZ.

[3] 45 BUSHEL @ 7.5¢/BU.

NOTE: RBTK = RUBBER TRACK

TABLE 12. ITEMIZED COST PER ACRE FOR **WINTER WHEAT** FOLLOWING
 SPRING WHEAT UNDER A DIRECT SEED ROTATION, LINCOLN
 COUNTY (WILBUR AREA), 12"-14" RAINFALL AREA.

		PRICE OR		VALUE OR	YOUR
		UNIT COST/UNIT	QUANTITY	COST	FARM

VARIABLE COSTS		\$		\$	
WHEAT SEED	LB.	.13	60.00	7.50	_____
16-20-0-14	LB.	.15	72.00	10.80	_____
NITROGEN	LB.	.28	50.00	14.00	_____
HARMONY EXTRA	OZ.	13.22	.40	5.29	_____
MCPA	PINT	2.26	.75	1.69	_____
DISCOVER	OZ.	4.68	3.20	14.98	_____
AERIAL APPLICATION	ACRE	4.25	1.00	4.25	_____
CROP INSURANCE	ACRE	2.50	1.00	2.50	_____
HAUL GRAIN	BU.	.075	45.00	3.38	_____
MACHINERY REPAIRS	ACRE	6.71	1.00	6.71	_____
MACHINE FUEL/LUBE	ACRE	3.94	1.00	3.94	_____
LABOR (TRAC/MACH)	HOUR	16.50	.61	10.08	_____
OVERHEAD	ACRE	4.47	1.00	4.47	_____
INTEREST ON OP. CAP.	ACRE	4.33	1.00	4.33	_____

TOTAL VARIABLE COST				93.91	_____
FIXED COSTS		\$		\$	
MACHINE DEPRECIATION	ACRE	9.83	1.00	9.83	_____
MACHINE INTEREST	ACRE	6.86	1.00	6.86	_____
MACHINE INSURANCE	ACRE	.48	1.00	.48	_____
MACHINE TAXES	ACRE	1.45	1.00	1.45	_____
MACHINE HOUSING	ACRE	.81	1.00	.81	_____
LAND TAXES	ACRE	4.00	1.00	4.00	_____
NET LAND RENT[1]	ACRE	38.19	1.00	38.19	_____

TOTAL FIXED COST				61.63	_____
TOTAL COST				155.54	_____

[1] 1/4 CROP VALUE - LAND TAXES

GROSS RETURNS = 45 BUSHELS X \$3.75/BU.
 BREAK-EVEN PRICE = \$3.36/BU.

Table 13. Machinery Complement for Direct Seed, 3-year Rotation, 12"-14" Rainfall, 2000-Acre Farm in Wilbur Area.

Type of Machine	Current Replacement Value (used) \$	Remaining Years of Life	Annual Hours of Use	Salvage Value \$	Annual Repairs (Materials) \$
280HP rubber track tractor, 1997, 3600 hours, salvage at 8100 hrs, new \$150,000 (all values below include tax)	\$99,000	15	300	\$30,000	\$700
72' Super Harrow. Used 12 years. \$24,500 new, 20-30 yr life, 35 a/hr, 1x fall, 2x spring, 40 a/hr, 1500 acres	\$15,500	12	90	\$2,500	\$600
84' 10 bar harrow, spike following tine. Used 12 years, \$22,000 new. 20-30 yr life, 2000 a/yr, 50 a/hr	\$13,500	12	45	\$2,500	\$200
30' no-till drill with air cart and hoe openers on 10" spacing, new, 13 a/hr.	\$82,000	15	170	\$7,500	\$8,000
36' no-till drill with air cart and hoe openers on 10" spacing, new, 16 a/hr, 2000 a/yr	\$82,000	15	135	\$7,500	\$8,500
25' Rotary non-hillside combine, 1993, 2500 hrs, 5000-hour life, 15 a/hr, 750 a/yr	\$75,000	10	140	\$8,000	\$2,500
25' Rotary hillside combine, ditto above w/leveler, 2500 hours, 5000-hour life, 15 a/hr, 2000 a/yr	\$125,000	10	140	\$14,000	\$3,500
Truck #1: Seed truck, 18-foot dump box, used 15 years, 25-year life	\$8,000	10	110	\$2,000	\$1,000
Truck #2 ditto	\$8,000	10	110	\$2,000	\$1,000
Pickup: 5 years old, 60,000 miles, 150,000 life	\$15,000	7	400	\$5,000	\$1,500
4WD ATV, new, 15-year life	\$6,500	10	150	\$1,000	\$100
Trap Wagon, used 12 years, 20 year life	\$7,000	8	75	\$3,000	\$400
2000 Gallon Slop Tank	\$1,500	15	50	0	\$25
50HP Wheel Tractor w/Bucket	\$15,000	20	100	\$3,500	\$200
Hired trucking for hauling grain to elevator is approximately \$.075/bu, similar for rented or owned truck and hired driver					

TABLE 14. HOURLY MACHINERY COSTS.

MACHINERY	PURCHASE PRICE	YEARS TO TRADE	ANNUAL HOURS	DEPREC-IATION	INTER-EST	INSUR-ANCE	TAXES	HOUSING	TOTAL FIXED COST	REPAIR	FUEL AND LUBE	TOTAL VARIABLE COST	TOTAL COST
	\$								-COST PER HOUR-				
280HP-RUBBER TRK[1]	99,000.00	15	300	15.33	18.28	1.29	3.87	2.15	40.92	2.33	10.35	12.68	53.60
280HP-RUBBER TRK[2]	99,000.00	15	300	15.33	18.28	1.29	3.87	2.15	40.92	2.33	15.53	17.86	58.78
72' SUPER HARROW	15,500.00	12	90	12.04	8.50	.60	1.80	1.00	23.94	6.67	.00	6.67	30.60
84' 10-BAR HARRW	13,500.00	12	45	20.37	15.11	1.07	3.20	1.78	41.53	4.44	.00	4.44	45.97
30' NO-TILL DRILL	82,000.00	15	170	29.22	22.38	1.58	4.74	2.63	60.54	44.12	.00	44.12	104.66
36' NO-TILL DRILL	82,000.00	15	135	36.79	28.18	1.99	5.97	3.31	76.24	62.96	.00	62.96	139.20
25'LEVEL LAND COMB	75,000.00	10	140	47.86	25.20	1.78	5.34	2.96	83.13	17.86	13.80	31.66	114.79
25'HILLSIDE COMB.	125,000.00	10	140	79.29	42.20	2.98	8.94	4.96	138.36	25.00	13.80	38.80	177.16
TRUCK #1	8,000.00	10	110	5.45	3.86	.27	.82	.45	10.86	9.09	5.18	14.27	25.13
TRUCK #2	8,000.00	10	110	5.45	3.86	.27	.82	.45	10.86	9.09	5.18	14.27	25.13
PICKUP	15,000.00	7	400	3.57	2.13	.15	.45	.25	6.55	3.75	5.18	8.93	15.47
4WD-ATV	6,500.00	10	150	3.67	2.13	.15	.45	.25	6.64	.67	1.73	2.39	9.03
TRAP WAGON	7,000.00	8	75	6.67	5.67	.40	1.20	.67	14.60	5.33	5.18	10.51	25.11
SLIP TANK	1,500.00	15	50	2.00	1.28	.09	.27	.15	3.79	.50	.00	.50	4.29
50HP-WT W/BUCKET	15,000.00	20	100	5.75	7.86	.56	1.67	.93	16.76	2.00	5.18	7.18	23.93

[1]FUEL CONSUMPTION 6 GALLONS PER HOUR.
 [2]FUEL CONSUMPTION 9 GALLONS PER HOUR.

APPENDIX II

2003 COST OF PRODUCING WHEAT AND BARLEY

UNDER A DIRECT SEEDING TILLAGE SYSTEM

LINCOLN COUNTY, WASHINGTON

14" – 16" RAINFALL AREA

TABLE 15. SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR **SPRING BARLEY** FOLLOWING WINTER WHEAT OR SPRING BARLEY UNDER A DIRECT SEED ROTATION, LINCOLN COUNTY (DAVENPORT AREA), 14"-16" RAINFALL AREA.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	VARIABLE COST						TOTAL VARIABLE COST	TOTAL COST
						TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	MACH LABOR	SERVICE	MATER.	INTER.		
						\$	\$	\$	\$	\$	\$	\$	\$
HARROW	280HP-RBTK W/72' SUPER HARROW	FALL	2002	.03	.03	1.37	.64	.39	.00	.00	.08	1.10	2.47
HARROW	280HP-RBTK W/72' SUPER HARROW	MAR	2003	.03	.03	1.37	.64	.39	.00	.00	.04	1.06	2.43
HAUL WATER	2-TON TRUCK W/SLIP TANK	APR	2003	.01	.02	.15	.15	.28	.00	.00	.02	.44	.59
SPRAY[1]	280HP-RBTK W/80' SPRAYER	APR	2003	.02	.02	.61	.27	.34	1.00	4.65	.22	6.48	7.10
HAUL SEED	2-TON TRUCK	APR	2003	.03	.03	.33	.43	.46	.00	.00	.03	.92	1.25
SEED/FERT[2]	280HP-RBTK W/36'-10" HOE DRILL	APR	2003	.05	.06	5.35	4.09	.84	.00	35.20	1.42	41.55	46.89
CROP INSURANCE	FIRE AND HAIL	MAY	2003	.00	.00	.00	.00	.00	2.50	.00	.07	2.57	2.57
HAUL WATER	2-TON TRUCK W/SLIP TANK	JUN	2003	.01	.02	.15	.15	.28	.00	.00	.01	.44	.58
SPRAY[3]	280HP-WT W/80' SPRAYER	JUN	2003	.02	.02	.61	.27	.34	1.00	19.16	.44	21.21	21.82
HARVEST (75%)	25' ROTARY HILL-SIDE COMBINE	AUG	2003	.05	.07	6.92	1.94	.91	.00	.00	.02	2.87	9.79
HARVEST (25%)	25' ROTARY LEVEL LAND COMBINE	AUG	2003	.02	.02	1.39	.53	.30	.00	.00	.01	.84	2.22
HAUL BARLEY[4]	7.5 CENTS/BU.	AUG	2003	.00	.00	.00	.00	.00	5.47	.00	.04	5.51	5.51
MISC USE	3/4-TON PICKUP	ANN	2003	.20	.22	1.31	1.79	3.08	.00	.00	.21	5.07	6.38
MISC USE	50HP-WT W/BUCKET	ANN	2003	.05	.06	.84	.36	.77	.00	.00	.05	1.18	2.01
MISC USE	TRUCKS	ANN	2003	.04	.04	.43	.57	.62	.00	.00	.05	1.24	1.67
MISC USE	4WD-ATV	ANN	2003	.04	.04	.27	.10	.62	.00	.00	.03	.74	1.01
MISC USE	TRAP WAGON	ANN	2003	.05	.05	.73	.53	.70	.00	.00	.05	1.28	2.01
OVERHEAD	UTILITIES, LEGAL, ACCT, ETC.	ANN	2003	.00	.00	.00	.00	.00	4.73	.00	.00	4.73	4.73
TAXES	LAND TAXES	ANN	2003	.00	.00	4.00	.00	.00	.00	.00	.00	.00	4.00
LAND COST	NET LAND RENT	ANN	2003	.00	.00	39.75	.00	.00	.00	.00	.00	.00	39.75
TOTAL PER ACRE				.64	.74	65.56	12.43	10.30	14.70	59.01	2.79	99.23	164.78

[1]SPRAYER COST @ \$1.00/ACRE. 16 OUNCES OF GLYPHOSPHATE @ 22¢/OZ., 6.4 OZS. SURFACTANT @ 14.5¢/OZ. AND 1.7 LBS. AMMONIA SULFATE @ 12¢/LB.

[2]80 LBS. OF BARLEY SEED @ 13¢/LB., 72 LBS. OF 16-20-0-14 @ 15¢/LB., 50 LBS. NITROGEN 28¢/LB.

[3]SPRAYER COST @ \$1.00/ACRE. 1 PINT MCPA @ \$2.26/PINT AND .52 LB. ACHIEVE @ \$32.50/LB.

[4]73 BUSHELS (1.75 TONS) @ 7.5¢/BU.

NOTE: RBTK = RUBBER TRACK

TABLE 16. ITEMIZED COST PER ACRE FOR **SPRING BARLEY** FOLLOWING WINTER WHEAT OR SPRING BARLEY UNDER A DIRECT SEED ROTATION, LINCOLN COUNTY (DAVENPORT AREA), 14"-16" RAINFALL AREA.

		PRICE OR		VALUE OR	YOUR
		UNIT COST/UNIT	QUANTITY	COST	FARM

VARIABLE COSTS		\$		\$	
80' SPRAYER	ACRE	1.00	2.00	2.00	_____
GLYPHOSPHATE	OZ.	.22	16.00	3.52	_____
SURFACTANT	OZ.	.14	6.40	.93	_____
AMMONIA SULFATE	LB.	.12	1.70	.20	_____
BARLEY SEED	LB.	.13	80.00	10.40	_____
16-20-0-14	LB.	.15	72.00	10.80	_____
NITROGEN	LB.	.28	50.00	14.00	_____
MCPA	PINT	2.26	1.00	2.26	_____
ACHIEVE	LB.	32.50	.52	16.90	_____
CROP INSURANCE	ACRE	2.50	1.00	2.50	_____
HAUL GRAIN	BU.	.075	73.00	5.47	_____
MACHINERY REPAIRS	ACRE	7.46	1.00	7.46	_____
MACHINE FUEL/LUBE	ACRE	4.98	1.00	4.98	_____
LABOR (TRAC/MACH)	HOOR	16.50	.74	10.30	_____
OVERHEAD	ACRE	4.73	1.00	4.73	_____
INTEREST ON OP. CAP.	ACRE	2.79	1.00	2.79	_____

TOTAL VARIABLE COST				99.23	_____
FIXED COSTS		\$		\$	
MACHINE DEPRECIATION	ACRE	10.83	1.00	10.83	_____
MACHINE INTEREST	ACRE	7.84	1.00	7.84	_____
MACHINE INSURANCE	ACRE	.55	1.00	.55	_____
MACHINE TAXES	ACRE	1.66	1.00	1.66	_____
MACHINE HOUSING	ACRE	.92	1.00	.92	_____
LAND TAXES	ACRE	4.00	1.00	4.00	_____
NET LAND RENT[1]	ACRE	39.75	1.00	39.75	_____

TOTAL FIXED COST				65.56	_____
TOTAL COST				164.78	_____

[1] 1/4 CROP VALUE - LAND TAXES

GROSS RETURNS = 1.75 TONS X \$100
 BREAK-EVEN PRICE = \$92.21/TON

TABLE 17. SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR **SPRING WHEAT** FOLLOWING SPRING BARLEY UNDER A DIRECT SEED ROTATION, LINCOLN COUNTY (DAVENPORT AREA), 14"-16" RAINFALL AREA.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	VARIABLE COST						TOTAL VARIABLE COST	TOTAL COST
						TOTAL FIXED COST	FUEL, LUBE & REPAIRS	MACH LABOR	SERVICE	MATER.	INTER.		
						\$	\$	\$	\$	\$	\$	\$	\$
HARROW	280HP-RBTK W/72' SUPER HARROW	FALL	2002	.03	.03	1.37	.64	.39	.00	.00	.08	1.10	2.47
HARROW	280HP-RBTK W/72' SUPER HARROW	MAR	2003	.03	.03	1.37	.64	.39	.00	.00	.04	1.06	2.43
HAUL WATER	2-TON TRUCK W/SLIP TANK	APR	2003	.01	.02	.15	.15	.28	.00	.00	.02	.44	.59
SPRAY[1]	280HP-RBTK W/80' SPRAYER	APR	2003	.02	.02	.61	.27	.34	1.00	4.65	.22	6.48	7.10
HAUL SEED	2-TON TRUCK	APR	2003	.03	.03	.33	.43	.46	.00	.00	.03	.92	1.25
SEED/FERT[2]	280HP-CHAL W/36'-10" HOE DRILL	APR	2003	.05	.06	5.35	4.09	.84	.00	33.55	1.36	39.84	45.19
CROP INSURANCE	FIRE AND HAIL	MAY	2003	.00	.00	.00	.00	.00	2.50	.00	.07	2.57	2.57
HAUL WATER	2-TON TRUCK W/SLIP TANK	JUN	2003	.01	.02	.15	.15	.28	.00	.00	.01	.44	.58
SPRAY[3]	280HP-WT W/80' SPRAYER	JUN	2003	.02	.02	.61	.27	.34	1.00	21.96	.50	24.07	24.68
HARVEST (75%)	25' ROTARY HILL-SIDE COMBINE	AUG	2003	.05	.07	6.92	1.94	.91	.00	.00	.02	2.87	9.79
HARVEST (25%)	25' ROTARY LEVEL LAND COMBINE	AUG	2003	.02	.02	1.39	.53	.30	.00	.00	.01	.84	2.22
HAUL WHEAT[4]	CUSTOM RATE OF 7.5 CENTS/BU.	AUG	2003	.00	.00	.00	.00	.00	4.12	.00	.03	4.15	4.15
MISC USE	3/4-TON PICKUP	ANN	2003	.20	.22	1.31	1.79	3.08	.00	.00	.21	5.07	6.38
MISC USE	50HP-WT W/BUCKET	ANN	2003	.05	.06	.84	.36	.77	.00	.00	.05	1.18	2.01
MISC USE	TRUCKS	ANN	2003	.04	.04	.43	.57	.62	.00	.00	.05	1.24	1.67
MISC USE	4WD-ATV	ANN	2003	.04	.04	.27	.10	.62	.00	.00	.03	.74	1.01
MISC USE	TRAP WAGON	ANN	2003	.05	.05	.73	.53	.70	.00	.00	.05	1.28	2.01
OVERHEAD	UTILITIES, LEGAL, ACCT, ETC.	ANN	2003	.00	.00	.00	.00	.00	4.71	.00	.00	4.71	4.71
TAXES	LAND TAXES	ANN	2003	.00	.00	4.00	.00	.00	.00	.00	.00	.00	4.00
LAND COST	NET LAND RENT	ANN	2003	.00	.00	47.56	.00	.00	.00	.00	.00	.00	47.56
TOTAL PER ACRE				.64	.74	73.37	12.43	10.30	13.34	60.16	2.78	99.01	172.38

[1]SPRAYER COST @ \$1.00/ACRE. 16 OUNCES OF GLYPHOSPHATE @ 22¢/OZ., 6.4 OZS. SURFACTANT @ 14.5¢/OZ. AND 1.7 LBS. AMMONIA SULFATE @ 12¢/LB.
 [2]70 LBS. OF WHEAT SEED @ 12.5¢/LB., 72 LBS. OF 16-20-0-14 @ 15¢/LB., 50 LBS. NITROGEN @ 28¢/LB.
 [3]SPRAYER COST @ \$1.00/ACRE. .75 PINT OF MCPA @ \$2.26/PINT, 0.4 OUNCE OF HARMONY EXTRA @ \$13.20/OZ., 3.2 OUNCES OF DISCOVER @ \$4.68/OZ.
 [4]55 BUSHELS @ 7.5¢/BU.

NOTE: RBTK = RUBBER TRACK

TABLE 18. ITEMIZED COST PER ACRE FOR **SPRING WHEAT** FOLLOWING
 SPRING BARLEY UNDER A DIRECT SEED ROTATION, LINCOLN
 COUNTY (DAVENPORT AREA), 14"-16" RAINFALL AREA.

		PRICE OR		VALUE OR	YOUR
		UNIT COST/UNIT	QUANTITY	COST	FARM

VARIABLE COSTS		\$		\$	
80' SPRAYER	ACRE	1.00	2.00	2.00	_____
GLYPHOSPATE	OZ.	.22	16.00	3.52	_____
SURFACTANT	OZ.	.14	6.40	.93	_____
AMMONIA SULFATE	LB.	.12	1.70	.20	_____
WHEAT SEED	LB.	.13	70.00	8.75	_____
16-20-0-14	LB.	.15	72.00	10.80	_____
NITROGEN	LB.	.28	50.00	14.00	_____
MCPA	PINT	2.26	.75	1.69	_____
HARMONY EXTRA	OZ.	13.22	.40	5.29	_____
DISCOVER	OZ.	4.68	3.20	14.98	_____
CROP INSURANCE	ACRE	2.50	1.00	2.50	_____
HAUL GRAIN	BU.	.075	55.00	4.12	_____
MACHINERY REPAIRS	ACRE	7.46	1.00	7.46	_____
MACHINE FUEL/LUBE	ACRE	4.98	1.00	4.98	_____
LABOR (TRAC/MACH)	HOURL	16.50	.74	10.30	_____
OVERHEAD	ACRE	4.71	1.00	4.71	_____
INTEREST ON OP. CAP.	ACRE	2.78	1.00	2.78	_____

TOTAL VARIABLE COST				99.01	_____
FIXED COSTS		\$		\$	
MACHINE DEPRECIATION	ACRE	10.83	1.00	10.83	_____
MACHINE INTEREST	ACRE	7.84	1.00	7.84	_____
MACHINE INSURANCE	ACRE	.55	1.00	.55	_____
MACHINE TAXES	ACRE	1.66	1.00	1.66	_____
MACHINE HOUSING	ACRE	.92	1.00	.92	_____
LAND TAXES	ACRE	4.00	1.00	4.00	_____
NET LAND RENT[1]	ACRE	47.56	1.00	47.56	_____

TOTAL FIXED COST				73.37	_____
TOTAL COST				172.38	_____

[1] 1/4 CROP VALUE - LAND TAXES

GROSS RETURNS = 55 BUSHEL X \$3.75/BU.
 BREAK-EVEN PRICE = \$2.93/BU.

TABLE 19. SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR WINTER WHEAT FOLLOWING SPRING WHEAT UNDER A DIRECT SEED ROTATION, LINCOLN COUNTY (DAVENPORT AREA), 14"-16" RAINFALL AREA.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST					TOTAL VARIABLE COST	TOTAL COST
							FUEL, LUBE & REPAIRS	MACH LABOR	SERVICE	MATER.	INTER.		
						\$	\$	\$	\$	\$	\$	\$	
HARROW	280HP-RBTK W/72' SUPER HARROW	OCT	2002	.03	.03	1.37	.64	.39	.00	.00	.08	1.10	2.47
HAUL SEED	2-TON TRUCK	OCT	2002	.03	.03	.33	.43	.46	.00	.00	.07	.96	1.29
SEED/FERT[2]	280HP-RBTK W/36'-10" HOE DRILL	OCT	2002	.05	.06	5.35	4.09	.84	.00	33.55	3.00	41.47	46.82
SPRAY[3]	AERIAL APPLICATION	MAY	2003	.00	.00	.00	.00	.00	4.25	21.96	.74	26.95	26.95
CROP INSURANCE	FIRE AND HAIL	MAY	2003	.00	.00	.00	.00	.00	2.50	.00	.07	2.57	2.57
HARVEST (25%)	25' ROTARY LEVEL LAND COMBINE	AUG	2003	.02	.02	1.39	.53	.30	.00	.00	.01	.84	2.22
HARVEST (75%)	25' ROTARY HILL-SIDE COMBINE	AUG	2003	.05	.07	6.92	1.94	.91	.00	.00	.02	2.87	9.79
HAUL WHEAT[4]	CUSTOM RATE OF 7.5 CENTS/BU.	AUG	2003	.00	.00	.00	.00	.00	4.50	.00	.03	4.53	4.53
MISC USE	3/4-TON PICKUP	ANN	2003	.20	.22	1.31	1.79	3.08	.00	.00	.21	5.07	6.38
MISC USE	50HP-WT W/BUCKET	ANN	2003	.05	.06	.84	.36	.77	.00	.00	.05	1.18	2.01
MISC USE	TRUCKS	ANN	2003	.04	.04	.43	.57	.62	.00	.00	.05	1.24	1.67
MISC USE	4WD-ATV	ANN	2003	.04	.04	.27	.10	.62	.00	.00	.03	.74	1.01
MISC USE	TRAP WAGON	ANN	2003	.05	.05	.73	.53	.70	.00	.00	.05	1.28	2.01
OVERHEAD	UTILITIES, LEGAL, ACCT, ETC.	ANN	2003	.00	.00	.00	.00	.00	4.54	.00	.00	4.54	4.54
TAXES	LAND TAXES	ANN	2003	.00	.00	4.00	.00	.00	.00	.00	.00	.00	4.00
LAND COST	NET LAND RENT	ANN	2003	.00	.00	52.25	.00	.00	.00	.00	.00	.00	52.25
TOTAL PER ACRE				.55	.62	75.17	10.95	8.68	15.79	55.51	4.41	95.34	170.51

[1]70 LBS. OF WHEAT SEED @ 12.5¢/LB., 72 LBS. OF 16-20-0-14 @ 15¢/LB., 50 LBS. NITROGEN @ 28¢/LB.

[2]CUSTOM AERIAL @ \$4.25/ACRE. .75 PINT OF MCPA @ \$2.26/PINT, 0.4 OUNCE OF HARMONY EXTRA @ \$13.20.OZ., 3.2 OUNCES OF DISCOVER @ \$4.68/OZ.

[3]60 BUSHEL @ 7.5¢/BU.

NOTE: RBTK = RUBBER TRACK

TABLE 20. ITEMIZED COST PER ACRE FOR **WINTER WHEAT** FOLLOWING
 SPRING WHEAT UNDER A DIRECT SEED ROTATION, LINCOLN
 COUNTY (DAVENPORT AREA), 14"-16" RAINFALL AREA.

		PRICE OR		VALUE OR	YOUR
		UNIT COST/UNIT	QUANTITY	COST	FARM

VARIABLE COSTS		\$		\$	
WHEAT SEED	LB.	.13	70.00	8.75	_____
16-20-0-14	LB.	.15	72.00	10.80	_____
NITROGEN	LB.	.28	50.00	14.00	_____
MCPA	PINT	2.26	.75	1.69	_____
HARMONY EXTRA	OZ.	13.22	.40	5.29	_____
DISCOVER	OZ.	4.68	3.20	14.98	_____
AERIAL APPLICATION	ACRE	4.25	1.00	4.25	_____
CROP INSURANCE	ACRE	2.50	1.00	2.50	_____
HAUL GRAIN	BU.	.075	60.00	4.50	_____
MACHINERY REPAIRS	ACRE	6.88	1.00	6.88	_____
MACHINE FUEL/LUBE	ACRE	4.07	1.00	4.07	_____
LABOR (TRAC/MACH)	ACRE	8.68	1.00	8.68	_____
OVERHEAD	ACRE	4.54	1.00	4.54	_____
INTEREST ON OP. CAP.	ACRE	4.41	1.00	4.41	_____

TOTAL VARIABLE COST				95.34	_____
FIXED COSTS		\$		\$	
MACHINE DEPRECIATION	ACRE	9.63	1.00	9.63	_____
MACHINE INTEREST	ACRE	6.63	1.00	6.63	_____
MACHINE INSURANCE	ACRE	.47	1.00	.47	_____
MACHINE TAXES	ACRE	1.40	1.00	1.40	_____
MACHINE HOUSING	ACRE	.78	1.00	.78	_____
LAND TAXES	ACRE	4.00	1.00	4.00	_____
NET LAND RENT[1]	ACRE	52.25	1.00	52.25	_____

TOTAL FIXED COST				75.17	_____
TOTAL COST				170.51	_____

[1] 1/4 CROP VALUE - LAND TAXES

GROSS RETURNS = 60 BUSHELS X \$3.75/BU.

BREAK-EVEN PRICE = \$2.54/BU

Table 21. Machinery Complement for Direct Seed, 3-year Rotation, 14"-16" Rainfall, 2000-Acre Farm in Davenport Area.

Type of Machine	Current Replacement Value (used) \$	Remaining Years of Life	Annual Hours of Use	Salvage Value \$	Annual Repairs (Materials) \$
280HP rubber track tractor, 1997, 3600 hours, salvage at 8100 hrs, new \$150,000 (all values below include tax)	\$99,000	15	400	\$30,000	\$1,300
72' Super Harrow. Used 12 years. \$24,500 new, 20-30 yr life, 35 a/hr, 1x fall, 2x spring, 40 a/hr, 1500 acres	\$15,500	12	90	\$2,500	\$600
84' 10 bar harrow, spike following tine. Used 12 years, \$22,000 new. 20-30 yr life, 2000 a/yr, 50 a/hr	\$13,500	12	45	\$2,500	\$200
30' no-till drill with air cart and hoe openers on 10" spacing, new, 13 a/hr.	\$82,000	15	170	\$7,500	\$8,000
36' no-till drill with air cart and hoe openers on 10" spacing, new, 16 a/hr, 2000 a/yr	\$82,000	15	135	\$7,500	\$8,500
25' Rotary non-hillside combine, 1993, 2500 hrs, 5000 hour life, 15 a/hr, 750 a/yr	\$75,000	10	140	\$8,000	\$2,500
25' Rotary hillside combine, ditto above w/leveler, 2500 hours, 5000 hour life, 15 a/hr, 2000 a/yr	\$125,000	10	140	\$14,000	\$3,500
Truck #1: Seed truck, 18 foot dump box, used 15 years, 25 year life	\$8,000	10	110	\$2,000	\$1,000
Truck #2 ditto	\$8,000	10	110	\$2,000	\$1,000
Pickup: 5 years old, 60,000 miles, 150,000 life	\$15,000	7	400	\$5,000	\$1,500
4WD ATV, new, 15 year life	\$6,500	10	150	\$1,000	\$100
Trap Wagon, used 12 years, 20 year life	\$7,000	8	75	\$3,000	\$400
2000 Gallon Slop Tank	\$1,500	15	50	0	\$25
50HP Wheel Tractor w/Bucket	\$15,000	20	100	\$3,500	\$200
Hired trucking for hauling grain to elevator is approximately \$.075/bu, similar for rented or owned truck and hired driver					

TABLE 22. HOURLY MACHINERY COSTS LINCOLN COUNTY (DAVENPORT AREA), 14"-16" RAINFALL AREA.

MACHINERY	PURCHASE PRICE	YEARS TO TRADE	ANNUAL HOURS	DEPREC-IATION	INTER-EST	INSUR-ANCE	TAXES	HOUSING	TOTAL FIXED COST	REPAIR	FUEL AND LUBE	TOTAL VARIABLE COST	TOTAL COST
	\$								---COST PER HOUR---				
280HP-RUBBER TRK[1]	99,000.00	15	400	11.50	13.71	.97	2.90	1.61	30.69	3.25	10.35	13.60	44.29
280HP-RUBBER TRK[2]	99,000.00	15	400	11.50	13.71	.97	2.90	1.61	30.69	3.25	15.53	18.78	49.46
72' SUPER HARROW	15,500.00	12	90	12.04	8.50	.60	1.80	1.00	23.94	6.67	.00	6.67	30.60
84' 10-BAR HARROW	13,500.00	12	45	20.37	15.11	1.07	3.20	1.78	41.53	4.44	.00	4.44	45.97
30' NO-TILL DRILL	82,000.00	15	170	29.22	22.38	1.58	4.74	2.63	60.54	47.06	.00	47.06	107.60
36' NO-TILL DRILL	82,000.00	15	135	36.79	28.18	1.99	5.97	3.31	76.24	62.96	.00	62.96	139.20
25'LEVEL LAND COMB.	75,000.00	10	140	47.86	25.20	1.78	5.34	2.96	83.13	17.86	13.80	31.66	114.79
25'HILLSIDE COMB.	125,000.00	10	140	79.29	42.20	2.98	8.94	4.96	138.36	25.00	13.80	38.80	177.16
TRUCK #1	8,000.00	10	110	5.45	3.86	.27	.82	.45	10.86	9.09	5.18	14.27	25.13
TRUCK #2	8,000.00	10	110	5.45	3.86	.27	.82	.45	10.86	9.09	5.18	14.27	25.13
PICKUP	15,000.00	7	400	3.57	2.13	.15	.45	.25	6.55	3.75	5.18	8.93	15.47
4WD-ATV	6,500.00	10	150	3.67	2.13	.15	.45	.25	6.64	.67	1.73	2.39	9.03
TRAP WAGON	7,000.00	8	75	6.67	5.67	.40	1.20	.67	14.60	5.33	5.18	10.51	25.11
SLIP TANK	1,500.00	15	50	2.00	1.28	.09	.27	.15	3.79	.50	.00	.50	4.29
50HP-WT W/BUCKET	15,000.00	20	100	5.75	7.86	.56	1.67	.93	16.76	2.00	5.18	7.18	23.93

[1]6 GALLONS OF FUEL PER HOUR.

[2]9 GALLONS OF FUEL PER HOUR.

Use pesticides with care. Apply them only to plants, animals, or sites listed on the label. When mixing and applying pesticides, follow all label precautions to protect yourself and others around you. It is violation of law to disregard label directions. If pesticides are spilled on skin or clothing, remove clothing and wash skin thoroughly. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

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