


<p>Farm Business Management Reports</p>		<p>EB1616</p>
	<p>1991 CROP ENTERPRISE BUDGETS SUMMER FALLOW-WINTER WHEAT SPRING BARLEY SPRING WHEAT</p>	
	<p>Herbert Hinman Thomas Hoffmann Alexandra Phelps</p>	
<p>COOPERATIVE EXTENSION WASHINGTON STATE  UNIVERSITY</p>		

PREFACE

Enterprise costs and returns vary among locations and over time for any particular farming operation. Variability is attributable to differences in the following:

- . Capital, labor, and natural resources.
- . Type, size, and age 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 serves as a general guide for producing wheat and barley under dryland conditions in the 15- to 17-inch rainfall area of Lincoln County, Washington. To avoid drawing unwarranted conclusions for any particular farm or group of farms, the reader must closely examine the underlying assumptions. If inappropriate for the situation under consideration, adjustments in the costs, and/or returns should be made.

Table of Contents

	Page
Introduction	1
Sources of Information	2
Budget Assumptions	2
Summary of Results	3
Table 1: Summary of the Per-Acre Cost of Producing Summer Fallow/ Winter Wheat, Spring Barley, and Spring Wheat	4
Table 2: Summary of Receipts, Costs, and Profitability Per Acre of a Summer Fallow - Winter Wheat - Spring Barley Rotation (3-Year Period)	4
Table 3: Summary of Receipts, Costs, and Profitability Per Acre of a Summer Fallow - Winter Wheat - Spring Wheat Rotation (3-Year Period)	5
Discussion of Detailed Budget Information	5
Appendix: Detailed Cost and Production Practice Information	10
Table 4: Schedule of Operations and Estimated Costs Per Acre for Summer Fallow Following Spring Barley or Spring Wheat	11
Table 5: Itemized Cost Per Acre for Summer Fallow Following Spring Barley or Spring Wheat	12
Table 6: Schedule of Operations and Estimated Costs Per Acre for Winter Wheat Following Summer Fallow	13
Table 7: Itemized Cost Per Acre for Winter Wheat Following Summer Fallow	14
Table 8: Break-Even Selling Price Per Bushel for Winter Wheat (2-Year Period)	15

Table of Contents

	Page
Table 9: Summary of Receipts, Costs, and Profitability Per Acre of Summer Fallow/Winter Wheat (2-Year Period) . . .	16
Table 10: Schedule of Operations and Estimated Costs Per Acre for Spring Barley Following Winter Wheat	17
Table 11: Itemized Cost Per Acre for Spring Barley Following Winter Wheat	18
Table 12: Break-Even Selling Price Per Ton for Spring Barley	19
Table 13: Summary of Receipts, Costs, and Profitability Per Acre of Spring Barley	20
Table 14: Schedule of Operations and Estimated Costs Per Acre for Spring Wheat Following Winter Wheat	21
Table 15: Itemized Cost Per Acre for Spring Wheat Following Winter Wheat	22
Table 16: Break-Even Selling Price Per Bushel for Spring Wheat	23
Table 17: Summary of Receipts, Costs, and Profitability Per Acre of Spring Wheat	24
Table 18: Materials and Services Provided by Operation to Produce Winter Wheat, Spring Barley, and Spring Wheat	25
Table 19: Machinery Complement and Hourly Machine Cost	27
Table 20: Prices of Selected Inputs	28

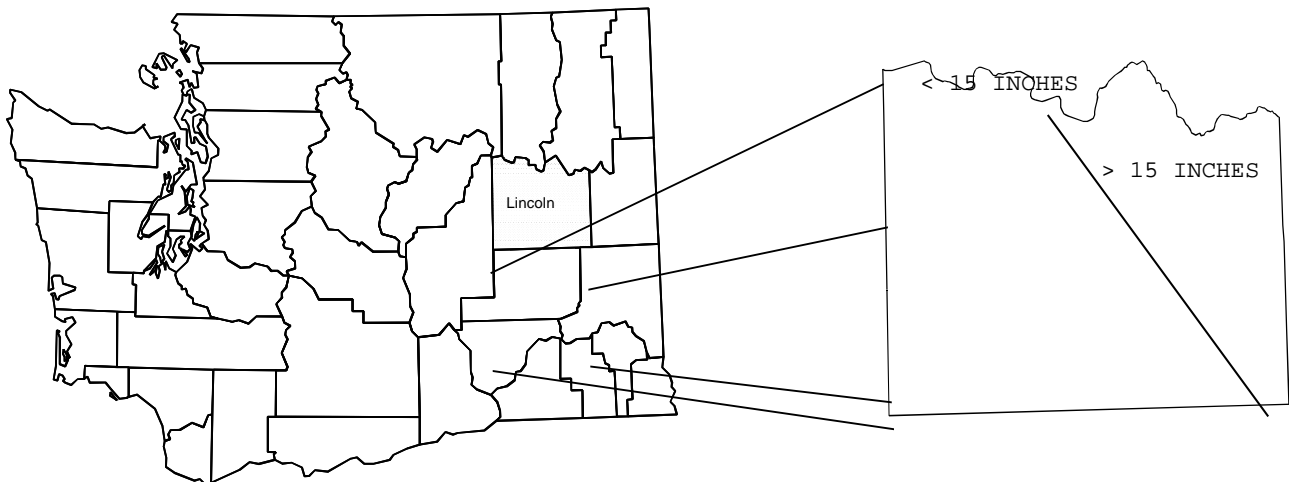
**1991 CROP ENTERPRISE BUDGETS
SUMMER FALLOW-WINTER WHEAT, SPRING BARLEY, SPRING WHEAT
LINCOLN COUNTY, WASHINGTON**

Herbert R. Hinman, Tom Hoffmann, and Alexandra Phelps*

INTRODUCTION

This publication presents projected costs and returns for crops commonly grown in a three-year rotation, summer fallow - winter wheat - spring barley, within Lincoln County. A budget for spring wheat is also presented. Spring wheat is often used as a replant crop when winter wheat has sustained severe winter damage. It is also occasionally substituted for spring barley in the three-year rotation when adequate soil moisture conditions exist. Producers, agricultural lenders, and others should find this information helpful in identifying enterprise strengths and weaknesses, planning production adjustments, determining financial requirements, formulating marketing decisions, and in resolving other business management problems.

The accompanying budgets are representative of the 15- to 17-inch rainfall area of Lincoln County. They are not representative of a particular farm. Instead, the budgets represent costs and returns anticipated under the specific assumptions adopted for the study. We recommend that individual growers use the blanks provided on the right-hand side of various budgets to estimate their own costs and returns. Also, local Cooperative Extension agents and fieldpersons should be consulted for recommendations on field operations and production inputs.



Lincoln County
Rainfall Area

*Extension Economist and Lincoln/Adams Area Extension Agent, Cooperative Extension, and Undergraduate Student, Department of Agricultural Economics, Washington State University.

SOURCES OF INFORMATION

A committee of experienced Lincoln County grain producers was assembled at the request of the area Extension agent. They 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. Machinery costs are based on replacement prices and on hours of annual use considered typical for an 1,800-acre farm.

BUDGET ASSUMPTIONS

The committee assumed the following in developing the data:

1. The representative farm includes 1,800 acres with 600 acres in winter wheat, 600 acres in spring barley and/or spring wheat, and 600 acres in summer fallow, annually.
2. Per-acre yields are 65 bushels for winter wheat, 45 bushels for spring wheat, and 1.5 tons for barley. It should be realized, however, that yield variability is quite common in Lincoln County and variable yields can have a substantial impact on per unit costs.
3. Prices received for the budgeted crops are \$3.82 per bushel for winter and spring wheat, and \$96.59 per ton for spring barley¹.
4. Machinery is valued on a replacement cost basis. Machine items used on Lincoln County farms are typically replaced used.

¹The assumed wheat and barley prices include payments from participation in government subsidy programs. The 1990 Farm Bill allows planting on 85% of the wheat base acres and limits deficiency payments to 70% of this base. Plantings can be made on 92.5% of the barley base acres with deficiency payments limited to 77.5% of the barley base allotment. Farmers are free to plant other program crops and certain non-program crops on these non-payment "flex" acres. In this study it is assumed that wheat or barley is planted on the respective flex base. In calculating the average expected price for wheat it is assumed that the local market price is \$3.00 per bushel. With the target price set at \$4.00 per bushel, the deficiency payment is \$1.00 per bushel on 82.35% of the production (70/85). For barley, it is assumed that the expected market price is \$90.00 per ton. With the target price of barley at \$98.00 per ton, the deficiency payment is \$8.00 per ton on 83.78% of the production (77.5/92.5). It is also assumed that the proven yield (the basis of government payment) is equal to the expected yield. Therefore, the calculations for the average expected prices are:

Average Expected Wheat Price = Market Price + (.8235) Deficiency Payment

Average Expected Wheat Price = \$3.00 + (.8235) (1.00) = \$3.82

Average Expected Barley Price = Market Price + (.8378) Deficiency Payment

Average Expected Barley Price = \$90.00 + (.8378) (8.00) = \$96.70

While valuing machinery at replacement cost may overstate current production costs, it provides an indication of the enterprise's ability to generate the earnings needed to replace depreciable assets. Increases in prices mean that depreciation claimed on assets purchased prior to price advances understates the amount of capital required for asset replacement. When evaluating an enterprise's long-run viability, it is important to consider its ability to replace depreciable assets on a replaceable cost basis.

5. The interest rate is 11.5%.

6. The farm is owned, managed, and operated by the same person.

Due to the information and procedure followed, 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.

SUMMARY OF RESULTS

In the 15- to 17-inch rainfall area of Lincoln County, the common crop rotation is summer fallow - winter wheat - spring barley. Spring wheat is often used as a replant crop when winter wheat has sustained severe winter injury and is sometimes substituted for spring barley in the three-year rotation when moisture conditions are sufficient. Table 1 presents a summary of the cost of producing summer fallow/winter wheat, spring barley, and spring wheat under the stated assumptions.

When evaluating the economics of the two three-year rotation scenarios, it may not be appropriate to separate summer fallow/winter wheat and spring barley or summer fallow/winter wheat and spring wheat, as the case may be, into two separate enterprises and evaluate the economics of each enterprise separately. Since agroclimatic conditions of the area essentially dictate a three-year rotation, the economics of each cropping system need to be evaluated as a rotational unit. Therefore, Table 2 presents the summary of receipts, costs, and profitability of a summer fallow - winter wheat - spring barley rotation. Table 3 presents the summary of receipts, costs, and profitability of a summer fallow - winter wheat - spring wheat rotation.

TABLE 1: SUMMARY OF THE PER-ACRE COST OF PRODUCING SUMMER FALLOW/WINTER WHEAT, SPRING BARLEY, AND SPRING WHEAT, 15- TO 17-INCH RAINFALL AREA, LINCOLN COUNTY, WASHINGTON.

-----COST PER ACRE-----			
	SUMMER FALLOW/ WINTER WHEAT (2-YR. PERIOD)	SPRING BARLEY	SPRING WHEAT
	\$	\$	\$
1. TOTAL VARIABLE COST	111.53	88.27	90.71
PLUS: TRACTOR AND MACHINERY INSURANCE	.67	.44	.49
TRACTOR AND MACHINERY TAXES	2.00	1.33	.49
LAND TAXES	6.00	3.00	3.00
2. TOTAL CASH COSTS	120.20	93.04	95.69
PLUS: TRACTOR AND MACHINERY DEPRECIATION	13.84	9.05	10.21
3. TOTAL CASH COST AND DEPRECIATION	134.04	102.09	105.90
PLUS: TRACTOR AND MACHINERY INTEREST	12.75	8.53	9.57
TRACTOR AND MACHINERY HOUSING	1.11	.75	.84
INTEREST ON SUMMER FALLOW COST	6.70	-	-
LAND (NET RENT)	66.77	37.25	46.12
4. TOTAL COST	221.37	148.62	162.43

Table 2: SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE OF A SUMMER FALLOW-WINTER WHEAT-SPRING BARLEY ROTATION; 15- TO 17-INCH RAINFALL AREA, LINCOLN COUNTY, WASHINGTON (3-YEAR PERIOD).

	UNIT	PRICE/ UNIT	QUANTITY	VALUE OR COST
GROSS RECEIPTS FROM PRODUCTION				
WINTER WHEAT	BU.	\$ 3.82	65	\$248.30
SPRING BARLEY	TONS	\$96.70	1.5	<u>\$145.05</u>
1. TOTAL RECEIPTS				\$393.35
LESS: TOTAL VARIABLE COST				\$199.80
2. RETURNS OVER VARIABLE COST				\$193.55
LESS: TRACTOR AND MACHINE FIXED COST				\$ 50.37
INTEREST ON SUMMER FALLOW COST				\$ 6.70
LAND TAXES				\$ 9.00
3. NET RETURNS TO LAND AND MANAGEMENT				\$127.48

Table 3: SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE OF A SUMMER FALLOW-WINTER WHEAT-SPRING WHEAT ROTATION; 15- TO 17-INCH RAINFALL AREA, LINCOLN COUNTY, WASHINGTON (3-YEAR PERIOD).

	UNIT	PRICE/ UNIT	QUANTITY	VALUE OR COST
GROSS RECEIPTS FROM PRODUCTION				
WINTER WHEAT	BU.	\$ 3.82	65	\$248.30
SPRING WHEAT	BU.	\$ 3.82	45	<u>\$171.90</u>
1. TOTAL RECEIPTS				\$420.20
LESS: TOTAL VARIABLE COST				\$202.24
2. RETURNS OVER VARIABLE COST				\$217.96
LESS: TRACTOR AND MACHINE FIXED COST				\$ 52.96
INTEREST ON SUMMER FALLOW COST				\$ 6.70
LAND TAXES				\$ 9.00
3. NET RETURNS TO LAND AND MANAGEMENT				\$149.30

As can be seen from the results shown in Tables 2 and 3, net returns to land and management for a summer fallow - winter wheat - spring wheat rotation exceed the returns from a summer fallow - winter wheat - spring barley rotation by approximately \$22 per acre over the three-year period. This result, therefore, brings forth the question that if summer fallow - winter wheat - spring wheat is the more profitable rotation, why is summer fallow - winter wheat - spring barley the more common rotation? The answer to this question basically lies in the fact that spring barley responds better to low moisture conditions than does spring wheat. During average or below average moisture conditions for the area, spring barley produces better and is a more profitable crop. Only in times of higher than normal moisture conditions does spring wheat typically respond in a more profitable manner than spring barley. Secondly, a summer fallow - winter wheat - spring wheat rotation on a continual basis is likely to encounter more disease and pest problems than a summer fallow - winter wheat - spring barley rotation. Of course, expected prices, and wheat and barley base allotments also count considerably towards selecting the most profitable three-year rotation.

DISCUSSION OF DETAILED BUDGET INFORMATION

Detailed budget information for the summer fallow/winter wheat, spring barley, and spring wheat enterprises is reported in the Appendix in 17 separate tables.

Tables 4, 6, 10, and 14: Schedule of Operations and Estimated Costs per Acre

Tables 4, 6, 10, and 14 outline the schedule of field operations by calendar month, the type of machinery used, and the hours of use per acre for summer fallow following spring barley (or spring wheat), winter wheat following summer fallow, spring barley following winter wheat, and spring wheat following winter wheat, respectively. The costs are divided into two categories. The first is machinery and land fixed costs. The second category, variable costs, is associated with operating machinery, labor, and purchasing services and materials. Total cost is the sum of fixed and variable costs.

Machinery fixed costs include depreciation, interest on the average investment, property taxes, insurance, and housing. These costs do not vary with the crops produced, given the ownership of a specific machinery complement, and are incurred whether or not a crop is grown.

Machinery fixed costs for a specific field operation are determined by multiplying the machine hours per acre by the per-hour fixed cost (Table 19). The per-hour fixed cost figures are determined by dividing the total fixed cost figures by the annual hours of machinery use.

Land fixed costs include taxes and net rent. Net rent is based on rental agreements typical for the area minus expenditures typically covered by the landlord. The typical lease agreement is one-third landlord and two-thirds tenant crop share with the landlord paying land taxes, one-third the fertilizer cost, one-third the crop insurance, and all the herbicide cost for perennial weed control. The tenant covers all other production expenses.

Thus, net rent for winter wheat is calculated as follows:

\$82.77 (1/3 gross receipts from production)
- \$ 6.00 (land tax; for summer fallow and winter wheat)
- \$ 1.50 (herbicides for perennial weed control; summer fallow and winter wheat)
- \$ 8.50 (1/3 fertilizer and crop insurance costs)
\$66.77 Net Rent per Acre

Net rent for spring barley is calculated as follows:

\$48.35 (1/3 gross receipts from production)
- \$ 3.00 (land tax)
- \$.75 (herbicides for perennial weed control)
- \$ 7.35 (1/3 fertilizer and crop insurance costs)
\$37.25 Net Rent per Acre

Net rent for spring wheat is calculated as follows:

- \$57.30 (1/3 gross receipts from production)
- \$ 3.00 (land tax)
- \$.75 (herbicides for perennial weed control)
- \$ 7.43 (1/3 fertilizer and crop insurance cost)

\$46.12 Net rent per acre

While the owner-operator obviously will not experience a land rental cost, the cost represents the minimum return the owner-operator must realize to justify growing the crop. This net rental return represents the income the owner-operator foregoes by producing the crop rather than renting the land to a tenant. As a result of investing in land, the farmer receives both current returns from farming and any long-term appreciation in the value of land. However, the farmer would continue to realize land value appreciation even if the land was rented out. Consequently, the appropriate land charge is only the net rent foregone. As used in this publication, land cost is referred to as an opportunity cost. Consequently, land cost does not represent an out-of-pocket expense, but rather a foregone return. To determine the profitability of crop production relative to other activities, the owner-operator should consider these foregone returns, or opportunity costs, along with the usual production expenses.

In Table 6, the previous year's summer fallow costs, plus a 11.5% interest charge, are included as part of the fixed cost of producing winter wheat. Summer fallow costs are allocated entirely to winter wheat because of the need to increase soil moisture in order to produce winter wheat. These costs must ultimately be covered by wheat returns if the enterprise is to remain profitable.

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

Tables 5, 7, 11, and 15: Itemized Cost per Acre

Tables 5, 7, 11, and 15 itemize the costs which appear in the "Schedule of Operations and Costs per Acre" for summer fallow, winter wheat, spring barley, and spring wheat, respectively. Most of the items are self-explanatory or have been explained previously. Two entries, "Machinery Interest" and "Tractor Interest," warrant additional explanation.

Machinery and tractor interest costs were calculated on the average annual investment in the equipment. The formula used to calculate the average annual machinery investment is:

Purchase Cost + Salvage Value

2

The 11.5% interest charge made against this average investment value represents an opportunity cost or interest paid on money borrowed to finance machine purchases, or both. Machinery interest cost for one acre of summer fallow, winter wheat, spring barley or spring wheat is determined by multiplying the respective machine hours per acre by the per-hour interest costs (Table 19).

Tables 8, 12, and 16: Break-Even Selling Prices per Unit

Tables 8, 12, and 16 present the break-even selling prices for different levels of enterprise costs for winter wheat, spring barley, and spring wheat, respectively.

The first break-even price is that necessary to cover total variable costs--those costs which are incurred only if the crop is produced. If the price received does not exceed this price, it becomes uneconomical to produce, even in the short run, for the added costs of production are greater than the added returns.

The second break-even price is the price required to cover total cash costs, assuming no interest on outstanding loans or land rent are being paid. If other cash costs exist on an individual's farm, such as interest payments or land rents, these costs must be identified and included in the cash cost break-even price. This price may be viewed as that price necessary to produce economically in the short run.

The third break-even price is the price that covers total cash costs plus depreciation on machinery. This price must be realized if the business is to remain financially viable over the long run. However, if the opportunity costs foregone from an investment in land and machinery are not considered in calculating the total cost break-even price, presented as the fourth break-even price, producers are overlooking the profitability of farming relative to alternative uses of their resources.

Only if the break-even price required to cover total cost is received, will the owner-operator be able to cover all out-of-pocket expenses, plus realize the assumed necessary return to labor, equity capital invested in land and machinery, and operating capital. Failure to realize the break-even price means the owner-operator will not realize a return on labor and capital equivalent to that assumed in these budgets. Realization of a price above the break-even level means that in addition to covering all cash and opportunity costs, the operator will receive a return to the management and risk assumed in producing the crop(s).

Tables 9, 13, and 17: Summary of Receipts, Costs, and Profitability Per Acre

Tables 9, 13, and 17 summarize the per-acre returns, costs, and profitability for winter wheat, spring barley, and spring wheat, respectively. The first profit measure is return over variable costs, calculated by subtracting total variable costs from total receipts. An important use for return over variable costs is selecting the most profitable crop mix. By selecting the crop with the greatest return over variable costs, farm profits are maximized (or losses minimized). The second profit measure, net returns to land and management, was calculated by subtracting machinery fixed expenses, summer fallow costs (for winter wheat only), and real estate taxes from returns over variable cost. This is the return to investment in land and management the owner-operator realizes after accounting for all costs including \$10.00 per hour for any labor contributed to the production of the crop.

Table 18: Material and Services Provided by Operation

Tables 4, 6, 10, and 14, "Schedule of Operations and Estimated Cost Per Acre..." for summer fallow, winter wheat, spring barley, and spring wheat, respectively, list under the "Service" column and "Materials" column dollar figures for services and materials used by different operations. Table 18 lists, by operation, the specific services and/or materials used, the quantities used, and the prices paid for the summer fallow year, winter wheat production, the spring barley production, and spring wheat production.

Table 19: Machinery Complement and Hourly Machine Cost

This table identifies the machine complement used to derive the operational portion of the budgets. Typically, most pieces of machinery on Lincoln County farms of the representative size are purchased used. Pickups are generally replaced new. Table 19 presents the types of machines used on the representative farm, their current replacement price, if replaced new or used, annual hours of use, and estimated per-hour fixed and variable costs.

Table 20: Prices of Selected Inputs

The prices for fuel, chemicals, and other inputs are listed in Table 20.

APPENDIX

Detailed Cost and Production
Practice Information

TABLE 4: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR SUMMER FALLOW FOLLOWING SPRING BARLEY OR SPRING WHEAT, LINCOLN COUNTY, WASHINGTON, 15- TO 17-INCH ANNUAL 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.		
						\$	\$	\$	\$	\$	\$	\$	
CHISEL	250HP-WT, 24' CHISEL	OCT	1990	.08	.09	1.35	1.88	.92	.00	.00	.27	3.07	4.42
HARROW	250HP-WT, 70' TINE HARROW	APR	1991	.03	.04	.65	.63	.37	.00	.00	.04	1.04	1.70
APPLY HERBICIDE	250HP-WT, 90' RENTAL SPRAYER	APR	1991	.03	.03	.21	.38	.27	1.50	3.20	.21	5.55	5.76
HAUL WATER	2 TON TRUCK	APR	1991	.01	.01	.14	.14	.10	.00	.00	.01	.25	.39
CULTIVATE	250HP-WT, 40' CULT W/HARROW	MAY	1991	.07	.07	2.01	1.40	.73	.00	.00	.06	2.19	4.21
FERTILIZE	250HP-WT, 50' RENTED APPLICAT.	JUL	1991	.05	.06	.42	.76	.55	.00	20.91	.21	22.43	22.85
RODWEED	250HP-WT, 60' RODWEED W/HARROW	JUL	1991	.04	.04	.00	.00	.44	.00	.00	.00	.44	.44
RODWEED	250HP-WT, 60' RODWEED W/HARROW	AUG	1991	.04	.04	1.50	.86	.44	.00	.00	.00	1.30	2.80
MACHINE TRANSPT	2 TON TRUCK	ANN	1991	.01	.01	.14	.14	.10	.00	.00	.01	.26	.40
WEED CONTROL	\$ COST OF PERENNIAL WEED CONT.	ANN	1991	.00	.00	.00	.00	.00	.00	.75	.04	.79	.79
MISC USE	3/4 TON PICKUP	ANN	1991	.25	.28	1.54	2.11	2.75	.00	.00	.28	5.14	6.67
MISC USE	52HP-WT W/BUCKET	ANN	1991	.05	.06	.50	.15	.55	.00	.00	.04	.74	1.24
MISC USE	4WD ALL TERRAIN VEHICLE	ANN	1991	.08	.08	.42	.17	.82	.00	.00	.06	1.05	1.47
OVERHEAD	UTILITIES, LEGAL, ACCT, ETC.	ANN	1991	.00	.00	.00	.00	.00	.00	2.21	.00	2.21	2.21
TAXES	LAND TAXES	ANN	1991	.00	.00	3.00	.00	.00	.00	.00	.00	.00	3.00
TOTAL PER ACRE				.73	.80	11.89	8.62	8.05	1.50	27.07	1.23	46.47	58.36

* ASSUMES 1,800 ACRES WITH 600 ACRES IN WINTER WHEAT, 600 ACRES IN SPRING BARLEY OR SPRING WHEAT, AND 600 ACRES IN SUMMER FALLOW, ANNUALLY.

TABLE 5: ITEMIZED COST PER ACRE FOR SUMMER FALLOW FOLLOWING
 SPRING BARLEY OR SPRING WHEAT, LINCOLN COUNTY,
 WASHINGTON, 15- TO 17-INCH ANNUAL RAINFALL AREA.

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

VARIABLE COSTS		\$		\$	
ROUNDUP	OZ.	.32	10.00	3.20	_____
SPRAYER RENTAL	ACRE	1.50	1.00	1.50	_____
NITROGEN	LB.	.25	75.00	18.75	_____
SULFUR	LB.	.27	8.00	2.16	_____
PERENNIAL WEED CONT	ACRE	.75	1.00	.75	_____
TRACTOR REPAIR	ACRE	2.04	1.00	2.04	_____
TRACTOR FUEL/LUBE	ACRE	3.11	1.00	3.11	_____
MACHINERY REPAIRS	ACRE	2.46	1.00	2.46	_____
MACHINE FUEL/LUBE	ACRE	1.02	1.00	1.02	_____
LABOR(TRAC/MACH)	ACRE	8.05	1.00	8.05	_____
OVERHEAD	ACRE	2.21	1.00	2.21	_____
INTEREST ON OP. CAP.	DOL.	.115	10.72	1.23	_____

TOTAL VARIABLE COST				46.47	_____
FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	1.39	1.00	1.39	_____
TRACTOR INTEREST*	ACRE	1.49	1.00	1.49	_____
TRACTOR INSURANCE	ACRE	.08	1.00	.08	_____
TRACTOR TAXES	ACRE	.23	1.00	.23	_____
TRACTOR HOUSING	ACRE	.13	1.00	.13	_____
MACHINE DEPRECIATION	ACRE	2.60	1.00	2.60	_____
MACHINE INTEREST*	ACRE	2.30	1.00	2.30	_____
MACHINE INSURANCE	ACRE	.12	1.00	.12	_____
MACHINE TAXES	ACRE	.36	1.00	.36	_____
MACHINE HOUSING	ACRE	.20	1.00	.20	_____
LAND TAX	ACRE	3.00	1.00	3.00	_____

TOTAL FIXED COST				11.89	_____
TOTAL COST				58.36	_____

* 11.5% OPPORTUNITY COST ON THE AVERAGE VALUE OF MACHINERY
 INVESTMENT OVER THE USEFUL LIFE.

TABLE 6: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR WINTER WHEAT FOLLOWING SUMMER FALLOW, LINCOLN COUNTY, WASHINGTON, 15- TO 17-INCH ANNUAL 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.		
						\$	\$	\$	\$	\$	\$	\$	
RODWEED	250HP-WT, 60' RODWEED W/HARROW	SEP	1990	.04	.04	1.50	.86	.44	.00	.00	.14	1.44	2.94
APPL HERB(30%)**	250HP-WT, 50' APPLICATOR	SEP	1990	.02	.02	.13	.23	.17	.45	4.00	.51	5.36	5.48
PLANT (.15X)***	250HP-WT, 40' DRILL W/BACKPACK	SEP	1990	.06	.06	4.06	1.84	.63	1.50	11.50	1.63	17.10	21.16
HAUL SEED	2 TON TRUCK	SEP	1990	.02	.02	.28	.29	.20	.00	.00	.05	.54	.82
APPLY HERBICIDE	250HP-WT, 90' RENTAL SPRAYER	APR	1991	.03	.03	.21	.38	.27	1.50	10.00	.47	12.61	12.82
HAUL WATER	2 TON TRUCK	APR	1991	.01	.01	.14	.14	.10	.00	.00	.01	.25	.39
SPRAY (.10X)****	AERIAL SPRAY	APR	1991	.00	.00	.00	.00	.00	.45	1.30	.07	1.82	1.82
CROP INSURANCE	HAIL AND FIRE INSURANCE	MAY	1991	.00	.00	.00	.00	.00	2.45	.00	.07	2.52	2.52
HARVEST	24' COMBINE	AUG	1991	.14	.15	8.80	3.67	1.54	.00	.00	.00	5.21	14.01
HAUL	2 TON TRUCK	AUG	1991	.14	.15	1.76	2.05	1.54	.00	.00	.00	3.59	5.35
HAUL	2 TON TRUCK	AUG	1991	.14	.15	1.98	2.01	1.54	.00	.00	.00	3.55	5.53
WEED CONTROL	\$ COST OF PERRENIAL WEED CONT.	ANN	1991	.00	.00	.00	.00	.00	.00	.75	.04	.79	.79
MACHINE TRANSPT	2 TON TRUCK	ANN	1991	.01	.01	.14	.14	.10	.00	.00	.01	.26	.40
MISC USE	3/4 TON PICKUP	ANN	1991	.25	.28	1.54	2.11	2.75	.00	.00	.28	5.14	6.67
MISC USE	52HP-WT W/BUCKET	ANN	1991	.05	.06	.50	.15	.55	.00	.00	.04	.74	1.24
MISC USE	4WD ALL TERRAIN VEHICLE	ANN	1991	.08	.08	.42	.17	.82	.00	.00	.06	1.05	1.47
SUM FALLOW COST	SUMMER FALLOW COST + INTEREST	ANN	1991	.00	.00	65.07	.00	.00	.00	.00	.00	.00	65.07
LAND COST	NET RENT	ANN	1991	.00	.00	66.77	.00	.00	.00	.00	.00	.00	66.77
TAXES	LAND TAXES	ANN	1991	.00	.00	3.00	.00	.00	.00	.00	.00	.00	3.00
OVERHEAD	UTILITIES, LEGAL, ACCT, ETC.	ANN	1991	.00	.00	.00	.00	.00	.00	3.10	.00	3.10	3.10
TOTAL PER ACRE				.97	1.07	156.31	14.03	10.65	6.35	30.65	3.38	65.06	221.37

* ASSUMES 1,800 ACRES WITH 600 ACRES IN WINTER WHEAT, 600 ACRES IN SPRING BARLEY OR SPRING WHEAT, AND 600 ACRES IN SUMMER FALLOW, ANNUALLY.

** 30% OF THE SEEDED ACRES.

*** APPROXIMATELY 15% OF THE ACREAGE IS RESEEDED ANNUALLY.

**** AVERAGE OF ONCE EVERY 10 YEARS FOR RUST AND/OR STRAWBREAKER FOOTROT.

TABLE 7: ITEMIZED COST PER ACRE FOR WINTER WHEAT FOLLOWING
 SUMMER FALLOW, LINCOLN COUNTY, WASHINGTON: 15- TO
 17-INCH ANNUAL RAINFALL AREA.

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

VARIABLE COSTS		\$		\$	
NITROGEN	LB.	.25	6.00	1.50	_____
PHOSPHOROUS	LB.	.31	10.00	3.10	_____
FARGO	LB.	.89	4.50	4.00	_____
RUST/FTRT SPRAY	ACRE	13.00	.10	1.30	_____
HERBICIDE	ACRE	10.00	1.00	10.00	_____
WHEAT SEED	LB.	.10	69.00	6.90	_____
SPRAYER RENTAL	ACRE	1.50	.30	.45	_____
SPRAYER RENTAL	ACRE	1.50	1.00	1.50	_____
BACKPACK RENTAL	ACRE	1.50	1.00	1.50	_____
CUSTOM AERIAL	ACRE	4.50	.10	.45	_____
CROP INSURANCE	ACRE	2.45	1.00	2.45	_____
PERENNIAL WEED CONTROL	ACRE	.75	1.00	.75	_____
TRACTOR REPAIR	ACRE	3.64	1.00	3.64	_____
TRACTOR FUEL/LUBE	ACRE	2.85	1.00	2.85	_____
MACHINERY REPAIRS	ACRE	5.81	1.00	5.81	_____
MACHINE FUEL/LUBE	ACRE	1.73	1.00	1.73	_____
LABOR(TRAC/MACH)	ACRE	10.65	1.00	10.65	_____
OVERHEAD	ACRE	3.10	1.00	3.10	_____
INTEREST ON OP. CAP.	DOL.	.115	29.36	3.38	_____

TOTAL VARIABLE COST				65.06	_____
FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	5.10	1.00	5.10	_____
TRACTOR INTEREST*	ACRE	4.52	1.00	4.52	_____
TRACTOR INSURANCE	ACRE	.24	1.00	.24	_____
TRACTOR TAXES	ACRE	.71	1.00	.71	_____
TRACTOR HOUSING	ACRE	.39	1.00	.39	_____
MACHINE DEPRECIATION	ACRE	4.75	1.00	4.75	_____
MACHINE INTEREST*	ACRE	4.45	1.00	4.45	_____
MACHINE INSURANCE	ACRE	.23	1.00	.23	_____
MACHINE TAXES	ACRE	.70	1.00	.70	_____
MACHINE HOUSING	ACRE	.39	1.00	.39	_____
NET RENT**	ACRE	66.67	1.00	66.67	_____
SUM FAL COST	ACRE	58.36	1.12	65.07	_____
LAND TAX	ACRE	3.00	1.00	3.00	_____

TOTAL FIXED COST				156.31	_____
TOTAL COST				221.37	_____

* 11.5% OPPORTUNITY COST ON THE AVERAGE VALUE OF MACHINERY
 INVESTMENT OVER THE USEFUL LIFE.

** 1/3 TOTAL VALUE OF PRODUCTION - 1/3 FERTILIZER COST
 - 1/3 CROP INSURANCE COST - PRIMARY WEED CONTROL COST
 - REAL ESTATE TAXES.

TABLE 8: BREAK-EVEN SELLING PRICE PER BUSHEL OF WINTER WHEAT; 15- to 17-INCH RAINFALL AREA OF LINCOLN COUNTY, WASHINGTON (2-YEAR PERIOD).

	COST PER ACRE	YOUR FARM	BREAK-EVEN PRICE (\$/BU.) (65 BU./AC.)	YOUR FARM
\$	\$	\$		
1. TOTAL VARIABLE COST	111.53	_____	1.72	_____
PLUS: TRACTOR & MACHINERY INSURANCE	.67	_____		
TRACTOR & MACHINERY TAXES	2.00	_____		
LAND TAXES	6.00	_____		
2. TOTAL CASH COSTS	120.20	_____	1.85	_____
PLUS: TRACTOR & MACHINERY DEPRECIATION	13.84	_____		
3. TOTAL CASH COST & DEPRECIATION	134.04	_____	2.06	_____
PLUS: TRACTOR & MACHINERY INTEREST	12.75	_____		
TRACTOR & MACHINERY HOUSING	1.11	_____		
INTEREST ON SUMMER FALLOW COST	6.70	_____		
LAND (NET RENT)	66.77	_____		
4. TOTAL COST	221.37	_____	3.41	_____

TABLE 9: SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE OF
 SUMMER FALLOW/WINTER WHEAT FOLLOWING SUMMER FALLOW; 15- TO
 17-INCH RAINFALL AREA OF LINCOLN COUNTY, WASHINGTON (2-YEAR
 PERIOD).

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
GROSS RECEIPTS FROM PRODUCTION					
WHEAT	BU.	\$3.82	65	\$248.30	_____
1. TOTAL RECEIPTS				\$248.30	_____
LESS: TOTAL VARIABLE COST				\$111.53	_____
2. RETURNS OVER VARIABLE COST				\$136.77	_____
LESS: TRACTOR & MACHINERY FIXED COST				\$ 30.36	_____
INTEREST ON SUMMER FALLOW COST				\$ 6.70	_____
LAND TAXES				\$ 6.00	_____
3. NET RETURNS TO LAND AND MANAGEMENT				\$ 93.71	_____

TABLE 10: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR SPRING BARLEY FOLLOWING WINTER WHEAT, LINCOLN COUNTY, WASHINGTON
15- TO 17-INCH ANNUAL RAINFALL AREA.*

		VARIABLE COST										
OPERATION	TOOLING	MTH YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	MACH LABOR	SERVICE MATER.	INTER.	TOTAL VARIABLE COST	TOTAL COST	
					\$	\$	\$	\$	\$	\$	\$	
HARROW	250HP-WT, 70' TINE HARROW	SEP 1990	.03	.04	.66	.64	.36	.00	.00	.11	1.11	1.77
CHISEL	250HP-WT, 24' CHISEL	OCT 1990	.08	.09	1.35	1.88	.92	.00	.00	.27	3.07	4.42
HARROW (2X)	250HP-WT, 70' TINE HARROW	APR 1991	.07	.07	1.33	1.28	.74	.00	.00	.08	2.10	3.43
CULTIVATE	250HP-WT, 40' CULT W/HARROW	APR 1991	.07	.07	2.01	1.40	.74	.00	.00	.08	2.22	4.24
FERTILIZE	250HP-WT, 50' RENTAL	APR 1991	.05	.06	.42	.76	.55	.00	18.95	.78	21.03	21.45
APPLY HERB(75%)**	250HP-WT, 50' APPLICATOR	APR 1991	.02	.02	.16	.29	.21	1.12	10.01	.45	12.08	12.24
PLANT	250HP-WT, 40' DRILL W/BACKPACK	APR 1991	.05	.06	3.50	1.58	.55	1.50	10.30	.53	14.47	17.97
HAUL SEED	2 TON TRUCK	APR 1991	.02	.02	.28	.29	.20	.00	.00	.02	.51	.79
CROP INSURANCE	HAIL AND FIRE INSURANCE	MAY 1991	.00	.00	.00	.00	.00	1.45	.00	.04	1.49	1.49
APPLY HERBICIDE	250HP-WT, 90' SPRAYER	JUN 1991	.03	.03	.21	.38	.28	1.50	8.00	.19	10.35	10.56
HAUL WATER	2 TON TRUCK	JUN 1991	.01	.01	.14	.14	.10	.00	.00	.01	.25	.39
HARVEST	24' COMBINE	JUL 1991	.08	.09	5.22	2.18	.92	.00	.00	.03	3.13	8.34
HAUL	2 TON TRUCK	JUL 1991	.08	.09	1.17	1.19	.92	.00	.00	.02	2.13	3.31
HAUL	2 TON TRUCK	JUL 1991	.08	.09	1.05	1.21	.92	.00	.00	.02	2.15	3.20
MACHINE TRANSPT	2 TON TRUCK	ANN 1991	.01	.01	.14	.14	.10	.00	.00	.01	.26	.40
WEED CONTROL	\$ COST OF PERRENIAL WEED CONT.	ANN 1991	.00	.00	.00	.00	.00	.00	.75	.04	.79	.79
MISC USE	3/4 TON PICKUP	ANN 1991	.25	.28	1.54	2.11	2.75	.00	.00	.28	5.14	6.67
MISC USE	52HP-WT W/BUCKET	ANN 1991	.05	.06	.50	.15	.55	.00	.00	.04	.74	1.24
MISC USE	4WD ALL TERRAIN VEHICLE	ANN 1991	.08	.08	.42	.17	.82	.00	.00	.06	1.05	1.47
OVERHEAD	UTILITIES, LEGAL, ACCT, ETC.	ANN 1991	.00	.00	.00	.00	.00	.00	4.20	.00	4.20	4.20
LAND COST	NET RENT	ANN 1991	.00	.00	37.25	.00	.00	.00	.00	.00	.00	37.25
TAXES	LAND TAXES	ANN 1991	.00	.00	3.00	.00	.00	.00	.00	.00	.00	3.00
TOTAL PER ACRE			1.06	1.16	60.35	15.79	11.63	5.58	52.22	3.06	88.27	148.62

* ASSUMES 1,800 ACRES WITH 600 ACRES IN WINTER WHEAT, 600 ACRES IN SPRING BARLEY OR SPRING WHEAT, AND 600 ACRES IN SUMMER FALLOW, ANNUALLY.

** 75% OF THE SEEDED ACREAGE.

TABLE 11: ITEMIZED COST PER ACRE FOR SPRING BARLEY FOLLOWING WINTER WHEAT, LINCOLN COUNTY, WASHINGTON, 15- TO 17-INCH ANNUAL RAINFALL AREA.

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

VARIABLE COSTS		\$		\$	
NITROGEN	LB.	.25	65.00	16.25	_____
SULFUR	LB.	.27	10.00	2.70	_____
PHOSPHOROUS	LB.	.31	10.00	3.10	_____
BARLEY SEED	LB.	.12	60.00	7.20	_____
BACKPACK RENTAL	ACRE	1.50	1.00	1.50	_____
FARGO	LB.	.89	11.25	10.01	_____
CHEM. APPLIC. RENTAL	ACRE	1.50	.75	1.12	_____
HERBICIDE	ACRE	8.00	1.00	8.00	_____
SPRAYER RENTAL	ACRE	1.50	1.00	1.50	_____
CROP INSURANCE	ACRE	1.45	1.00	1.45	_____
PERENNIAL WEED CONT.	ACRE	.75	1.00	.75	_____
TRACTOR REPAIR	ACRE	2.54	1.00	2.54	_____
TRACTOR FUEL/LUBE	ACRE	4.04	1.00	4.04	_____
MACHINERY REPAIRS	ACRE	6.94	1.00	6.94	_____
MACHINE FUEL/LUBE	ACRE	2.27	1.00	2.27	_____
LABOR(TRAC/MACH)	ACRE	11.63	1.00	11.63	_____
OVERHEAD	ACRE	4.20	1.00	4.20	_____
INTEREST ON OP. CAP.	DOL.	.115	26.60	3.06	_____

TOTAL VARIABLE COST				88.27	_____
FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	1.70	1.00	1.70	_____
TRACTOR INTEREST*	ACRE	1.81	1.00	1.81	_____
TRACTOR INSURANCE	ACRE	.09	1.00	.09	_____
TRACTOR TAXES	ACRE	.28	1.00	.28	_____
TRACTOR HOUSING	ACRE	.16	1.00	.16	_____
MACHINE DEPRECIATION	ACRE	7.35	1.00	7.35	_____
MACHINE INTEREST*	ACRE	6.72	1.00	6.72	_____
MACHINE INSURANCE	ACRE	.35	1.00	.35	_____
MACHINE TAXES	ACRE	1.05	1.00	1.05	_____
MACHINE HOUSING	ACRE	.58	1.00	.58	_____
LAND TAX	ACRE	3.00	1.00	3.00	_____
NET RENT**	ACRE	37.25	1.00	37.25	_____

TOTAL FIXED COST				60.35	_____
TOTAL COST				148.62	_____

* 11.5% OPPORTUNITY COST ON THE AVERAGE VALUE OF MACHINERY INVESTMENT OVER THE USEFUL LIFE.

** 1/3 TOTAL VALUE OF PRODUCTION - 1/3 FERTILIZER COST - 1/3 CROP INSURANCE COST - PERENNIAL WEED CONTROL COST - REAL ESTATE TAXES.

TABLE 12: BREAK-EVEN SELLING PRICE PER TON OF SPRING BARLEY; 15- to 17-INCH RAINFALL AREA OF LINCOLN COUNTY, WASHINGTON.

YOUR	COST PER	YOUR	BREAK-EVEN	
	ACRE	FARM	PRICE (\$/TON)	FARM
	\$	\$	(1.5 TONS/AC.)	\$
1. TOTAL VARIABLE COST	88.27	_____	58.85	_____
PLUS: TRACTOR & MACHINERY INSURANCE	.44	_____		
TRACTOR & MACHINERY TAXES	1.33	_____		
LAND TAXES	3.00	_____		
2. TOTAL CASH COSTS	93.04	_____	62.03	_____
PLUS: TRACTOR & MACHINERY DEPRECIATION	9.05	_____		
3. TOTAL CASH COST & DEPRECIATION	102.09	_____	68.06	_____
PLUS: TRACTOR & MACHINERY INTEREST	8.53	_____		
TRACTOR & MACHINERY HOUSING	.75	_____		
LAND (NET RENT)	37.25	_____		
4. TOTAL COST	148.62	_____	99.08	_____

TABLE 13: SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE OF SPRING BARLEY; 15- TO 17-INCH RAINFALL AREA OF LINCOLN COUNTY, WASHINGTON.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
GROSS RECEIPTS FROM PRODUCTION					
BARLEY	TON	\$ 96.70	1.5	\$145.05	_____
1. TOTAL RECEIPTS				\$145.05	_____
LESS: TOTAL VARIABLE COST				\$ 88.27	_____
2. RETURNS OVER VARIABLE COST				\$ 56.78	_____
LESS: TRACTOR & MACHINERY FIXED COST				\$ 20.01	_____
LAND TAXES				\$ 3.00	_____
3. NET RETURNS TO LAND AND MANAGEMENT				\$ 33.77	_____

TABLE 14: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR SPRING WHEAT FOLLOWING WINTER WHEAT, LINCOLN COUNTY, WASHINGTON, 15- TO 17-INCH 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	250HP-WT, 70' TINE HARROW	SEP 1990	.03	.04	.65	.63	.36	.00	.00	.10	1.10	1.75
CHISEL	250HP-WT, 24' CHISEL	OCT 1990	.08	.09	1.35	1.88	.92	.00	.00	.27	3.07	4.42
HARROW (2X)	250HP-WT, 70' TINE HARROW	APR 1991	.07	.07	1.33	1.28	.74	.00	.00	.08	2.10	3.43
CULTIVATE	250HP-WT, 40' CULT W/HARROW	APR 1991	.07	.07	2.01	1.40	.74	.00	.00	.08	2.22	4.24
FERTILIZE	250HP-WT, 50' RENTAL	APR 1991	.05	.06	.42	.76	.55	.00	18.95	.78	21.03	21.45
APPLY HERB(75%)**	250HP-WT, 50' APPLICATOR	APR 1991	.02	.02	.16	.29	.21	1.12	10.01	.45	12.08	12.24
PLANT	250HP-WT, 40' DRILL W/BACKPACK	APR 1991	.05	.06	3.50	1.58	.55	1.50	9.92	.52	14.08	17.58
HAUL SEED	2 TON TRUCK	APR 1991	.02	.02	.28	.29	.20	.00	.00	.02	.51	.79
CROP INSURANCE	HAIL AND FIRE INSURANCE	MAY 1991	.00	.00	.00	.00	.00	1.70	.00	.05	1.75	1.75
APPLY HERBICIDE	250HP-WT, 90' SPRAYER	JUN 1991	.03	.03	.21	.38	.28	1.50	8.00	.19	10.35	10.56
HAUL WATER	2 TON TRUCK	JUN 1991	.01	.01	.14	.14	.10	.00	.00	.01	.25	.39
HARVEST	24' COMBINE	JUL 1991	.11	.12	6.98	2.91	1.22	.00	.00	.04	4.17	11.15
HAUL	2 TON TRUCK	JUL 1991	.11	.12	1.57	1.59	1.22	.00	.00	.03	2.84	4.41
HAUL	2 TON TRUCK	JUL 1991	.11	.12	1.40	1.62	1.22	.00	.00	.03	2.87	4.27
MACHINE TRANSPT	2 TON TRUCK	ANN 1991	.01	.01	.14	.14	.10	.00	.00	.01	.26	.40
WEED CONTROL	\$ COST OF PERRENIAL WEED CONT.	ANN 1991	.00	.00	.00	.00	.00	.00	.75	.04	.79	.79
MISC USE	3/4 TON PICKUP	ANN 1991	.25	.28	1.54	2.11	2.75	.00	.00	.28	5.14	6.67
MISC USE	52HP-WT W/BUCKET	ANN 1991	.05	.06	.50	.15	.55	.00	.00	.04	.74	1.24
MISC USE	4WD ALL TERRAIN VEHICLE	ANN 1991	.08	.08	.42	.17	.82	.00	.00	.06	1.05	1.47
OVERHEAD	UTILITIES, LEGAL, ACCT, ETC.	ANN 1991	.00	.00	.00	.00	.00	.00	4.32	.00	4.32	4.32
LAND COST	NET RENT	ANN 1991	.00	.00	46.12	.00	.00	.00	.00	.00	.00	46.12
TAXES	LAND TAXES	ANN 1991	.00	.00	3.00	.00	.00	.00	.00	.00	.00	3.00
TOTAL PER ACRE			1.14	1.25	71.72	17.33	12.53	5.83	51.96	3.07	90.71	162.43

* ASSUMES 1,800 ACRES WITH 600 ACRES IN WINTER WHEAT, 600 ACRES IN SPRING BARLEY OR SPRING WHEAT, AND 600 ACRES IN SUMMER FALLOW, ANNUALLY.

** 75% OF THE SEEDED ACREAGE.

TABLE 15: ITEMIZED COST PER ACRE FOR SPRING WHEAT FOLLOWING WINTER WHEAT, LINCOLN COUNTY, WASHINGTON, 15- TO 17-INCH RAINFALL AREA.

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

VARIABLE COSTS		\$		\$	
NITROGEN	LB.	.25	65.00	16.25	_____
SULFUR	LB.	.27	10.00	2.70	_____
PHOSPHOROUS	LB.	.31	10.00	3.10	_____
SPRING WHEAT SEED	ACRE	.105	65.00	6.82	_____
BACKPACK RENTAL	ACRE	1.50	1.00	1.50	_____
FARGO	LB.	.89	11.25	10.01	_____
CHEM. APPLIC. RENTAL	ACRE	1.50	.75	1.12	_____
HERBICIDE	ACRE	8.00	1.00	8.00	_____
SPRAYER RENTAL	ACRE	1.50	1.00	1.50	_____
CROP INSURANCE	ACRE	1.70	1.00	1.70	_____
PERENNIAL WEED CONT.	ACRE	.75	1.00	.75	_____
TRACTOR REPAIR	ACRE	2.54	1.00	2.54	_____
TRACTOR FUEL/LUBE	ACRE	4.04	1.00	4.04	_____
MACHINERY REPAIRS	ACRE	8.08	1.00	8.08	_____
MACHINE FUEL/LUBE	ACRE	2.67	1.00	2.67	_____
LABOR(TRAC/MACH)	ACRE	12.53	1.00	12.53	_____
OVERHEAD	ACRE	4.32	1.00	4.32	_____
INTEREST ON OP. CAP.	DOL.	.115	26.73	3.07	_____

TOTAL VARIABLE COST				90.71	_____
FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	1.69	1.00	1.69	_____
TRACTOR INTEREST*	ACRE	1.81	1.00	1.81	_____
TRACTOR INSURANCE	ACRE	.09	1.00	.09	_____
TRACTOR TAXES	ACRE	.28	1.00	.28	_____
TRACTOR HOUSING	ACRE	.16	1.00	.16	_____
MACHINE DEPRECIATION	ACRE	8.52	1.00	8.52	_____
MACHINE INTEREST*	ACRE	7.75	1.00	7.75	_____
MACHINE INSURANCE	ACRE	.40	1.00	.40	_____
MACHINE TAXES	ACRE	1.21	1.00	1.21	_____
MACHINE HOUSING	ACRE	.67	1.00	.67	_____
LAND TAX	ACRE	3.00	1.00	3.00	_____
NET RENT**	ACRE	46.12	1.00	46.12	_____

TOTAL FIXED COST				71.72	_____
TOTAL COST				162.43	_____

* 11.5% OPPORTUNITY COST ON THE AVERAGE VALUE OF MACHINERY INVESTMENT OVER THE USEFUL LIFE.

** 1/3 TOTAL VALUE OF PRODUCTION - 1/3 FERTILIZER COST - 1/3 CROP INSURANCE COST - PERENNIAL WEED CONTROL COST - REAL ESTATE TAXES.

TABLE 16: BREAK-EVEN SELLING PRICE PER BUSHEL OF SPRING WHEAT; 15- to 17-INCH RAINFALL AREA OF LINCOLN COUNTY, WASHINGTON.

YOUR	COST PER	YOUR	BREAK-EVEN	
	ACRE	FARM	PRICE (\$/TON)	FARM
	\$	\$	(45 BU/AC)	\$
1. TOTAL VARIABLE COST	90.71	_____	2.02	_____
PLUS: TRACTOR & MACHINERY INSURANCE	.49	_____		
TRACTOR & MACHINERY TAXES	.49	_____		
LAND TAXES	3.00	_____		
2. TOTAL CASH COSTS	95.69	_____	2.13	_____
PLUS: TRACTOR & MACHINERY DEPRECIATION	10.21	_____		
3. TOTAL CASH COST & DEPRECIATION	105.90	_____	2.35	_____
PLUS: TRACTOR & MACHINERY INTEREST	9.57	_____		
TRACTOR & MACHINERY HOUSING	.84	_____		
LAND (NET RENT)	46.12	_____		
4. TOTAL COST	162.43	_____	3.61	_____

TABLE 17: SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE OF
 SPRING WHEAT; 15- TO 17-INCH RAINFALL AREA OF LINCOLN COUNTY,
 WASHINGTON.

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

GROSS RECEIPTS FROM PRODUCTION					
WHEAT	BU	\$ 3.82	45	\$171.90	_____
1. TOTAL RECEIPTS				\$171.90	_____
LESS: TOTAL VARIABLE COST				\$ 90.71	_____
2. RETURNS OVER VARIABLE COST				\$ 81.19	_____
LESS: TRACTOR & MACHINERY FIXED COST				\$ 22.60	_____
LAND TAXES				\$ 3.00	_____
3. NET RETURNS TO LAND AND MANAGEMENT				\$ 55.59	_____

TABLE 18: MATERIALS AND SERVICES PROVIDED BY OPERATION TO PRODUCE WINTER WHEAT, SPRING BARLEY, AND SPRING WHEAT IN LINCOLN COUNTY, WASHINGTON, 15- TO 17-INCH RAINFALL AREA.

OPERATION	MONTH	MATERIAL AND/OR SERVICE
SUMMER FALLOW YEAR:		
APPLY HERBICIDE	APRIL	10 OZS. OF ROUNDUP @ .32¢/OZ. SPRAYER RENTAL @ \$1.50/ACRE
FERTILIZE	JULY	75 LBS. OF NITROGEN @ .25¢/LB. 8 LBS. OF SULFUR @ .27¢/LB.
WEED CONTROL	ANNUAL	DOLLAR COST OF PERENNIAL WEED CONTROL @ .75¢/ACRE
OVERHEAD	ANNUAL	5% VARIABLE COST
WINTER WHEAT YEAR:		
APPLY HERBICIDE (30%)	SEPT.	15 LBS. OF FARGO @ .89¢/LB.* RENTED APPLICATOR @ \$1.50/ACRE*
PLANT (1.15X)	SEPT.	69 LBS. OF WHEAT SEED @ .10¢/LB. 10 LBS. OF PHOSPHOROUS @ .31¢/LB. 6 LBS. OF NITROGEN @ .25¢/LB.
APPLY HERBICIDE	APRIL	SPRAYER RENTAL @ \$1.50/ACRE SPRING HERBICIDE @ \$10.00/ACRE
SPRAY (.10X)	APRIL	RUST/FTRT SPRAY @ \$13.00/ACRE* AERIAL APPLICATION @ \$4.50/ACRE*
CROP INSURANCE	MAY	HAIL AND FIRE CROP INSURANCE @ \$2.45/ACRE
WEED CONTROL	ANNUAL	DOLLAR COST OF PERENNIAL WEED CONTROL @ .75¢/ACRE
OVERHEAD	ANNUAL	5% VARIABLE COST
SPRING BARLEY YEAR:		
PLANT	APRIL	60 LBS. OF BARLEY SEED @ .12¢/LB. 10 LBS. OF PHOSPHOROUS @ .31¢/LB. BACKPACK RENTAL @ \$1.50/ACRE
FERTILIZE	APRIL	65 LBS. OF NITROGEN @ .25¢/LB. 10 LBS. OF SULFUR @ .27¢/LB.
APPLY HERBICIDE (75%)	APRIL	15 LBS. OF FARGO @ .89¢/LB.* RENTED APPLICATOR @ \$1.50/ACRE*
CROP INSURANCE	MAY	HAIL AND FIRE CROP INSURANCE @ \$1.45/ACRE
APPLY HERBICIDE	JUNE	HERBICIDE @ \$8.00/ACRE SPRAYER RENTAL @ \$1.50/ACRE

TABLE 19: MACHINERY COMPLEMENT AND HOURLY MACHINE COST

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-----				
250HP-WT. 8YR	30,000.00	10	600	3.53	3.72	.19	.58	.32	8.35	5.95	12.07	18.03	26.37
52HP-WT W/BKT,USED	8,000.00	20	100	4.00	4.60	.24	.72	.40	9.96	.25	3.62	3.87	13.83
24' COMBINE, 5YR	50,000.00	10	135	30.04	25.32	1.32	3.96	2.20	62.84	17.04	12.07	29.11	91.96
2TON TRUCK, 2YR	25,000.00	20	220	5.68	6.53	.34	1.02	.57	14.15	12.05	3.02	15.06	29.21
2TON TRUCK, 12YR	10,000.00	10	135	6.10	5.01	.26	.78	.44	12.59	11.85	3.62	15.47	28.07
3/4 TON PICKUP,NEW	16,000.00	7	520	3.27	2.22	.12	.35	.19	6.15	4.81	4.35	9.15	15.31
4WD ATV, NEW	4,000.00	5	165	3.27	1.85	.10	.29	.16	5.66	1.00	1.45	2.45	8.11
24' CHISEL, 5YR	5,000.00	15	100	3.01	3.15	.16	.49	.27	7.10	6.00	.00	6.00	13.10
70'TINE HAR 3YR	7,500.00	15	100	4.52	4.73	.25	.74	.41	10.64	2.50	.00	2.50	13.14
40'CULT W/HAR,NEW	12,500.00	15	85	8.86	9.27	.48	1.45	.81	20.87	4.24	.00	4.24	25.11
60'RODWD W/HAR,NEW	15,000.00	15	75	12.05	12.60	.66	1.97	1.10	28.38	4.87	.00	4.87	33.25
40' DISK DRILL,NEW	30,000.00	15	70	25.83	27.01	1.41	4.23	2.35	60.82	15.00	.00	15.00	75.82

TABLE 20: PRICES OF SELECTED INPUTS, LINCOLN COUNTY, WASHINGTON.

ITEM	UNIT	PRICE/UNIT
		\$
<u>Fuel:</u>		
Gasoline	Gal.	1.05
Diesel	Gal.	.80
<u>Fertilizer:</u>		
Nitrogen	Lb.	.25
Sulfur	Lb.	.27
Phosphorous	Lb.	.31
<u>Chemicals</u>		
Roundup	Oz.	.32
Fargo	Lb.	.89
Spring Herbicide	Acre	8.00
Rust/Strawbreaker Footrot Fungicide	Acre	13.00
<u>Seed:</u>		
Winter Wheat Seed	Lb.	.10
Spring Wheat Seed	Lb.	.105
Spring Barley Seed	Lb.	.12
<u>Rental and Custom Rates:</u>		
Herbicide Applicator	Acre	1.50
Aerial Application	Acre	4.50
Backpack	Acre	1.50
<u>Labor:</u>	Hour	10.00

TABLE 18: MATERIALS AND SERVICES PROVIDED BY OPERATION TO PRODUCE
 SPRING BARLEY, SPRING WHEAT, AND WINTER WHEAT IN LINCOLN
 COUNTY, WASHINGTON, 15- TO 17-INCH RAINFALL AREA (Continued).

OPERATION	MONTH	MATERIAL AND/OR SERVICE
WEED CONTROL	ANNUAL	DOLLAR COST OF PERENNIAL WEED CONTROL @ .75¢/ACRE
OVERHEAD	ANNUAL	5% VARIABLE COST
SPRING WHEAT YEAR:		
FERTILIZE	APRIL	65 LBS. OF NITROGEN @ .25¢/LB. 10 LBS. OF SULFUR @ .27¢/LB.
PLANT	APRIL	65 LBS. OF WHEAT SEED @ \$1.05/LB. 10 LBS. OF PHOSPHOROUS @ .31¢/LB. BACKPACK RENTAL @ \$1.50/ACRE
APPLY HERBICIDE (75%)	APRIL	15 LBS. OF FARGO @ .89¢/ACRE* SPRAYER RENTAL \$1.50/ACRE*
CROP INSURANCE	MAY	HAIL AND FIRE CROP INSURANCE @ \$1.70/ACRE
APPLY HERBICIDE	JUNE	HERBICIDE @ \$8.00/ACRE
WEED CONTROL	ANNUAL	DOLLAR COST OF PRIMARY WEED CONTROL @ .75¢/ACRE
OVERHEAD	ANNUAL	5% VARIABLE COST

* PER ACTUAL ACRE APPLIED.

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.

Alternate formats of our educational materials are available upon request for persons with disabilities. Please contact the Information Department, College of Agriculture and Home Economics.

Washington State University Cooperative Extension publications contain material written and produced for public distribution. You may reprint written material, provided you do not use it to endorse a commercial product. Please reference by title and credit Washington State University Cooperative Extension.

Issued by Washington State University Cooperative Extension and the U.S. Department of Agriculture in furtherance of the Acts of May 8 and June 30, 1914. Cooperative Extension programs and policies are consistent with federal and state laws and regulations on nondiscrimination regarding race, sex, religion, age, color, creed, national or ethnic origin; physical, mental or sensory disability; marital status, sexual orientation, and status as a Vietnam-era or disabled veteran. Evidence of noncompliance may be reported through you local Cooperative Extension office.

Published 1991. Subject codes 274, 340.A.

EB1616