


<p>Farm Business Management Reports</p>		<p>EB1617</p>
	<p>1997 ENTERPRISE BUDGETS WINTER WHEAT-DRY PEA ROTATION COLUMBIA COUNTY, WASHINGTON STATE</p>	
	<p>Herbert Hinman Roland Schirman</p>	
<p>COOPERATIVE EXTENSION WASHINGTON STATE  UNIVERSITY</p>		

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 serves as an estimate of the costs and returns for growing winter wheat and dry peas under dryland conditions in the 18- to 22-inch area of Columbia 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.

**1997 CROP ENTERPRISE BUDGETS
WINTER WHEAT-DRY PEA ROTATION
COLUMBIA COUNTY, WASHINGTON**

Herbert Hinman and Roland Schirman¹

INTRODUCTION

This publication presents estimated costs and returns for a winter wheat-dry pea rotation, the common crop rotation in the 18- to 22-inch rainfall area of Columbia County. Producers, agricultural lenders, and others should find this information helpful in identifying enterprise strengths and weaknesses, planning production adjustments, determining financial requirements, making marketing decisions, and analyzing other business management issues.

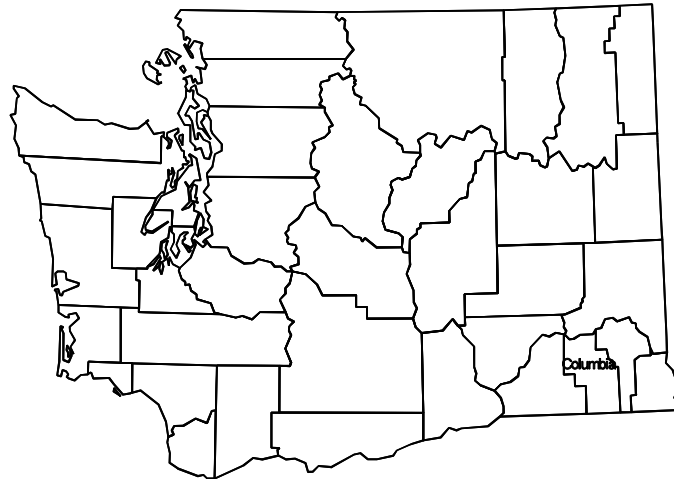


Figure 1 Columbia County, Washington

The enterprise data represent costs and returns under the specific assumptions adopted for the study, not a particular farm. Individual growers will need to use the blanks provided on the right-hand side of these budget estimates to make adjustments for their costs and returns. Additional help is available through local Cooperative Extension agents and fieldpersons for questions and/or suggestions on field operations and operating inputs.

¹Extension Economist and Columbia County Extension Agent, respectively, Cooperative Extension, Washington State University.

SOURCES OF INFORMATION

A committee of experienced Columbia County wheat/pea producers was assembled at the request of the county agent. They identified the machinery complement, field operations, and inputs commonly used in well-managed operations. The producers also determined the price to use for labor, including social security tax, labor and industrial insurance, plus any perks that may be provided such as housing, vehicles, gasoline, etc. The price of labor also represents what the owner-operator calculates as a fair return to his/her labor. Local farm suppliers were contacted to obtain current price information on materials and services commonly used. Machinery costs were based on current replacement prices and on rates of annual use considered typical for a 1,500-acre farm.

TRANSITION PAYMENTS

The federal government is stopping all wheat and feed grain subsidy payments to farmers. However, instead of stopping these payments immediately, there is a transition period over which subsidy payments are to be phased out. Thus, from 1997 through the year 2002 wheat and barley farmers will receive a transition payment on 85% of their base acreage for wheat and barley times their established yields. These transition payments vary from year to year and will be paid regardless of the crop mix grown. The transition payments for wheat and barley are the following:

Year	Transition Payment	
	Wheat (Bu.) \$	Barley (Ton) \$
1997	0.61	10.43
1998	0.65	10.83
1999	0.63	10.00
2000	0.57	9.16
2001	0.46	8.34
2002	0.45	7.50

Thus, if we assume that a farm has a base acreage for wheat that is 750 acres with an established yield of 70 bushels, and no barley base, the total transition payments for 1997 through 2002 will equal:

1997	750 acres	X	70 bu.	X	\$0.61	X	85%	=	\$27,221.25
1998	750 acres	X	70 bu.	X	\$0.65	X	85%	=	\$29,006.25
1999	750 acres	X	70 bu.	X	\$0.63	X	85%	=	\$28,113.75
2000	750 acres	X	70 bu.	X	\$0.57	X	85%	=	\$25,436.25
2001	750 acres	X	70 bu.	X	\$0.46	X	85%	=	\$20,527.50
2002	750 acres	X	70 bu.	X	\$0.45	X	85%	=	\$20,081.25

After 2002, all transition payments cease and the returns for

wheat and barley will depend solely upon yield and market price. Thus, since these transition payments are received regardless of the crop mix grown, they are not figured into the expected returns of the crops grown in this study. The expected returns from wheat and peas are based solely upon expected yield times the expected price.

BUDGET ASSUMPTIONS

The following assumptions were made in developing the data:

1. For reasons mentioned above, program payments are not included in the analysis.
2. The representative farm includes 1,500 acres with 750 acres in winter wheat, 500 acres in peas, and 250 acres of other crops, grass or summer fallow, annually.
3. Wheat yield is assumed to be 70 bushels per acre and dry pea yield is assumed to be 18 hundredweight per acre. It should be realized, however, that yields vary by year and location in Columbia County, and varied yields have a substantial impact on break-even prices.
4. The farm gate price to the grower for wheat, net of transportation and marketing costs, is \$3.95 per bushel. The assumed price for dry peas is \$8.50 per hundredweight.
5. Machinery is valued at current replacement prices. Machinery on farms of the representative size in Columbia County are typically replaced used. 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 an enterprise is evaluated to determine its long-run viability, it is important to consider its ability to replace depreciable assets on a replacement cost basis.
6. The prevailing interest rate for both operating and capital asset investments is 10.5%.
7. The farm is owned, managed, and operated by the same person.

The budget should be viewed as "typical" or "representative," rather than a mathematical average of a large number of producers. Quite different enterprise costs and returns may result where such factors as farm size, machinery complement and use, cultural practices, and yield differ from those assumed in this publication. Also, this budget includes only production costs and does not include storage, handling, transportation, and interest costs faced by the farmer in marketing wheat and peas.

DISCUSSION OF BUDGET INFORMATION

The budget information for the winter wheat and the dry pea enterprise is reported in 9 separate tables.

Tables 1 and 4: Schedule of Operations and Costs Per Acre

Tables 1 and 4 outline the schedule of field operations by calendar month, type of machinery used, and hours used per acre for winter wheat and dry peas, respectively. Costs are divided into machinery and land fixed costs and variable costs, those 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 investment, property taxes, and insurance. 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. The per-hour fixed costs are determined by dividing the total annual fixed cost by the annual hours of machinery use for the representative farm. Machinery fixed costs for a specific field operation are determined by multiplying the machine hours per acre times the per-hour fixed cost (Table 8).

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 for land on which wheat is grown is a 40% landlord and 60% tenant crop share, with the landlord paying land taxes, 40% of the fertilizer cost, and 40% of the crop insurance, and 100% of the chemicals for perennial weed control. The tenant covers all other production expenses. Thus, net rent per acre for winter wheat is calculated as follows:

\$110.60	(40% gross receipts from production)
- \$ 5.00	(land tax)
- \$ 9.72	(chemical for perennial weed control)
- \$ 13.78	(40% fertilizer, and 40% crop insurance costs)
\$ 82.10	Net Rent per Acre

The typical lease agreement for land on which dry peas are grown is 25% landlord and 75% tenant crop share, with the landlord paying land taxes, 25% of the crop insurance cost, and 100% of the chemicals for perennial weed control. The tenant covers all other production expenses. Thus, net rent per acre for dry peas is calculated as follows:

\$ 38.25	(25% gross receipts from production)
- \$ 5.00	(land tax)
- \$ 4.05	(chemical for perennial weed control)
- \$.64	(25% crop insurance costs)
\$ 28.56	Net rent per acre

While the owner-operator does not actually experience a land rental cost, the cost represents the minimum returns the owner-operator must have to justify growing this crop. This net rent return represents the income the owner-operator foregoes by producing this crop rather than renting to a tenant who produces the crop. Thus, the appropriate land charge for the owner-operator growing the crop is equal to the net rent lost. As used in this publication, land cost is termed an opportunity cost to indicate that it is not an out-of-pocket expense, but rather a return that is foregone as a result of choosing to use the land to grow this crop. To determine the profitability of crop production relative to other activities, the owner-operator may want to consider these foregone returns, or opportunity costs, along with the usual production expenses. Of course, for the individual producer, any land costs that are actual cash costs, such as interest payments on loans outstanding or land rent payments, must be identified and treated as cash costs and not as opportunity costs. Changes in land values are not considered as part of this enterprise.

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. Machine operating labor, including that provided by the owner-operator, is also included as a variable cost.

Tables 2 and 5: Materials and Services Provided by Operation

Tables 1 and 4, "Schedule of Operations and Estimated Cost Per Acre..." for winter wheat and dry peas, respectively, list under the "Service" column and "Materials" column dollar figures for services and materials used by different operations. Tables 2 and 5 list, by operation, specific services and/or materials used, quantities used, and prices paid for producing winter wheat and dry peas, respectively.

Tables 3 and 6: Summary of Production Cost Per Acre

Tables 3 and 6 itemize the costs appearing in the "Schedule of Operations and Costs per Acre" for winter wheat and dry peas, respectively. Most of the items are self-explanatory or have been explained previously. Two entries, "Interest on Tractors" and "Interest on Machinery," warrant additional explanation.

Tractor and 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 10.5% interest charge made against this average investment represents either an opportunity cost (returns foregone by investing in the given machine rather than in an alternative investment) or interest paid on money borrowed to finance machine purchases, or both. Interest cost for one acre of cropland is determined by multiplying the respective machine and/or tractor hours per acre times the per hour interest costs (Table 8).

Table 7: Machinery Complement

Table 7 identifies the machine complement used to derive machine costs. It includes the type of machines used on the representative farm, their current replacement value (new or used), years of use before trade-in, salvage value at trade-in, annual repair cost, and annual hours of use.

Table 8: Machinery Costs

The data in Table 8 are used to estimate the per-hour fixed and variable costs. Machinery and building fixed costs include depreciation and interest on investment, property taxes, and insurance; these are costs that do not vary with crop grown or number of acres produced. Current replacement costs are used for all machinery.² Note that interest on investment represents an 10.5% opportunity cost to the enterprise. These are earnings foregone by investing money in the machinery rather than the next best alternative. This may also represent the interest paid on funds borrowed to purchase machinery and buildings.

Machinery variable costs include machine repair, fuel, and lubrication--costs that vary with the crop grown or the number of acres produced.

²Resources to help producers estimate their machinery cost are the following:

MACHCOST - A Machinery Cost Analysis Computer Program, Department of Agricultural Economics and Rural Sociology, University of Idaho.

The Cost of Owning and Operating Farm Machinery in the Pacific Northwest, PNW 346, A Pacific Northwest Extension Publication, Washington State University - University of Idaho - Oregon State University.

Table 9: Input Prices

The 1997 prices used for fuel, fertilizer, chemicals, seed, custom services, and other inputs are listed in Table 9.

SUMMARY OF RESULTS AND CONCLUDING NOTE

This publication presents estimated production costs of winter wheat and dry peas grown in the 18- to 22-inch rainfall area in Columbia County. The yields and prices received for these crops are 1997 projections. The variable, fixed, and total cost, and the break-even prices for winter wheat and dry peas under the given assumptions are the following:

	<u>Winter Wheat</u>	<u>Dry Peas</u>
Variable Cost	\$169	\$205
Fixed Cost	\$127	\$ 85
Total Cost	\$296	\$290
Estimated Yield	70 Bu.	18 Cwt.
Break-Even Price/Unit	\$4.22	\$16.12

These budgets are representative of the costs producers in the 18- to 22-inch rainfall area of Columbia County are currently facing when producing these crops. During times in which returns do not cover total costs, producers remain in business by postponing equipment replacement and by accepting a lower return for their labor and equity.

Users of these budgets should fully comprehend the procedures and assumptions used in this study and interpret the results accordingly. The budgets do not represent any one particular operation. Therefore, the budgets should be used as a general guide to help derive budgets for a particular operation. Moreover, this publication is not intended as a guide to recommend production practices. Rather, it represents production practices currently used in the area.

TABLE 1. 1997 SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR WINTER WHEAT FOLLOWING DRY PEAS, COLUMBIA COUNTY, WASHINGTON, 18- TO 22-INCH RAINFALL AREA.

		VARIABLE COST											
OPERATION	TOOLING	MTH	YEAR	HOURS	HOURS	TOTAL	FUEL, LUBE, &				TOTAL	TOTAL	
						FIXED	REPAIRS	LABOR	SERVICE	MATER.	INTER.		VARIABLE
						\$	\$	\$	\$	\$	\$	\$	
WEED CONTROL	PERENNIAL WD CTL, CUSTM AERIAL	AUG	1996	.00	.00	.00	.00	.00	4.50	9.72	1.37	15.59	15.59
CHISEL PLOW	185HP-CT, 16' CHISEL PLOW	SEP	1996	.20	.22	4.70	6.62	2.64	.00	.00	.81	10.07	14.78
FERTILIZE	185HP-CT, 45' FERT. APPLICATOR	SEP	1996	.06	.07	.81	1.28	.88	.00	30.96	2.90	36.02	36.83
CULTIWEED	185HP-CT, 36' CULTIWEEDER	SEP	1996	.08	.09	3.54	2.98	1.10	.00	.00	.36	4.44	7.99
PLANT	185HP-CT, 30' DISC DRILL	SEP	1996	.17	.21	7.65	5.55	2.50	.00	10.20	1.60	19.85	27.49
HAUL SEED	3 TON TRUCK	SEP	1996	.02	.04	.30	.34	.48	.00	.00	.07	.89	1.20
APPLY HERB, 20%	185HP-CT, 50' SPRAYER	SEP	1996	.01	.01	.11	.17	.12	.30	3.45	.35	4.40	4.51
HAUL WATER, 20%	3 TON TRUCK	SEP	1996	.00	.01	.06	.07	.10	.00	.00	.01	.18	.24
HERB/FUNG, 50%	185HP-CT, 50' SPRAYER	MAR	1997	.02	.03	.28	.44	.31	.75	10.00	.40	11.90	12.18
HAUL WATER, 50%	3T TRUCK W/1500 GAL. SLIP TANK	MAR	1997	.01	.02	.15	.17	.24	.00	.00	.01	.43	.58
HERB/FUNG, 50%	CUSTOM AERIAL	MAR	1997	.00	.00	.00	.00	.00	2.25	10.00	.43	12.68	12.68
CROP INSURANCE	HAIL, FIRE AND MULTI-PERIL	MAY	1997	.00	.00	.00	.00	.00	3.50	.00	.06	3.56	3.56
HARVEST	22' COMBINE	JUL	1997	.27	.32	13.01	11.52	3.84	.00	.00	.00	15.36	28.37
HAUL	3 TON TRUCK (5-10 YRS OLD)	JUL	1997	.20	.32	3.03	3.42	3.84	.00	.00	.00	7.26	10.29
HAUL	3 TON TRUCK (> 10 YRS OLD)	JUL	1997	.20	.32	1.56	3.07	3.84	.00	.00	.00	6.91	8.47
MACHINE TRANSPT	2 TON TRUCK	ANN	1997	.01	.02	.15	.17	.24	.00	.00	.02	.43	.58
MISC USE	3/4 TON PICKUP	ANN	1997	.33	.37	3.22	2.38	4.40	.00	.00	.36	7.13	10.36
MISC USE	52HP-WT W/BUCKET	ANN	1997	.05	.06	.74	.27	.66	.00	.00	.05	.98	1.72
MISC USE	4WD ATV	ANN	1997	.08	.08	.41	.18	.99	.00	.00	.06	1.23	1.64
OVERHEAD	UTILITIES, LEGAL, ACCT, ETC.	ANN	1997	.00	.00	.00	.00	.00	.00	9.56	.00	9.56	9.56
TAXES	LAND TAXES	ANN	1997	.00	.00	5.00	.00	.00	.00	.00	.00	.00	5.00
LAND COST	NET RENT	ANN	1997	.00	.00	82.10	.00	.00	.00	.00	.00	.00	82.10
TOTAL PER ACRE				1.71	2.18	126.82	38.64	26.18	11.30	83.89	8.87	168.88	295.70

Table 2. Materials and Services Provided by Operation to Produce Winter Wheat in Columbia County, Washington, 18- to 22-Inch Rainfall Area.

Operation	Month	Material And/Or Service
Perennial Weed Control	August	54 ozs. of Landmaster @ 18¢/oz. Custom aerial @ \$4.50/acre
Fertilize	September	80 lbs. of nitrogen @ 31.5¢/lb. 12 lbs. of sulfur @ 48¢/lb.
Plant	September	85 lbs. of wheat seed @ 12¢/lb.
Apply Herbicide (20%)	September	15 lbs. of Fargo @ \$1.15/lb.* Rented applicator @ \$1.50/acre*
Apply Herb/Fung (50%)	March	Spring herbicide/fungicide @ \$20.00/acre* Rented applicator @ \$1.50/acre*
Apply Herb/Fung (50%)	March	Spring herbicide/fungicide @ \$20.00/acre* Custom aerial @ \$4.50/acre
Crop Insurance	May	Hail, fire and multi-peril crop insurance @ \$3.50/acre
Overhead	Annual	6% of variable cost

* Per acre applied.

TABLE 3. 1997 ITEMIZED COST PER ACRE FOR WINTER WHEAT FOLLOWING DRY PEAS, COLUMBIA COUNTY, WASHINGTON, 18- TO 22-INCH RAINFALL AREA.

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

VARIABLE COSTS		\$		\$	
NITROGEN (AI)	LB.	.32	80.00	25.20	_____
SULFUR (AI)	LB.	.48	12.00	5.76	_____
WHEAT SEED	LB.	.12	85.00	10.20	_____
FARGO	LB.	1.15	3.00	3.45	_____
LANDMASTER	OZ.	.18	54.00	9.72	_____
SPR. HERB/FUNG	ACRE	20.00	.50	10.00	_____
SPR. HERB/FUNG	ACRE	20.00	.50	10.00	_____
CUSTOM AERIAL	ACRE	4.50	1.00	4.50	_____
CUSTOM AERIAL	ACRE	4.50	.50	2.25	_____
50' SPRAYER	ACRE	1.50	.20	.30	_____
50' SPRAYER	ACRE	1.50	.50	.75	_____
CROP INSURANCE	ACRE	3.50	1.00	3.50	_____
TRACTOR REPAIR	ACRE	9.41	1.00	9.41	_____
TRACTOR FUEL/LUBE	ACRE	4.18	1.00	4.18	_____
MACHINERY REPAIRS	ACRE	20.18	1.00	20.18	_____
MACHINE FUEL/LUBE	ACRE	4.87	1.00	4.87	_____
LABOR (TRAC/MACH)	HOUR	12.00	2.18	26.18	_____
OVERHEAD	ACRE	9.56	1.00	9.56	_____
INTEREST ON OP. CAP.	ACRE	8.87	1.00	8.87	_____

TOTAL VARIABLE COST				168.88	_____
FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	3.23	1.00	3.23	_____
TRACTOR INTEREST	ACRE	4.20	1.00	4.20	_____
TRACTOR INSURANCE	ACRE	.24	1.00	.24	_____
TRACTOR TAXES	ACRE	.72	1.00	.72	_____
TRACTOR HOUSING	ACRE	.40	1.00	.40	_____
MACHINE DEPRECIATION	ACRE	13.84	1.00	13.84	_____
MACHINE INTEREST	ACRE	12.91	1.00	12.91	_____
MACHINE INSURANCE	ACRE	.74	1.00	.74	_____
MACHINE TAXES	ACRE	2.21	1.00	2.21	_____
MACHINE HOUSING	ACRE	1.23	1.00	1.23	_____
LAND TAX	ACRE	5.00	1.00	5.00	_____
NET RENT	ACRE	82.10	1.00	82.10	_____

TOTAL FIXED COST				126.82	_____

TABLE 4. 1997 SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR DRY PEAS FOLLOWING WINTER WHEAT, COLUMBIA COUNTY, WASHINGTON,
18- TO 22-INCH RAINFALL AREA.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	VARIABLE COST						TOTAL VARIABLE COST	TOTAL COST
						TOTAL FIXED COST	FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.		
						\$	\$	\$	\$	\$	\$	\$	\$
WEED CONT. 50%	PERENNIAL WD CTL, CUSTM AERIAL	AUG	1996	.00	.00	.00	.00	.00	2.25	4.05	.61	6.91	6.91
PLOW	185HP-CT, 8BTM PLOW	SEP	1996	.25	.28	5.96	9.90	3.30	.00	.00	1.16	14.36	20.32
CULTIVATE	185HP-CT, 35' CULT W/TINE HARRW	MAR	1997	.10	.11	2.66	3.21	1.32	.00	.00	.16	4.69	7.35
SPRAY	185HP-CT, 50' SPRAYER	MAR	1997	.04	.05	.55	.87	.62	1.50	39.97	1.50	44.47	45.03
HAUL WATER	3T TRUCK W/1500 GAL. SLIP TANK	MAR	1997	.02	.04	.30	.34	.48	.00	.00	.03	.85	1.15
CULTIVATE (2X)	185HP-CT, 35' CULT W/TINE HARRW	MAR	1997	.20	.22	5.32	6.41	2.64	.00	.00	.32	9.37	14.69
PLANT	185HP-CT, 30' DISC DRILL	APR	1997	.11	.14	5.10	3.70	1.67	.00	30.00	.93	36.29	41.39
HAUL SEED	3 TON TRUCK	APR	1997	.02	.04	.30	.34	.48	.00	.00	.02	.84	1.15
HARROW	185HP-CT, 60' TINE HARROW	APR	1997	.05	.06	1.64	1.30	.66	.00	.00	.05	2.01	3.64
PACK	185HP-CT, 40' PACKER	APR	1997	.07	.07	2.32	1.70	.88	.00	.00	.07	2.64	4.96
INSURANCE	HAIL AND FIRE INSURANCE	JUN	1997	.00	.00	.00	.00	.00	2.56	.00	.02	2.58	2.58
INSECTIC.(1.2X)	CUSTOM AERIAL	JUN	1997	.00	.00	.00	.00	.00	5.40	18.19	.21	23.79	23.79
HARVEST	COMBINE W/PEA BAR & REEL	JUL	1997	.40	.52	21.09	19.68	6.24	.00	.00	.00	25.92	47.01
HAUL	3 TON TRUCK (5-10 YRS OLD)	JUL	1997	.08	.26	1.21	1.37	3.12	.00	.00	.00	4.49	5.70
HAUL	3 TON TRUCK (> 10 YRS OLD)	JUL	1997	.08	.26	.62	1.23	3.12	.00	.00	.00	4.35	4.97
MACHINE TRANSP	3 TON TRUCK	ANN	1997	.01	.02	.15	.17	.24	.00	.00	.02	.43	.58
MISC USE	3/4 TON PICKUP	ANN	1997	.33	.37	3.22	2.38	4.40	.00	.00	.36	7.13	10.36
MISC USE	52HP-WT W/BUCKET	ANN	1997	.05	.06	.74	.27	.66	.00	.00	.05	.98	1.72
MISC USE	4WD ATV	ANN	1997	.08	.08	.41	.18	.99	.00	.00	.06	1.23	1.64
OVERHEAD	UTILITIES, LEGAL, ACCT, ETC.	ANN	1997	.00	.00	.00	.00	.00	.00	11.60	.00	11.60	11.60
TAXES	LAND TAXES	ANN	1997	.00	.00	5.00	.00	.00	.00	.00	.00	.00	5.00
LAND COST	NET RENT	ANN	1997	.00	.00	28.56	.00	.00	.00	.00	.00	.00	28.56
TOTAL PER ACRE				1.89	2.57	85.15	53.05	30.82	11.71	103.81	5.56	204.94	290.09

Table 5. Materials and Services Provided by Operation to Produce Dry Peas in Columbia County, Washington, 18- to 22-Inch Rainfall Area.

Operation	Month	Material And/Or Service
Perennial Weed Control (50%)	August	2 qts. Of 2-4-D @ \$4.05/qt. Custom aerial @ \$4.50/acre*
Herbicide-Sulfur	March	1 pint of Treflan @ \$4.22/pint 6 gallons of Thiosul @ \$1.45/gal. 1.5 oz. of Pursuit @ \$17.27/oz. 1 lb. Fargo @ \$1.15/lb. Rented applicator @ \$1.50/Acre
Plant	April	200 lbs. pea seed @ 15¢/lb.
Crop Insurance	May	Hail and fire crop insurance @ \$2.56/acre
Insecticide (1.2X)	June	2 lbs. of Imidan @ \$6.85/lb.* 1/3 pint of Cygon @ \$4.37/pint* Custom aerial @ \$4.50/acre*
Overhead	Annual	6% of variable cost

* Per acre applied.

TABLE 6. ITEMIZED COST PER ACRE FOR DRY PEAS FOLLOWING WINTER WHEAT, COLUMBIA COUNTY, WASHINGTON, 18- TO 22-INCH RAINFALL AREA.

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

VARIABLE COSTS		\$		\$	
PEA SEED	LB.	.15	200.00	30.00	_____
2-4-D	QT.	4.05	1.00	4.05	_____
TREFLAN	PINT	4.22	1.00	4.22	_____
THIOSUL	GAL.	1.45	6.00	8.70	_____
PURSUIT	OZ.	17.27	1.50	25.91	_____
FARGO	LB.	1.15	1.00	1.15	_____
CUSTOM AERIAL	ACRE	4.50	1.20	5.40	_____
IMIDAN	LB.	6.85	2.40	16.44	_____
CYGON	PINT	4.37	.40	1.75	_____
50' SPRAYER	ACRE	1.50	1.00	1.50	_____
CUSTOM AERIAL	ACRE	4.50	.50	2.25	_____
CROP INSURANCE	ACRE	2.56	1.00	2.56	_____
TRACTOR REPAIR	ACRE	14.43	1.00	14.43	_____
TRACTOR FUEL/LUBE	ACRE	6.52	1.00	6.52	_____
MACHINERY REPAIRS	ACRE	26.97	1.00	26.97	_____
MACHINE FUEL/LUBE	ACRE	5.12	1.00	5.12	_____
LABOR (TRAC/MACH)	HOUR	12.00	2.57	30.82	_____
OVERHEAD	ACRE	11.60	1.00	11.60	_____
INTEREST ON OP. CAP.	ACRE	5.56	1.00	5.56	_____
TOTAL VARIABLE COST				204.94	_____

FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	4.84	1.00	4.84	_____
TRACTOR INTEREST	ACRE	6.26	1.00	6.26	_____
TRACTOR INSURANCE	ACRE	.36	1.00	.36	_____
TRACTOR TAXES	ACRE	1.07	1.00	1.07	_____
TRACTOR HOUSING	ACRE	.60	1.00	.60	_____
MACHINE DEPRECIATION	ACRE	16.87	1.00	16.87	_____
MACHINE INTEREST	ACRE	16.30	1.00	16.30	_____
MACHINE INSURANCE	ACRE	.93	1.00	.93	_____
MACHINE TAXES	ACRE	2.79	1.00	2.79	_____
MACHINE HOUSING	ACRE	1.55	1.00	1.55	_____
LAND TAX	ACRE	5.00	1.00	5.00	_____
NET RENT	ACRE	28.56	1.00	28.56	_____
TOTAL FIXED COST				85.15	_____

TOTAL COST				290.09	_____

Table 7. Machine Data - Winter Wheat/Dry Pea

Machine Name	Purchase Price	Years of Use	Salvage Value	Annual Repair Cost	Annual Hours of Use	Fuel Use Per Hour
185HP-CT, 15Yr	57,000	20	5,700	8,000	500	7D, 6.5D, 5.5D
52HP-WT W/Bucket, Used	12,000	20	2,000	200	100	3D
3Ton Truck, 5Yr	25,000	10	10,000	3,700	260	2.5D
3Ton Truck, 15Yrs	10,000	10	2,000	2,500	210	3D
3/4 Ton Pickup, New	25,000	7	6,500	1,500	500	3G
4WD ATV, New	5,000	10	1,000	150	150	1G
22'-Combine, 5Yr*	75,000	15	11,250	7,500	210	6.5D
Pea Bar & Reel	6,000	10	1,000	1,500	250	
16' Chisel, 5Yr	7,500	10	1,000	1,000	150	
60' Tine Harrow, 3Yr	6,400	15	1,000	100	50	
35' Cultivator w/Harrow, New	20,000	15	3,000	1,500	240	
36' Cultiveeder, 3Yr	15,000	15	2,250	750	80	
40' Packer, 5Yr	8,000	20	1,000	75	50	
8BTM Plow, 10Yr	10,000	10	2,000	2,500	190	
30' Disk Drill, New	30,000	10	6,000	1,500	190	

TABLE 8. HOURLY MACHINERY COSTS

MACHINERY	PURCHASE PRICE	YEARS TO TRADE	ANNUAL HOURS	DEPREC-IATION	INTER-EST	INSUR-ANCE	TAXES	HOUSING COST	TOTAL FIXED COST	REPAIR	FUEL AND LUBE	TOTAL VARIABLE COST	TOTAL COST	
	\$							COST PER HOUR						
185HP-CT, 15YR	57,000.00	20	500	5.13	6.58	.38	1.13	.63	13.85	16.00	8.05*	24.05	37.90	
52HP-WT W/BUCKET	12,000.00	20	100	5.00	7.35	.42	1.26	.70	14.73	2.00	3.45	5.45	20.18	
3TON TRUCK, 5YR	25,000.00	10	260	5.77	7.07	.40	1.21	.67	15.13	14.23	2.88	17.11	32.23	
3TON TRUCK, 15YR	10,000.00	10	210	3.81	3.00	.17	.51	.29	7.78	11.90	3.45	15.35	23.14	
3/4 TON PICKUP	25,000.00	7	500	5.29	3.31	.19	.57	.32	9.66	3.00	4.14	7.14	16.80	
4WD ATV	5,000.00	10	150	2.67	2.10	.12	.36	.20	5.45	1.00	1.38	2.38	7.83	
22' COMBINE, 5YR	75,000.00	15	210	20.24	21.56	1.23	3.70	2.05	48.78	35.71	7.48	43.19	91.97	
PEA BAR & REEL	6,000.00	10	250	2.00	1.47	.08	.25	.14	3.95	6.00	.00	6.00	9.95	
16' CHISEL, 5YR	7,500.00	10	150	4.33	2.98	.17	.51	.28	8.27	6.67	.00	6.67	14.94	
60' TINE HAR 3YR	6,400.00	15	50	7.20	7.77	.44	1.33	.74	17.49	2.00	.00	2.00	19.49	
35' CULT W/HARROW	20,000.00	15	240	4.72	5.03	.29	.86	.48	11.38	6.25	.00	6.25	17.63	
36' CULTIWD, 3YR	15,000.00	15	75	11.33	12.08	.69	2.07	1.15	27.32	10.00	.00	10.00	37.32	
40' PACKER, 5YR	8,000.00	20	50	7.00	9.45	.54	1.62	.90	19.51	1.50	.00	1.50	21.01	
8BTM PLOW, 10YR	10,000.00	10	190	4.21	3.32	.19	.57	.32	8.60	13.16	.00	13.16	21.76	
30' DISK DRILL	30,000.00	10	160	15.00	11.81	.68	2.03	1.13	30.64	9.38	.00	9.38	40.01	

*Shown using 7 gallons of diesel fuel. Using 6.5 gallons and 5 gallons of diesel fuel, the costs are \$7.48 and \$5.75, respectively.

TABLE 9. PRICES OF SELECTED INPUTS, COLUMBIA COUNTY, WASHINGTON.

ITEM	UNIT	PRICE/UNIT
		\$
Fuel:		
Gasoline	Gal.	1.20
Diesel	Gal.	1.00
Fertilizer:		
Nitrogen (Full Service)	Lb.	.315
Sulfur (Full Service)	Lb.	.48
Chemicals:		
Fargo	Lb.	1.15
Treflan	Pint	4.22
Thiosul	Gal.	1.45
Imidan	Lb.	6.85
Cygon	Pint	4.37
2-4-D	Quart	4.05
Pursuit	Ounce	17.27
Landmaster	Ounce	.18
Spring Herbicide/Fungicide	Acre	20.00
Seed:		
Wheat	Lb.	.12
Pea	Lb.	.15
Rental and Custom Rates:		
Herbicide Applicator	Acre	1.50
Aerial Application	Acre	4.50
Labor:	Hr.	12.00

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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