


<p>Farm Business Management Reports</p>		<p>EB1667</p>
	<p>1997 ENTERPRISE BUDGETS POTATOES, WINTER WHEAT, ALFALFA HAY, GRAIN CORN, SILAGE CORN AND SWEET CORN UNDER CENTER PIVOT IRRIGATION, COLUMBIA BASIN, WASHINGTON</p>	
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NOTE

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

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

Costs can also be calculated differently depending on the intended use of the cost estimate. The information in this publication serves as a general guide for enterprises grown on a modern, well-managed Columbia Basin farm. To avoid drawing unwarranted conclusions for any particular enterprise, the reader must closely examine the assumptions used. If they are not appropriate for the situation at hand, you should adjust the costs and/or returns.

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1997 Enterprise Budgets for
Alfalfa Hay, Potatoes, Winter Wheat,
Grain Corn, Silage Corn, and Sweet Corn
Under Center Pivot Irrigation,
Columbia Basin, Washington

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INTRODUCTION

The enterprise budgets presented in this publication are based on crops produced in the Bureau of Reclamation's Columbia Basin Project. The project area is in the "big bend" of the Columbia River in south central Washington. Rainfall ranges from 6-10 inches annually; thus, crops depend on irrigation water pumped from behind the Grand Coulee Dam. Irrigation water availability, coupled with a growing season of 140 to 200 days, makes it possible to grow a multitude of crops.

The general objective of this study was to develop enterprise budgets for fall potatoes, winter wheat, alfalfa hay, grain corn, silage corn, and sweet corn. The specific objectives were:

1. To identify production practices representative of well-managed crop enterprises grown under center pivot irrigation in the Columbia Basin.
2. To provide estimates of capital requirements, production costs, and returns.
3. To provide current and prospective producers with a procedure for analyzing the profitability of various crop enterprises.

SOURCES OF INFORMATION

The primary information for this study was obtained from a group of Columbia Basin producers. These producers were considered representative of well-managed farms. Their production practices and requirements for labor, equipment, and supplies are the basis for the assumptions used in this study and represent what this group of producers consider to be the latest developments. Local farm suppliers provided price information on materials and other services commonly used by farmers. Machinery costs were based on current purchase prices and rates of annual use considered typical by the producer committee.

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BUDGET ASSUMPTIONS

The following assumptions were made in developing the enterprise data:

1. The enterprise budgets reported are for crops grown under one or more 125-acre center pivot irrigation systems.
2. All land is assumed to be rented with the following rental rates:

Potatoes	\$450 per acre
Wheat	\$150 per acre
Alfalfa	\$250 per acre
Grain Corn	\$150 per acre
Silage Corn	\$150 per acre
Sweet Corn	\$180 per acre
3. The landowner furnishes the center pivot system and the operator pays the irrigation charge amounting to \$30.50 per acre, along with annual repairs of about \$12 per acre per year. The operator also pays the irrigation power charges which were estimated to be the following:

Potatoes (28 acre inches)	\$50.00
Wheat (24 acre inches)	\$42.85
Alfalfa (42 acre inches)	\$75.00
Grain Corn (36 acre inches)	\$64.30
Silage Corn (36 acre inches)	\$64.30
Sweet Corn (22 acre inches)	\$39.16

These power costs are representative of those for farmers in Grant County, Washington.

4. Estimated annual yield per acre for the crop enterprises were:

Potatoes	28.5 tons
Winter Wheat	120 bushels
Alfalfa Hay	8 tons
Grain Corn	5 tons
Silage Corn	30 tons
Sweet Corn	9 tons
5. Estimated average price to the farmer for the crops were:

Potatoes	\$ 89.00/ton
Winter Wheat	\$ 4.00/bushel
Alfalfa Hay	\$110.00/ton
Grain Corn	\$125.00/ton
Silage Corn	\$ 26.00/ton
Sweet Corn	\$ 68.00/ton
6. The interest rate is 10%.

DISCUSSION OF BUDGET INFORMATION

The budget information for each crop is reported in a set of eight tables. A summary of the information in each table follows.

Tables 1A-1G: Schedule of Operations and Costs Per Acre

Table 1 outlines the schedule of field operations by month, the type of machinery and labor use, the hours of machine use per acre, and total production costs.

Production costs are divided into two categories: (1) fixed costs, which include machinery ownership, land costs, and management; and (2) variable costs, which are associated with operating machinery, hiring 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, insurance, and housing costs. These costs are incurred whether or not a crop is grown and do not vary with the size of the enterprise, given the ownership of a specific machinery complement. Machinery fixed costs for a specific field operation are determined by multiplying the machine hours per acre times the per-hour fixed cost. The per-hour fixed costs, shown in Table 7, are determined by dividing the total annual fixed cost by the annual hours of machinery use over all enterprises for the representative farm.

Land fixed cost is equal to the cash rent typical of the area. Much of the land used for production is rented. Even if you produce a crop on the land you own, the prevailing rental rate is an opportunity cost or foregone return for not renting out the land. Although individual rental arrangements vary, in many situations the tenant pays a cash rent and the landowner pays the property taxes.

An opportunity cost for management is also included in Table 1. For management, a cost of 7% of expected gross receipts is used. This is representative of management fees charged by farm management firms in the Columbia Basin and is an estimate of the value of an operator's management skills. For alfalfa, an amortized establishment cost is also included. This cost represents establishment year costs that must be recaptured during the following three production years.

Variable costs depend directly on the number of crop acres and type of enterprise. These costs include labor, fuel, oil, repairs, fertilizer, chemicals, custom work, interest on operating capital, and overhead (telephone, utilities, legal, accounting, organization dues, etc.).

Tables 2A-2G: Materials and Services Used by Operation

Table 2 lists, by operation and per acre, the specific services and/or materials used, the quantities used, and the prices paid for each enterprise analyzed in this study.

Tables 3A-3G: Itemized Cost Per Acre

Table 3 is an itemized summary of the costs presented by field operation in Table 1. Most items are self-explanatory. However, "Tractor Interest" and "Machinery Interest" warrant an explanation. These costs represent the opportunity cost (returns foregone by investing in machinery rather than in alternative investments) or interest paid to finance this equipment. The cost is calculated on the average annual value of the machinery multiplied times a 10% interest rate:

$$\frac{\text{Purchase Price} - \text{Salvage Value}}{2} \times 10\%$$

Tables 4A-4G: Break-Even Selling Price Per Unit

Table 4 shows break-even selling prices for different levels of enterprise costs. The first break-even price is the price needed to cover total variable costs--those costs that occur only if the crop is produced. If the price received does not equal or exceed the variable cost break-even price, the crop becomes uneconomical to produce even in the short-run because 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 machinery loans. If other cash costs exist on your farm, you must identify these costs and include them in the cash cost break-even calculation. Furthermore, since a cash cost has been attributed to all labor and to land rent, you should subtract any noncash costs for operator/family labor and owned land before calculating the price needed to cover cash costs.

The third break-even price is the price needed to cover total cash costs, plus depreciation on machinery. You must realize this price to stay in business over the long run.

The fourth break-even price is the price you must receive to recover total costs including cash costs, depreciation, operator labor and management, and opportunity costs for investments in equipment. Failure to receive this price means you will not realize a return on your management, labor, and capital contributions equivalent to what you could earn from an alternative use. Realizing a price above the break-even level means that, in addition to covering all costs, you will earn a premium for the risk assumed in producing the crop.

Tables 5A-5G: Summary of Receipts, Costs, and Profitability Per Acre

Table 5 summarizes receipts, costs, and various measures of profitability for the crop enterprise. The assumed commodity price is an estimate of what the 1997 price may be and is by no means a "predicted" price. Since profitability depends significantly on price received, you should recalculate profitability using your own predicted price.

The first measure is estimated total receipts, calculated by multiplying the predicted price times the predicted yield. The second measure is returns over variable costs and land rent, which was calculated by subtracting total variable costs and land rent from total receipts. The third measure, returns to management and risk, was calculated by subtracting the machinery fixed expenses and establishment cost (alfalfa) from returns over variable cost and land rent. This is the return you realize for your management and risk after accounting for all costs including \$12.00 per hour for any labor contributed to producing the crop.

Table 6: Machinery Complement

Table 6 identifies the machinery complement used to derive machinery 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 7: Hourly Machinery Costs

The data in Table 6 are used to estimate per-hour fixed and variable costs appearing in Table 7. Machinery fixed costs include depreciation and interest on investment, property taxes, and insurance--costs that do not vary with the crop grown or the number of acres produced. Current replacement costs are used for all machinery and equipment. While this assumption may result in an overstatement of production costs, it is an indication of the enterprise's ability to generate the earnings needed to replace depreciable assets. Continuing increases in prices paid for machinery and equipment mean that depreciation claimed on assets purchased before price advances understates the amount of capital currently required to replace assets. When an enterprise is evaluated to determine its long-run viability, it is important to consider its ability to replace depreciable assets. Note that interest on investment represents an 10% opportunity cost to the enterprise. These are earnings foregone by investing money in the machinery complement rather than the next best alternative. This may also represent the interest paid on funds borrowed to finance machinery purchases.

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

Table 8: Input Prices

Prices used for fuel, fertilizer, chemicals, seed, custom services, and other inputs are listed in Table 8.

SUMMARY OF RESULTS AND CONCLUDING NOTE

This publication estimates the production costs of six crops commonly grown in the Columbia Basin under center pivot irrigation. The yields and prices received for these crops are only an estimate of what the 1997 yields and prices may be. However, when using these yields and prices in comparing possible returns with probable cost, several of these budgets show a negative return to management and risk (see Tables 5A - 5G). The variable, fixed, and total cost and the break-even prices for these crops under the given assumptions are the following:

	<u>Potatoes</u>	<u>Wheat</u>	<u>Alfalfa</u>	<u>Grain Corn</u>	<u>Silage Corn</u>	<u>Sweet Corn</u>
Variable Cost/Acre	\$1,659	\$294	\$334	\$511	\$612	\$441
Fixed Cost/ Acre	\$ 744	\$212	\$469	\$228	\$239	\$284
Total Cost/ Acre	\$2,403	\$506	\$803	\$739	\$851	\$725
Estimated Yield/Acre	28.5 Tons	120 Bu.	8 Tons	5 Tons	30 Tons	9 Tons
Break-Even Price/Unit	\$83.22	\$4.21	\$100.37	\$147.86	\$28.37	\$80.56

These results were discussed with a number of producers in the Columbia Basin. The general comment was that the budgets are representative of their costs. Further, they commented that during times in which returns do not cover total costs, they remain in business by postponing equipment replacement and by accepting a lower return for their labor, management, and equity.

Users of these budgets should understand the procedures and assumptions used in this study and interpret the results accordingly. It was recognized by the producers and authors involved in organizing this information that these budgets do not represent any one particular operation. Therefore, you should use these budgets only as a general guide to help derive budgets for your own particular operation. Moreover, this publication is not intended as a guide to recommended production practices. Rather, it represents current production practices and technology used in the area.

TABLE 1A. 1997 SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR FALL RUSSET BURBANK POTATOES FOLLOWING ALFALFA IN THE COLUMBIA BASIN; CENTER PIVOT IRRIGATION.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST					TOTAL VARIABLE COST	TOTAL COST
							FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.		
						\$	\$	\$	\$	\$	\$	\$	
NEMA TEST	CUSTOM TEST	OCT	1996	.00	.00	.00	.00	.00	1.00	.00	.09	1.09	1.09
TILL FIELD	300HP-WT, 17' CHISEL CHOPPER	OCT	1996	.10	.12	4.75	3.50	1.44	.00	.00	.45	5.40	10.14
FUMIGATE*	THROUGH SPRINKLER	OCT	1996	.00	.00	.00	.00	.00	.00	157.50	14.44	171.94	171.94
NEMA TEST	CUSTOM TEST	NOV	1996	.00	.00	.00	.00	.00	1.00	.00	.08	1.08	1.08
MONITOR CROP	CONSULTANT	SEA	1997	.00	.00	.00	.00	.00	14.00	.00	.70	14.70	14.70
FERTILIZE	CUSTOM DOUBLE SPREAD APPLIC.	MAR	1997	.00	.00	.00	.00	.00	8.00	166.60	8.73	183.33	183.33
TILL FIELD	300HP-WT, 17' CHISEL CHOPPER	APR	1997	.10	.12	4.75	3.50	1.44	.00	.00	.21	5.15	9.90
HAUL SEED	CUSTOM HAULING	APR	1997	.00	.00	.00	.00	.00	8.05	.00	.34	8.39	8.39
LOAD SEED	FRONT-END LOADER	APR	1997	.03	.04	.21	.22	.43	.00	.00	.03	.68	.89
PLANT**	200HP-WT, 6R-POTATO PLANTER	APR	1997	.13	.40	11.26	5.71	4.80	.00	253.00	10.98	274.49	285.74
INSECTICIDE	INSECTICIDE APPLICATOR W/ABOVE	APR	1997	.13	.00	.26	.09	.00	.00	67.15	2.80	70.04	70.30
IRRIGATE	CENTER PIVOT, 28 AC. IN.	SEA	1997	.00	1.00	.00	12.00	12.00	80.50	.00	5.23	109.73	109.73
DRAG OFF	200HP-WT, 24' HARROW	MAY	1997	.07	.08	3.22	.99	1.01	.00	.00	.07	2.06	5.29
RESERVOIR TILL	200HP-WT, 6R-DAMMER/DIKER	MAY	1997	.16	.19	9.35	4.66	2.30	.00	.00	.23	7.20	16.55
COVER SPRAY	CUSTOM AERIAL	MAY	1997	.00	.00	.00	.00	.00	6.50	17.33	.79	24.62	24.62
HERBIGATE	THROUGH SPRINKLERS	JUN	1997	.00	.00	.00	.00	.00	.00	13.97	.35	14.32	14.32
FERTIGATE	THROUGH SPRINKLERS	JUN	1997	.00	.00	.00	.00	.00	.00	49.08	1.23	50.31	50.31
FUNGIGATE	THROUGH SPRINKLERS	JUN	1997	.00	.00	.00	.00	.00	.00	11.34	.28	11.62	11.62
COVER SPRAY	CUSTOM AERIAL	JUN	1997	.00	.00	.00	.00	.00	6.50	31.51	.95	38.96	38.96
FERTIGATE	THROUGH SPRINKLERS	JUL	1997	.00	.00	.00	.00	.00	.00	41.31	.69	42.00	42.00
FUNGIGATE	THROUGH SPRINKLERS	JUL	1997	.00	.00	.00	.00	.00	.00	48.88	.81	49.69	49.69
FUNGIGATE	THROUGH SPRINKLERS	JUL	1997	.00	.00	.00	.00	.00	.00	11.34	.19	11.53	11.53
COVER SPRAY	CUSTOM AERIAL	JUL	1997	.00	.00	.00	.00	.00	6.50	73.23	1.33	81.06	81.06
FUNGIGATE	THROUGH SPRINKLERS	AUG	1997	.00	.00	.00	.00	.00	.00	15.86	.13	15.99	15.99
COVER SPRAY	CUSTOM AERIAL	AUG	1997	.00	.00	.00	.00	.00	6.50	31.30	.32	38.11	38.11
DEFOLIATE	CUSTOM AERIAL	SEP	1997	.00	.00	.00	.00	.00	6.50	23.50	.00	30.00	30.00
PULL/PACK	200HP-WT	SEP	1997	.50	.60	20.07	6.28	7.20	.00	.00	.00	13.48	33.54
DIG POTATOES	200HP-WT, 3R-POTATO HARVESTER	SEP	1997	.75	1.80	55.73	22.21	21.60	.00	.00	.00	43.81	99.54
HAUL POTATOES	CUSTOM HAUL	SEP	1997	.00	.00	.00	.00	.00	180.00	.00	.00	180.00	180.00
CUSTOM PILING	STORAGE	SEP	1997	.00	.00	.00	.00	.00	75.00	.00	.00	75.00	75.00
PICKUP, MANAGEMT	3/4 TON	ANN	1997	.80	.00	4.54	2.46	.00	.00	.00	.12	2.58	7.12
PICKUP, IRRIGATN	3/4 TON	ANN	1997	.40	.00	2.34	1.60	.00	.00	.00	.08	1.68	4.02
OVERHEAD	UTILITIES, LEGAL, ACCT., ETC.	ANN	1997	.00	.00	.00	.00	.00	79.00	.00	.00	79.00	79.00
LAND COST	NET RENT	ANN	1997	.00	.00	450.00	.00	.00	.00	.00	.00	.00	450.00
MANAGEMENT	7% OF EXPECTED GROSS RETURNS	ANN	1997	.00	.00	177.56	.00	.00	.00	.00	.00	.00	177.56
TOTAL PER ACRE				3.18	4.35	744.02	63.22	52.22	479.05	1012.91	51.65	1659.05	2403.07

*GROUND APPLICATION WOULD RESULT IN AN INCREASE OF APPROXIMATELY \$40 PER ACRE.

**SEED INCLUDES FUNGICIDE TREATMENT AND CUTTING.

Table 2A. Materials and Services Used by Operation for Producing Fall Potatoes

Operation		Material and/or Service
Nema Test	September	Custom test @ \$1.00/acre
Fumigate	October	37.5 gals. of metham sodium @ \$4.20/gal.
Nema Test	November	Custom test @ \$1.00/acre
Monitor Crop	Season	Private consultant @ \$14.00/acre
Fertilize	March	Custom double spread application @ \$8.00/acre 125 lbs. of nitrogen (dry) @ 34¢/lb. 230 lbs. of phosphate (dry) @ 25¢/lb. 350 lbs. of potash @ 14¢/lb. 80 lbs. of sulfur @ 10¢/lb. 5 lbs. of zinc @ \$1.05/lb. 1.5 lbs. of boron @ \$2.90/lb.
Haul Seed	April	1.15 tons of seed per acre @ \$7.00/ton
Plant	April	23 cwt. of seed per acre @ \$11.00/cwt.*
Insecticide	April	17 lbs. of Temik @ \$3.95/lb.
Irrigate	Season	Irrigation water @ \$30.50/acre Irrigation power @ \$50.00/acre Irrigation repair @ \$12.00/acre
Cover Spray	May	Aerial application @ \$6.50/acre 2 lbs. of mancozeb @ \$4.00/lb. 4 lbs. of sulfur fungicide @ 80¢/lb. 5 lbs. of foliar nutrient @ \$1.00/lb. Adjuvant @ 7% of total spray cost
Herbigation	June	0.5 lbs. of metribuzin @ \$27.95/lb.
Fertigate	June	100 lbs. of nitrogen (liq.) @ 35¢/lb. 30 lbs. of phosphate (liq.) @ 36¢/lb. 17 lbs. of sulfur (liq.) @ 19.3¢/lb.
Fungigate	June	1.5 pints of chlorothalonil @ \$7.56/pint

Table 2A. Materials and Services Used by Operation for Producing Fall Potatoes (Continued)

Operation		Material and/or Service
Cover Spray	June	Aerial application @ \$6.50/acre 1 qt. of Monitor @ \$21.25/qt. 5 lbs. of foliar nutrient @ \$1.00/lb. 4 lbs. of sulfur fungicide @ 80¢/lb. Adjuvant @ 7% of total spray cost
Fertigate	July	80 lbs. of nitrogen (liq.) @ 34¢/lb. 30 lbs. of phosphate (liq.) @ 36¢/lb. 13 lbs. of sulfur (liq.) @ 19.3¢/lb.
Fungigate	July	2 lbs. of Rovral @ \$24.44/lb.
Fungigate	July	1.5 pints of chlorothalonil @ \$7.56/pint
Cover Spray	July	Aerial application @ \$6.50/acre 1.5 pints of chlorothalonil @ \$7.56/pint 1 qt. of Monitor @ \$21.25/qt. 2.5 pts. of Comite @ \$11.06/pint 4 lbs. of sulfur fungicide @ 80¢/lb. 5 lbs. of foliar nutrient @ \$1.00/lb. Adjuvant @ 7% of total spray cost
Fungigate	August	2 lbs. of Polyram @ \$3.90/lb. 0.25 lbs. of Super-Tin @ \$32.25/lb.
Cover Spray	August	Aerial application @ \$6.50/acre 2 lbs. of mancozeb @ \$4.00/lb. 1 qt. of Monitor @ \$21.25/qt. Adjuvant @ 7% of total spray cost
Defoliate	September	Aerial application @ \$6.50/acre 1 qt. of Diquat @ \$23.50/qt.
Haul	September	Custom haul @ \$6.00/ton (28.5 ton yield + 5% dirt)
Custom Piling	September	Piling @ storage facility @ \$2.50/ton (28.5 ton yield + 5% dirt)
Overhead	Annual	5% of variable cost

*Seed includes fungicide treatment and cutting.

TABLE 3A. 1997 ITEMIZED COST PER ACRE FOR FALL RUSSET BURBANK
 POTATOES FOLLOWING ALFALFA IN THE COLUMBIA BASIN;
 CENTER PIVOT IRRIGATION.

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

VARIABLE COSTS		\$		\$	
NEMA TEST	ACRE	1.00	2.00	2.00	_____
METHAM SODIUM	GAL.	4.20	37.50	157.50	_____
POTATO SEED	CWT.	11.00	23.00	253.00	_____
CONSULTANT	ACRE	14.00	1.00	14.00	_____
NITROGEN (DRY)	LB.	.34	125.00	42.50	_____
NITROGEN (LIQ)	LB.	.35	180.00	63.00	_____
PHOSPHATE (DRY)	LB.	.25	230.00	57.50	_____
PHOSPHATE (LIQ)	LB.	.36	60.00	21.60	_____
POTASH	LB.	.14	350.00	49.00	_____
ZINC	LB.	1.05	5.00	5.25	_____
BORON	LB.	2.90	1.50	4.35	_____
SULFUR	LB.	.10	80.00	8.00	_____
SULFUR (LIQ)	LB.	.19	30.00	5.79	_____
SULFUR FUNGICIDE	LB.	.80	12.00	9.60	_____
FOLIAR NUTRIENT	LB.	3.00	5.00	15.00	_____
TEMIK	LB.	3.95	17.00	67.15	_____
METRIBUZIN	LB.	27.95	.50	13.97	_____
CHLOROTHALONIL	PT.	7.56	4.50	34.02	_____
MANCOZEB	LB.	4.00	4.00	16.00	_____
MONITOR	QT.	21.25	3.00	63.75	_____
COMITE	PT.	11.06	2.50	27.65	_____
ROVRAL	PT.	24.44	2.00	48.88	_____
POLYRAM	LB.	3.90	2.00	7.80	_____
SUPER-TIN	LB.	32.25	.25	8.06	_____
DIQUAT	QT.	23.50	1.00	23.50	_____
ADJUVANT	ACRE	10.03	1.00	10.03	_____
CUSTOM FERTILIZE	ACRE	8.00	1.00	8.00	_____
CUSTOM AERIAL	ACRE	6.50	5.00	32.50	_____
CUSTOM HAULING (SEED)	TON	7.00	1.15	8.05	_____
CUSTOM HAULING	TON	6.00	30.00	180.00	_____
CUSTOM PILING	TON	2.50	30.00	75.00	_____
IRRIGATION WATER	ACRE	30.50	1.00	30.50	_____
IRRIGATION POWER	ACRE	50.00	1.00	50.00	_____
IRRIGATION REPAIR	ACRE	12.00	1.00	12.00	_____
TRACTOR REPAIR	ACRE	13.04	1.00	13.04	_____
TRACTOR FUEL/LUBE	ACRE	18.45	1.00	18.45	_____
MACHINERY REPAIRS	ACRE	16.42	1.00	16.42	_____
MACHINE FUEL/LUBE	ACRE	3.31	1.00	3.31	_____
LABOR (TRAC/MACH/IRR)	HOUR	12.00	4.35	52.22	_____
OVERHEAD	ACRE	79.00	1.00	79.00	_____
INTEREST ON OP. CAP.	ACRE	51.64	1.00	51.64	_____
TOTAL VARIABLE COST				1659.05	_____

FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	24.92	1.00	24.92	_____
TRACTOR INTEREST	ACRE	36.31	1.00	36.31	_____
TRACTOR INSURANCE	ACRE	2.18	1.00	2.18	_____
TRACTOR TAXES	ACRE	6.54	1.00	6.54	_____
TRACTOR HOUSING	ACRE	3.63	1.00	3.63	_____
MACHINE DEPRECIATION	ACRE	21.49	1.00	21.49	_____
MACHINE INTEREST	ACRE	15.97	1.00	15.97	_____
MACHINE INSURANCE	ACRE	.96	1.00	.96	_____
MACHINE TAXES	ACRE	2.87	1.00	2.87	_____
MACHINE HOUSING	ACRE	1.60	1.00	1.60	_____
MANAGEMENT FEE*	ACRE	177.56	1.00	177.56	_____
LAND RENT	ACRE	450.00	1.00	450.00	_____
TOTAL FIXED COST				744.02	_____

TOTAL COST				2403.07	_____

*7% OF EXPECTED GROSS RETURNS (28.5 TONS X \$89 X .07)

TABLE 4A. BREAK-EVEN SELLING PRICE PER TON OF FALL POTATOES PRODUCED IN THE COLUMBIA BASIN UNDER CENTER PIVOT IRRIGATION.

	COST PER ACRE	YOUR FARM	BREAK-EVEN PRICE (\$/TON) (28.5 TONS)	YOUR FARM
	\$	\$		\$
1. TOTAL VARIABLE COST	1,659.05	_____	58.21	_____
PLUS: TRACTOR & MACHINERY INSURANCE	3.14	_____		
TRACTOR & MACHINERY TAXES	9.41	_____		
LAND RENT	450.00	_____		
2. TOTAL CASH COSTS	2,121.60	_____	74.44	_____
PLUS: TRACTOR & MACHINERY DEPRECIATION	46.41	_____		
3. TOTAL CASH COST & DEPRECIATION	2,168.01	_____	76.07	_____
PLUS: TRACTOR & MACHINERY INTEREST	52.27	_____		
TRACTOR & MACHINERY HOUSING	5.23	_____		
MANAGEMENT	177.56	_____		
4. TOTAL COST	2,403.07	_____	83.32	_____

TABLE 5A. SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE FOR FALL POTATOES PRODUCED IN THE COLUMBIA BASIN UNDER CENTER PIVOT IRRIGATION.

	PRICE/UNIT	QUANTITY	VALUE OR COST	YOUR FARM

GROSS RECEIPTS				
POTATOES	\$89.00	28.5 TONS	\$2,536.50	_____
1. TOTAL RECEIPTS			\$2,536.50	_____
LESS: TOTAL VARIABLE COST			\$1,659.05	_____
LAND RENT			\$ 450.00	_____
2. RETURNS OVER VARIABLE COST AND LAND RENT			\$ 427.45	_____
LESS: TRACTOR & MACHINERY FIXED COST			\$ 116.46	_____
3. NET RETURNS TO MANAGEMENT AND RISK			\$ 310.99	_____

TABLE 1B. 1997 SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR WHITE WINTER WHEAT FOLLOWING POTATOES IN THE COLUMBIA BASIN;
CENTER PIVOT IRRIGATION.

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.		
						\$	\$	\$	\$	\$	\$	\$	
DISC	200HP-WT, 20' OFFSET DISC	OCT	1996	.13	.16	7.32	3.03	1.87	.00	.00	.41	5.31	12.64
SUBSOIL	200HP-WT, 12' SUBSOILER	OCT	1996	.22	.26	10.89	5.15	3.17	.00	.00	.69	9.01	19.90
PLANT	150HP-WT, 20' DISC DRILL	OCT	1996	.11	.17	6.14	2.92	1.98	.00	8.40	1.11	14.41	20.55
IRRIGATE	CENTER PIVOT, 24 AC. IN.	SEA	1997	.00	.60	.00	10.00	7.20	67.25	.00	4.22	88.67	88.67
SOIL TEST	CUSTOM TEST	MAR	1997	.00	.00	.00	.00	.00	1.50	.00	.06	1.56	1.56
FERTILIZE	CUSTOM APPLICATION	MAR	1997	.00	.00	.00	.00	.00	5.00	34.00	1.63	40.63	40.63
WEED CONTROL	CUSTOM APPLICATION	APR	1997	.00	.00	.00	.00	.00	5.50	16.62	.74	22.85	22.85
NITROGATION	THROUGH SPRINKLERS (50#)	APR	1997	.00	.00	.00	.00	.00	.00	17.50	.58	18.08	18.08
NITROGATION	THROUGH SPRINKLERS (50#)	MAY	1997	.00	.00	.00	.00	.00	.00	17.50	.44	17.94	17.94
HARVEST	CUSTOM HARVEST	JUL	1997	.00	.00	.00	.00	.00	38.00	.00	.32	38.32	38.32
HAUL	CUSTOM HAUL	JUL	1997	.00	.00	.00	.00	.00	14.40	.00	.12	14.52	14.52
PICK-UP	3/4 TON	ANN	1997	.67	.00	3.81	2.06	.00	.00	.00	.10	2.16	5.97
OVERHEAD	UTILITIES, LEGAL, ACCT., ETC.	ANN	1997	.00	.00	.00	.00	.00	20.51	.00	.00	20.51	20.51
LAND COST	LAND RENT	ANN	1997	.00	.00	150.00	.00	.00	.00	.00	.00	.00	150.00
MANAGEMENT	7% OF EXPECTED GROSS RETURNS	ANN	1997	.00	.00	33.60	.00	.00	.00	.00	.00	.00	33.60
TOTAL PER ACRE				1.13	1.19	211.76	23.16	14.22	152.16	94.02	10.42	293.97	505.73

Table 2B. Materials and Services Used by Operation for Producing White Winter Wheat

Operation		Material and/or Service
Plant	October	80 lbs. of wheat seed @ 10.5¢/lb.
Irrigate	Season	Irrigation water @ \$24.40/acre Irrigation power @ \$42.85/acre Irrigation repair @ \$8.33/acre
Soil test	March	Custom test @ \$1.50/acre
Fertilize	March	Custom fertilization @ \$5.00/acre 100 lbs. of nitrogen (dry) @ 34¢/lb.
Weed Control	April	Custom spraying @ \$5.50/acre 0.3 ounces of Harmony Extra @ \$15.99/oz. 1.5 pints of Buctril @ \$7.88/pint
Nitrogation	April	50 lbs. of nitrogen (liq.) @ 35¢/lb.
Nitrogation	May	50 lbs. of nitrogen (liq.) @ 35¢/lb.
Harvest	July	Custom harvest @ \$38.00/acre
Haul	July	Custom haul @ \$4.00/ton
Overhead	Annual	7.5% of variable cost

TABLE 3B. 1997 ITEMIZED COST PER ACRE FOR WHITE WINTER WHEAT
 FOLLOWING POTATOES IN THE COLUMBIA BASIN; CENTER PIVOT
 IRRIGATION.

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

VARIABLE COSTS		\$		\$	
SOIL TEST	ACRE	1.50	1.00	1.50	_____
WHEAT SEED	LB.	.105	80.00	8.40	_____
CUSTOM FERTILIZE	ACRE	5.00	1.00	5.00	_____
NITROGEN (DRY)	LB.	.34	100.00	34.00	_____
NITROGEN (LIQ)	LB.	.35	100.00	35.00	_____
CUSTOM SPRAY	ACRE	5.50	1.00	5.50	_____
HARMONY-EXTRA	OZ.	15.99	.30	4.80	_____
BUCTRIL	PINT	7.88	1.50	11.82	_____
CUSTOM HAULING	TON	4.00	3.60	14.40	_____
CUSTOM COMBINE	ACRE	38.00	1.00	38.00	_____
IRRIGATION WATER	ACRE	24.40	1.00	24.40	_____
IRRIGATION POWER	ACRE	42.85	1.00	42.85	_____
IRRIGATION REPAIR	ACRE	12.00	.83	10.00	_____
TRACTOR REPAIR	ACRE	2.89	1.00	2.89	_____
TRACTOR FUEL/LUBE	ACRE	5.36	1.00	5.36	_____
MACHINERY REPAIRS	ACRE	3.06	1.00	3.06	_____
MACHINE FUEL/LUBE	ACRE	1.85	1.00	1.85	_____
LABOR (TRAC/MACH/IRR)	HOUR	12.00	1.18	14.22	_____
OVERHEAD	ACRE	20.51	1.00	20.51	_____
INTEREST ON OP. CAP.	ACRE	10.42	1.00	10.42	_____

TOTAL VARIABLE COST				293.97	_____
FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	6.42	1.00	6.42	_____
TRACTOR INTEREST	ACRE	9.64	1.00	9.64	_____
TRACTOR INSURANCE	ACRE	.58	1.00	.58	_____
TRACTOR TAXES	ACRE	1.73	1.00	1.73	_____
TRACTOR HOUSING	ACRE	.96	1.00	.96	_____
MACHINE DEPRECIATION	ACRE	4.43	1.00	4.43	_____
MACHINE INTEREST	ACRE	3.28	1.00	3.28	_____
MACHINE INSURANCE	ACRE	.20	1.00	.20	_____
MACHINE TAXES	ACRE	.59	1.00	.59	_____
MACHINE HOUSING	ACRE	.33	1.00	.33	_____
MANAGEMENT FEE*	ACRE	33.60	1.00	33.60	_____
LAND RENT	ACRE	150.00	1.00	150.00	_____

TOTAL FIXED COST				211.76	_____
TOTAL COST				505.73	_____

*7% OF EXPECTED GROSS RETURNS (120 BU. X \$4.00 X .07)					

TABLE 4B. BREAK-EVEN SELLING PRICE PER BUSHEL OF WHITE WINTER WHEAT FOLLOWING POTATOES PRODUCED IN THE COLUMBIA BASIN UNDER CENTER PIVOT IRRIGATION.

	COST PER ACRE	YOUR FARM	BREAK-EVEN PRICE (\$/BU.)	YOUR FARM
	\$	\$	(120 BU.)	\$
1. TOTAL VARIABLE COST	293.97	_____	2.45	_____
PLUS: TRACTOR & MACHINERY INSURANCE	.78	_____		
TRACTOR & MACHINERY TAXES	2.32	_____		
LAND RENT	150.00	_____		
2. TOTAL CASH COSTS	447.07	_____	3.73	_____
PLUS: TRACTOR & MACHINERY DEPRECIATION	10.85	_____		
3. TOTAL CASH COST & DEPRECIATION	457.92	_____	3.82	_____
PLUS: TRACTOR & MACHINERY INTEREST	12.92	_____		
TRACTOR & MACHINERY HOUSING	1.29	_____		
MANAGEMENT	33.60	_____		
4. TOTAL COST	505.73	_____	4.21	_____

TABLE 5B. SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE FOR PRODUCING WINTER WHEAT FOLLOWING POTATOES IN THE COLUMBIA BASIN UNDER CENTER PIVOT IRRIGATION.

	PRICE/UNIT	QUANTITY	VALUE OR COST	YOUR FARM

GROSS RECEIPTS				
WINTER WHEAT	\$4.00	120 BU.	\$480.00	_____
1. TOTAL RECEIPTS			\$480.00	_____
LESS: TOTAL VARIABLE COST			\$293.97	_____
LAND RENT			\$150.00	_____
2. RETURNS OVER VARIABLE COST AND LAND RENT			\$ 36.95	_____
LESS: TRACTOR & MACHINERY FIXED COST			\$ 28.16	_____
3. NET RETURNS TO MANAGEMENT AND RISK			\$ 7.87	_____

TABLE 1C. 1997 SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING ALFALFA HAY FOLLOWING WHEAT OR BARLEY IN THE COLUMBIA BASIN; CENTER PIVOT IRRIGATION.*

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST					TOTAL VARIABLE COST	TOTAL COST
							FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.		
						\$	\$	\$	\$	\$	\$	\$	
FERTILIZE**	CUSTOM APPLICATION	AUG	1996	.00	.00	.00	.00	.00	5.00	50.40	.92	56.32	56.32
DISC & PACK	150HP-WT, 13' TANDUM DISC&PACK	AUG	1996	.20	.24	8.92	3.96	2.88	.00	.00	.11	6.95	15.87
CHISEL	200HP-WT, 13' CHISEL	AUG	1996	.20	.24	10.26	4.80	2.88	.00	.00	.13	7.81	18.07
DISC & PACK	150HP-WT, 13' TANDUM DISK&PACK	AUG	1996	.20	.24	8.92	3.96	2.88	.00	.00	.11	6.95	15.87
HARROW	150HP-WT, 36' HARROW	AUG	1996	.07	.08	2.53	1.07	.96	.00	.00	.03	2.07	4.59
PLANT	150HP-WT, RENTED AIR SEEDER	AUG	1996	.17	.25	5.35	2.35	3.00	6.00	61.60	1.22	74.16	79.52
IRRIGATE	CENTER PIVOT; 6 AC. IN.	SEP	1996	.00	.17	.00	2.00	2.04	16.80	.00	.17	21.01	21.01
PICK-UP	3/4 TON	ANN	1996	.40	.48	2.27	1.23	5.76	.00	.00	.35	7.34	9.61
OVERHEAD	UTILITIES,LEGAL,ACCT.,ETC.	ANN	1996	.00	.00	.00	.00	.00	13.70	.00	.00	13.70	13.70
TOTAL PER ACRE				1.23	1.70	38.24	19.37	20.40	41.50	112.00	3.05	196.32	234.57

*ALL FIXED COSTS ASSOCIATED WITH LAND & MANAGEMENT ARE ALLOCATED TO THE PRECEDING CROP.

**ASSUMES THAT THE STRAW HAS BEEN REMOVED FIRST.

Table 2C. Materials and Services Used by Operation for Establishing Alfalfa Hay

Operation		Material and/or Service
Fertilize	August	Custom fertilizer application @ \$5.00/acre 25 lbs. of nitrogen @ 34¢/lb. 100 lbs. of phosphate @ 25¢/lb. 1 lb. of boron @ \$2.90/lb. 100 lbs. of potash @ 14¢/lb.
Plant	August	Rented air seeder @ \$6.00/acre 22 lbs. of alfalfa seed @ \$2.80/lb.
Irrigate	Sept.-Oct.	Irrigation power @ \$10.70/acre Irrigation water @ \$6.10/acre Irrigation repair @ \$1.67/acre
Overhead	Annual	7.5% of variable cost

TABLE 3C. 1997 ITEMIZED COST PER ACRE FOR ESTABLISHING ALFALFA HAY FOLLOWING WHEAT OR BARLEY IN THE COLUMBIA BASIN; CENTER PIVOT IRRIGATION.*

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

VARIABLE COSTS		\$		\$	
RENTED AIR SEED	ACRE	6.00	1.00	6.00	_____
ALFALFA SEED	LB.	2.80	22.00	61.60	_____
CUSTOM FERTILIZE	ACRE	5.00	1.00	5.00	_____
NITROGEN (DRY)	LB.	.34	25.00	8.50	_____
PHOSPHATE (DRY)	LB.	.25	100.00	25.00	_____
BORON	LB.	2.90	1.00	2.90	_____
POTASH	LB.	.14	100.00	14.00	_____
IRRIGATION POWER	ACRE	10.70	1.00	10.70	_____
IRRIGATION REPAIR	ACRE	12.00	.17	2.00	_____
IRRIGATION WATER	ACRE	6.10	1.00	6.10	_____
TRACTOR REPAIR	ACRE	4.59	1.00	4.59	_____
TRACTOR FUEL/LUBE	ACRE	8.96	1.00	8.96	_____
MACHINERY REPAIRS	ACRE	2.72	1.00	2.72	_____
MACHINE FUEL/LUBE	ACRE	1.10	1.00	1.10	_____
LABOR (TRAC/MACH/IRR)	HOUR	12.00	1.70	20.40	_____
INTEREST ON OP. CAP.	ACRE	3.05	1.00	3.05	_____
OVERHEAD	ACRE	13.70	1.00	13.70	_____

TOTAL VARIABLE COST				196.32	_____
FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	10.19	1.00	10.19	_____
TRACTOR INTEREST	ACRE	15.29	1.00	15.29	_____
TRACTOR INSURANCE	ACRE	.92	1.00	.92	_____
TRACTOR TAXES	ACRE	2.75	1.00	2.75	_____
TRACTOR HOUSING	ACRE	1.53	1.00	1.53	_____
MACHINE DEPRECIATION	ACRE	3.68	1.00	3.68	_____
MACHINE INTEREST	ACRE	2.90	1.00	2.90	_____
MACHINE INSURANCE	ACRE	.17	1.00	.17	_____
MACHINE TAXES	ACRE	.52	1.00	.52	_____
MACHINE HOUSING	ACRE	.29	1.00	.29	_____

TOTAL FIXED COST				38.24	_____
TOTAL COST				234.57	_____

*ALL FIXED COSTS ASSOCIATED WITH LAND & MANAGEMENT ARE ALLOCATED TO THE PRECEDING CROP.

TABLE 1D. 1997 SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR PRODUCTION OF ALFALFA HAY IN THE COLUMBIA BASIN;
CENTER PIVOT IRRIGATION.

OPERATION	TOOLING	MTH YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST					TOTAL VARIABLE COST	TOTAL COST
						FUEL, LUBE, & REPAIRS	LABOR	SERVICE	MATER.	INTER.		
						\$	\$	\$	\$	\$	\$	\$
FERTILIZE*	CUSTOM APPLICATION	NOV 1996	.00	.00	.00	.00	.00	3.33	30.73	3.12	37.19	37.19
WEED CONTROL	CUSTOM HERBICIDE APPLIC.	MAR 1997	.00	.00	.00	.00	.00	5.50	15.75	1.24	22.49	22.49
IRRIGATION	CENTER PIVOT, 42 AC. IN.	SEA 1997	.00	1.00	.00	12.00	12.00	105.50	.00	6.48	135.97	135.97
SWATH	70HP/14' WINDROWER	MAY 1997	.17	.20	5.21	4.43	2.40	.00	.00	.28	7.11	12.32
RAKE & TURN	85HP-WT, 18' TWO-ROW RAKE	MAY 1997	.06	.07	1.42	.90	.81	.00	.00	.07	1.77	3.19
BALE	150HP-WT, PTO BALER	MAY 1997	.20	.24	9.74	4.65	2.88	.00	3.36	.45	11.34	21.08
REMOVE & STACK	CUSTOM BALE WAGON	MAY 1997	.00	.00	.00	.00	.00	12.50	.00	.52	13.02	13.02
SWATH	70HP/14' WINDROWER	JUL 1997	.14	.17	4.47	3.80	2.06	.00	.00	.15	6.00	10.47
RAKE & TURN	85HP-WT, 18' TWO-ROW RAKE	JUL 1997	.06	.07	1.42	.90	.81	.00	.00	.04	1.75	3.16
REMOVE & STACK	CUSTOM BALE WAGON	JUL 1997	.00	.00	.00	.00	.00	10.00	.00	.25	10.25	10.25
BALE	150HP-WT, PTO BALER	JUL 1997	.17	.20	8.13	3.88	2.40	.00	2.69	.22	9.19	17.32
SWATH	70HP/14' WINDROWER	AUG 1997	.14	.17	4.47	3.80	2.06	.00	.00	.10	5.95	10.43
RAKE & TURN	85HP-WT, 18' TWO-ROW RAKE	AUG 1997	.06	.07	1.42	.90	.81	.00	.00	.03	1.73	3.15
REMOVE & STACK	CUSTOM BALE WAGON	AUG 1997	.00	.00	.00	.00	.00	10.00	.00	.17	10.17	10.17
BALE	150HP-WT, PTO BALER	AUG 1997	.17	.20	8.13	3.88	2.40	.00	2.69	.15	9.12	17.25
SWATH	70HP/14' WINDROWER	OCT 1997	.14	.17	4.47	3.80	2.06	.00	.00	.00	5.86	10.33
RAKE & TURN	85HP-WT, 18' TWO-ROW RAKE	OCT 1997	.06	.07	1.42	.90	.81	.00	.00	.00	1.70	3.12
REMOVE & STACK	CUSTOM BALE WAGON	OCT 1997	.00	.00	.00	.00	.00	7.50	.00	.00	7.50	7.50
BALE	150HP-WT, PTO BALER	OCT 1997	.14	.17	6.96	3.32	2.06	.00	2.02	.00	7.40	14.36
GOPHER CONTROL	COST OF ANNUAL GOPHER CONTROL	ANN 1997	.00	.00	.00	.00	.00	2.00	.00	.10	2.10	2.10
PICK-UP	3/4 TON	ANN 1997	1.00	.00	5.68	3.07	.00	.00	.00	.15	3.23	8.91
OVERHEAD	UTILITIES, LEGAL, ACCT., ETC.	ANN 1997	.00	.00	.00	.00	.00	23.31	.00	.00	23.31	23.31
LAND COST	NET RENT	ANN 1997	.00	.00	250.00	.00	.00	.00	.00	.00	.00	250.00
MANAGEMENT	7% OF EXPECTED GROSS RETURNS	ANN 1997	.00	.00	61.60	.00	.00	.00	.00	.00	.00	61.60
ESTABLISHMENT**	PRORATED ESTABLISHMENT COST	ANN 1997	.00	.00	94.32	.00	.00	.00	.00	.00	.00	94.32
TOTAL PER ACRE			2.50	2.80	468.84	50.22	33.54	179.65	57.24	13.53	334.17	803.01

*TWO-THIRDS OF APPLIED COST SINCE FERTILIZER NOT APPLIED FIRST YEAR OF PRODUCTION.

**\$234.57 ESTABLISHMENT COST AMORTIZED OVER 3 YEARS AT 10% INTEREST.

Table 2D. Materials and Services Used by Operation for Producing Alfalfa Hay

Operation		Material and/or Service
Fertilize*	November	Custom fertilize application @ \$5.00/acre 100 lbs. of phosphate @ 25¢/lb. 100 lbs. of potash @ 14¢/lb. 4 lbs. of zinc @ \$1.05/lb. 1 lb. of boron @ \$2.90/lb.
Weed Control	Feb./Mar.	Custom spray @ \$5.50/acre 0.38 lbs. of metribuzin @ \$27.95/lb. 1 pint of Gramoxone-Extra @ \$5.13/pint
Irrigate	Season	Irrigation water @ \$30.50/acre Irrigation power @ \$75.00/acre Irrigation repair @ \$10.00/acre
Bale	May	1,050 ft. of baling twine @ \$3.20/1,000 ft.
Remove & Stack	May	2.5 tons of bales @ \$5.00/ton
Bale	June/July	840 ft. of baling twine @ \$3.20/1,000 ft.
Remove & Stack	June/July	2 tons of bales @ \$5.00/ton
Bale	July/August	840 ft. of baling twine @ \$3.20/1,000 ft.
Remove & Stack	July/August	2 tons of bales @ \$5.00/ton
Bale	Sept./Oct.	630 ft. of baling twine @ \$3.20/1,000 ft.
Remove & Stack	Sept./Oct.	1.5 tons of bales @ \$5.00/ton
Gopher Control	Annual	Cost of gopher control @ \$2.00/acre
Overhead	Annual	7.5% of variable cost

*Fertilizer application not applied the first year of production.
Application rate shown is per acre applied.

TABLE 3D. 1997 ITEMIZED COST PER ACRE PRODUCTION OF ALFALFA HAY
IN THE COLUMBIA BASIN; CENTER PIVOT IRRIGATION.

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

VARIABLE COSTS		\$		\$	
CUSTOM FERTILIZE*	ACRE	5.00	.67	3.33	_____
PHOSPHATE (DRY)*	LB.	.25	66.67	16.67	_____
POTASH*	LB.	.14	66.67	9.33	_____
BORON*	LB.	2.90	.67	1.93	_____
ZINC*	LB.	1.05	2.67	2.80	_____
CUSTOM SPRAY	ACRE	5.50	1.00	5.50	_____
METRIBUZIN	LB.	27.95	.38	10.62	_____
GRAMOXONE-EXTRA	PINT	5.13	1.00	5.13	_____
CUSTOM BALE WAGON	TON	5.00	8.00	40.00	_____
TWINE	1000FT	3.20	3.36	10.76	_____
GOPHER CONTROL	ACRE	2.00	1.00	2.00	_____
IRRIGATION WATER	ACRE	30.50	1.00	30.50	_____
IRRIGATION POWER	ACRE	75.00	1.00	75.00	_____
IRRIGATION REPAIR	ACRE	12.00	1.00	12.00	_____
TRACTOR REPAIR	ACRE	4.41	1.00	4.41	_____
TRACTOR FUEL/LUBE	ACRE	7.99	1.00	7.99	_____
MACHINERY REPAIRS	ACRE	17.71	1.00	17.71	_____
MACHINE FUEL/LUBE	ACRE	8.10	1.00	8.10	_____
LABOR (TRAC/MACH/IRR)	HOUR	12.00	2.80	33.54	_____
OVERHEAD	ACRE	23.31	1.00	23.31	_____
INTEREST ON OP. CAP.	ACRE	13.53	1.00	13.53	_____

TOTAL VARIABLE COST				334.17	_____
FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	9.13	1.00	9.13	_____
TRACTOR INTEREST	ACRE	13.25	1.00	13.25	_____
TRACTOR INSURANCE	ACRE	.79	1.00	.79	_____
TRACTOR TAXES	ACRE	2.38	1.00	2.38	_____
TRACTOR HOUSING	ACRE	1.32	1.00	1.32	_____
MACHINE DEPRECIATION	ACRE	20.31	1.00	20.31	_____
MACHINE INTEREST	ACRE	11.74	1.00	11.74	_____
MACHINE INSURANCE	ACRE	.70	1.00	.70	_____
MACHINE TAXES	ACRE	2.11	1.00	2.11	_____
MACHINE HOUSING	ACRE	1.17	1.00	1.17	_____
MANAGEMENT FEE**	ACRE	61.60	1.00	61.60	_____
LAND RENT	ACRE	250.00	1.00	250.00	_____
ESTABLISHMENT COST	ACRE	94.32	1.00	94.32	_____

TOTAL FIXED COST				468.84	_____
TOTAL COST				803.01	_____

*TWO-THIRDS OF APPLIED COST SINCE FERTILIZER NOT APPLIED FIRST
YEAR OF PRODUCTION.

**7% OF EXPECTED GROSS RETURNS (8 TONS X \$110 X .07)

TABLE 4D. BREAK-EVEN SELLING PRICE PER TON OF ALFALFA HAY PRODUCED IN THE COLUMBIA BASIN UNDER CENTER PIVOT IRRIGATION.

	COST PER ACRE	YOUR FARM	BREAK-EVEN PRICE (\$/TON)	YOUR FARM
	\$	\$	(8 TONS)	\$
1. TOTAL VARIABLE COST	334.17	_____	41.77	_____
PLUS: TRACTOR & MACHINERY INSURANCE	1.49	_____		
TRACTOR & MACHINERY TAXES	4.49	_____		
LAND RENT	250.00	_____		
2. TOTAL CASH COSTS	590.15	_____	73.77	_____
PLUS: TRACTOR & MACHINERY DEPRECIATION	29.44	_____		
3. TOTAL CASH COST & DEPRECIATION	619.59	_____	77.45	_____
PLUS: TRACTOR & MACHINERY INTEREST	25.00	_____		
TRACTOR & MACHINERY HOUSING	2.50	_____		
AMORTIZED ESTABLISHMENT COST	94.32	_____		
MANAGEMENT	61.60	_____		
4. TOTAL COST	803.01	_____	100.37	_____

TABLE 5D. SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE FOR ALFALFA HAY PRODUCED IN THE COLUMBIA BASIN UNDER CENTER PIVOT IRRIGATION.

	PRICE/UNIT	QUANTITY	VALUE OR COST	YOUR FARM

GROSS RECEIPTS				
ALFALFA	\$110.00	8 TONS	\$880.00	_____
1. TOTAL RECEIPTS			\$880.00	_____
LESS: TOTAL VARIABLE COST			\$334.17	_____
LAND RENT			\$250.00	_____
2. RETURNS OVER VARIABLE COST AND LAND RENT			\$295.83	_____
LESS: TRACTOR & MACHINERY FIXED COST			\$ 62.92	_____
AMORTIZED ESTABLISHMENT COST			\$ 94.32	_____
3. NET RETURNS TO MANAGEMENT AND RISK			\$138.59	_____

TABLE 1E. 1997 SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR GRAIN CORN FOLLOWING WHEAT IN THE COLUMBIA BASIN; CENTER PIVOT IRRIGATION.

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.		
						\$	\$	\$	\$	\$	\$	\$	
DISC & PACK	200HP-WT,20'OFFSET DISC & PACK	NOV	1996	.13	.16	7.63	3.53	1.87	.00	.00	.50	5.90	13.53
IRRIGATE	CENTER PIVOT, 36 AC. IN.	SEA	1997	.00	.80	.00	12.00	9.60	94.80	.00	5.82	122.22	122.22
SOIL TEST	CUSTOM TEST	MAR	1997	.00	.00	.00	.00	.00	1.50	.00	.09	1.59	1.59
FERTILIZE	CUSTOM APPLICATION	APR	1997	.00	.00	.00	.00	.00	5.00	94.65	4.99	104.64	104.64
DISC & PACK	200HP-WT,20'OFFSET DISC & PACK	APR	1997	.13	.16	7.63	3.53	1.87	.00	.00	.27	5.68	13.30
PLANT*	85HP-WT, SIX-ROW PLANTER	MAY	1997	.17	.26	5.63	3.26	3.06	.00	25.00	1.30	32.62	38.25
HERBICIDE	CUSTOM APPLICATION	MAY	1997	.00	.00	.00	.00	.00	5.50	25.00	1.27	31.77	31.77
RESERVOIR TILL	200HP-WT, 6R-DAMMER/DIKER	MAY	1997	.16	.19	9.35	4.66	2.30	.00	.00	.29	7.26	16.60
NITROGATION	THROUGH SPRINKLERS (75#)	JUN	1997	.00	.00	.00	.00	.00	.00	26.25	.88	27.12	27.12
NITROGATION	THROUGH SPRINKLERS (75#)	JUL	1997	.00	.00	.00	.00	.00	.00	26.25	.66	26.91	26.91
HARVEST	CUSTOM COMBINE	OCT	1997	.00	.00	.00	.00	.00	38.00	.00	.00	38.00	38.00
HAUL	CUSTOM HAUL	OCT	1997	.00	.00	.00	.00	.00	20.00	.00	.00	20.00	20.00
DRY CORN	CUSTOM DRY	OCT	1997	.00	.00	.00	.00	.00	50.00	.00	.00	50.00	50.00
PICK-UP	3/4 TON	ANN	1997	.67	.00	3.81	2.06	.00	.00	.00	.10	2.16	5.97
OVERHEAD	UTILITIES,LEGAL,ACCT.,ETC.	ANN	1997	.00	.00	.00	.00	.00	35.69	.00	.00	35.69	35.69
LAND COST	LAND RENT	ANN	1997	.00	.00	150.00	.00	.00	.00	.00	.00	.00	150.00
MANAGEMENT	7% OF EXPECTED GROSS RETURNS	ANN	1997	.00	.00	43.75	.00	.00	.00	.00	.00	.00	43.75
TOTAL PER ACRE				1.26	1.56	227.79	29.05	18.71	250.49	197.15	16.16	511.55	739.34

*SEED INCLUDES INSECTICIDE AND FUNGICIDE TREATMENT.

Table 2E. Materials and Services Used by Operation for Producing Grain Corn

Operation		Material and/or Service
Irrigate	Season	Irrigation charge @ \$30.50/acre Irrigation power @ \$64.30/acre Irrigation repair @ \$10.00/acre
Soil test	March	Custom test @ \$1.50/acre
Fertilize	April	Custom applied @ \$5.00/acre 150 lbs. of nitrogen (dry) @ 34¢/lb. 100 lbs. of phosphate (dry) @ 25¢/lb. 100 lbs. of potash @ 14¢/lb. 15 lbs. of sulfur @ 10¢/lb. 3 lbs. of zinc @ \$1.05/lb.
Plant	May	Corn seed @ \$25.00/acre*
Herbicide	May	Custom spray @ \$5.50/acre Herbicide @ \$25.00/acre
Nitrogate	June	75 lbs. of nitrogen (liq.) @ 35¢/lb.
Nitrogate	July	75 lbs. of nitrogen (liq.) @ 35¢/lb.
Harvest	October	Custom combine @ \$38.00/acre
Haul	October	Custom hauling @ \$4.00/ton
Dry Corn	October	Custom drying @ \$10.00/ton
Overhead	Annual	7.5% of variable cost

*Seed includes insecticide and fungicide treatment.

TABLE 3E. ITEMIZED COST PER ACRE FOR GRAIN CORN FOLLOWING WHEAT
IN THE COLUMBIA BASIN; CENTER PIVOT IRRIGATION.

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

VARIABLE COSTS		\$		\$	
SOIL TEST	ACRE	1.50	1.00	1.50	_____
CORN SEED	ACRE	25.00	1.00	25.00	_____
CUSTOM FERTILIZE	ACRE	5.00	1.00	5.00	_____
NITROGEN (DRY)	LB.	.34	150.00	51.00	_____
NITROGEN (LIQ)	LB.	.35	150.00	52.50	_____
PHOSPHATE (DRY)	LB.	.25	100.00	25.00	_____
ZINC	LB.	1.05	3.00	3.15	_____
POTASH	LB.	.14	100.00	14.00	_____
SULFUR	LB.	.10	15.00	1.50	_____
CUSTOM SPRAY	ACRE	5.50	1.00	5.50	_____
HERBICIDE	ACRE	25.00	1.00	25.00	_____
CUSTOM COMBINE	ACRE	38.00	1.00	38.00	_____
CUSTOM HAULING	TON	4.00	5.00	20.00	_____
CUSTOM DRYING	TON	10.00	5.00	50.00	_____
IRRIG. WATER	ACRE	30.50	1.00	30.50	_____
IRRIG. POWER	ACRE	64.30	1.00	64.30	_____
IRRIG. REPAIR	ACRE	12.00	1.00	12.00	_____
TRACTOR REPAIR	ACRE	3.40	1.00	3.40	_____
TRACTOR FUEL/LUBE	ACRE	6.37	1.00	6.37	_____
MACHINERY REPAIRS	ACRE	5.42	1.00	5.42	_____
MACHINE FUEL/LUBE	ACRE	1.85	1.00	1.85	_____
LABOR (TRAC/MACH/IRR)	HOUR	12.00	1.56	18.71	_____
OVERHEAD	ACRE	35.69	1.00	35.69	_____
INTEREST ON OP. CAP.	ACRE	16.16	1.00	16.16	_____
TOTAL VARIABLE COST				511.55	_____

FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	7.06	1.00	7.06	_____
TRACTOR INTEREST	ACRE	10.25	1.00	10.25	_____
TRACTOR INSURANCE	ACRE	.61	1.00	.61	_____
TRACTOR TAXES	ACRE	1.84	1.00	1.84	_____
TRACTOR HOUSING	ACRE	1.02	1.00	1.02	_____
MACHINE DEPRECIATION	ACRE	6.54	1.00	6.54	_____
MACHINE INTEREST	ACRE	5.00	1.00	5.00	_____
MACHINE INSURANCE	ACRE	.30	1.00	.30	_____
MACHINE TAXES	ACRE	.90	1.00	.90	_____
MACHINE HOUSING	ACRE	.50	1.00	.50	_____
MANAGEMENT FEE**	ACRE	43.75	1.00	43.75	_____
LAND RENT	ACRE	150.00	1.00	150.00	_____
TOTAL FIXED COST				227.79	_____

TOTAL COST				739.34	_____

*SEED INCLUDES INSECTICIDE AND FUNGICIDE TREATMENT.

**7% OF EXPECTED GROSS RETURNS (5 TONS X \$125 X .07)

TABLE 4E. BREAK-EVEN SELLING PRICE PER TON OF GRAIN CORN FOLLOWING WHEAT PRODUCED IN THE COLUMBIA BASIN UNDER CENTER PIVOT IRRIGATION.

	COST PER ACRE	YOUR FARM	BREAK-EVEN PRICE (\$/TON) (5 TONS)	YOUR FARM
	\$	\$		\$
1. TOTAL VARIABLE COST	511.55	_____	102.31	_____
PLUS: TRACTOR & MACHINERY INSURANCE	.91	_____		
TRACTOR & MACHINERY TAXES	2.74	_____		
LAND RENT	150.00	_____		
2. TOTAL CASH COSTS	665.20	_____	133.04	_____
PLUS: TRACTOR & MACHINERY DEPRECIATION	13.60	_____		
3. TOTAL CASH COST & DEPRECIATION	678.80	_____	135.76	_____
PLUS: TRACTOR & MACHINERY INTEREST	15.26	_____		
TRACTOR & MACHINERY HOUSING	1.53	_____		
MANAGEMENT	43.75	_____		
4. TOTAL COST	739.34	_____	147.86	_____

TABLE 5E. SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE FOR PRODUCING GRAIN CORN FOLLOWING WHEAT IN THE COLUMBIA BASIN UNDER CENTER PIVOT IRRIGATION.

	PRICE/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
GROSS RECEIPTS				
GRAIN CORN	\$125.00	5 TONS	\$ 625.00	_____
1. TOTAL RECEIPTS			\$ 625.00	_____
LESS: TOTAL VARIABLE COST			\$ 511.55	_____
LAND RENT			\$ 150.00	_____
2. RETURNS OVER VARIABLE COST AND LAND RENT			\$ -36.55	_____
LESS: TRACTOR & MACHINERY FIXED COST			\$ 34.04	_____
3. NET RETURNS TO MANAGEMENT AND RISK			\$ -70.59	_____

TABLE 1F. 1997 SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR SILAGE CORN FOLLOWING WHEAT IN THE COLUMBIA BASIN; CENTER PIVOT IRRIGATION.

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.		
						\$	\$	\$	\$	\$	\$	\$	
DISC & PACK	200HP-WT, 20' OFFSET DISC&PACK	NOV	1996	.13	.16	7.63	3.53	1.87	.00	.00	.50	5.90	13.53
IRRIGATE	CENTER PIVOT, 36 AC. IN.	SEA	1997	.00	.80	.00	12.00	9.60	94.80	.00	5.82	122.22	122.22
SOIL TEST	CUSTOM TEST	MAR	1997	.00	.00	.00	.00	.00	1.50	.00	.09	1.59	1.59
FERTILIZE	CUSTOM APPLICATION	APR	1997	.00	.00	.00	.00	.00	5.00	94.65	4.99	104.64	104.64
DISC & PACK	200HP-WT, 20' OFFSET DISC&PACK	APR	1997	.13	.16	7.63	3.53	1.87	.00	.00	.27	5.68	13.30
PLANT*	85HP-WT, SIX-ROW PLANTER	MAY	1997	.17	.26	5.63	3.26	3.06	.00	30.00	1.51	37.83	43.46
HERBICIDE	CUSTOM APPLICATION	MAY	1997	.00	.00	.00	.00	.00	5.50	25.00	1.27	31.77	31.77
RESERVOIR TILL	200HP-WT, 6R-DAMMER/DIKER	MAY	1997	.16	.19	9.35	4.66	2.30	.00	.00	.29	7.26	16.60
NITROGATION	THROUGH SPRINKLERS (75#)	JUN	1997	.00	.00	.00	.00	.00	.00	26.25	.88	27.12	27.12
NITROGATION	THROUGH SPRINKLERS (75#)	JUL	1997	.00	.00	.00	.00	.00	.00	26.25	.66	26.91	26.91
CHOP & HAUL	CUSTOM CHOP & HAUL	SEP	1997	.00	.00	.00	.00	.00	195.00	.00	1.63	196.62	196.62
PICK-UP	3/4 TON	ANN	1997	.67	.00	3.81	2.06	.00	.00	.00	.10	2.16	5.97
OVERHEAD	UTILITIES,LEGAL,ACCT.,ETC.	ANN	1997	.00	.00	.00	.00	.00	42.73	.00	.00	42.73	42.73
LAND COST	LAND RENT	ANN	1997	.00	.00	150.00	.00	.00	.00	.00	.00	.00	150.00
MANAGEMENT	7% OF EXPECTED GROSS RETURNS	ANN	1997	.00	.00	54.60	.00	.00	.00	.00	.00	.00	54.60
TOTAL PER ACRE				1.26	1.56	238.64	29.05	18.71	344.53	202.15	17.99	612.42	851.06

*SEED INCLUDES INSECTICIDE AND FUNGICIDE TREATMENT.

Table 2F. Materials and Services Used by Operation for Producing Silage Corn

Operation		Material and/or Service
Irrigate	Season	Irrigation charge @ \$30.50/acre Irrigation power @ \$64.30/acre Irrigation repair @ \$10.00/acre
Soil test	March	Custom test @ \$1.50/acre
Fertilize	April	Custom applied @ \$5.00/acre 150 lbs. of nitrogen (dry) @ 34¢/lb. 100 lbs. of phosphate (dry) @ 25¢/lb. 100 lbs. of potash @ 14¢/lb. 15 lbs. of sulfur @ 10¢/lb. 3 lbs. of zinc @ \$1.05/lb.
Plant	May	Corn seed @ \$30.00/acre*
Herbicide	May	Custom spray @ \$5.50/acre Herbicide @ \$25.00/acre
Nitrogate	June	75 lbs. of nitrogen (liq.) @ 35¢/lb.
Nitrogate	July	75 lbs. of nitrogen (liq.) @ 35¢/lb.
Chop & Haul	Late Sept. Early Oct.	Custom chop & haul 30 tons @ \$6.50/ton
Overhead	Annual	7.5% of variable cost

*Seed includes insecticide and fungicide treatment.

TABLE 3F. 1997 ITEMIZED COST PER ACRE FOR SILAGE CORN FOLLOWING
WHEAT IN THE COLUMBIA BASIN; CENTER PIVOT IRRIGATION.

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

VARIABLE COSTS		\$		\$	
SOIL TEST	ACRE	1.50	1.00	1.50	_____
CORN SEED	ACRE	30.00	1.00	30.00	_____
CUSTOM FERTILIZE	ACRE	5.00	1.00	5.00	_____
NITROGEN (DRY)	LB.	.34	150.00	51.00	_____
NITROGEN (LIQ)	LB.	.35	150.00	52.50	_____
PHOSPHATE (DRY)	LB.	.25	100.00	25.00	_____
POTASH	LB.	.14	100.00	14.00	_____
SULFUR	LB.	.10	15.00	1.50	_____
ZINC	LB.	1.05	3.00	3.15	_____
CUSTOM SPRAY	ACRE	5.50	1.00	5.50	_____
HERBICIDE	ACRE	25.00	1.00	25.00	_____
CUSTOM CHOP & HAUL	TON	6.50	30.00	195.00	_____
IRRIGATION WATER	ACRE	30.50	1.00	30.50	_____
IRRIGATION POWER	ACRE	64.30	1.00	64.30	_____
IRRIGATION REPAIR	ACRE	12.00	1.00	12.00	_____
TRACTOR REPAIR	ACRE	3.40	1.00	3.40	_____
TRACTOR FUEL/LUBE	ACRE	6.37	1.00	6.37	_____
MACHINERY REPAIRS	ACRE	5.42	1.00	5.42	_____
MACHINE FUEL/LUBE	ACRE	1.85	1.00	1.85	_____
LABOR (TRAC/MACH/IRR)	ACRE	12.00	1.56	18.71	_____
OVERHEAD	ACRE	42.73	1.00	42.73	_____
INTEREST ON OP. CAP.	ACRE	17.99	1.00	17.99	_____

TOTAL VARIABLE COST				612.42	_____
FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	7.06	1.00	7.06	_____
TRACTOR INTEREST	ACRE	10.25	1.00	10.25	_____
TRACTOR INSURANCE	ACRE	.61	1.00	.61	_____
TRACTOR TAXES	ACRE	1.84	1.00	1.84	_____
TRACTOR HOUSING	ACRE	1.02	1.00	1.02	_____
MACHINE DEPRECIATION	ACRE	6.54	1.00	6.54	_____
MACHINE INTEREST	ACRE	5.00	1.00	5.00	_____
MACHINE INSURANCE	ACRE	.30	1.00	.30	_____
MACHINE TAXES	ACRE	.90	1.00	.90	_____
MACHINE HOUSING	ACRE	.50	1.00	.50	_____
MANAGEMENT FEE	ACRE	54.60	1.00	54.60	_____
LAND RENT	ACRE	150.00	1.00	150.00	_____

TOTAL FIXED COST				238.64	_____
TOTAL COST				851.06	_____

*SEED INCLUDES INSECTICIDE AND FUNGICIDE TREATMENT.
**7% OF EXPECTED GROSS RETURNS (30 TONS X \$26.00 X .07)

TABLE 4F. BREAK-EVEN SELLING PRICE PER TON OF SILAGE CORN FOLLOWING WHEAT PRODUCED IN THE COLUMBIA BASIN UNDER CENTER PIVOT IRRIGATION.

	COST PER ACRE	YOUR FARM	BREAK-EVEN PRICE (\$/TON) (30 TONS)	YOUR FARM
	\$	\$		\$
1. TOTAL VARIABLE COST	612.42	_____	20.41	_____
PLUS: TRACTOR & MACHINERY INSURANCE	.91	_____		
TRACTOR & MACHINERY TAXES	2.74	_____		
LAND RENT	150.00	_____		
2. TOTAL CASH COSTS	766.07	_____	25.54	_____
PLUS: TRACTOR & MACHINERY DEPRECIATION	13.60	_____		
3. TOTAL CASH COST & DEPRECIATION	779.67	_____	25.99	_____
PLUS: TRACTOR & MACHINERY INTEREST	15.26	_____		
TRACTOR & MACHINERY HOUSING	1.53	_____		
MANAGEMENT	54.60	_____		
4. TOTAL COST	851.06	_____	28.37	_____

TABLE 5F. SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE FOR PRODUCING SILAGE CORN FOLLOWING WHEAT IN THE COLUMBIA BASIN UNDER CENTER PIVOT IRRIGATION.

	PRICE/UNIT	QUANTITY	VALUE OR COST	YOUR FARM

GROSS RECEIPTS				
SILAGE CORN	\$26.00	30 TONS	\$ 780.00	_____
1. TOTAL RECEIPTS			\$ 780.00	_____
LESS: TOTAL VARIABLE COST			\$ 612.42	_____
LAND RENT			\$ 150.00	_____
2. RETURNS OVER VARIABLE COST AND LAND RENT			\$ 17.58	_____
LESS: TRACTOR & MACHINERY FIXED COST			\$ 34.04	_____
3. NET RETURNS TO MANAGEMENT AND RISK			\$ -16.46	_____

TABLE 1G. 1997 SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR PRODUCING PROCESSED SWEET CORN IN THE COLUMBIA BASIN;
CENTER PIVOT IRRIGATION.

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.		
						\$	\$	\$	\$	\$	\$	\$	\$
DISC & PACK*	200HP-WT, 20' OFFSET DISC&PACK	SEP	1996	.13	.16	7.63	3.53	1.87	.00	.00	.50	5.90	13.53
SOIL TEST	CUSTOM TEST	MAR	1997	.00	.00	.00	.00	.00	1.50	.00	.06	1.56	1.56
HERBICIDE	CUSTOM APPLICATION	APR	1997	.00	.00	.00	.00	.00	5.50	9.38	.50	15.38	15.38
SUBSOIL	200HP-WT, 12' SUBSOILER	APR	1997	.22	.26	10.89	5.15	3.17	.00	.00	.28	8.60	19.49
DISC & PACK	200HP-WT, 20' OFFSET DISC&PACK	MAY	1997	.13	.16	7.63	3.53	1.87	.00	.00	.14	5.54	13.17
PLANT & FERT**	150HP-WT, 6R-PLT W/LIQ APPLIC.	MAY	1997	.14	.21	8.58	4.17	2.58	.00	100.70	2.69	110.13	118.71
IRRIGATE	CENTER PIVOT IRRIG. (22 IN.)	SEA	1997	.00	.80	.00	12.00	9.60	69.66	.00	4.56	95.82	95.82
NITROGATE	THROUGH SPRINKLERS	SEA	1997	.00	.00	.00	.00	.00	.00	87.50	4.38	91.87	91.87
HERBICIDE	CUSTOM APPLICATION	JUN	1997	.00	.00	.00	.00	.00	5.50	26.82	.54	32.86	32.86
INSECTICIDE***	CUSTOM AIR APPLIC. (3X)	SEA	1997	.00	.00	.00	.00	.00	7.50	9.75	.86	18.11	18.11
CULTIVATE****	150HP-WT, SIX-ROW CULTIVATOR	JUL	1997	.13	.15	5.04	2.26	1.80	.00	.00	.03	4.10	9.13
TOPPING***	CUSTOM HIRED	AUG	1997	.00	.00	.00	.00	.00	5.50	.00	.00	5.50	5.50
HARVEST/HAUL	PROVIDED BY PROCESSOR	AUG	1997	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
SHRED STUBBLE	150HP-WT, 20' SHREDDER	AUG	1997	.14	.17	7.09	3.03	2.06	.00	.00	.00	5.09	12.18
DISC & PACK	200HP-WT, 20' OFFSET DISC&PACK	AUG	1997	.13	.16	7.63	3.53	1.87	.00	.00	.00	5.40	13.03
PICKUP, MANGEMT	3/4 TON	ANN	1997	.80	.00	4.54	2.46	.00	.00	.00	.12	2.58	7.12
PICKUP, IRRIGATN	3/4 TON	ANN	1997	.40	.00	2.34	1.60	.00	.00	.00	.08	1.68	4.02
LAND COST	NET RENT	ANN	1997	.00	.00	180.00	.00	.00	.00	.00	.00	.00	180.00
OVERHEAD	UTILITIES, LEGAL, ACCT., ETC.	ANN	1997	.00	.00	.00	.00	.00	30.76	.00	.00	30.76	30.76
MANAGEMENT	7% OF EXPECTED GROSS RETURNS	ANN	1997	.00	.00	42.84	.00	.00	.00	.00	.00	.00	42.84
TOTAL PER ACRE				2.22	2.07	284.20	41.27	24.83	125.92	234.14	14.73	440.89	725.09

*IF FOLLOWING POTATOES, A WHEAT COVER CROP IS PLANTED FOLLOWING THE DISC & PACK OPERATION AT A TOTAL COST OF 19.40 PER ACRE.

**SEED INCLUDES INSECTICIDE AND FUNGICIDE TREATMENT.

***AMOUNT PAID BY PRODUCER. PROCESSOR PAYS ONE-HALF THE COST.

****IN SOME CASES, IN ADDITION TO CULTIVATION, RESERVOIR TILLAGE MAY ALSO BE DONE AT A TOTAL COST OF \$16.55 PER ACRE.

Table 2G. Materials and Services Used by Operation for Producing Sweet Corn.

Operation		Material and/or Service
Soil Test	March	Soil test @ \$1.50/acre
Herbicide	April	Custom applied @ \$5.50/acre 1 pt. of glyphosate @ \$7.10/pt. 1 pt. of spreader @ \$2.28/pt.
Plant and Fertilize	May	Corn seed @ \$55.00/acre* 40 lbs. of nitrogen (liq) @ 35¢/lb. 80 lbs. of phosphate (liq) @ 36¢/lb. 15 lbs. of sulfur (liq) @ 19.3¢/lb.
Irrigate	Season	Irrigation charge @ \$30.50/acre Irrigation power @ \$39.16/acre
Nitrogate	Season	250 lbs. of nitrogen (liq.) @ 35¢/lb.
Herbicide	June	Custom applied @ \$5.50/acre 3.0 qts. of Prowl @ \$8.19/qt. 0.5 lb. of atrazine @ \$4.50/lb.
Insecticide	Season	Custom aerial, 3 applications @ \$5.00/acre/application** 0.75 pt. of Pounce 3.2 @ \$26.00/pt.**
Topping	August	Custom hired @ \$11.00/acre**
Overhead	Annual	7.5% of variable cost

*Seed includes insecticide and fungicide treatment.

**Total cost per acre. Producer pays one-half the cost and the processor pays one-half the cost.

TABLE 3G. 1997 ITEMIZED COST PER ACRE FOR PRODUCING PROCESSED
SWEET CORN IN THE COLUMBIA BASIN; CENTER PIVOT
IRRIGATION.

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

VARIABLE COSTS		\$		\$	
SOIL TEST	ACRE	1.50	1.00	1.50	_____
CORN SEED	ACRE	55.00	1.00	55.00	_____
NITROGEN (LIQ)	LB.	.35	290.00	101.50	_____
PHOSPHATE (LIQ)	LB.	.36	80.00	28.80	_____
SULFUR (LIQ)	LB.	.19	15.00	2.89	_____
GLYPHOSATE	PT.	7.10	1.00	7.10	_____
SPREADER	PT.	2.28	1.00	2.28	_____
PROWL	QT.	8.19	3.00	24.57	_____
ATRAZINE	LB.	4.50	.50	2.25	_____
POUNCE 3.2	PT.	26.00	.38	9.75	_____
CUSTOM SPRAY	ACRE	5.50	2.00	11.00	_____
CUSTOM AERIAL	ACRE	5.00	1.50	7.50	_____
CUSTOM TOPPING	ACRE	11.00	.50	5.50	_____
IRRIGATION POWER	ACRE	39.16	1.00	39.16	_____
IRRIGATION WATER	ACRE	30.50	1.00	30.50	_____
IRRIGATION REPAIR	ACRE	12.00	1.00	12.00	_____
TRACTOR REPAIR	ACRE	6.20	1.00	6.20	_____
TRACTOR FUEL/LUBE	ACRE	12.26	1.00	12.26	_____
MACHINERY REPAIRS	ACRE	7.50	1.00	7.50	_____
MACHINE FUEL/LUBE	ACRE	3.31	1.00	3.31	_____
LABOR (TRAC/MACH/IRR)	HOURL	12.00	2.07	24.83	_____
OVERHEAD	ACRE	30.76	1.00	30.76	_____
INTEREST ON OP. CAP.	ACRE	14.73	1.00	14.73	_____
TOTAL VARIABLE COST				440.89	_____

FIXED COSTS		\$		\$	
TRACTOR DEPRECIATION	ACRE	13.77	1.00	13.77	_____
TRACTOR INTEREST	ACRE	20.65	1.00	20.65	_____
TRACTOR INSURANCE	ACRE	1.24	1.00	1.24	_____
TRACTOR TAXES	ACRE	3.72	1.00	3.72	_____
TRACTOR HOUSING	ACRE	2.07	1.00	2.07	_____
MACHINE DEPRECIATION	ACRE	10.21	1.00	10.21	_____
MACHINE INTEREST	ACRE	7.24	1.00	7.24	_____
MACHINE INSURANCE	ACRE	.43	1.00	.43	_____
MACHINE TAXES	ACRE	1.30	1.00	1.30	_____
MACHINE HOUSING	ACRE	.72	1.00	.72	_____
LAND RENT	ACRE	180.00	1.00	180.00	_____
MANAGEMENT FEE*	ACRE	42.84	1.00	42.84	_____
TOTAL FIXED COST				284.20	_____
TOTAL COST				725.09	_____

*7% OF EXPECTED GROSS RETURNS (9 TON X \$68 X .07)					

TABLE 4G. BREAK-EVEN SELLING PRICE PER TON OF PROCESSED SWEET CORN PRODUCED IN THE COLUMBIA BASIN UNDER CENTER PIVOT IRRIGATION.

	COST PER ACRE	YOUR FARM	BREAK-EVEN PRICE (\$/TON)	YOUR FARM
	\$	\$	(9 TONS)	\$
1. TOTAL VARIABLE COST	440.89	_____	48.99	_____
PLUS: TRACTOR & MACHINERY INSURANCE	1.67	_____		
TRACTOR & MACHINERY TAXES	5.02	_____		
LAND RENT	180.00	_____		
2. TOTAL CASH COSTS	627.58	_____	69.73	_____
PLUS: TRACTOR & MACHINERY DEPRECIATION	23.98	_____		
3. TOTAL CASH COST & DEPRECIATION	651.56	_____	72.40	_____
PLUS: TRACTOR & MACHINERY INTEREST	27.89	_____		
TRACTOR & MACHINERY HOUSING	2.80	_____		
MANAGEMENT	42.84	_____		
4. TOTAL COST	725.09	_____	80.56	_____

TABLE 5G. SUMMARY OF RECEIPTS, COSTS, AND PROFITABILITY PER ACRE FOR PRODUCING PROCESSED SWEET CORN IN THE COLUMBIA BASIN UNDER CENTER PIVOT IRRIGATION.

	PRICE/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
GROSS RECEIPTS				
SWEET CORN	\$68.00	9 TONS	\$612.00	_____
1. TOTAL RECEIPTS			\$612.00	_____
LESS: TOTAL VARIABLE COST			\$440.89	_____
LAND RENT			\$180.00	_____
2. RETURNS OVER VARIABLE COST AND LAND RENT			\$- 8.89	_____
LESS: TRACTOR & MACHINERY FIXED COST			\$ 61.36	_____
3. NET RETURNS TO MANAGEMENT AND RISK			\$-70.25	_____

Table 6. Machine Data

Machine Name	Purchase Price	Years of Use	Salvage Value	Annual Repair Cost	Annual Hours of Use	Gallons of Fuel Use Per Hour
300HP-WT	120,000	10	36,000	12,000	1000	14D
200HP-WT	100,000	20	20,000	1,800	300	11D, 8.5D, 6D
150HP-WT	80,000	20	16,000	1,440	300	8.5D
85HP-WT	45,000	15	9,000	1,690	500	4D
70HP-Swather	52,000	8	10,400	5,275	300	6.5G
Front Loader	30,000	20	3,000	900	500	5D
Pickup, Managment	22,000	5	10,000	250	800	2G
Pickup, Irrigation	10,000	5	2,500	500	400	2G
12' Subsoiler	5,000	15	750	450	125	
13' Packer	3,200	10	640	420	250	
20' Packer	4,200	7	840	300	350	
24' Harrow	2,100	15	420	50	150	
36' Harrow	2,700	15	540	75	150	
17' Chisel Chopper	20,000	15	4,000	500	100	
13' Tandum Disc	9,000	10	1,800	525	200	
20' Offset Disc	19,000	10	3,800	1,625	250	
6R-Dammer/Diker	16,000	15	3,200	1,400	150	
13' Chisel Plow	8,000	15	1,600	630	150	
6R-Potato Planter	39,500	6	11,750	5,200	200	
3R-Potato Harvester	47,000	10	9,400	3,200	250	
20' Disc Drill	16,000	10	3,200	1,380	125	
6R-Corn Planter	15,500	10	3,100	1,330	125	
28' 2-Row Rake	15,000	10	3,000	1,500	200	
20' Stubble Shredder	16,000	15	2,400	850	150	

Table 6. Machine Data (continued)

Machine Name	Purchase Price	Years of Use	Salvage Value	Annual Repair Cost	Annual Hours of Use	Fuel Use Per Hour
Hay Baler, PTO	20,000	6	4,000	2,480	320	
Granular Applicator	3,000	10	900	195	75	
Insecticide Applicator	900	10	180	50	75	
Liquid Fertilizer Applicator	3,000	10	600	300	100	

TABLE 7. HOURLY MACHINERY COSTS

MACHINERY	PURCHASE PRICE	YEARS TO TRADE	ANNUAL HOURS	DEPRECIATION	INTEREST	INSURANCE	TAXES	HOUSING	TOTAL FIXED COST	REPAIR	FUEL AND LUBE	TOTAL VARIABLE COST	TOTAL COST
	\$								COST PER HOUR				
300HP-WT	120,000.00	10	1000	8.40	7.80	.47	1.40	.78	18.85	12.00	15.30	27.29	46.15
200HP-WT	100,000.00	20	300	13.33	20.00	1.20	3.60	2.00	40.13	6.00	12.02	18.02	58.15
150HP-WT	80,000.00	20	300	10.67	16.00	.96	2.88	1.60	32.11	4.80	9.29	14.09	46.19
85HP-WT	45,000.00	15	500	4.80	5.40	.32	.97	.54	12.04	3.38	4.37	7.75	19.79
70HP SWATHER	52,000.00	8	300	17.33	10.40	.62	1.87	1.04	31.27	17.58	8.97	26.55	57.82
FRONT LOADER	30,000.00	20	500	2.70	3.30	.20	.59	.33	7.12	1.80	5.46	7.26	14.38
PICKUP, MGT	22,000.00	5	800	3.00	2.00	.12	.36	.20	5.68	.31	2.76	3.07	8.75
PICKUP, IRRIG	10,000.00	5	400	3.75	1.56	.09	.28	.16	5.84	1.25	2.76	4.01	9.85
12' SUBSOILER	5,000.00	15	125	2.27	2.30	.14	.41	.23	5.35	3.60	.00	3.60	8.95
4-18" MB PLOW	8,300.00	10	250	2.73	1.95	.12	.35	.20	5.35	3.98	.00	3.98	9.33
13' PACKER	3,200.00	10	250	1.02	.77	.05	.14	.08	2.05	1.68	.00	1.68	3.73
20' PACKER	4,200.00	7	350	1.37	.72	.04	.13	.07	2.34	.86	.00	.86	3.19
24' HARROW	2,100.00	15	150	.75	.84	.05	.15	.08	1.87	.33	.00	.33	2.21
36' HARROW	2,700.00	15	150	.96	1.08	.06	.19	.11	2.41	.50	.00	.50	2.91
17' CHISEL CHOP	20,000.00	15	100	10.67	12.00	.72	2.16	1.20	26.75	5.00	.00	5.00	31.75
13' TANDUM DISC	9,000.00	10	200	3.60	2.70	.16	.49	.27	7.22	2.63	.00	2.63	9.84
20' OFFSET DISC	19,000.00	10	250	6.08	4.56	.27	.82	.46	12.19	6.50	.00	6.50	18.69
6R-DAMMER/DIKER	16,000.00	15	150	5.69	6.40	.38	1.15	.64	14.26	9.33	.00	9.33	23.60
13' CHISEL PLOW	8,000.00	15	150	2.84	3.20	.19	.58	.32	7.13	4.20	.00	4.20	11.33
6R-POTATO PLANTER	39,500.00	6	200	23.13	12.81	.77	2.31	1.28	40.29	26.00	.00	26.00	66.29
3R-POTATO HARVESTER	47,000.00	10	250	15.04	11.28	.68	2.03	1.13	30.16	12.80	.00	12.80	42.96
20' DISC DRILL	16,000.00	10	125	10.24	7.68	.46	1.38	.77	20.53	11.04	.00	11.04	31.57
6R-CORN PLANTER	15,500.00	10	125	9.92	7.44	.45	1.34	.74	19.89	10.64	.00	10.64	30.53
28' 2-ROW RAKE	15,000.00	10	200	6.00	4.50	.27	.81	.45	12.03	7.50	.00	7.50	19.53
20' STUBBLE SHRED.	16,000.00	15	150	6.04	6.13	.37	1.10	.61	14.26	5.67	.00	5.67	19.93
HAY BALER, PTO	20,000.00	6	320	8.33	3.75	.23	.68	.38	13.36	7.75	.00	7.75	21.11
GRANULAR APPLIC.	3,000.00	10	75	2.80	2.60	.16	.47	.26	6.28	2.60	.00	2.60	8.88
INSECTICIDE APPLIC.	900.00	10	75	.96	.72	.04	.13	.07	1.92	.67	.00	.67	2.59
LIQUID FERT APPLIC.	3,000.00	10	100	2.40	1.80	.11	.32	.18	4.81	3.00	.00	3.00	7.81

*SHOWN AT 11 GALLONS PER HOUR OF FUEL CONSUMPTION. AT 8.5 GALLONS AND 6.0 GALLONS OF FUEL CONSUMPTION, THE FUEL AND LUBE COST ARE \$9.29 AND \$6.55, RESPECTIVELY.

Table 8. Input Prices

Item	Unit	Price
		\$
<u>Fuel</u>		
Gasoline	Gallon	1.20
Diesel	Gallon	.95
<u>Fertilizer</u>		
Nitrogen (dry)	Pound	.34
Nitrogen (liquid)	Pound	.35
Phosphate (dry)	Pound	.25
Phosphate (liquid)	Pound	.36
Potash	Pound	.14
Sulfur (dry)	Pound	.10
Sulfur (liquid)	Pound	.193
Zinc	Pound	1.05
Boron	Pound	2.90
Foliar Nutrient	Pound	1.00
<u>Chemicals</u>		
Adjuvant (potatoes)	7% of total cover spray cost	
Atrazine	Pound	4.50
Buctril	Pint	7.88
Chlorothalonil	Pint	7.56
Comite	Pint	11.06
Glyphosate	Pint	7.10
Gramoxone-Extra	Pint	5.13
Harmony-Extra	Ounce	15.99
Mancozeb	Pound	4.00
Metham Sodium	Gallon	4.20
Metribuzin	Pound	27.95
Monitor	Quart	21.25
Polyram	Pound	3.90
Pounce 3.2	Pint	26.00
Prowl	Quart	8.19
Rovral	Pint	24.44
Spreader	Pint	2.28
Sulfur Fungicide	Pound	.80
Super-Tin	Pound	32.25
Temik	Pound	3.95
<u>Seed</u>		
Alfalfa Seed	Pound	2.80
Potato Seed*	Cwt.	11.00
Wheat Seed	Pound	.105
Grain Corn Seed**	Acre	25.00
Silage Corn Seed**	Acre	30.00
Sweet Corn Seed**	Acre	55.00

Table 8. Input Prices (Continued)

Item	Unit	Price
		\$
<u>Custom Rates</u>		
Fertilizer Application	Acre	5.00
Fertilizer Double Spread Application	Acre	8.00
Herbicide Application	Acre	5.50
Aerial Application	Acre	6.50
Combining:		
Grain Corn	Acre	38.00
Wheat	Acre	38.00
Hauling:		
Potato Seed	Ton	7.00
Potatoes	Ton	6.00
Grain Corn	Ton	4.00
Wheat	Ton	4.00
Drying (Grain Corn)	Ton	10.00
Bale Wagon (Alfalfa)	Ton	5.00
Piling (Potatoes)	Ton	2.50
Chop & Haul (Corn Silage)	Ton	6.50
<u>Irrigation</u>		
Irrigation Water	Acre	30.50
Irrigation Repair	Acre	12.00
Irrigation Power:		
Alfalfa (42 ac. in.)	Acre	75.00
Potatoes (28 ac. in.)	Acre	50.00
Wheat (24 ac. in.)	Acre	42.85
Grain Corn (36 ac. in.)	Acre	64.30
Silage Corn (36 ac. in.)	Acre	64.30
Sweet Corn (22 ac. in.)	Acre	39.16
<u>Land Rent</u>		
Alfalfa	Acre	275.00
Potatoes	Acre	450.00
Wheat	Acre	150.00
Grain Corn	Acre	150.00
Silage Corn	Acre	150.00
Sweet Corn	Acre	180.00
<u>Misc. Inputs</u>		
Rented Air Seeder (Alfalfa)	Acre	6.00
Soil Test	Acre	1.50
Nema Test (Potatoes)	Acre	1.00
Consultant (Potatoes)	Acre	14.00
Gopher Control (Alfalfa)	Acre	2.00
Baling Twine (Alfalfa)	1,000 Feet	3.20
Labor	Hour	12.00

*Seed includes fungicide treatment and cutting.

**Seed includes insecticide and fungicide treatment.

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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