Farm Business Management Reports

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1994 Crop Enterprise Budgets Timothy-Legume and Alfalfa Hay, Sudan Grass, Sweet Corn and Spring Wheat under Rill Irrigation Kittitas County, Washington

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PREFACE

Enterprise costs and returns vary among farms and over time. Variability can be attributed to differences in:

- Capital, labor, land and management resources.
- Type and size of machinery complement.
- Cultural practices.
- Size of farm and enterprises.
- 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 a well-managed Kittitas County farm. To avoid drawing unwarranted conclusions for any particular enterprise, the reader must closely examine the assumptions being used. If not appropriate for your situation, adjust the operations, costs, and/or returns.

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1994 CROP ENTERPRISE BUDGETS

Timothy-Legume and Alfalfa Hay, Sudan Grass, Sweet Corn, and Spring Wheat Under Rill Irrigation in Kittitas County, Washington

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INTRODUCTION

The enterprise budgets presented in this publication are based on crops produced in Kittitas County, Washington. Located in central Washington, Kittitas County extends eastward from the crest of the Cascade Mountains that embrace the headwaters of the upper Yakima River and its tributaries to the rugged plateau of the Columbia River, comprising 1,481,600 acres. Less than 10 percent of the county consists of agricultural lands; they lay principally in the basin of the Kittitas Valley and the valley of the upper Yakima River. Irrigated cropland in the valley is estimated to be 95,000 acres. Kittitas County is the largest producer of grass hay, primarily timothy hay, in Washington State.

The Kittitas Valley is one of the highest irrigated areas in the state, with elevations of 1,500 to 1,900 feet. Climatic conditions vary greatly throughout the county. Annual precipitation varies from 8.86 inches at Ellensburg to 107.6 inches at Snoqualmine Pass, with 71 percent occurring from October through April. The summers are warm and dry while the winters are cool and moist. Crop production relies on irrigation water supplied from reservoirs located in the northwestern region of the county. Reservoirs are recharged from snowpack melt in the Cascade and Stuart mountains. The growing season in the valley is approximately 140 days.

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OBJECTIVES

This study:

1. identifies production practices representative of well-managed crop enterprises grown under rill irrigation;

2. estimates capital requirements, production costs, and returns; and,

3. provides producers with a procedure for analyzing the profitability of various crop enterprises.

While representative for the area, these budgets may not be indicative of a particular operation. Use the blank spaces on the right-hand side of the budget tables to record your representative values.

SOURCES OF INFORMATION

Information was obtained from a group of Kittitas County producers with well-managed farms. Their production practices and requirements for labor, equipment, and supplies are the basis for the assumptions used in this study. Local agricultural suppliers were contacted to obtain price information on materials and agricultural farm services. Machinery costs are based on a current replacement value and annual rates of use considered typical for the region.

The enterprise data represent costs and returns specific to the assumptions used in this study. We suggest that the blanks provided on the right side of the tables be used to estimate costs and returns for individual growers. You may obtain recommendations on field operations and operating inputs from local Cooperative Extension agents and agricultural business personnel.

BUDGET ASSUMPTIONS

The following assumptions were used in developing the enterprise data:

1. The study unit is a 300-acre rill irrigated farm in the Kittitas Valley. The farm is managed so that 150 acres are in timothy-legume hay, 75 acres are in wheat, 50 acres are in alfalfa, and the remaining 25 acres are in sweet corn or sudan grass.

2. Estimated annual yields per acre are:

Timothy-Legume Hay	7.0 tons
Sweet Corn	9.5 tons
Spring Wheat	90 bushels
Sudan Grass Hay	7.0 tons
Alfalfa Hay	6.25 tons

3. Estimated average prices for crops to the farmer are:

Timothy-Legume Hay	
First cutting	$115.00/ton
Second cutting	$85.00/ton
Sweet Corn	$60.00/ton
Hard Red Spring Wheat	$4.30/bushel
Alfalfa	$90.00/ton
Sudan Grass Hay	$90.00/ton

4. For budget and price purposes, the owner is not participating in the government wheat program. Participating producers in provisions of the 1990 farm bill need to include their expected deficiency payments and set-aside costs when calculating an enterprise budget for wheat.

5. Initial cost for a rill irrigation system designed for 300 acres is $61,750. The investment and useful life assumed for major components of the system are as follows:

7,500 feet of concrete ditches	$41,250	20-year life
7,500 feet of gated pipe	$18,750	15-year life
450 siphon tubes	$ 1,350	5-year life
40 dams	$ 400	5-year life

The annual fixed costs were calculated based upon useful life at a 9.5 percent interest rate with an average investment cost of $30,875. A repair cost of $1.75 per acre was assessed for each enterprise. No salvage values are assumed. The irrigation system was assumed to be in operation a total of 2,950 hours per year, or 9.84 hours for each of the 300 acres.

6. The hay shed is a 44' x 308' x 22' building which costs $40,656 to build. Annual maintenance to the hay shed was assumed to be 1.5 percent of the construction cost. Hay shed fixed costs were based on a 20-year life with no salvage value. Hay is stored for 245 days with the annual costs amortized over the 200-acre hay enterprise.

7. All land is managed, owned, and operated by the same person(s).

8. Interest rate on the operating loan is 9.5 percent.

9. Labor is valued at $9.00 per hour, including employment security (FICA), medical aid (L&I), and fringe benefits (medical and retirement).

DISCUSSION OF BUDGET INFORMATION

Budget information for each crop is reported in a series of tables. A discussion of the information comprising each table is presented below.

Schedule of Operations and Production Costs

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

Production costs are divided into two categories.

- **Fixed Cost** includes machinery ownership, land ownership, and a management charge.
- **Variable Cost** is associated with operating machinery, hired labor, and purchasing services and materials.

Total cost is the sum of fixed and variable costs.

Fixed Costs

Machinery fixed costs include depreciation, interest on the investment, property taxes, insurance, and housing. These costs are incurred whether or not a crop is grown and do not vary with the size of the enterprise. The per-hour fixed cost, as illustrated in Table 6, is determined by dividing the total annual fixed cost by the annual hours of machinery use for all enterprises identified in this case farm. Machinery fixed costs for each field operation, as illustrated in Tables 1A-1H, are determined by multiplying the machine hours per acre times the per-hour fixed cost.

The per-acre fixed costs associated with shop tools and the irrigation system, as illustrated in Table 7, were determined by dividing the total annual fixed cost for these items by the number of acres.

Land fixed cost is equal to net rent, which is based on rental rates ($100 per acre) typical of the area minus expenditures generally covered by the landlord: in this example, an $8 per acre property tax. While the owner-operator will not experience a land rental cost, the cost represents the minimum return the owner-operator must realize on the land to justify growing the crop rather than renting the land. As a result of investing capital in land, the farmer realizes both current returns (or losses) from crop production activities and long-term land value appreciation (or depreciation). The owner/operator will realize land value appreciation (or depreciation) whether operated or rented out; thus, the appropriate land charge for growing a crop is only the foregone net rent. Consequently, the land cost is termed an opportunity cost to indicate that it is not an out-of-pocket (e.g., cash) expense, but rather a return that is foregone by the producer as a result of choosing to grow the crop.

If the land is rented on a cash rent basis, then the cash rent per acre can be listed as the land charge. If the land is rented on a crop share arrangement, no land charge should be included. A land charge is omitted because the amount of production should be reduced by the amount the landlord (or tenant) is expected to receive.

Table 1 includes management -- an opportunity cost -- as a fixed cost. As an estimate of the value of an operator's management skills, a management charge of seven (7) percent of gross receipts is used. This is representative of management fees charged by farm management firms in eastern Washington.

Establishment year costs must be recaptured during the productive life of the enterprise. Consequently, a prorated establishment cost is included throughout the production period for timothy-legume hay and alfalfa hay as a fixed cost.

Variable Costs

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

Production Materials and Services

The dollar amounts spent on services and materials for various operations appear in their respective columns in Table 1. Table 2 lists, by operation, the specific types and quantities of services and materials used in this study along with their corresponding prices.

Itemized Production Costs

Table 3 is an itemized list of the costs identified in Table 1. Most items are self-explanatory. However, machinery and tractor interest warrant additional explanation. These costs represent an opportunity cost -- a return foregone by investing in machinery and buildings rather than in alternate investments -- or interest paid to finance the purchase of a capital asset.

Interest cost on capital investments is calculated on the average value of machinery and buildings over their useful life: ((new cost + salvage value) ÷ 2) x interest charge. A 9.5 percent interest charge is assumed.

Per-Acre Summary of Receipts, Costs, and Return to Land

Receipts, costs, and various measures of return for each crop enterprise are summarized in Table 4. Since returns depend on price received and costs actually incurred, returns must be recalculated based upon your own predicted price and estimated costs of production.

The first return measure is Total Receipts (Line 1), which is calculated by summing the returns from the crops taken from the land during the year. The second return measure is Return over Variable Costs (Line 2), which is calculated by subtracting total variable costs from total receipts. An important use of returns over variable costs is in the selection of the most profitable crop mix. By selecting crops with the greatest return over variable costs, farm profits are maximized (or losses minimized). The third return measure -- Return to Land and Management (Line 3) -- is calculated by subtracting machinery and building fixed costs and, if applicable, a prorated establishment cost from Return over Variable Costs. This is the return the owner-operator realizes to the investment in land and management. A return to Land, the fourth profit measure (Line 4), is determined by assessing a charge to Management of 7 percent of gross receipts. This "residual" value -- exclusive of all factors, including operator and full-time hired labor, for which a charge has been assessed in producing the enterprise -- represents a return to land. The final return measure (Line 5), Return to Land, is that realized as a return to the owner-operator's investment in land after accounting for all costs in the production of the enterprise.

Variable Cost Break-Even Selling Price

Table 5 shows break-even selling prices for different levels of enterprise costs. The first break-even price (Line 1) is the price needed to cover total variable costs -- costs incurred only if the crop is produced. If the price received does not equal or exceed the variable break-even price, the crop is uneconomical to produce -- even in the short term -- because the added costs of production are greater than the added returns.

The second break-even price (Line 2) is the price required to cover total cash costs, excluding land rent and interest paid on land, buildings and machinery loans. If other cash costs exist, these costs must be identified and included in the cash cost break-even calculation. Since a cash cost has been assessed for all labor and land rent, noncash costs for operator/family labor and owned land (e.g., net rent) should be subtracted and ownership cash costs substituted before calculating the break-even price needed to cover cash costs.

The third break-even price (Line 3) is the price needed to cover total cash and noncash costs. This price must be realized to stay in business over the long run.

The fourth break-even price is the price necessary to cover total costs including cash costs; depreciation; operator labor; opportunity costs for investments in land, equipment, and

buildings; and a management charge. If unable to achieve this price, the owner-operator will not realize a return on management, labor, and capital contributions equivalent to what could have been obtained from an alternative use. Realization of a price above this break-even level means that, in addition to covering all costs, the operator will earn a premium (or profit) for the risk assumed in producing the crop.

Machinery Complement and Ownership Costs

Table 6 lists the machine complement used to derive per hour costs. It includes the type and size of machines used, a replacement price, useful life, annual hours of use, and estimated per-hour fixed and variable costs. For the irrigation tubes and dams, machine shop and shed, and tools, the cost is calculated on a per acre basis.

Machinery fixed costs include depreciation, interest on investment, property taxes, shelter, and insurance -- costs that do not vary with the crop grown or the number of acres produced. Machinery variable costs include repairs, fuel, and lubrication -- costs that vary with the crop grown or the number of acres produced.

Purchase costs reflect the value of new machinery. While this assumption may result in an overstatement of production costs, it indicates the enterprise's ability to generate the earnings needed to replace depreciable assets. With an anticipated increase in prices for replacement machinery due to inflation and improved technology, the depreciation claimed on capital assets purchased prior to price advances understates the amount of capital currently required to replace the assets. When evaluating the long-run viability of an enterprise, consider its ability to replace depreciable assets on a replaceable cost basis.

In calculating equipment costs, the opportunity cost is represented by a 9.5 percent interest charge on the investment. An interest on investment -- as characterized by the opportunity cost -- may represent earnings foregone by investing money in the machinery component rather than the next best alternative investment or may represent the interest paid on funds borrowed to finance machinery purchases.

Costs Per Acre for Hay Shed and Irrigation System

Associated costs of the hay shed and the irrigation system used in production are listed in Table 7. Based upon a useful life and acre utilization, a per acre charge is calculated for total fixed cost and annual repair.

TABLE 1A: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING TIMOTHY-LEGUME HAY: PROJECTED 1993 COSTS.*

OPERATION	TOOLING	MTH YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST: FUEL, LUBE, & REPAIRS	VARIABLE COST: LABOR	VARIABLE COST: SERVICE	VARIABLE COST: MATER.	VARIABLE COST: INTER.	TOTAL VARIABLE COST	TOTAL COST
					$	$	$	$	$	$	$	$
PLOW	120 HP-WT, 4-18" M.B. PLOW	FALL 1993	.28	.30	6.59	4.79	2.25	.00	.00	.17	7.21	13.80
VIBRASHANK	120 HP-WT, 12' VIBRASHANK	FALL 1993	.22	.24	7.28	3.06	1.80	.00	.00	.12	4.97	12.25
PLANE	120 HP-WT, 12' LANDPLANE	FALL 1993	.33	.36	10.50	5.20	2.72	.00	.00	.19	8.11	18.62
CULTIMULCH	120 HP-WT, 12' CULTIMULCHER	FALL 1993	.20	.22	5.07	3.19	1.65	.00	.00	.12	4.96	10.03
PACK	120 HP-WT, 10' PACKER	FALL 1993	.17	.18	4.98	2.29	1.37	.00	.00	.09	3.75	8.74
WEED CONTROL	CUSTOM HERBICIDE APPLICATION	FALL 1993	.00	.00	.00	.00	.00	6.50	7.87	.34	14.72	14.72
SEED	120 HP-WT, 10' DRILL	FALL 1993	.25	.28	11.20	3.93	2.06	.00	10.30	.39	16.68	27.88
CORRUGATE	120 HP-WT, ROTARY CORRUGATOR	FALL 1993	.20	.23	3.69	2.94	1.73	.00	.00	.11	4.78	8.47
IRRIGATE	SURFACE IRRIGATION SYSTEM	FALL 1993	.00	.60	4.79	.35	4.50	.00	5.60	.25	10.70	15.49
MISC. USE	3/4 TON 4-WD PICKUP	ANN 1993	.30	.33	2.87	4.12	2.47	.00	.00	.31	6.91	9.79
OVERHEAD	7.5% OF VARIABLE COSTS	SEA 1993	.00	.00	.00	.00	.00	6.21	.00	.00	6.21	6.21
TOTAL PER ACRE			1.95	2.74	56.99	29.88	20.56	12.71	23.78	2.07	89.00	145.99

* 20% OF IRRIGATION COST CHARGED TO THE ESTABLISHMENT OF HAY; 80% OF IRRIGATION AND 100% OF LAND COST CHARGED TO THE PREVIOUS CROP.

Table 2A: Materials and Services Used Per Acre to Establish Timothy-Legume Hay, Provided by Operation.

Operation	Month	Material and/or Service
Weed Control	Fall	Custom application @ $6.50/acre 0.75 lb. of Roundup @ $10.50/lb.
Seed	Fall	2 lbs. of alfalfa seed @ $2.60/lb. 6 lbs. of Timothy seed @ $0.85/lb.
Irrigate	Fall	20% annual irrigation charge @ $28.00/acre
Overhead	Seasonal	7.5% of variable costs

TABLE 3A: ITEMIZED COST PER ACRE FOR ESTABLISHING TIMOTHY-LEGUME HAY; PROJECTED 1993 COSTS.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS		$		$	
ALFALFA SEED	LB.	2.60	2.00	5.20	_____
TIMOTHY SEED	LB.	.85	6.00	5.10	_____
ROUNDUP	LB.	10.50	.75	7.87	_____
HERBICIDE APPLICATION	ACRE	6.50	1.00	6.50	_____
IRRIGATION CHARGE	ACRE	28.00	.20	5.60	_____
TRACTOR REPAIR	ACRE	9.24	1.00	9.24	_____
MACHINERY REPAIRS	ACRE	6.38	1.00	6.38	_____
FUEL/LUBE	ACRE	14.27	1.00	14.27	_____
LABOR	ACRE	20.56	1.00	20.56	_____
OVERHEAD	ACRE	6.21	1.00	6.21	_____
INTEREST ON OP. CAP.	ACRE	2.07	1.00	2.07	_____

TOTAL VARIABLE COST				89.00	_____
FIXED COSTS		$		$	
TRACTOR DEPRECIATION	ACRE	8.36	1.00	8.36	_____
TRACTOR INTEREST	ACRE	7.29	1.00	7.29	_____
TRACTOR INSURANCE	ACRE	.46	1.00	.46	_____
TRACTOR TAXES	ACRE	.90	1.00	.90	_____
TRACTOR HOUSING	ACRE	.77	1.00	.77	_____
MACHINE DEPRECIATION	ACRE	18.94	1.00	19.21	_____
MACHINE INTEREST	ACRE	15.40	1.00	15.65	_____
MACHINE INSURANCE	ACRE	.87	1.00	.99	_____
MACHINE TAXES	ACRE	1.89	1.00	1.92	_____
MACHINE HOUSING	ACRE	1.44	1.00	1.44	_____

TOTAL FIXED COST				56.99	_____
TOTAL COST				145.99	_____

TABLE 1B: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR TIMOTHY-LEGUME HAY PRODUCTION; PROJECTED 1994 COSTS.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST: FUEL, LUBE, & REPAIRS	VARIABLE COST: LABOR	VARIABLE COST: SERVICE	VARIABLE COST: MATER.	VARIABLE COST: INTER.	TOTAL VARIABLE COST	TOTAL COST
						$	$	$	$	$	$	$	$
FERTILIZE	CUSTOM FERT. APPLICATION	MAR	1994	.00	.00	.00	.00	.00	5.50	50.60	2.22	58.32	58.32
CORRUGATE	120 HP-WT, ROTARY CORRUGATOR	APR	1994	.18	.21	3.32	2.65	1.58	.00	.00	.13	4.36	7.68
INSECT CONTROL*	CUSTOM INSECTICIDE APPLICATION	APR	1994	.00	.00	.00	.00	.00	6.50	12.25	.59	19.34	19.34
SWATH	14' HAY SWATHER	JUN	1994	.22	.27	18.30	4.13	2.03	.00	.00	.10	6.25	24.55
TEDDER	120 HP-WT, TEDDER	JUN	1994	.13	.15	2.22	1.79	1.13	.00	.00	.05	2.96	5.18
BALE	120 HP-WT, TWINE BALER	JUN	1994	.33	.36	15.02	7.36	2.72	.00	8.86	.30	19.24	34.26
HAUL & STACK	HARROWBED	JUN	1994	.25	.30	14.65	6.16	2.25	.00	.00	.13	8.54	23.19
BARN STACK	CONTRACT HAND LABOR	JUN	1994	.00	.00	.00	.00	.00	4.50	.00	.07	4.57	4.57
FERTILIZE	CUSTOM FERTILIZER APPLICATION	JUL	1994	.00	.00	.00	.00	.00	5.50	22.40	.22	28.12	28.12
SWATH	14' HAY SWATHER	AUG	1994	.17	.20	13.87	3.13	1.50	.00	.00	.00	4.63	18.49
TEDDER	120 HP-WT, TEDDER	AUG	1994	.08	.10	1.48	1.19	.75	.00	.00	.00	1.94	3.42
BALE	120 HP-WT, TWINE BALER	AUG	1994	.20	.22	9.10	4.46	1.65	.00	3.77	.00	9.88	18.98
HAUL & STACK	HARROWBED	AUG	1994	.17	.20	9.77	4.11	1.50	.00	.00	.00	5.61	15.38
BARN STACK	CONTRACT HAND LABOR	AUG	1994	.00	.00	.00	.00	.00	2.50	.00	.02	2.50	2.50
IRRIGATE	SURFACE IRRIGATION SYSTEM	SEA	1994	.00	3.00	23.96	1.75	22.50	.00	28.00	2.48	54.73	78.70
HAY STORAGE	HAY SHED COST	ANN	1994	.00	.00	21.62	3.20	.00	.00	.00	.15	3.35	24.97
MISC. USE	3/4 TON 4-WD PICKUP	ANN	1994	.60	.72	5.75	8.25	5.40	.00	.00	.65	14.30	20.04
TAXES	LAND TAXES	ANN	1994	.00	.00	8.00	.00	.00	.00	.00	.00	.00	8.00
LAND COST	NET RENT	ANN	1994	.00	.00	92.00	.00	.00	.00	.00	.00	.00	92.00
OVERHEAD	7.5% OF VARIABLE COSTS	SEA	1994	.00	.00	.00	.00	.00	18.65	.00	.00	18.65	18.65
MANAGEMENT FEE	7% OF GROSS RECEIPTS**	ANN	1994	.00	.00	51.43	.00	.00	.00	.00	.00	.00	51.43
ESTAB. COST	PRORATED 5 YEARS @ 9.5%	ANN	1994	.00	.00	38.02	.00	.00	.00	.00	.00	.00	38.02
TOTAL PER ACRE				2.32	5.73	328.50	48.17	43.00	43.15	125.88	7.12	267.32	595.82

* APPLIED ONLY IN YEARS WITH A SIGNIFICANT INSECT OR MITE POPULATION. DEPENDING ON TIMING OF AN INFESTATION, AN INSECTICIDE CAN BE APPLIED IN COMBINATION WITH THE FERTILIZER OPERATION.

** GROSS RECEIPTS = 4.5 TONS X $115.00 = $517.50
2.5 TONS X $ 85.00 = $212.50
$730.00

Table 2B: Materials and Services Used Per Acre to Produce Timothy-Legume Hay, Provided by Operation.

Operation	Month	Material and/or Service
Fertilize	March	Custom application @ $5.50/acre 100 lbs. of nitrogen @ $0.28/lb. 50 lbs. of phosphorous @ $0.23/lb. 50 lbs. of potassium @ $0.15/lb. 30 lbs. of sulfur @ $0.12/lb.
Insect Control	April	Custom application @ $6.50/acre 0.5 lb. of Supracide @ $24.50/lb.
Bale	June	0.4 roll of baling twine @ $22.15/roll
Barn Stack	June	2.25 tons of hay @ $2.00/ton
Fertilize	July	Custom application @ $5.50/acre 80 lbs. of nitrogen @ $0.28/lb.
Bale	August	0.17 roll of baling twine @ $22.15/roll
Barn Stack	August	1.25 tons of hay @ $2.00/ton
Irrigate	Seasonal	Irrigation charge @ $28.00/acre
Overhead	Seasonal	7.5% of variable costs

TABLE 3B: ITEMIZED COST PER ACRE FOR TIMOTHY-LEGUME HAY PRODUCTION; PROJECTED 1994 COSTS.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS		$		$	
NITROGEN	LB.	.28	180.00	50.40	_____
PHOSPHOROUS	LB.	.23	50.00	11.50	_____
POTASSIUM	LB.	.15	50.00	7.50	_____
SULFUR	LB.	.12	30.00	3.60	_____
FERTILIZER APPLICATION	ACRE	5.50	2.00	11.00	_____
SUPRACIDE	LB.	24.50	.50	12.25	_____
INSECTICIDE APPLICATION	ACRE	6.50	1.00	6.50	_____
BALING TWINE	ROLL	22.15	.57	12.63	_____
BARN STACK	TON	2.00	3.50	7.00	_____
IRRIGATION CHARGE	ACRE	28.00	1.00	28.00	_____
TRACTOR REPAIR	ACRE	23.75	1.00	23.75	_____
MACHINERY REPAIRS	ACRE	10.45	1.00	10.45	_____
FUEL/LUBE	ACRE	13.97	1.00	13.97	_____
LABOR	ACRE	43.00	1.00	43.00	_____
OVERHEAD	ACRE	18.65	1.00	18.65	_____
INTEREST ON OP. CAP.	ACRE	7.12	1.00	7.12	_____

TOTAL VARIABLE COST				267.32	_____
FIXED COSTS		$		$	
TRACTOR DEPRECIATION	ACRE	39.60	1.00	39.60	_____
TRACTOR INTEREST	ACRE	25.28	1.00	25.28	_____
TRACTOR INSURANCE	ACRE	1.60	1.00	1.60	_____
TRACTOR TAXES	ACRE	3.11	1.00	3.11	_____
TRACTOR HOUSING	ACRE	2.66	1.00	2.66	_____
MACHINE DEPRECIATION	ACRE	33.72	1.00	33.72	_____
MACHINE INTEREST	ACRE	27.22	1.00	27.22	_____
MACHINE INSURANCE	ACRE	1.70	1.00	1.70	_____
MACHINE TAXES	ACRE	3.34	1.00	3.34	_____
MACHINE HOUSING	ACRE	.82	1.00	.82	_____
PRORATED ESTB. COST	ACRE	38.02	1.00	38.02	_____
MANAGEMENT FEE	ACRE	51.43	1.00	51.43	_____
LAND NET RENT	ACRE	92.00	1.00	92.00	_____
LAND TAXES	ACRE	8.00	1.00	8.00	_____

TOTAL FIXED COST				328.50	_____
TOTAL COST				595.82	_____

TABLE 4B: Per-Acre Summary of Receipts, Costs, and Return to Land for Timothy-Legume Hay Produced in Kittitas County, Washington.

	Unit	Price or cost/unit	Quantity	Value or Cost	Your Farm
GROSS INCOME					
Hay, first cutting	Ton	$115.00	4.5	$517.50	_____
Hay, second cutting	Ton	85.00	2.5	212.50	_____
Grazing*	AUM	6.00	0.8	4.80	_____
1. TOTAL RECEIPTS				$734.80	_____
Less: Total Variable Costs				(267.32)	_____
2. RETURN OVER VARIABLE COSTS				$467.48	_____
Less: Fixed Costs for Machinery and Buildings (Depreciation, Insurance, Taxes, Interest, Housing)				(139.05)	_____
Prorated Establishment Cost				(38.02)	_____
Land Taxes				(8.00)	
3. RETURN TO LAND AND MANAGEMENT**				$282.41	_____
Less: Management Charge (7% of Gross Receipts)				(51.43)	_____
5. RETURN TO LAND				$230.98	_____

* In an effort to reduce the amount of discolored foliar material in the first cutting the following season and to decrease the incidence of foliar diseases and meadow voles by removal of plant debris, fall grazing of timothy stands is becoming increasingly common. A grazing fee based upon an animal unit month or assessment per head per day is generally associated with this cultural practice. The stocker customarily provides a source of water and the fencing. The stocking rate is approximately 1.25 acres per AUM for one month.

** A value for unpaid family labor is included in total variable costs.

TABLE 5B: Break-even Selling Price Per Ton of Timothy-Legume Hay.*

Per Acre	Cost Per Acre	Your Farm	Break-even Price ($/Ton)	Your Farm
			7 tons/acre	
1. TOTAL VARIABLE COST	$267.32	_____	$38.19	_____
Plus: Fixed Cash Costs				
Insurance on Machinery and Buildings	3.30	_____		
Taxes on Machinery and Buildings	6.45	_____		
Shelter (Housing) for Machinery	3.48	_____		
Land Taxes	8.00	_____		
2. TOTAL CASH COSTS	$288.55	_____	$41.22	_____
Plus: Fixed Noncash Costs				
Depreciation on Machinery	73.32	_____		
Interest on Machinery*	52.50	_____		
Land (Net Rent)*	92.00	_____		
Prorated Establishment Costs**	38.02	_____		
3. TOTAL CASH AND NONCASH COSTS	$544.39	_____	$77.77	_____
Plus: Return to Management	51.43	_____		
4. TOTAL COST	$595.82	_____	$85.12	_____
Minus: Return From Grazing	(4.80)			
5. NET COST	$591.02	_____	$84.43	_____

* Assuming the capital item is owned, the value reflects an opportunity cost (refer to Page 4).

** Because establishment costs were incurred and paid during the first year, these prorated expenditures are considered in subsequent years as "fixed noncash costs."

TABLE 1C: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR SWEET CORN PRODUCTION; PROJECTED 1994 COSTS.

OPERATION	TOOLING	MTH YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST: FUEL, LUBE, & REPAIRS	VARIABLE COST: LABOR	VARIABLE COST: SERVICE	VARIABLE COST: MATER.	VARIABLE COST: INTER.	TOTAL VARIABLE COST	TOTAL COST
					$	$	$	$	$	$	$	$
HERBICIDE APPLIC.*	CUSTOM HERBICIDE APPLICATION	FALL 1993	.00	.00	.00	.00	.00	6.50	10.50	1.48	18.48	18.48
PLOW	120 HP-WT, 4-18" M.B. PLOW	FALL 1993	.33	.37	7.85	5.71	2.75	.00	.00	.74	9.19	17.04
DISC	120 HP-WT, 12' OFFSET DISC	FALL 1993	.25	.28	5.89	4.28	2.06	.00	.00	.55	6.89	12.78
FERTILIZE	CUSTOM FERT. APPLICATION	MAR 1994	.00	.00	.00	.00	.00	5.50	63.80	3.29	72.59	72.59
CULTIMULCH (2X)	120 HP-WT, 12' CULTIMULCHER	APR 1994	.40	.44	10.15	6.38	3.30	.00	.00	.38	10.07	20.21
PLANT	120 HP-WT, 4-ROW CORN PLANTER	MAY 1994	.31	.34	21.78	5.18	2.56	.00	35.00	1.35	44.09	65.87
DITCH	120 HP-WT, 3 PT. DITCHER	MAY 1994	.33	.37	4.59	4.50	2.75	.00	.00	.23	7.48	12.07
FERTILIZE	CUSTOM FERT. APPLICATION	JUN 1994	.00	.00	.00	.00	.00	5.50	14.00	.46	19.96	19.96
WEED CONTROL	CUSTOM HERBICIDE APPLICATION	JUN 1994	.00	.00	.00	.00	.00	6.50	15.00	.51	22.01	22.01
CULTIVATE (2X)	120 HP-WT, 4-ROW CULTIVATOR	JUN 1994	.90	.96	16.45	13.20	7.20	.00	.00	.48	20.88	37.33
HARVEST	PROCESSOR HARVESTED -- NO COST	SEP 1994	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
DISC	120 HP-WT, 12' OFFSET DISC	SEP 1994	.25	.28	5.89	4.28	2.06	.00	.00	.00	6.34	12.23
IRRIGATE	SURFACE IRRIGATION SYSTEM	SEA 1994	.00	3.00	23.96	1.75	22.50	.00	28.00	2.48	54.73	78.70
MISC. USE	3/4 TON 4-WD PICKUP	ANN 1994	.60	.66	5.75	8.25	4.95	.00	.00	.63	13.83	19.57
TAXES	LAND TAXES	ANN 1994	.00	.00	8.00	.00	.00	.00	.00	.00	.00	8.00
LAND COST	NET RENT	ANN 1994	.00	.00	92.00	.00	.00	.00	.00	.00	.00	92.00
MANAGEMENT	7% OF GROSS RECEIPTS**	ANN 1994	.00	.00	39.90	.00	.00	.00	.00	.00	.00	39.90
OVERHEAD	7.5% OF VARIABLE COSTS	SEA 1994	.00	.00	.00	.00	.00	22.99	.00	.00	22.99	22.99
TOTAL PER ACRE			3.38	6.68	242.21	53.52	50.13	46.99	166.30	12.59	329.53	571.74

* SPRAY OUT THE TIMOTHY-LEGUME STAND.

** GROSS RECEIPTS = 9.5 TONS X $60.00/TON = $570.00.

Table 2C: Materials and Services Used Per Acre to Produce Sweet Corn, Provided by Operation.

Operation	Month	Material and/or Service
Herbicide Application	Fall	Custom application @ $6.50/acre 1 lb. of Roundup @ $10.50/lb.
Fertilize	March	Custom application @ $5.50/acre 150 lbs. of nitrogen @ $0.28/lb. 60 lbs. of phosphorous @ $0.23/lb. 15 lbs. of potassium @ $0.15/lb. 3 lbs. of zinc @ $1.00/lb. 1 lbs. of boron @ $2.75/lb.
Plant	May	14 lbs. of corn seed @ $2.50/lb.
Fertilize	June	Custom application @ $5.50/acre 50 lbs. of nitrogen @ $0.28/lb.
Weed Control	June	Custom application @ $6.50/acre 0.5 gal. of Eradicane @ $30.00/gal.
Irrigate	Seasonal	Irrigation charge @ $28.00/acre
Overhead	Seasonal	7.5% of variable costs

TABLE 3C: ITEMIZED COST PER ACRE FOR SWEET CORN PRODUCTION; PROJECTED 1994 COSTS.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS		$		$	
ROUNDUP	LB.	10.50	1.00	10.50	_____
ERADICANE	GAL.	30.00	.50	15.00	_____
HERBICIDE APPLICATION	ACRE	6.50	2.00	13.00	_____
NITROGEN	LB.	.28	200.00	56.00	_____
PHOSPHOROUS	LB.	.23	60.00	13.80	_____
POTASSIUM	LB.	.15	15.00	2.25	_____
ZINC	LB.	1.00	3.00	3.00	_____
BORON	LB.	2.75	1.00	2.75	_____
FERTILIZER APPLICATION	ACRE	5.50	2.00	11.00	_____
CORN SEED	LB.	2.50	14.00	35.00	_____
IRRIGATION CHARGE	ACRE	28.00	1.00	28.00	_____
TRACTOR REPAIR	ACRE	19.66	1.00	19.66	_____
MACHINERY REPAIRS	ACRE	9.16	1.00	9.16	_____
FUEL/LUBE	ACRE	24.70	1.00	24.70	_____
LABOR	ACRE	50.13	1.00	50.13	_____
OVERHEAD	ACRE	22.99	1.00	22.99	_____
INTEREST ON OP. CAP.	ACRE	12.59	1.00	12.59	_____

TOTAL VARIABLE COST				329.53	_____
FIXED COSTS		$		$	
TRACTOR DEPRECIATION	ACRE	17.16	1.00	17.16	_____
TRACTOR INTEREST	ACRE	14.38	1.00	14.38	_____
TRACTOR INSURANCE	ACRE	.91	1.00	.91	_____
TRACTOR TAXES	ACRE	1.77	1.00	1.77	_____
TRACTOR HOUSING	ACRE	1.51	1.00	1.51	_____
MACHINE DEPRECIATION	ACRE	33.16	1.00	33.16	_____
MACHINE INTEREST	ACRE	26.69	1.00	26.69	_____
MACHINE INSURANCE	ACRE	1.67	1.00	1.67	_____
MACHINE TAXES	ACRE	3.28	1.00	3.28	_____
MACHINE HOUSING	ACRE	1.78	1.00	1.78	_____
LAND TAXES	ACRE	8.00	1.00	8.00	_____
LAND NET RENT	ACRE	92.00	1.00	92.00	_____
MANAGEMENT FEE	ACRE	39.90	1.00	39.90	_____

TOTAL FIXED COST				242.21	_____
TOTAL COST				571.74	_____

TABLE 4C: Per-Acre Summary of Receipts, Costs, and Returns to Land for Sweet Corn Produced in Kittitas County, Washington.

	Unit	Price or cost/unit	Quantity	Value or Cost	Your Farm
GROSS INCOME					
Sweet Corn	Ton	$60.00	9.5	$570.00	_____
1. TOTAL RECEIPTS				$570.00	_____
Less: Total Variable Costs				(329.53)	_____
2. RETURN OVER VARIABLE COSTS				$240.47	_____
Less: Fixed Costs for Machinery and Buildings (Depreciation, Insurance, Taxes, Interest, Housing)				(102.31)	_____
Land Taxes				(8.00)	_____
3. RETURN TO LAND AND MANAGEMENT*				$130.16	_____
Less: Management Charge (7% of Gross Receipts)				(39.90)	_____
5. RETURN TO LAND				$90.26	_____

* A value for unpaid family labor is included in total variable costs.

TABLE 5C: Break-even Selling Price Per Ton of Sweet Corn.

Per Acre	Cost Per Acre	Your Farm	Break-even Price ($/Ton)	Your Farm
			9.5 tons/acre	
1. TOTAL VARIABLE COST	$329.53	_____	$34.69	_____
Plus: Fixed Cash Costs				
Insurance on Machinery and Buildings	2.58	_____		
Taxes on Machinery and Buildings	5.05	_____		
Shelter (Housing) for Machinery	3.29	_____		
Land Taxes	8.00	_____		
2. TOTAL CASH COSTS	$348.45	_____	$36.68	_____
Plus: Fixed Noncash Costs				
Depreciation on Machinery	50.32	_____		
Interest on Machinery*	41.07	_____		
Land (Net Rent)*	92.00	_____		
3. TOTAL CASH AND NONCASH COSTS	$531.84	_____	$55.98	_____
Plus: Return to Management				
4. TOTAL COST	$571.74	_____	$60.18	_____

* Assuming the capital item is owned, the value reflects an opportunity cost (refer to Page 4).

TABLE 1D: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR HARD RED SPRING WHEAT PRODUCTION; PROJECTED 1994 COSTS.

OPERATION	TOOLING	MTH YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST: FUEL, LUBE, & REPAIRS	VARIABLE COST: LABOR	VARIABLE COST: SERVICE	VARIABLE COST: MATER.	VARIABLE COST: INTER.	TOTAL VARIABLE COST	TOTAL COST
					$	$	$	$	$	$	$	$
PLOW	120 HP-WT, 4-18" M.B. PLOW	FALL 1993	.28	.30	6.59	4.79	2.25	.00	.00	.61	7.66	14.25
VIBRASHANK	120 HP-WT, 12' VIBRASHANK	APR 1994	.22	.24	7.28	3.06	1.80	.00	.00	.15	5.01	12.29
PLANE	120 HP-WT, 12' LANDPLANE	APR 1994	.33	.37	10.61	5.25	2.75	.00	.00	.25	8.26	18.87
FERTILIZE	CUSTOM FERT. APPLICATION	APR 1994	.00	.00	.00	.00	.00	5.50	40.80	1.47	47.77	47.77
CULTIMULCH (2X)	120 HP-WT, 12' CULTIMULCHER	APR 1994	.40	.44	10.15	6.38	3.30	.00	.00	.31	9.99	20.14
SEED	120 HP-WT, 10' DRILL	APR 1994	.25	.28	11.20	3.93	2.06	.00	14.40	.65	21.04	32.24
DITCH	120 HP-WT, 3 PT. DITCHER	APR 1994	.33	.37	4.59	4.50	2.75	.00	.00	.23	7.48	12.07
WEED CONTROL	CUSTOM HERBICIDE APPLICATION	MAY 1994	.00	.00	.00	.00	.00	6.50	1.58	.19	8.27	8.27
FERTILIZE	CUSTOM FERTILIZER APPLICATION	JUN 1994	.00	.00	.00	.00	.00	5.50	14.00	.31	19.81	19.81
SWATH	14' GRAIN SWATHER	AUG 1994	.20	.25	4.26	1.32	1.88	.00	.00	.00	3.20	7.46
COMBINE	CUSTOM COMBINE	AUG 1994	.00	.00	.00	.00	.00	34.00	.00	.00	34.00	34.00
HAUL GRAIN	2-TON TRUCK	AUG 1994	.50	.55	4.63	6.50	4.12	.00	.00	.00	10.63	15.26
GRAIN STORAGE*	COMMERCIAL GRAIN STORAGE	SEA 1994	.00	.00	.00	.00	.00	.00	16.20	.77	16.97	16.97
BALE STRAW	12 HP-WT, 3-TWINE BALER	AUG 1994	.20	.24	9.10	4.46	1.80	.00	3.10	.00	9.36	18.46
HAUL & STACK	HARROWBED	AUG 1994	.12	.13	7.03	2.96	.99	.00	.00	.00	3.95	10.98
WEATHER PROTECTION	CUSTOM COVERAGE WITH TARP	ANN 1994	.00	.00	.00	.00	.00	6.25	.00	.30	6.55	6.55
IRRIGATE	SURFACE IRRIGATION SYSTEM	SEA 1994	.00	3.00	23.96	1.75	22.50	.00	28.00	2.48	54.73	78.70
MISC. USE	3/4 TON 4-WD PICKUP	ANN 1994	.60	.72	5.75	8.25	5.40	.00	.00	.65	14.30	20.04
TAXES	LAND TAXES	ANN 1994	.00	.00	8.00	.00	.00	.00	.00	.00	.00	8.00
LAND COST	NET RENT	ANN 1994	.00	.00	92.00	.00	.00	.00	.00	.00	.00	92.00
MANAGEMENT	7% OF GROSS RECEIPTS**	ANN 1994	.00	.00	31.03	.00	.00	.00	.00	.00	.00	31.03
OVERHEAD	7.5% OF VARIABLE COSTS	SEA 1994	.00	.00	.00	.00	.00	21.67	.00	.00	21.67	21.67
TOTAL PER ACRE			3.44	6.88	236.19	53.16	51.60	79.42	118.08	8.37	310.63	546.82

* IN STORAGE FOR 6 MONTHS AT 3¢/BU./MONTH.

** GROSS RECEIPTS = 90 BU. X $4.30/BU. = $387.00
1.25 TONS X $45.00/TON = $ 56.25
$443.25

Table 2D: Materials and Services Used Per Acre to Produce Hard Red Spring Wheat, Provided by Operation.

Operation	Month	Material and/or Service
Fertilize	April	Custom application @ $5.50/acre 100 lbs. of nitrogen @ $0.28/lb. 40 lbs. of phosphorous @ $0.23/lb. 30 lbs. of sulfur @ $0.12/lb.
Seed	April	0.8 cwt. of wheat seed @ $18.00/cwt.
Weed Control	May	Custom application @ $6.50/acre 0.5 lb. of 2,4-D @ $3.15/lb.
Fertilize	June	Custom application @ $5.50/acre 50 lbs. of nitrogen @ $0.28/lb.
Combine	August	Custom combining @ $34.00/acre
Grain Storage	Seasonal	90 bu. in storage for 6 months @ $0.03/bu./month
Bale Straw	August	0.14 roll of baling twine @ $22.15/roll
Weather Protection	Annual	Custom coverage w/tarp @ $5.00/ton
Irrigate	Seasonal	Irrigation charge @ $28.00/acre
Overhead	Seasonal	7.5% of variable costs

TABLE 3D: ITEMIZED COST PER ACRE FOR SPRING WHEAT PRODUCTION; PROJECTED 1994 COSTS.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS		$		$	
NITROGEN	LB.	.28	150.00	42.00	_____
PHOSPHOROUS	LB.	.23	40.00	9.20	_____
SULFUR	LB.	.12	30.00	3.60	_____
FERTILIZER APPLICATION	ACRE	5.50	2.00	11.00	_____
2,4-D	LB.	3.15	.50	1.58	_____
HERBICIDE APPLICATION	ACRE	6.50	1.00	6.50	_____
WHEAT SEED	CWT.	18.00	.80	14.40	_____
COMBINE GRAIN	ACRE	34.00	1.00	34.00	_____
GRAIN STORAGE	BU.	.18	90.00	16.20	_____
BALING TWINE	ROLL	22.15	.14	3.10	_____
CUSTOM COVERING	TON	5.00	1.25	6.25	_____
IRRIGATION CHARGE	ACRE	28.00	1.00	28.00	_____
TRACTOR REPAIRS	ACRE	19.39	1.00	19.39	_____
MACHINERY REPAIRS	ACRE	7.90	1.00	7.90	_____
FUEL/LUBE	ACRE	25.87	1.00	25.87	_____
LABOR	ACRE	51.60	1.00	51.60	_____
OVERHEAD	ACRE	21.67	1.00	21.67	_____
INTEREST ON OP. CAP.	ACRE	8.37	1.00	8.37	_____

TOTAL VARIABLE COST				310.63	_____
FIXED COSTS		$		$	
TRACTOR DEPRECIATION	ACRE	22.68	1.00	22.68	_____
TRACTOR INTEREST	ACRE	16.08	1.00	16.08	_____
TRACTOR INSURANCE	ACRE	1.02	1.00	1.02	_____
TRACTOR TAXES	ACRE	1.98	1.00	1.98	_____
TRACTOR HOUSING	ACRE	1.69	1.00	1.69	_____
MACHINE DEPRECIATION	ACRE	30.98	1.00	30.98	_____
MACHINE INTEREST	ACRE	24.61	1.00	24.61	_____
MACHINE INSURANCE	ACRE	1.54	1.00	1.54	_____
MACHINE TAXES	ACRE	3.02	1.00	3.02	_____
MACHINE HOUSING	ACRE	1.56	1.00	1.56	_____
LAND TAXES	ACRE	8.00	1.00	8.00	_____
LAND NET RENT	ACRE	92.00	1.00	92.00	_____
MANAGEMENT FEE	ACRE	31.03	1.00	31.03	_____

TOTAL FIXED COST				236.19	_____
TOTAL COST				546.82	_____

TABLE 4D: Summary of Receipts, Costs, and Profitability Per Acre for Hard Red Spring Wheat Produced in Kittitas County, Washington.

	Unit	Price or cost/unit	Quantity	Value or Cost	Your Farm
GROSS INCOME					
Grain	Bushel	$4.30	90.00	$387.00	_____
Straw	Ton	45.00	1.25	56.25	_____
1. TOTAL RECEIPTS				$443.25	_____
Less: Total Variable Costs				(310.63)	_____
2. RETURN OVER VARIABLE COSTS				$132.62	_____
Less: Fixed Costs for Machinery and Buildings (Depreciation, Insurance, Taxes, Interest, Housing)				(105.15)	_____
Land Taxes				(8.00)	_____
3. RETURN TO LAND AND MANAGEMENT*				$19.47	_____
Less: Management Charge (7% of Gross Receipts)				(31.03)	_____
5. RETURN TO LAND				-$11.56	_____

* A value for unpaid family labor is included in total variable costs.

TABLE 5D: Break-even Selling Price Per Bushel of Hard Red Spring Wheat.

Per Acre	Cost Per Acre	Your Farm	Breakeven Price ($/Bushel)	Your Farm
			90 bu/ac	
1. TOTAL VARIABLE COST	$310.63	_____	$3.45	_____
Plus: Fixed Cash Costs				
Insurance on Machinery and Buildings	2.56	_____		
Taxes on Machinery and Buildings	5.00	_____		
Shelter (Housing) for Machinery	3.25	_____		
Land Taxes	8.00	_____		
2. TOTAL CASH COSTS	$329.44	_____	$3.66	_____
Plus: Fixed Noncash Costs				
Depreciation on Machinery	53.66	_____		
Interest on Machinery*	40.69	_____		
Land (Net Rent)*	92.00	_____		
3. TOTAL CASH AND NONCASH COSTS	$515.79	_____	$5.73	_____
Plus: Return to Management	31.03	_____		
4. TOTAL COST	$546.82	_____	$6.08	_____
Minus: Return From Straw	(56.25)	_____		
5. NET COST	$490.57	_____	$5.45	_____

* Assuming the capital item is owned, the value reflects an opportunity cost (refer to Page 4).

TABLE 1E: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR SUDAN GRASS PRODUCTION; PROJECTED 1994 COSTS.

OPERATION	TOOLING	MTH	YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST: FUEL, LUBE, & REPAIRS	VARIABLE COST: LABOR	VARIABLE COST: SERVICE	VARIABLE COST: MATER.	VARIABLE COST: INTER.	TOTAL VARIABLE COST	TOTAL COST
						$	$	$	$	$	$	$	$
PLOW	120 HP-WT, 4-18" M.B. PLOW	OCT	1993	.28	.30	6.59	4.79	2.25	.00	.00	.61	7.66	14.25
FERTILIZE	CUSTOM FERT. APPLICATION	APR	1994	.00	.00	.00	.00	.00	5.50	45.00	2.00	52.50	52.50
CULTIMULCH (2X)	120 HP-WT, 12' CULTIMULCHER	APR	1994	.40	.44	10.15	6.38	3.30	.00	.00	.38	10.07	20.21
PLANE	120 HP-WT, 12' LANDPLANE	APR	1994	.33	.37	10.61	5.25	2.75	.00	.00	.32	8.32	18.93
SEED	120 HP-WT, 10' DRILL	MAY	1994	.25	.28	11.20	3.93	2.06	.00	45.00	1.61	52.61	63.80
PACK	120 HP-WT, 10' PACKER	MAY	1994	.17	.18	5.09	2.34	1.35	.00	.00	.12	3.81	8.89
DITCH	120 HP-WT, 3 PT. DITCHER	MAY	1994	.33	.36	4.54	4.45	2.70	.00	.00	.23	7.38	11.93
IRRIGATE	SURFACE IRRIGATION SYSTEM	SEA	1994	.00	3.00	23.96	1.75	22.50	.00	28.00	2.48	54.73	78.70
WEED CONTROL	CUSTOM HERBICIDE APPLICATION	JUL	1994	.00	.00	.00	.00	.00	6.50	1.58	.13	8.20	8.20
SWATH	14' SWATHER	AUG	1994	.25	.30	20.79	4.69	2.25	.00	.00	.05	6.99	27.79
BALE	120 HP-WT, 3-TWINE BALER	AUG	1994	.33	.36	15.02	7.36	2.72	.00	15.50	.20	25.79	40.81
HAUL & STACK	HARROWBED	AUG	1994	.25	.30	14.65	6.16	2.25	.00	.00	.07	8.48	23.13
SWATH*	14' SWATHER	SEP	1994	.20	.25	16.63	3.75	1.88	.00	.00	.00	5.63	22.26
BALE*	120 HP-WT, 3-TWINE BALER	SEP	1994	.25	.28	11.38	5.58	2.06	.00	12.18	.00	19.82	31.20
HAUL & STACK*	HARROWBED	SEP	1994	.20	.24	11.72	4.93	1.80	.00	.00	.00	6.73	18.45
APPLY ROUNDUP	CUSTOM HERBICIDE APPLICATION	SEP	1994	.00	.00	.00	.00	.00	6.50	10.50	.00	17.00	17.00
WEATHER PROTECT.	CUSTOM COVERAGE WITH TARP	ANN	1994	.00	.00	.00	.00	.00	30.00	.00	1.43	31.43	31.43
MISC. USE	3/4 TON 4-WD PICKUP	ANN	1994	.60	.72	5.75	8.25	5.40	.00	.00	.65	14.30	20.04
TAXES	LAND TAXES	ANN	1994	.00	.00	8.00	.00	.00	.00	.00	.00	.00	8.00
LAND COST	NET RENT	ANN	1994	.00	.00	92.00	.00	.00	.00	.00	.00	.00	92.00
MANAGEMENT	7% OF GROSS RECEIPTS**	ANN	1994	.00	.00	37.80	.00	.00	.00	.00	.00	.00	37.80
OVERHEAD	7.5% OF VARIABLE COSTS	SEA	1994	.00	.00	.00	.00	.00	25.61	.00	.00	25.61	25.61
TOTAL PER ACRE				3.84	7.37	305.88	69.62	55.27	74.11	157.76	10.28	367.04	672.92

* A TWO-CUTTING SCHEDULE PRECLUDES A FALL ESTABLISHMENT OF ANOTHER CROP. IF FALL ESTABLISHMENT OF A GRAIN OR HAY CROP IS DESIRED, ONLY ONE CUTTING WILL BE POSSIBLE.

** GROSS RECEIPTS = 1ST CUTTING: 4 TONS X $90/TON = $360.00
2ND CUTTING: 3 TONS X $90/TON = $270.00
$630.00

Table 2E: Materials and Services Used Per Acre to Produce Sudan Grass, Provided by Operation.

Operation	Month	Material and/or Service
Fertilize	April	Custom application @ $5.50/acre 150 lbs. of nitrogen @ $0.28/lb. 25 lbs. of sulfur @ $0.12/lb.
Seed	May	60 lbs. of Sudan grass seed @ $0.50/lb.
Weed Control	July	Custom application @ $6.50/acre 0.5 lb. of 2,4-D @ $3.15/lb.
Bale	July	0.7 roll of baling twine @ $22.15/roll
Bale	September	0.55 roll of baling twine @ $22.15/roll
Apply Roundup	September	Custom application @ $6.50/acre 1 lb. of Roundup @ $10.50/lb.
Irrigate	Seasonal	Irrigation charge @ $28.00/acre
Weather Protection	Annual	Custom coverage w/tarp @ $5.00/ton
Overhead	Seasonal	7.5% of variable costs

TABLE 3E: ITEMIZED COST PER ACRE FOR SUDAN GRASS PRODUCTION; PROJECTED 1994 COSTS.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS		$		$	
NITROGEN	LB.	.28	150.00	42.00	_____
SULFUR	LB.	.12	25.00	3.00	_____
FERTILIZER APPLICATION	ACRE	5.50	1.00	5.50	_____
SUDAN GRASS SEED	LB.	.50	90.00	45.00	_____
2,4-D	LB.	3.15	.50	1.58	_____
BALING TWINE	ROLL	22.15	1.25	27.68	_____
ROUNDUP	LB.	10.50	1.00	10.50	_____
HERBICIDE APPLICATION	ACRE	6.50	2.00	13.00	_____
CUSTOM TARP COVERING	TON	5.00	6.00	30.00	_____
IRRIGATION CHARGE	ACRE	28.00	1.00	28.00	_____
TRACTOR REPAIR	ACRE	33.39	1.00	33.39	_____
MACHINERY REPAIRS	ACRE	11.37	1.00	11.37	_____
FUEL/LUBE	ACRE	24.86	1.00	24.86	_____
LABOR	ACRE	55.27	1.00	55.27	_____
OVERHEAD	ACRE	25.61	1.00	25.61	_____
INTEREST ON OP. CAP.	ACRE	10.28	1.00	10.28	_____

TOTAL VARIABLE COST				367.04	_____
FIXED COSTS		$		$	
TRACTOR DEPRECIATION	ACRE	50.80	1.00	50.80	_____
TRACTOR INTEREST	ACRE	34.11	1.00	34.11	_____
TRACTOR INSURANCE	ACRE	2.15	1.00	2.15	_____
TRACTOR TAXES	ACRE	4.19	1.00	4.19	_____
TRACTOR HOUSING	ACRE	3.59	1.00	3.59	_____
MACHINE DEPRECIATION	ACRE	37.30	1.00	37.30	_____
MACHINE INTEREST	ACRE	28.64	1.00	28.64	_____
MACHINE INSURANCE	ACRE	1.79	1.00	1.79	_____
MACHINE TAXES	ACRE	3.52	1.00	3.52	_____
MACHINE HOUSING	ACRE	1.99	1.00	1.99	_____
LAND TAXES	ACRE	8.00	1.00	8.00	_____
LAND NET RENT	ACRE	92.00	1.00	92.00	_____
MANAGEMENT FEE	ACRE	37.80	1.00	37.80	_____

TOTAL FIXED COST				305.88	_____
TOTAL COST				672.92	_____

TABLE 4E: Summary of Receipts, Costs, and Profitability Per Acre for Sudan Grass Produced in Kittitas County, Washington.

	Unit	Price or cost/unit	Quantity	Value or Cost	Your Farm
GROSS INCOME					
Hay, first cutting	Ton	$90.00	4.0	$360.00	_____
Hay, second cutting	Ton	$90.00	3.0	270.00	_____
1. TOTAL RECEIPTS				$630.00	_____
Less: Total Variable Costs				(367.04)	_____
2. RETURN OVER VARIABLE COSTS				$262.96	_____
Less: Fixed Costs for Machinery and Buildings (Depreciation, Insurance, Taxes, Interest, Housing)				(168.07)	_____
Land Taxes				(8.00)	
3. RETURN TO LAND AND MANAGEMENT*				$86.89	_____
Less: Management Charge (7% of Gross Receipts)				(37.80)	_____
5. RETURN TO LAND				$49.09	_____

* A value for unpaid family labor is included in total variable costs.

TABLE 5E: Break-even Selling Price Per Ton of Sudan Grass.

Per Acre	Cost Per Acre	Your Farm	Break-even Price ($/Ton)	Your Farm
			7 tons/acre	
1. TOTAL VARIABLE COST	$367.04	_____	$52.43	_____
Plus: Fixed Cash Costs				
Insurance on Machinery and Buildings	3.94	_____		
Taxes on Machinery and Buildings	7.71	_____		
Shelter (Housing) for Machinery	5.58	_____		
Land Taxes	8.00	_____		
2. TOTAL CASH COSTS	$392.27	_____	$56.04	_____
Plus: Fixed Noncash Costs				
Depreciation on Machinery	88.10	_____		
Interest on Machinery*	62.75	_____		
Land (Net Rent)*	92.00	_____		
3. TOTAL CASH AND NONCASH COSTS	$635.12	_____	$90.73	_____
Plus: Return to Management	37.80	_____		
4. TOTAL COST	$672.92	_____	$96.13	_____

* Assuming the capital item is owned, the value reflects an opportunity cost (refer to Page 4).

TABLE 1F: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING ALFALFA HAY FOLLOWING SWEET CORN OR POTATOES: PROJECTED 1993 COSTS.*

OPERATION	TOOLING	MTH YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST: FUEL, LUBE, & REPAIRS	VARIABLE COST: LABOR	VARIABLE COST: SERVICE	VARIABLE COST: MATER.	VARIABLE COST: INTER.	TOTAL VARIABLE COST	TOTAL COST
					$	$	$	$	$	$	$	$
DISC(2X)	120 HP-WT, 21' OFFSET DISC	FALL 1993	.50	.55	11.77	8.56	4.12	.00	.00	.20	12.88	24.66
PLOW	120 HP-WT, 4-18" M.B. PLOW	FALL 1993	.28	.30	6.59	4.79	2.25	.00	.00	.11	7.15	13.75
CULTIMULCH(2X)	120 HP-WT, 12' CULTIMULCHER	FALL 1993	.40	.44	10.15	6.38	3.30	.00	.00	.15	9.84	19.98
PLANE	120 HP-WT, 12' LANDPLANE	FALL 1993	.33	.36	10.50	5.20	2.72	.00	.00	.13	8.05	18.55
SEED	120 HP-WT, 10' DRILL	FALL 1993	.25	.28	11.20	3.93	2.06	.00	39.00	.71	45.71	56.90
PACK	120 HP-WT, 10' PACKER	FALL 1993	.17	.18	4.98	2.29	1.37	.00	.00	.06	3.73	8.71
CORRUGATE	120 HP-WT, ROTARY CORRUGATOR	FALL 1993	.33	.36	6.09	4.85	2.72	.00	.00	.12	7.69	13.78
IRRIGATE	SURFACE IRRIGATION SYSTEM	FALL 1993	.00	.60	4.79	.35	4.50	.00	5.60	.17	10.62	15.41
WEED CONTROL**	CUSTOM HERBICIDE APPLICATION	FALL 1993	.00	.00	.00	.00	.00	6.50	12.00	.29	18.79	18.79
MISC. USE	3/4 TON 4-WD PICKUP	ANN 1993	.30	.33	2.87	4.12	2.47	.00	.00	.31	6.91	9.79
OVERHEAD	7.5% OF VARIABLE COSTS	SEA 1993	.00	.00	.00	.00	.00	9.85	.00	.00	9.85	9.85
TOTAL PER ACRE			2.56	3.40	68.95	40.49	25.53	16.35	56.60	2.25	141.22	210.17

* 20% OF IRRIGATION COST CHARGED TO THE ESTABLISHMENT OF HAY; 80% OF IRRIGATION AND 100% OF LAND COST CHARGED TO THE PREVIOUS CROP.

** A FALL APPLICATION OF 2,4-DB IS TEMPERATURE DRIVEN; AN APPLICATION WILL NOT BE MADE WITH LOW TEMPERATURES.

Table 2F: Materials and Services Used Per Acre to Establish Alfalfa Hay Following Sweet Corn or Potatoes, Provided by Operation.

Operation	Month	Material and/or Service
Seed	Fall	15 lbs. of alfalfa seed @ $2.60/lb.
Irrigate	Fall	20% of annual irrigation charge @ $28.00/acre
Weed Control	Fall	Custom application @ $6.50/acre 1.5 lbs. of 2,4-DB @ $8.00/lb.
Overhead	Seasonal	7.5% of variable costs

TABLE 3F: ITEMIZED COST PER ACRE FOR ESTABLISHING ALFALFA HAY FOLLOWING SWEET CORN OR POTATOES; PROJECTED 1993 COSTS.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS		$		$	
ALFALFA SEED	LB.	2.60	15.00	39.00	_____
2,4-DB	LB.	8.00	1.50	12.00	_____
HERBICIDE APPLICATION	ACRE	6.50	1.00	6.50	_____
IRRIGATION CHARGE	ACRE	28.00	.20	5.60	_____
TRACTOR REPAIR	ACRE	12.66	1.00	12.66	_____
MACHINERY REPAIRS	ACRE	9.05	1.00	9.05	_____
FUEL/LUBE	ACRE	18.77	1.00	18.77	_____
LABOR	ACRE	25.53	1.00	25.53	_____
OVERHEAD	ACRE	9.85	1.00	9.85	_____
INTEREST ON OP. CAP.	ACRE	2.25	1.00	2.25	_____

TOTAL VARIABLE COST				141.22	_____
FIXED COSTS		$		$	
TRACTOR DEPRECIATION	ACRE	11.45	1.00	11.45	_____
TRACTOR INTEREST	ACRE	9.99	1.00	9.99	_____
TRACTOR INSURANCE	ACRE	.63	1.00	.63	_____
TRACTOR TAXES	ACRE	1.23	1.00	1.23	_____
TRACTOR HOUSING	ACRE	1.05	1.00	1.05	_____
MACHINE DEPRECIATION	ACRE	21.75	1.00	21.75	_____
MACHINE INTEREST	ACRE	17.85	1.00	17.85	_____
MACHINE INSURANCE	ACRE	1.12	1.00	1.12	_____
MACHINE TAXES	ACRE	2.19	1.00	2.19	_____
MACHINE HOUSING	ACRE	1.67	1.00	1.67	_____

TOTAL FIXED COST				68.95	_____
TOTAL COST				210.17	_____

TABLE 1G: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ESTABLISHING ALFALFA HAY FOLLOWING WHEAT AND PLANTING INTO STANDING STUBBLE: PROJECTED 1993 COSTS.*

OPERATION	TOOLING	MTH YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST: FUEL, LUBE, & REPAIRS	VARIABLE COST: LABOR	VARIABLE COST: SERVICE	VARIABLE COST: MATER.	VARIABLE COST: INTER.	TOTAL VARIABLE COST	TOTAL COST
					$	$	$	$	$	$	$	$
CHOP RESIDUE	120 HP-WT, 10' ROTARY MOWER	AUG 1993	.33	.40	6.35	4.84	3.00	.00	.00	.25	8.09	14.44
CORRUGATE	120 HP-WT, ROTARY CORRUGATOR	AUG 1993	.33	.36	14.78	5.19	2.72	.00	.00	.25	8.16	22.94
IRRIGATE	SURFACE IRRIGATION SYSTEM	AUG 1993	.00	.60	4.79	.35	4.50	.00	5.60	.33	10.78	15.57
WEED CONTROL	CUSTOM HERBICIDE APPLICATION	AUG 1993	.00	.00	.00	.00	.00	6.50	5.25	.37	12.12	12.12
SEED	120 HP-WT, 10' DRILL	SEP 1993	.25	.28	11.20	3.93	2.06	.00	39.00	1.07	46.06	57.26
CORRUGATE	120 HP-WT, ROTARY CORRUGATOR	SEP 1993	.33	.36	6.09	4.85	2.72	.00	.00	.18	7.75	13.84
IRRIGATE	SURFACE IRRIGATION SYSTEM	SEP 1993	.00	.60	4.79	.35	4.50	.00	5.60	.25	10.70	15.49
WEED CONTROL	CUSTOM HERBICIDE APPLICATION	OCT 1993	.00	.00	.00	.00	.00	6.50	12.00	.29	18.79	18.79
MISC. USE	3/4 TON 4-WD PICKUP	ANN 1993	.30	.33	2.87	4.12	2.47	.00	.00	.31	6.91	9.79
OVERHEAD	7.5% OF VARIABLE COSTS	SEA 1993	.00	.00	.00	.00	.00	9.70	.00	.00	9.70	9.70
TOTAL PER ACRE			1.54	2.93	50.87	23.64	21.98	22.70	67.45	3.30	139.08	189.95

* 40% OF IRRIGATION COST CHARGED TO THE ESTABLISHMENT OF HAY; 60% OF IRRIGATION AND 100% OF LAND COST CHARGED TO THE PREVIOUS CROP.

Table 2G: Materials and Services Used Per Acre to Establish Alfalfa Hay Following Wheat, Provided by Operation.

Operation	Month	Material and/or Service
Irrigate	August	20% of annual irrigation charge @ $28.00/acre
Weed Control	August	Custom application @ $6.50/acre 0.5 lb. of Roundup @ $10.50/lb.
Seed	September	15 lbs. of alfalfa seed @ $2.60/lb.
Irrigate	September	20% of annual irrigation charge @ $28.00/acre
Weed Control	October	Custom application @ $6.50/acre 1.5 lbs. of 2,4-DB @ $8.00/lb.
Overhead	Seasonal	7.5% of variable costs

TABLE 3G: ITEMIZED COST PER ACRE FOR ESTABLISHING ALFALFA HAY FOLLOWING WHEAT AND PLANTING INTO STANDING STUBBLE: PROJECTED 1993 COSTS.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS		$		$	
BALING TWINE	ROLL	22.15	.14	3.10	_____
ROUNDUP	LB.	10.50	.50	5.25	_____
2,4-DB	LB.	8.00	1.50	12.00	_____
HERBICIDE APPLICATION	ACRE	6.50	2.00	13.00	_____
ALFALFA SEED	LB.	2.60	15.00	39.00	_____
IRRIGATION CHARGE	ACRE	28.00	.40	11.20	_____
TRACTOR REPAIRS	ACRE	6.96	1.00	6.96	_____
MACHINERY REPAIRS	ACRE	5.43	1.00	5.43	_____
FUEL/LUBE	ACRE	11.26	1.00	11.26	_____
LABOR	ACRE	21.98	1.00	21.98	_____
OVERHEAD	ACRE	9.70	1.00	9.70	_____
INTEREST ON OP. CAP.	ACRE	3.30	1.00	3.30	_____

TOTAL VARIABLE COST				139.08	_____
FIXED COSTS		$		$	
TRACTOR DEPRECIATION	ACRE	6.29	1.00	6.29	_____
TRACTOR INTEREST	ACRE	5.49	1.00	5.49	_____
TRACTOR INSURANCE	ACRE	.35	1.00	.35	_____
TRACTOR TAXES	ACRE	.67	1.00	.67	_____
TRACTOR HOUSING	ACRE	.58	1.00	.58	_____
MACHINE DEPRECIATION	ACRE	18.81	1.00	18.81	_____
MACHINE INTEREST	ACRE	14.79	1.00	14.79	_____
MACHINE INSURANCE	ACRE	.93	1.00	.93	_____
MACHINE TAXES	ACRE	1.82	1.00	1.82	_____
MACHINE HOUSING	ACRE	1.14	1.00	1.14	_____

TOTAL FIXED COST				50.87	_____
TOTAL COST				189.95	_____

TABLE 1H: SCHEDULE OF OPERATIONS AND ESTIMATED COSTS PER ACRE FOR ALFALFA HAY PRODUCTION; PROJECTED 1994 COSTS.

OPERATION	TOOLING	MTH YEAR	MACH HOURS	LABOR HOURS	TOTAL FIXED COST	VARIABLE COST: FUEL, LUBE, & REPAIRS	VARIABLE COST: LABOR	VARIABLE COST: SERVICE	VARIABLE COST: MATER.	VARIABLE COST: INTER.	TOTAL VARIABLE COST	TOTAL COST
					$	$	$	$	$	$	$	$
WEED CONTROL*	CUSTOM HERBICIDE APPLICATION	NOV 1993	.00	.00	.00	.00	.00	6.50	23.44	2.37	32.32	32.32
FERTILIZE**	CUSTOM FERTILIZE APPLICATION	APR 1994	.00	.00	.00	.00	.00	5.50	14.02	.77	20.29	20.29
CORRUGATE	120 HP-WT, ROTARY CORRUGATOR	APR 1994	.33	.36	6.09	4.85	2.72	.00	.00	.30	7.87	13.96
IRRIGATE	SURFACE IRRIGATION SYSTEM	SEA 1994	.00	3.00	23.96	1.75	22.50	.00	28.00	2.48	54.73	78.70
INSECT CONTROL	AERIAL APPLICATION	MAY 1994	.00	.00	.00	.00	.00	6.75	2.34	.29	9.38	9.38
SWATH	14' HAY SWATHER	MAY 1994	.25	.30	20.79	4.69	2.25	.00	.00	.22	7.16	27.95
RAKE AND TURN	120 HP-WT, 14' RAKE	MAY 1994	.08	.10	1.91	1.12	.75	.00	.00	.06	1.93	3.84
BALE	120 HP-WT, TWINE BALER	JUN 1994	.33	.36	15.02	7.36	2.72	.00	5.40	.37	15.85	30.87
HAUL & STACK	HARROWBED	JUN 1994	.20	.24	11.72	4.93	1.80	.00	.00	.16	6.89	18.61
BARN STACK	CONTRACT HAND LABOR	JUN 1994	.00	.00	.00	.00	.00	3.00	.00	.07	3.07	3.07
FERTILIZE	CUSTOM FERTILIZER APPLICATION	JUN 1994	.00	.00	.00	.00	.00	5.50	18.10	.56	24.16	24.16
SWATH	14' HAY SWATHER	JUL 1994	.20	.24	16.63	3.75	1.80	.00	.00	.09	5.64	22.27
RAKE AND TURN	120 HP-WT, 14' RAKE	JUL 1994	.08	.10	1.91	1.12	.75	.00	.00	.03	1.90	3.81
BALE	120 HP-WT, TWINE BALER	JUL 1994	.25	.28	11.38	5.58	2.06	.00	3.46	.18	11.27	22.64
HAUL & STACK	HARROWBED	JUL 1994	.13	.16	7.62	3.20	1.17	.00	.00	.07	4.44	12.06
BARN STACK	CONTRACT HAND LABOR	JUL 1994	.00	.00	.00	.00	.00	2.00	.00	.03	2.03	2.03
SWATH	14' HAY SWATHER	SEP 1994	.17	.20	13.87	3.13	1.50	.00	.00	.00	4.63	18.49
RAKE & TURN	120 HP-WT, 14' RAKE	SEP 1994	.08	.10	1.91	1.12	.75	.00	.00	.00	1.87	3.78
BALE	120 HP-WT, TWINE BALER	SEP 1994	.17	.20	7.59	3.72	1.50	.00	2.46	.00	7.68	15.26
HAUL & STACK	HARROWBED	SEP 1994	.10	.12	5.86	2.46	.90	.00	.00	.00	3.36	9.22
BARN STACK	CONTRACT HAND LABOR	SEP 1994	.00	.00	.00	.00	.00	1.25	.00	.00	1.25	1.25
HAY STORAGE	HAY SHED COST	ANN 1994	.00	.00	21.62	3.20	.00	.00	.00	.15	3.35	24.97
MISC. USE	3/4 TON 4-WD PICKUP	ANN 1994	.60	.72	5.75	8.25	5.40	.00	.00	.65	14.30	20.04
TAXES	LAND TAXES	ANN 1994	.00	.00	8.00	.00	.00	.00	.00	.00	.00	8.00
LAND COST	NET RENT	ANN 1994	.00	.00	92.00	.00	.00	.00	.00	.00	.00	92.00
OVERHEAD	7.5% OF VARIABLE COSTS	SEA 1994	.00	.00	.00	.00	.00	18.40	.00	.00	18.40	18.40
MANAGEMENT FEE	7% OF GROSS RECEIPTS***	ANN 1994	.00	.00	36.23	.00	.00	.00	.00	.00	.00	36.23
ESTAB. COST****	PRORATED 5 YEARS @ 9.5%	ANN 1994	.00	.00	54.74	.00	.00	.00	.00	.00	.00	54.74
TOTAL PER ACRE			2.97	6.48	364.58	60.24	48.58	48.90	97.23	8.85	263.79	628.37

* IN THE FIRST PRODUCTION YEAR, THIS OPERATION IS NOT APPLIED, HOWEVER, 1.5 PINTS OF BUCTRIL IS CUSTOM APPLIED IN APRIL, FOLLOWING THE FALL ESTABLISHMENT PERIOD ONLY, A TOTAL COST OF $18.54/ACRE.

** FERTILIZER APPLICATION IS BASED ON ALFALFA FOLLOWING SWEET CORN OR POTATOES. IF FOLLOWING WHEAT, 5 LBS. OF ZINC AT $1.00/LB. AND 1 LB. OF BORON AT $2.75/LB. WOULD ALSO BE APPLIED.

*** GROSS RECEIPTS = 6.25 TONS X $90.00 = $562.50.

**** ESTABLISHMENT COST BASED ON ALFALFA FOLLOWING SWEET CORN OR POTATOES. IF FOLLOWING WHEAT, THE NET ESTABLISHMENT COST PRORATED 5 YEARS AT 9.5% INTEREST WOULD EQUAL $49.47 PER YEAR.

Table 2H: Materials and Services Used Per Acre to Produce Alfalfa Hay, Provided by Operation.

Operation	Month	Material and/or Service
Weed Control*	November	Custom application @ $6.50/acre 1.5 pints of Poast @ $15.63/pint
Fertilize**	April	Custom application @ $5.50/acre 9 lbs. of nitrogen @ $0.28/lb. 20 lbs. of phosphorous @ $0.23/lb. 30 lbs. of potassium @ $0.15/lb. 20 lbs. of sulfur @ $0.12/lb.
Irrigate	Seasonal	Irrigation charge @ $28.00/acre
Insect Control	May	Aerial application @ $6.75/acre 0.75 pints of Dimethoate @ $3.13/pint
Bale	June	0.244 roll of baler twine @ $22.15/roll
Barn Stack	June	1.5 tons @ $2.00/ton
Fertilize	June	Custom application @ $5.50/acre 20 lbs. of nitrogen @ $0.28/lb. 25 lbs. of phosphorous @ $0.23/lb. 25 lbs. of potassium @ $0.15/lb. 25 lbs. of sulfur @ $0.12/lb.
Bale	July	0.156 roll of baler twine @ $22.15/roll
Barn Stack	July	1.0 ton @ $2.00/ton
Bale	September	0.111 roll of baler twine @ $22.15/roll
Barn Stack	September	0.625 ton @ $2.00/ton
Overhead	Seasonal	7.5% of variable costs

* In the first production year, this operation is not applied. Instead, in April, 1.5 pints of Buctril @ $7.50/pint is custom applied @ $6.50/acre.

** Fertilizer application is based on alfalfa following seed corn or potatoes. If following wheat, 5 lbs. of zinc @ $1.00/lb. and 1 lb. of boron @ $2.75/lb. would also be applied.

TABLE 3H: ITEMIZED COST PER ACRE FOR ALFALFA HAY PRODUCTION: PROJECTED 1994 COSTS.

	UNIT	PRICE OR COST/UNIT	QUANTITY	VALUE OR COST	YOUR FARM
VARIABLE COSTS		$		$	
POAST	PINT	15.63	1.50	23.44	_____
HERBICIDE APPLICATION	ACRE	6.50	1.00	6.50	_____
NITROGEN	LB.	.28	29.00	8.12	_____
PHOSPHOROUS	LB.	.23	45.00	10.35	_____
POTASSIUM	LB.	.15	55.00	8.25	_____
SULFUR	LB.	.12	45.00	5.40	_____
FERTILIZER APPLICATION	ACRE	5.50	2.00	11.00	_____
DIMETHOATE	PINT	3.13	.75	2.34	_____
AERIAL APPLICATION	ACRE	6.75	1.00	6.75	_____
BALING TWINE	ROLL	22.15	.51	11.32	_____
BARN STACK	TON	2.00	3.13	6.25	_____
IRRIGATION CHARGE	ACRE	28.00	1.00	28.00	_____
TRACTOR REPAIRS	ACRE	25.18	1.00	25.18	_____
MACHINERY REPAIRS	ACRE	17.17	1.00	17.17	_____
FUEL/LUBE	ACRE	17.90	1.00	17.90	_____
LABOR	ACRE	48.58	1.00	48.58	_____
OVERHEAD	ACRE	18.40	1.00	18.40	_____
INTEREST ON OP. CAP.	ACRE	8.85	1.00	8.85	_____

TOTAL VARIABLE COST				263.79	_____
FIXED COSTS		$		$	
TRACTOR DEPRECIATION	ACRE	41.34	1.00	41.34	_____
TRACTOR INTEREST	ACRE	27.49	1.00	27.49	_____
TRACTOR INSURANCE	ACRE	1.74	1.00	1.74	_____
TRACTOR TAXES	ACRE	3.38	1.00	3.38	_____
TRACTOR HOUSING	ACRE	2.89	1.00	2.89	_____
MACHINE DEPRECIATION	ACRE	50.03	1.00	50.03	_____
MACHINE INTEREST	ACRE	37.80	1.00	37.80	_____
MACHINE INSURANCE	ACRE	2.37	1.00	2.37	_____
MACHINE TAXES	ACRE	4.64	1.00	4.64	_____
MACHINE HOUSING	ACRE	1.93	1.00	1.93	_____
LAND TAXES	ACRE	8.00	1.00	8.00	_____
LAND NET RENT	ACRE	92.00	1.00	92.00	_____
MANAGEMENT FEE	ACRE	36.23	1.00	36.23	_____
PRORATED ESTAB. COST	ACRE	54.74	1.00	54.74	_____

TOTAL FIXED COST				364.58	_____
TOTAL COST				628.37	_____

TABLE 4H: Summary of Receipts, Costs, and Profitability Per Acre for Alfalfa Hay Produced in Kittitas County, Washington.

	Unit	Price or cost/unit	Quantity	Value or Cost	Your Farm
GROSS INCOME					
Hay, first cutting	Ton	$90.00	3.00	$270.00	_____
Hay, second cutting	Ton	$90.00	2.00	180.00	_____
Hay, third cutting	Ton	$90.00	1.25	112.50	
1. TOTAL RECEIPTS				$562.50	_____
Less: Total Variable Costs				(263.79)	_____
2. RETURN OVER VARIABLE COSTS				$298.71	_____
Less: Fixed Costs for Machinery and Buildings (Depreciation, Insurance, Taxes, Interest, Housing)				(173.61)	_____
Prorated Establishment Cost				(54.74)	_____
Land Taxes				(8.00)	
3. RETURN TO LAND AND MANAGEMENT*				$62.36	_____
Less: Management Charge (7% of Gross Receipts)				(36.23)	_____
5. RETURN TO LAND				$26.13	_____

* A value for unpaid family labor is included in total variable costs.

TABLE 5H: Break-even Selling Price Per Ton of Alfalfa Hay.

Per Acre	Cost Per Acre	Your Farm	Break-even Price ($/Ton)	Your Farm
			6.25 tons/ac	
1. TOTAL VARIABLE COST	$263.79	_____	$42.21	_____
Plus: Fixed Cash Costs				
Insurance on Machinery and Buildings	4.11	_____		
Taxes on Machinery and Buildings	8.02	_____		
Shelter (Housing) for Machinery	4.82	_____		
Land Taxes	8.00	_____		
2. TOTAL CASH COSTS	$288.74	_____	$46.20	_____
Plus: Fixed Noncash Costs				
Depreciation on Machinery	91.37	_____		
Interest on Machinery*	65.29	_____		
Land (Net Rent)*	92.00	_____		
Prorated Establishment Costs	54.74	_____		
3. TOTAL CASH AND NONCASH COSTS	$592.14	_____	$94.74	_____
Plus: Return to Management	36.23	_____		
4. TOTAL COST	$628.37	_____	$100.54	_____

* Assuming the capital item is owned, the value reflects an opportunity cost (refer to Page 4).

TABLE 6: MACHINERY COMPLEMENT AND OWNERSHIP COSTS.

MACHINERY	PURCHASE PRICE	YEARS TO TRADE	ANNUAL HOURS	DEPREC-IATION	INTER-EST	INSUR-ANCE	TAXES	HOUSING	TOTAL FIXED COST	REPAIR	FUEL AND LUBE	TOTAL VARIABLE COST	TOTAL COST
	$			COST PER HOUR									
120 HP-WHEEL TRACTOR	54,000.00	10	750	5.08	4.43	.28	.54	.47	10.79	5.61	7.39	13.00	23.80
12' ROTARY CORRUGATOR	4,500.00	15	75	3.62	3.12	.20	.38	.33	7.65	1.70	.00	1.70	9.35
3 PT. DITCHER	1,400.00	15	60	1.41	1.21	.08	.15	.13	2.97	.49	.00	.49	3.47
TWINE BALER	28,000.00	10	125	18.70	12.40	.78	1.52	1.30	34.71	9.30	.00	9.30	44.01
14' SWATHER	54,000.00	10	100	43.79	30.50	1.93	3.75	3.21	83.17	15.02	3.74	18.76	101.93
USED GRAIN SWATHER	5,000.00	5	50	13.04	6.40	.40	.79	.67	21.31	2.88	3.74	6.62	27.93
USED HARROW BED	27,500.00	5	100	35.86	17.61	1.11	2.16	1.85	58.60	20.91	3.74	24.65	83.24
12' CULTIMULCHER	8,000.00	15	70	6.89	5.95	.38	.73	.63	14.57	2.96	.00	2.96	17.53
4 ROW CULTIVATOR	4,400.00	15	75	3.54	3.05	.19	.38	.32	7.48	1.66	.00	1.66	9.14
12' LANDPLANE	8,250.00	15	50	9.94	8.59	.54	1.06	.90	21.04	2.76	.00	2.76	23.79
4 BTM PLOW	10,000.00	15	100	6.03	5.21	.33	.64	.55	12.75	4.11	.00	4.11	16.86
10' SEED DRILL	7,200.00	12	30	17.22	12.98	.82	1.60	1.37	33.99	2.72	.00	2.72	36.71
CORN PLANTER	10,500.00	12	25	30.13	22.72	1.44	2.79	2.39	59.48	3.69	.00	3.69	63.17
12' VIBRA SHANK	3,500.00	15	20	10.55	9.11	.58	1.12	.96	22.31	.89	.00	.89	23.20
12' OFFSET DISK	10,000.00	15	100	6.03	5.21	.33	.64	.55	12.75	4.11	.00	4.11	16.86
10' PACKER	3,000.00	15	20	9.04	7.81	.49	.96	.82	19.12	.76	.00	.76	19.88
12' CULTIPACKER	1,900.00	15	20	5.73	4.95	.31	.61	.52	12.11	.48	.00	.48	12.59
TEDDER	4,100.00	15	75	2.89	3.14	.20	.39	.33	6.94	1.33	.00	1.33	8.27
14' RAKE	9,000.00	15	75	6.40	6.84	.43	.84	.72	15.23	1.33	.00	1.33	16.57
10' ROTARY MOWER	5,000.00	15	75	3.47	3.86	.24	.47	.41	8.46	1.67	.00	1.67	10.12
USED 2 TON TRUCK	6,000.00	10	100	4.94	3.35	.21	.41	.35	9.27	1.82	11.18	13.00	22.27
3/4-4WD PICKUP	15,500.00	10	250	5.10	3.47	.22	.43	.36	9.58	6.79	6.96	13.75	23.33

TABLE 7: COSTS PER ACRE FOR HAY SHED AND IRRIGATION SYSTEM.

MACHINERY	PURCHASE PRICE	YEARS OF LIFE	ACRES COVERED	DEPREC-IATION	INTER-EST	INSUR-ANCE	TAXES	TOTAL FIXED COST	REPAIR	TOTAL COST
				COST PER ACRE						
HAY SHED	40,656.00	20	200	10.16	9.66	.61	1.19	21.62	3.20	24.82
CONCRETE DITCH	41,250.00	20	300	6.88	6.53	.41	.80	14.62	1.00	15.62
IRRIGATION DAMS	400.00	3	300	.44	.06	.00	.01	.52	.00	.52
IRRIGATION TUBES	1,350.00	5	300	.90	.21	.00	.03	1.14	.00	1.14
GATED PIPE	18,750.00	15	300	4.17	2.97	.19	.36	7.69	.75	8.44

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