

Hay Production - Dryland 150 acres - Williams Lake

This information is a resource to project costs and returns for British Columbia farm enterprises and is a general guide to plan individual farm operations. This budget should be used as a guide only. Each farm should develop their own budget to reflect specific production goals, costs and market prices.

Information regarding financial planning and other enterprise budgets may be viewed at the B.C. Ministry of Agriculture and Lands website (<http://www.agf.gov.bc.ca/busmgmt/>) and their information portal, InfoBasket (<http://www.infobasket.gov.bc.ca>).

HISTORICAL PRICES

Prices for hay are affected by items such as demand for feed from livestock producers, livestock prices and the levels of annual hay production. Prices often vary from region to region and thus farm managers should spend time researching hay prices by talking with local hay producers and livestock producer, as well as researching via the Internet. Suggested websites of interest include:

- Feed Listings - Peace River Forage Association of BC
http://www.peaceforage.bc.ca/feed_listings.htm
- Hay, Straw and Pasture Listings – Alberta Agriculture and Food
<http://www.agric.gov.ab.ca/app68/hay>
- Hay & Forage Grower
<http://www.forageinfo.com/>
- Hay & Forage – Farms.com
<http://www.farms.com/forage/default.asp>

KEY FACTORS AFFECTING PROFITABILITY

Key factors seen as affecting the value of production and thus profit of the business include:

- Yield per acre
- Price per ton
- Control of direct costs such as fertilizer and seed
- Management of an effective fertilizer program

SAMPLE REVENUE AND EXPENSE BUDGET INFORMATION

This budget summarizes the revenue and expenses for a model farm operation at this location. These statements show the profit or loss of the farm business and are prepared on an accrual basis.

- **Revenue** is the value generated from sales of hay plus alfalfa on first and second cut.
- **Direct costs** are those costs that can readily be identified with items produced by the business. Examples are seed, fertilizer, fuel, twine, irrigation power, tarp, and machinery repairs costs.
- **Contribution Margin** equals Revenue less Direct Costs or the amount left over to contribute to indirect cost.
- **Indirect Costs** are items such as operating interest, interest on long term debt, depreciation on building and equipment, land taxes, interest on loans, land taxes, land rental, general/office overhead and insurance.
- **Net Farm Income** equals Revenue less all Direct and Indirect Costs. This is the amount left to pay principle payments and living expenses and can be used to review return on equity and return on investment.

ASSUMPTIONS

The following assumptions were made in calculating the revenue and expense budget.

Revenue & Expenses

- Projected revenue and expenses are based on current market prices.
- Price for Alfalfa Hay is 100\$ per Ton.
- Labour cost included in the budget is for paid labour required over and above owner operator labour.
- Off-farm income and living expenses are not included in the budget.

Type, Size & Production Values

Model farm data such as deeded acres, owned land base, crop land acreage, and asset and liability type, size and value was developed through consensus research from producers at this specific location plus information from the Farm Financial Survey, Statistics Canada & Agriculture and Agri-food Canada.

- The farm operation is assumed to be currently in operation and it not a new business. This is reflected in the assets and liabilities of the business.
- Alfalfa hay crop requires three years to be in full production of hay:
 - Year one - the acreage is in cover crop in preparation for hay seeding next year,
 - Year two - the acreage is seeded to grass mix with a cover crop,
 - Year three - hay can be cut for full production with only a first cut production.
- The operation has 150 acres that is always in the following crop rotation:
 - 10 acres is in year one of establishment of a hay crop. This acreage is seeded to an oat cover crop only. There is only oat production on that acreage in year one.
 - 10 acres in a year two of establishment of a hay crop. This acreage in year two is seeded with grass mix and also has an oat cover crop seeded. There is only oat production on that acreage in year two.
 - 130 acres in full production of hay production with first cut only at a yield of 2.0 tons per acre.
- Direct expenses include: supplies and materials, seed (grass mix and oats), fertilizer, twine, fuel & lube costs, and machine repairs.

SUMMARY OF HAY REVENUE AND EXPENSES - 150 ACRES - WILLIAMS LAKE DRYLAND

	Establishment Year - 10 Acres					Establishment - Year 2 10 Acres					Full Production - 130 Acres				
REVENUE	Yield	Price	Units	\$Per Acre	\$/Ton	Yield	Price	Units	\$Per Acre	\$/Ton	Yield	Price	Units	\$Per Acre	\$/Ton
Oat hay	2.0	\$90.00	Ton	\$180.00		1.5	\$90.00	Ton	\$135.00				Ton		
Alfalfa 1st Cut			Ton					Ton			2.0	100.00	Ton	\$200.00	
TOTAL REVENUE	2.0			\$180.00	\$90.00	1.5			\$135.00	\$90.00	2.0			\$200.00	\$100.00
DIRECT EXPENSES			Units					Units					Units		
Supplies and Materials	Quant.	\$/ Unit	Used	\$/Ac		Quant.	\$/ Unit	Used	\$/Ac		Quant.	\$/ Unit	Used	\$/Ac	
Seed: Grass mix		\$3.50	Lbs.			15.0	\$3.50	Lbs.	\$52.50				Lbs.		
:Oats	100.0	\$0.30	Lbs.	\$30.00		50.0	\$0.30	Lbs.	\$15.00				Lbs.		
Fertilizer: 46-0-0	100.0	\$0.24	Lbs.	\$23.59		50.0	\$0.24	Lbs.	\$11.80		150.0	0.24	Lbs.	\$35.39	
:0.0.60	20.0	\$0.18	Lbs.	\$3.54		30.0	\$0.18	Lbs.	\$5.31		40.0	0.18	Lbs.	\$7.08	
: 11-52-0		\$0.23	Lbs.			20.0	\$0.23	Lbs.	\$4.67		50.0	0.23	Lbs.	\$11.68	
custom fertilizer application	1.0	\$6.00	acres	\$6.00		1.0	\$6.00	acres	\$6.00		1.0	6.00	acres	\$6.00	
Twine	2.0	\$1.60	T.of hay	\$3.20		1.5	\$1.60	T.of hay	\$2.40		2.0	1.60	T.of hay	\$3.20	
Total Supplies and Materials				\$66.33					\$97.68					\$63.35	
Fuel & Lube				\$50.38					\$38.02					\$25.74	
Machine Repairs				\$31.39					\$22.31					\$14.28	
TOTAL DIRECT EXPENSES				\$148.11	\$74.05				\$158.01	\$105.34				\$103.37	\$51.69
CONTRIBUTION MARGIN				\$31.89	\$15.95				(\$23.01)	(\$15.34)				\$96.63	\$48.31

SENSITIVITY ANALYSIS OF CONTRIBUTION MARGIN

Profitability is strongly influenced by market prices (dollars per Ton) and production yield (Tons per acre). The following tables illustrate the resulting contribution margin as price and production levels yields vary.

Contribution Margin at Various Yields (Tons per acre) for Alfalfa Hay Production

	Yield (Tons per Acre)	Contribution Margin per Acre (Price Constant At 100\$ per Ton)
	2.5	\$144.51
Yield per Ton Value from Budget	2.0	\$96.63
	1.5	\$48.74

Contribution Margin at Various Prices (Dollars per Ton) for Alfalfa Hay Production

	Price (Dollar per Ton)	Contribution Margin per Acre (Yield Constant At 2.0 Tons per acre)
	110	\$116.63
Price per Ton Value from Budget	100	\$96.63
	90	\$76.63

INVESTMENT CAPITAL REPLACEMENT COSTS

The following equipment and buildings would be required for the operation. Thus, the start up investment for the operation would include the market value of machinery, building and land (purchase or rental costs) and should be reviewed as part of the return on assets and return on investment.

	Replacement Value
Tractor #1 75 hp	\$75,000
Tractor #2 100 hp	\$100,000
Tractor #3 50 hp	\$30,000
Plow 4 btm	\$12,000
Disc 12ft	\$16,000
Harrows 12 ft	\$5,000
Drill 10 ft	\$5,000
Swather /Conditioner	\$30,000
Rotary Rake	\$10,000
Round Baler	\$35,000
Wagon	\$9,000
Irrigation system	\$85,000
ATV	\$10,000
Pick up	\$45,000
Gooseneck	\$20,000
Small tools	\$20,000
Hay Shed	\$20,000
Workshop	\$25,000

CONTACT

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