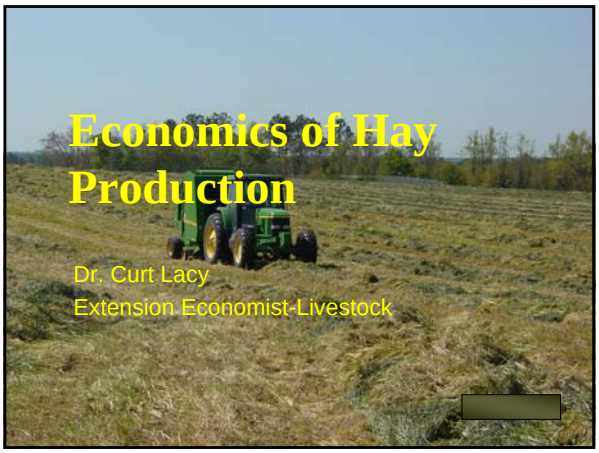
Hay Production Economics



Some Basic Economic Concepts

1. Long-term, the price of any commodity will approach the average cost of production.
2. The cost should be calculated for the marketing unit (bales, tons etc.).
3. Good marketers focus on what is most profitable not what gets the highest price.
4. Any product can be profitable if you can charge enough.

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The first step in any successful marketing plan is knowing you cost.

$$\text{Breakeven Cost} = \frac{\text{Variable Cost} + \text{Fixed Cost}}{\text{Production}}$$

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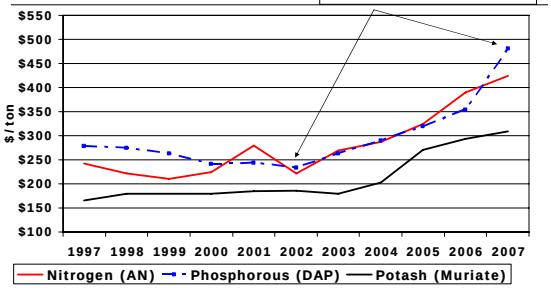
Hay Production Economics

Fertilizer Prices 1997-2007



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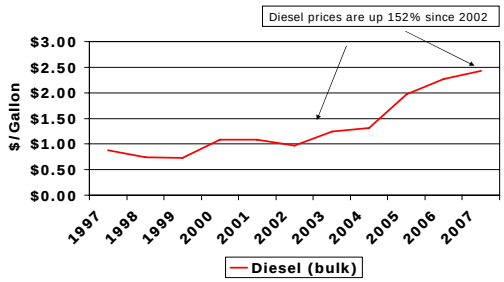
Fuel Prices 1997-2007



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Impact of Fertilizer and Fuel Prices

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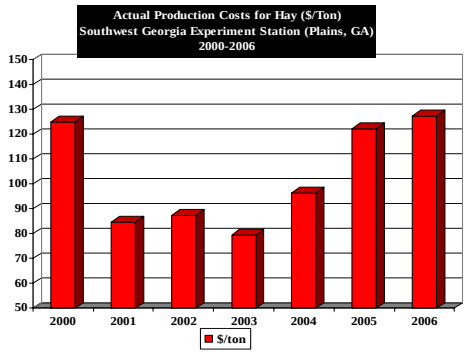
Costs of Producing Hay



How do I determine my cost?

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Variable Cost Budget

- Variable cost budget includes only variable costs
- Variable costs are typically the costs of production and a prorated interest charge.
- They can be very different from farm to farm.
- This target is **THE FIRST** to calculate—important ***determines the ability to pay operating expenses.***

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Hay Production Economics

Variable Costs for Hybrid Bermuda 2008

ITEM	COST $/ACRE	COST $/TON
VARIABLE COSTS:		
LIME	$16.00	$2.46
FERTILIZER:		
NITROGEN	$162.50	$25.02
PHOSPHATE	$33.00	$5.08
POTASH	$72.00	$11.09
LIME	$16.00	$2.46
CROP PROTECTION		
HERBICIDE	$11.00	$1.69
ARMYWORM CONTROL	$29.50	$4.54
MACHINERY:		
FUEL	$63.49	$9.78
REPAIRS & MAINT.	$23.49	$3.62
LAND RENTAL	$0.00	$0.00
LABOR	$35.73	$5.50
OTHER	$0.00	$0.00
INTEREST ON OP. CAP.	$20.82	$3.21
TOTAL VARIABLE COST	$483.53	$74.45

Economic Cost Budget

- Includes Variable & Fixed Costs.
- Fixed costs reflect ownership costs.
- These costs occur whether or not a crop is produced--depreciation, insurance, interest and taxes.
- Use of land (ownership costs or rent).
- Being able to cover (pay for) fixed costs indicate long-term staying power.

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Fixed Cost Summary

ITEM	TOTAL COST	COST $/TON
FIXED COST: (Click on appropriate link)		
ESTABLISHMENT COSTS	$2,462.33	$3.79
ANNUAL FIXED COSTS	$11,538.59	$17.77
	$0.00	$0.00
MANAGEMENT	$2,901.19	$4.47
LAND	$0.00	$0.00
TOTAL FIXED COST	**$16,902.11**	**$26.02**

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Depreciation and Interest Detail

ITEM	% OF TIME FOR THIS ENTERPRISE	COST	SALVAGE VALUE	YRS. OF LIFE (Yr.)	CALC. DEPR. ($/yr.)	TOTAL
Round Baler - Large	100%	$30,000	$4,500	8	$3,187.50	
Hay Rake - 17'	100%	$5,000	$750	8	$531.25	
Disc Mower - 9'	100%	$9,500	$1,425	8	$1,009.38	
Hay Tedder - 17'	100%	$5,000	$750	8	$531.25	
Tractor 100 hp	25%	$54,000	$21,600	8	$1,012.50	
Tractor 75 hp	25%	$30,000	$5,000	8	$781.25	
Miscellaneous Equipment	100%	$2,000	$0	10	$200.00	
Other	0%	$0	$0	0	$0.00	
Other	0%	$0	$0	0	$0.00	
TOTAL INVESTMENT THIS ENTERPRISE		**$72,500**	**$14,075**			
TOTAL DEPRECIATION THIS ENTERPRISE						**$7,253.13**
INTEREST ON INVESTMENT (average investment X interest rate)						**$3,679.44**
TAXES AND INSURANCE	% OF AVERAGE INVESTMENT	1.40%				**$606.03**
TOTAL ANNUAL FIXED COST						**$11,538.59**
TOTAL ANNUAL FIXED COST PER ACRE						**$115.39**

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Final Result – Total Cost Budget

EXPECTED BREAKEVEN TABLE

ITEM	TOTAL AMOUNT	$ / TON	$/Acre
VARIABLE COST	$48,353.20	$74.45	$483.53
ESTABLISHMENT+FIXED COST	$14,000.92	$21.56	$140.01
MANAGEMENT	$2,901.19	$4.47	$29.01
LAND	$0.00	$0.00	$0.00
TOTAL COST	**$65,255.30**	**$100.47**	**$652.55**

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Cash Cost or Cash Flow Budget

- What most people use.
- Actual cash outflow from the production of the cattle.
- Includes both variable and some fixed costs (insurance, taxes, etc.).
- Also includes any payments such as land, equipment, cattle, etc.
- Includes profit; and,
- Can include proportion of family living.

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Hay Production Economics

Cash Cost Summary

ITEM	TOTAL COST	COST $/ACRE	COST $/TON
FIXED COST: (Click on appropriate link)			
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
ANNUAL PAYMENTS	$8,318.80	$83.19	$12.81
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
TOTAL FIXED COST	**$8,318.80**	**$83.19**	**$12.81**

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Cash Payment Detail

ITEM	% OF TIME FOR THIS ENTERPRISE	TOTAL COST	---FINANCING--- AMOUNT	YEARS (Yr.)	INT.RATE	CALC. YR. PAYMENT
Round Baler - Large	100%	$30,000	100%	5	9.0%	$7,712.77
Hay Rake - 8.5'	100%	$5,000	0%	5	9.0%	$0.00
Disc Mower - 8'	100%	$9,500	0%	5	9.0%	$0.00
Hay Tedder - 17'	100%	$5,000	0%	5	9.0%	$0.00
Tractor 100 hp	25%	$54,000	0%	5	9.0%	$0.00
Tractor 50 hp	25%	$30,000	0%	5	9.0%	$0.00
Miscellaneous Equipment	100%	$2,000	0%	5	9.0%	$0.00
Other	0%	$0	50%	5	9.0%	$0.00
Other	0%	$0	50%	5	9.0%	$0.00
CALCULATED TOTAL ANNUAL DEBT PAYMENT						**$7,712.77**

TOTAL ANNUAL DEBT PAYMENT	**$7,712.77**
TAXES AND INSURANCE	**$606.03**
TOTAL ANNUAL FIXED OUTLAY	**$8,318.80**
TOTAL ANNUAL FIXED OUTLAY PER ACRE	**$83.19**

Other Items

- ☐ Impacts of yields on breakeven prices.
- ☐ How do you calculate equipment costs?

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Impact of Acreage and Yield on Fixed Costs – Depreciation and Interest

	Yield				
Acres	2.50	5.00	7.50	10.00	12.50
25	$ 150.03	$ 75.02	$ 50.01	$ 37.51	$ 30.01
50	$ 75.02	$ 37.51	$ 25.01	$ 18.75	$ 15.00
100	$ 37.51	$ 18.75	$ 12.50	$ 9.38	$ 7.50
250	$ 15.00	$ 7.50	$ 5.00	$ 3.75	$ 3.00
500	$ 7.50	$ 3.75	$ 2.50	$ 1.88	$ 1.50

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Impact of Acreage and Yield on Fixed Costs – Cash Payments

	Yield				
Acres	2.50	5.00	7.50	10.00	12.50
25	$ 129.70	$ 64.85	$ 43.23	$ 32.42	$ 25.94
50	$ 64.85	$ 32.42	$ 21.62	$ 16.21	$ 12.97
100	$ 32.42	$ 16.21	$ 10.81	$ 8.11	$ 6.48
250	$ 12.97	$ 6.48	$ 4.32	$ 3.24	$ 2.59
500	$ 6.48	$ 3.24	$ 2.16	$ 1.62	$ 1.30

Payments on $25,000 over 5 years at 8%

EACH $1,000 BORROWED = $250-$275 PER YEAR

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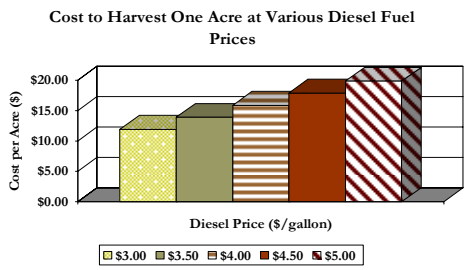
Impact of Diesel Prices on Harvesting Costs



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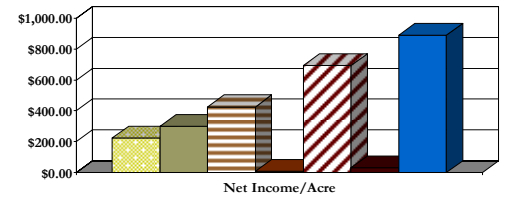
Hay Production Economics

Comparison of Various Hay Enterprises



Irrigated Alfalfa | Non-irrigated Bermuda | Irrigated Bermuda | NI Rolls | NI Square | Irrig. Rolls | Irrig. Square

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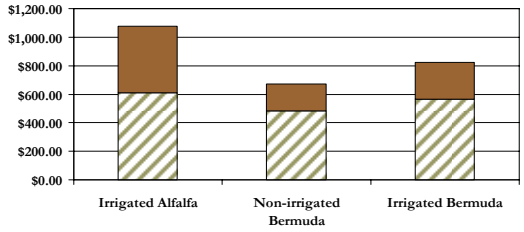
Where does the money go?



Variable Costs | Fixed Costs

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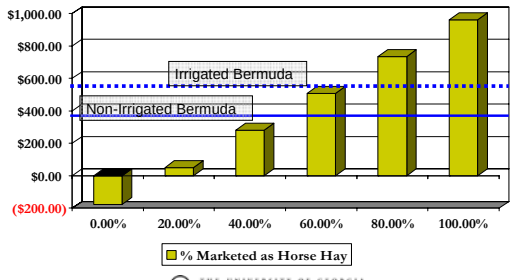
Impact of Alfalfa Hay Quality (Price) on Profits



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Calculating Machinery Cost

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DIRTI 5 of Machinery Costs

- ☐ Depreciation
- ☐ Interest
- ☐ Repairs
- ☐ Taxes
- ☐ Insurance

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Estimating Fuel Cost

Fuel Cost/Acre = Fuel Cost/Hour X Hours/Acre

$$\text{Acres/hr} = \frac{1}{\text{Performanc e Rate}}$$

$$\text{Performanc e Rate (Acres/hr)} = \frac{(\text{Width(ft) X Speed X F.E.})}{43{,}560}$$

Where, FE = Field Efficiency

Each hp = .052 gallons/hr

100hp tractor = 5.2 gallons/hr

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Hay Production Economics

Machinery Economics

$$\text{Depreciation} = \frac{(\text{Purchase Price} - \text{Salvage Price})}{\text{Years of Use}}$$

Interest = Intermediate Interest Rate X Annual Average Investment

Where,

$$\text{Average Annual Investment} = \frac{(\text{Beginning Value} + \text{Salvage Value})}{2}$$

Repairs = Repair & Maintenace% X Purchase Price

Taxes & Insurance = T & I% X Average Annual Investment

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Summary

- ☐ Effective marketers know their costs.
- ☐ Cover your variable cost first.
- ☐ Keep borrowed capital to a minimum.
- ☐ Consider establishment costs in your fixed costs.
- ☐ Know your machinery costs.

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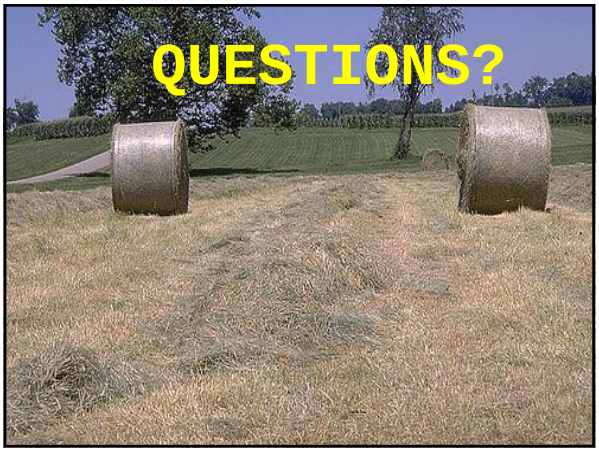

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