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Hay and the Cost of Fuel and Fertilizer

by Dennis Kauppila and Glenn Rogers, May, 2008

The other day, a farmer who sells hay asked how much the hay price will have to go up due to the fuel price increases. Good question.

However it isn't just the fuel price that has gone up. Fertilizer prices have nearly doubled and it looks like the cost of supplies and repairs is heading up. Although we always think about what the competition is charging for hay, the market price may or may not cover Your costs, or return a profit. To accurately set a price we need to look at enterprise budgeting and study our own real costs, both the variable and the fixed costs to make hay. Variable Costs include things like fertilizer, labor, fuel, supplies, and repairs and maintenance. Fixed Costs include depreciation, property taxes, interest on investment, land charges, and insurance. Finally we need to know the yield / acre of the crop.

As a reference point, we started with the 2007-2008 Penn State Agronomy Guide. You can find it on the web at <http://agguide.agronomy.psu.edu>. Once at that webpage click on Crop and Soil Management, and then click on Section 12, Farm Management Enterprise Budgets. The Timothy Hay production budget is here. (There are other budgets for seeding down, and for other crops.) The first column is directly from the Agronomy Guide, with last year's fertilizer costs, diesel fuel at \$2.25/gallon, and labor at \$12/hour for the operator, and \$10/ hour for additional labor. The original budget shows hay selling at \$120/ton (\$2.40/bale), giving a profit of \$124/acre, and with a yield of 3T/A, profit comes in at \$41/ton (\$0.83/bale).

The second column of the table is where we looked at 'what would happen if' the cost of both fuel and fertilizer double in cost. Total Costs per Acre go up from \$236 to \$374/A. This comes in at \$125/T now, or \$2.49/bale just to make the hay this year. There is no profit yet, just covering costs.

Probably the table here is close if you buy all the fertilizer. Some people would say that the cost/ton can be cut when you use your farm's manure. However, there is still a significant cost to hauling and spreading manure. Some budgets would put in an 'opportunity cost' for the manure - what it would be worth in some other use.

It's amazing what one year can do to budgets. To make the same profit this year as was made last year one would need to charge nearly an additional \$1.00/bale to just to cover fuel and fertilizer costs. Remember this doesn't include increases in repairs, supplies, or other variable costs. This year's hay price will depend on what the market will bear, what others are charging, and successful dickering between a willing buyer and willing seller. Will the new market price cover Your costs? Will it return a profit to you?

Timothy Hay Production Budget

	PA budget per Acre	Double Fuel + fert
Hay, T/A	3	3
Price, \$/T	\$120	?
Price, \$/bale	\$2.40	?
<u>Variable costs</u>		
Fertilizer	\$118	236
Labor	46	46
Fuel	20	40
Repairs, Maint.	18	18
Other var. costs	4	4
Total Var Cost	\$206	\$344
<u>Fixed costs</u>		
Tractors	\$11	11
Other fixed costs	19	19
Total Fixed Costs	\$30	30
Total Costs/A	\$236	\$374
Cost of Production (no profit included)		
\$/Ton	\$79	\$125
\$/bale	\$1.57	\$2.49

From: Penn State Agronomy Guide, Table 1.12-9

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