

# The Dairy Business

By  
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## Choose Efficient Crop Systems

What is the most efficient cropping system for your farm? The goal on every farm should be to obtain the best possible mix of crops to provide the maximum amounts of protein and energy, at

the least cost per unit of TDN and protein. For dairy farms, the usual mix of crops is about 40 percent corn, 40 percent alfalfa, and the rest distributed between soybeans and small grain. The percentages may vary greatly from farm to farm, and the reasons for the distribution of crops are endless.

Some of the reasons for variation in the distribution between corn, alfalfa and small grains are soil type, slope, rock outcrops and drainage. Of these, drainage is probably the most critical, and most often determines where we grow alfalfa. Crops that tolerate 'wet feet' must be substituted. Other soil hazards are usually either ignored or tolerated in planning crops in Pennsylvania.

A crop plan should be fine-tuned around the most efficient way to provide protein and energy to the

cows. A quick look at some figures on yields and nutrient content of various crops gives a picture of what to expect from different crops.

For total TDN you can't beat corn silage. A yield of 20 tons of silage per acre will furnish 8,222 pounds of TDN, and 555 pounds of protein. Five tons of alfalfa per acre, which is average for good farms, can produce about 5,000 pounds of TDN and 1,100 pounds of digestible protein. The only other crop which comes close to alfalfa in protein is the soybean crop, and that has to yield much higher than average to do it. For example, it would take about 57 bushels of soybeans per acre to match the protein content of five tons of alfalfa. This many beans will also furnish about 2,930 pounds of TDN. So some beans probably will be grown and fed for a more concentrated form of protein and TDN, since cows can eat only so much bulky forage like silage.

Looking at returns over costs per acre, we are not interested so much in the market price as we are in the feeding value of a crop. If the crop can be bought for less money than the total cost of raising it, we would be better off with purchased feed. But since most of us already have a considerable investment in land and machinery, we keep on using it to produce our feed, even if it could be bought cheaper. It takes a lot of ciphering and deciphering

to figure that one out! When we figure the cost of borrowing money to buy land and machines, it may be worth the effort.

Aside from the bare bones nutritional content, the only way we have to compare returns from one crop against another, is by using a fair market price. So if we want to look at the margin of profit over cost of a crop, we can take the price per unit times yield and subtract the costs of production.

This only applies when the crop is sold, however. If it is fed, market price make little difference. The important thing then is what it actually costs to raise the crop. Or more important than that is what it costs per unit of protein of TDN, when comparing crops.

The computer figures fast and easy. We compared 10 acres each of corn silage, shelled corn, high moisture ear corn, alfalfa, and soybeans (57 bushels per acre.)

It is immediately apparent that the lowest cost TDN per ton is obtained from corn silage. The lowest cost per ton of crude protein is from alfalfa. Four ton of good alfalfa per acre even beats HM ear corn in cost per ton of TDN.

This little exercise may not change your cropping program immediately, but it does point out a valid trend in future planning, if we are to maintain efficiency in our cropping system.

Crop	Cost Per Ton of TDN and CP	
	Yield/acre	Cost/Ton
Corn silage	20 ton	28.81 194.22
HM ear corn	120 bu.	51.45 457.40
Alfalfa hay	4 ton	34.00 108.23
Soybeans	50 bu.	88.00 173.00

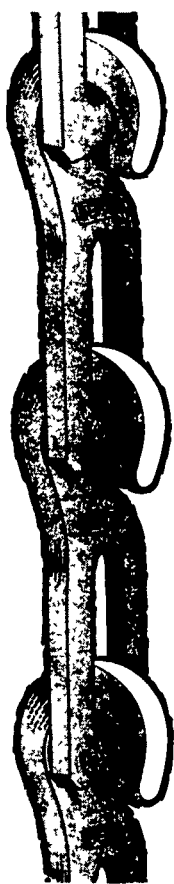
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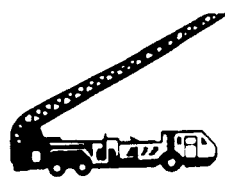
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