

## **Comparing Quality and Yield of Different Grass Species in a Dry Hay Two Cut System**

By Dean A. Sprague, Field and Forage Crop Educator, Ellicottville Office

In the fall of 1998, Don Hill of Cattaraugus, NY approached me about doing a dry grass hay comparison on his farm. Don has about 380 ewes and harvests about 135 acres of dry hay for them annually. With the publicity of so many "new" varieties of grasses available, Don wanted to find a grass that would hold its quality and not have to be replanted for many years. To help offset the cost of testing and monitoring the grasses, he applied for and received an Northeast SARE Farmer/Growers Grant.

In spring of 1999, Don planted three 2.5 to 4 acre plots side by side on a Chautauqua silt loam soil. The plots were planted to Barliza Timothy, BG-24 Perennial Ryegrass, and Barcel Tall Fescue. Because of the dry summer in 1999, no yield or quality test were taken that year. Testing began in the 2000 growing season. Forage quality values were obtained by using the NIR test from the Dairy One lab. Yields were done by hand harvesting small sub-plots. First cutting was taken off late June and second cutting in late September. The accompanying charts show results from samples taken weekly for dry matter yield, % TDN (Total Digestible Nutrients), Relative Feed Value, and TDN per acre.

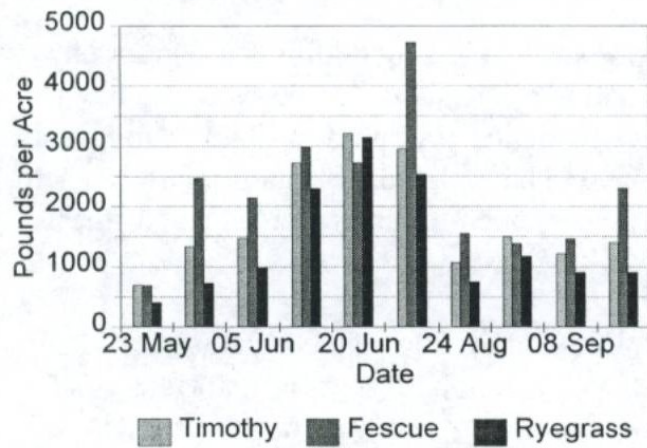
**Dry Matter Yield:** As expected yield generally went up as the crop aged. The one exception to this is ryegrass. In both first and second cuttings ryegrass seems to reach a top yield and then declined. Tall fescue was the top yielder right along with ryegrass yielding the least.

**% TDN and Relative Feed Value:** Again test here did as expected. As the crop matured, the % TDN and Relative Feed Value went down. Ryegrass continually had the highest values with tall fescue having the lowest. This is just the reverse of yield for the two grasses.

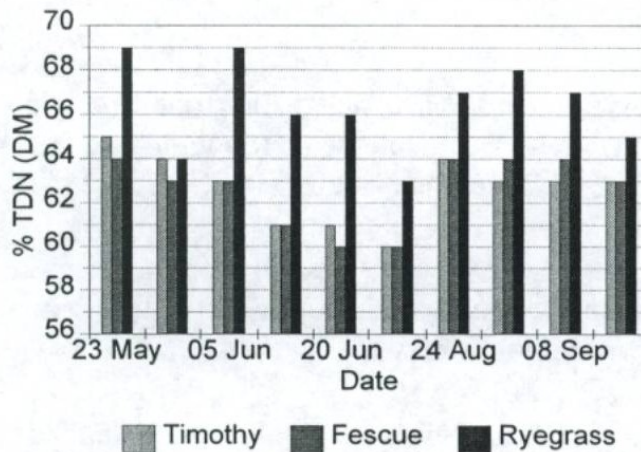
**TDN per Acre:** This is where things get interesting. Even with its lower feed value and % TDN because of its high yield, tall fescue actually out performs the other grasses in nutrients produced per acre. Likewise, because of its low yield, ryegrass produced the least nutrients per acre even though it had the highest %TDN.

**Observations and Conclusions:** These results are based on only one years data and therefore of limited reliability. In comparing these three grasses (Timothy, Tall Fescue, and Ryegrass) what you plant will depend on what results you want. Tall Fescue appears to be the choice for high yield with a somewhat lower feed value. Ryegrass will give you the best quality even in late cuttings, but your yield potential will suffer for it. Timothy seems to be middle of the road all the way around. For all of the grasses, an earlier cutting will give better quality with small decreases in yield. Palatability and length of stand will be looked at over the next few years. At this time, Don's sheep seem to be eating all three grasses without any problems.

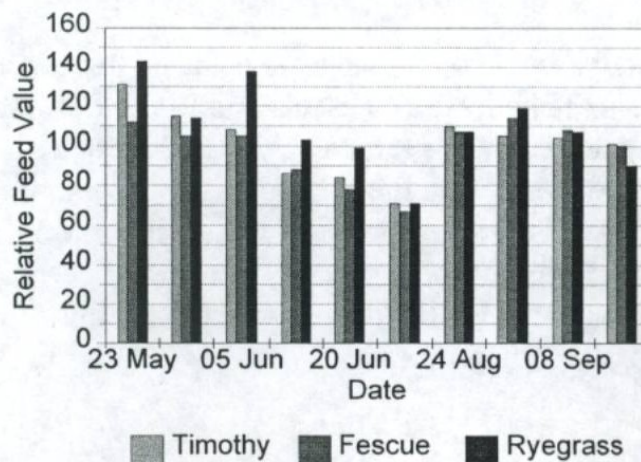
## Dry Matter Yield



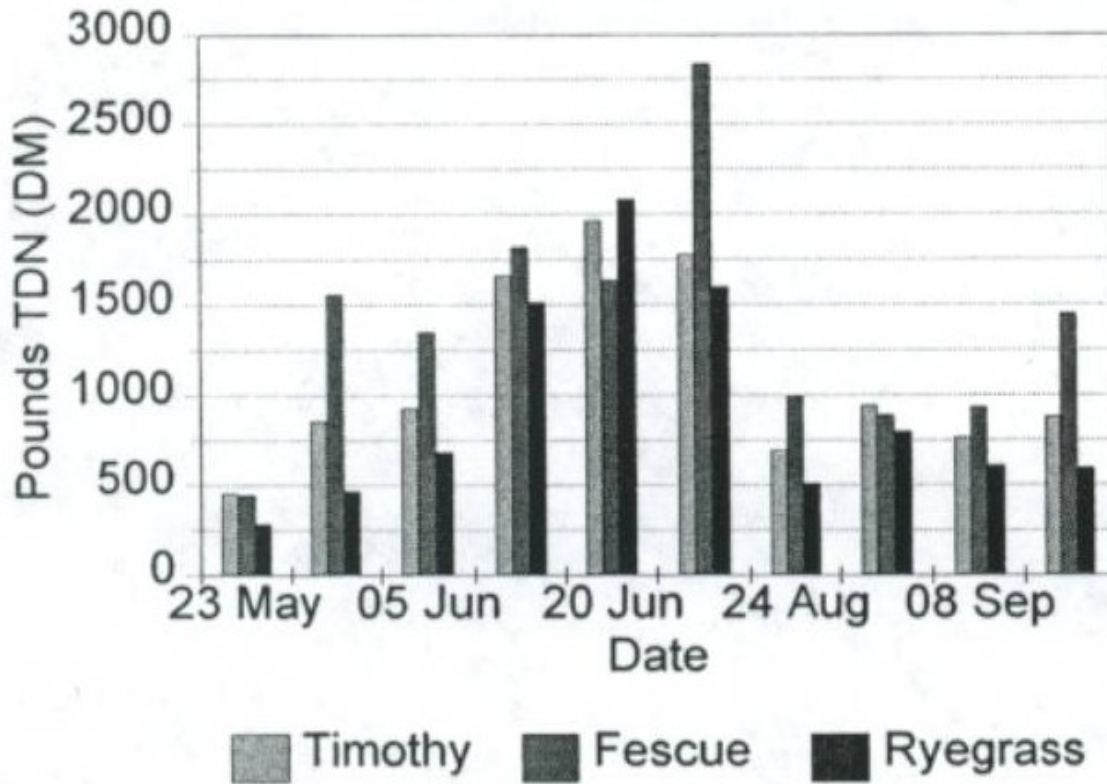
## %TDN



## Relative Feed Value



# TDN per ACRE



organic N from sods is available much like the organic N in manure. The decay series suggests that 55% of the N is available the 1<sup>st</sup> year, 12% the 2<sup>nd</sup> year, and 5% the 3<sup>rd</sup> year. Let's say that the plowed down grass sod supplies 100 lbs of organic N per acre. The first year there is 55 pounds nitrogen available to the crop ( $100 \times 55\% = 55$  pounds organic N). Next year, there will be 12 pounds of organic N left from the sod and the third year there is 5 pounds of organic N.



A pre sidedress nitrate test (PSNT) is a useful diagnostic tool used to determine if there is enough nitrogen in the soil to carry the corn crop through the season. PSNT's are only useful if organic material such as manure or plowed down sod was used in the field. A soil sample is taken when the corn is between 6 and 12 inches tall. The sample is dried and tested. The test will determine the nitrate content of the soil. If there is an adequate amount of nitrate in the soil, then sidedressing N is not recommended. If the soil has a low nitrate reading, consider sidedressing the corn crop. PSNT results can be received within one day or the very next day. You should expect to pay about \$5.00 for a PSNT.

Maximizing your manure usage and taking a close look at all of the nitrogen credits can reduce your nitrogen fertilizer bill. These are things that we should be looking at every year. Sometimes it takes high fertilizer prices to remind us to look at things that we may not be doing on our farms. For more information on PSNT's contact Cornell Cooperative Extension, your crop consultant, or your local crop supplier.

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CCE - Cattaraugus County*

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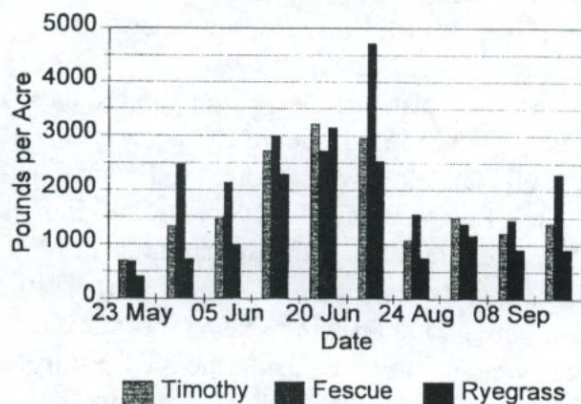
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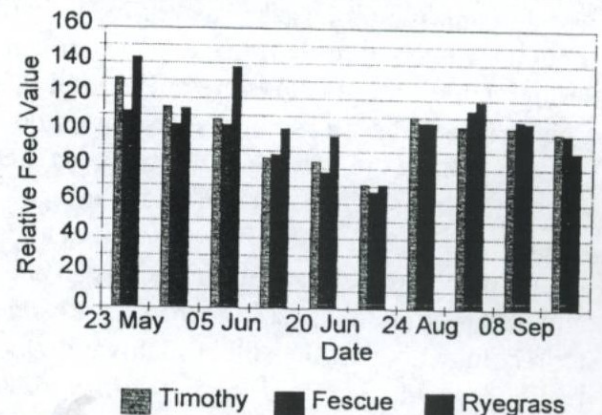
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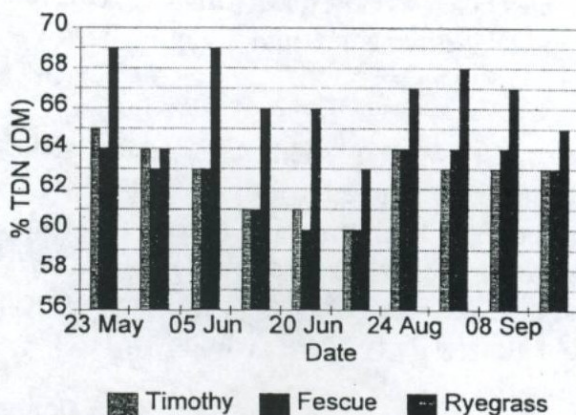
## Dry Matter Yield



## Relative Feed Value



## %TDN



## TDN per ACRE

