

## **Corn Silage Discussion Summary – 2009**

### **Yield data and trial interpretation**

Our corn silage hybrid testing program is targeted to provide some performance information for selecting corn hybrids for silage production. Corn hybrids can vary in yield and their nutritional profile and in our program we assess both. The program is best used when combined with other information: your own assessment of hybrid performance, seed industry background information on hybrids and any other performance information you can find on the hybrids. Our data is located on both the PDMP ([www.pdmp.org](http://www.pdmp.org)) and the Penn State Corn and Soybeans ([cornandsoybeans.psu.edu](http://cornandsoybeans.psu.edu)) websites.

Let's think about how we can use the data effectively as an aid in hybrid selection. First, think about important characteristics for corn silage on your operation. For many farms, high yields, a high milk/ton rating and high fiber digestibility might be good criteria. Try to identify hybrids that have above average performance for these criteria. At both websites, you can sort hybrid data for several traits. The PDMP website allows you to identify several criteria in the sort program and on the Penn State site you could sort the excel spreadsheet data by different columns to identify the hybrids with the best combination of characteristics that you are looking for.

We also have some BMR hybrids included in our tests. You will notice that the BMR hybrids are often near the top for NDFD (fiber digestibility) and near the bottom in yields. Even though they are lower in yields, research trials and on farm experiences have shown that in some cases the BMR hybrids can result in higher milk production which can offset the lower corn silage yields. In evaluating BMR hybrids, it is probably best to compare them to other BMR hybrids or to use the data to note the difference between BMR and non-BMR hybrids.

In 2009, we had another successful year of evaluations. In most places, the weather was favorable for corn production with good rainfall and lack of heat stress. This resulted in high yields for most of our tests. Yields for individual location ranged from 25.3 to 32.7 tons per acre. Within an individual test though, yields vary considerably. Yield performance can be related to how well a particular hybrid was adapted to the weather at a single location. To guard against this, I look at the combined results to find hybrids that did well across multiple locations to try to find hybrids that have some consistency that is important for growing corn in Pennsylvania. For example, in the combined results of the Medium maturity rootworm hybrid test, yield performance of the individual hybrids ranged from 33.1 to 26.4 tons/acre. If you study the performance of some of the top hybrids in the combined test, you note that they often did well in the individual locations. There is often a significant range in forage quality traits as well among hybrids in these results when averaged over environments as noted in the graphs on the accompanying page.

This year we did a separate study of BMR hybrids compared to conventional, non-BMR hybrids. We conducted this at two of our early medium locations in central PA. This test showed that on average the BMR hybrids yielded about 21.5 tons/acre compared to 26.1 tons/acre or about a 4.6 ton/acre "yield drag". But if we look more closely at the data, we

find that one of the BMR hybrids, F2F622, yielded similarly to one of the conventional hybrids and averaged only 2.9 tons/ per acre lower than the top yielding non-BMR hybrids. Also, note from the production details sheet that we tested these in corn following corn fields, which tend to have higher disease pressure which is an issue with the BMR hybrids. If we had tested in a corn following alfalfa environment, we may have seen less “yield drag” associated with some of the BMR hybrids. Another interesting aspect of this test was the high NDFD of one of the non BMR hybrids, MA9150. This hybrid had noticeably higher NDFD at both individual locations and also with both labs we evaluated in this test, indicating it was not likely a fluke in the testing. This test is an example of how carefully studying the results of our tests can provide more insight into hybrid performance than you might see otherwise.

We are continuing to work to improve our testing program. This year we will be considering some tactics to improve the statistical power of our tests, and will be taking some steps to reduce the variation we encounter when testing in manured fields. We pride ourselves in testing hybrids under the conditions that leading dairy farmers are growing these hybrids, and this includes no-till corn on corn manured environments, which can be challenging for us to conduct tests. We will also be evaluating the techniques that we are using to characterize the forage quality of the hybrids. We developed a team of experts from industry and extension to review our program and will be meeting with them this winter.

In summary, this testing program provides us with a great opportunity to evaluate commercial corn hybrids being marketed in Pennsylvania for corn silage. Consider these key points when using the data:

- Identify characteristics that are important to you: yield, forage quality, BMR etc.
- Evaluate hybrids in the maturity group that represents your farm.
- Focus on using the multi-location data in your hybrid selection.
- Sort hybrids according to the traits you have identified.
- Also consider hybrid characteristics from the seed industry in placing hybrids on the farm.