



Corn vs. SxS for Supplemental Forage

Some years prove challenging for corn growers in New York. Cool, wet conditions often have prevented dairy farmers from planting their silage corn in a timely fashion. These tough conditions have resulted in corn being planted as late as July 15th. When corn planting is pushed into mid to late June, dairy farmers will try to choose the best option for their situation. Some decide not to plant corn after mid June and purchase any supplemental forage supplies from off the farm.

Planting full season hybrids instead of shorter season hybrids late in the season is another choice. It is unknown how brown midrib (BMR) corn would respond to late planting dates. A summer annual such as BMR sorghum-sudangrass (SXS) has been used as a corn silage alternative after June 15th.

BMR varieties (in both SXS and corn) have a low lignin content with significantly higher digestibility. Although BMR corn is higher in forage quality, it is sensitive to stress and has some yield decline associated with the BMR trait, along with higher seed prices. Each year new releases of BMR corn are slowly reducing the yield gap between BMR and normal corn. BMR SXS does not appear to have the sensitivity to stress that BMR corn exhibits.



Figure 1. Planting date study for emergency annual forages at Willsboro, NY.

Planting Date Study

On June 1 or June 8, 2004, a full season corn hybrid (110 day RM), a short season corn hybrid (85 day RM), a full season BMR corn hybrid (110 day RM) and a BMR SXS variety

were planted, and approximately every 10 days after the initial planting in the same field (depending on weather). The Chazy site lacked the initial planting date of the other two sites.

The BMR SXS was harvested each time it reached a height of approximately 36-40 inches. Corn hybrids were harvested in the fall just prior to first frost. At Canton, NY, SXS had 3 cuts for planting date 1, two cuts for planting dates 2 and 3, and one cut for planting date 4. At Willsboro and Chazy, NY, SXS had 2 cuts for all four planting dates. Moisture content of corn at harvest averaged 70%, 77%, 79% and 82% for the four planting dates.

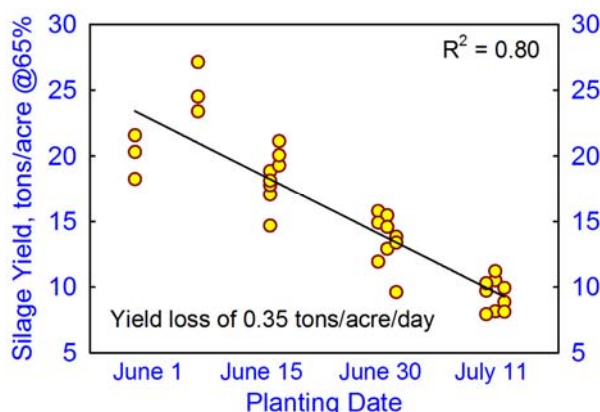


Figure 2. Yield loss per day due to delayed planting of corn for silage in northern NY.

Corn silage yield declined linearly as the planting date was delayed from June 1 to July 15 (Fig. 2). The yield loss was about 1/3 of a ton per day. Differences in corn silage yield among sties and different types of hybrids are minimized with later planting dates.

Moisture in corn dropped low enough for ensiling in early June plantings, but not in later plantings (Fig. 3). In a year with adequate rainfall, full season corn will produce higher yields than shorter season hybrids (Fig. 4). It is possible to green-chop corn for dairy cattle. Ration balancing is critical, as the composition of immature corn is constantly changing.

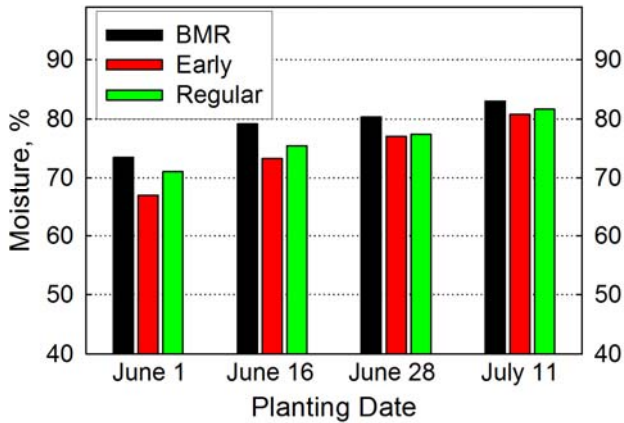


Figure 3. Moisture in corn as influenced by planting date and type of corn hybrid.

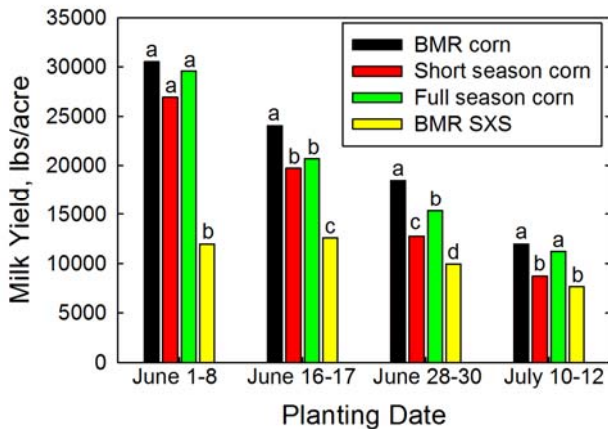


Figure 4. Milk Yields from Milk2000 averaged over three northern NY locations in 2004. Similar letters above the column within each planting date means they are not significantly different.

Weather Matters

The abnormally moist conditions throughout the summer of 2004 resulted in no stress being applied to bmr corn. Normal moisture conditions would create stress on plants at some point during the summer and could have a negative impact on bmr corn. Drier conditions would make bmr SXS more competitive with late-planted corn, compared to 2004 results. With adequate moisture throughout the summer, however, late-planted corn will likely outperform bmr SXS.

There is a similar concern with the comparison of short and full season corn hybrids in 2004. It is not clear if full season corn would compare as well to short season corn in a short or stressful growing season.

One major concern with late-planted corn is ensiling, with the possible exception of the early June planting date. Harvest of late-planted corn would need to occur after a frost to reach proper ensiling moisture. Sorghum-sudangrass can be wilted. Even with plenty of summer precipitation, a mid-July planting of either corn or SXS is risky due to low yields. A less risky option at that point might be to plant a small grain such as oats for fall forage (see Grass Information Sheet #27).

Summary

Selection and management of supplemental or emergency forage crops requires a thorough evaluation. It may be more economical to buy forage as opposed to producing forage that is likely to have a relatively high cost of production per ton. In a year with adequate moisture, late-planted corn will produce higher yields than SxS, and can be used as green-chop or ensiled. By mid-July it is time to forget about corn or SXS and consider other options such as small grains.


Additional Resources

- 2011 Cornell Guide for Integrated Field Crops Management. Electronically accessible at: <http://ipmguidelines.org/Fieldcrops/>.
- Cornell University Agronomy Fact Sheet #14 (Brown Midrib Sorghum Sudangrass, Part 1), and #26 (Brown Midrib Sorghum Sudangrass Nitrogen Management) <http://nmsp.cals.cornell.edu/guidelines/factsheets.html>.

Disclaimer

This information sheet reflects the current (and past) authors' best effort to interpret a complex body of scientific research, and to translate this into practical management options. Following the guidance provided in this information sheet does not assure compliance with any applicable law, rule, regulation or standard, or the achievement of particular discharge levels from agricultural land.

For more information



Cornell University
Cooperative Extension

Grass Management Manual
<http://forages.org>

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