Impacts of the 2004 Growing Season on Silage Quality

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Objectives

- To describe the weather impact on the 2004 corn silage crop.
  - “Mission impossible?”
- To describe what is known about weather and management effects on silage quality.
- What should we be thinking about as we head into 2005?
Corn Production during 2004

- **Record grain yields in southwestern Wisconsin**
- **Opportunities for early planting date in most of Wisconsin**
  - After May 5 - late (June) planting dates in eastern Wisconsin
- **Growing season**
  - Cooler than normal
  - Wetter than normal May and June
  - Corn growth and development lagged behind
  - Beautiful September
Wisconsin Corn Research Hybrid Evaluation

Conducted by:
University of Wisconsin-Madison
College of Agricultural and Life Sciences
Department of Agronomy
and
University of Wisconsin-Extension
Cooperative Extension

Cooperators:
Wisconsin Crop Improvement Assoc.
Commercial Seed Companies
Arlington Agricultural Research Station
## 2004 Wisconsin Corn Performance Trials
### Silage Summary

<table>
<thead>
<tr>
<th>Location</th>
<th>1994-2003</th>
<th>2004</th>
<th>Percent change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Yield</td>
<td>N</td>
</tr>
<tr>
<td>Arlington</td>
<td>491</td>
<td>9.4</td>
<td>52</td>
</tr>
<tr>
<td>Lancaster</td>
<td>491</td>
<td>7.9</td>
<td>52</td>
</tr>
<tr>
<td>Fond du Lac</td>
<td>476</td>
<td>8.5</td>
<td>57</td>
</tr>
<tr>
<td>Galesville</td>
<td>477</td>
<td>8.6</td>
<td>61</td>
</tr>
<tr>
<td>Chippewa Falls</td>
<td>104</td>
<td>7.5</td>
<td>51</td>
</tr>
<tr>
<td>Marshfield</td>
<td>486</td>
<td>6.8</td>
<td>52</td>
</tr>
<tr>
<td>Valders</td>
<td>491</td>
<td>6.6</td>
<td>52</td>
</tr>
<tr>
<td>Rhinelander</td>
<td>42</td>
<td>6.3</td>
<td>27</td>
</tr>
<tr>
<td>Spooner</td>
<td>84</td>
<td>6.6</td>
<td>54</td>
</tr>
</tbody>
</table>

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Corn Forage Milk per Ton (lb/ A) Response to Year in the UW Corn Trials (N= 11,292 plots)

Milk per Ton (lb/ T)

- North Central
- South Central
- South


http://corn.agronomy.wisc.edu

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Corn Forage NDFD (%) Response to Year in the UW Corn Trials (N=11,292 plots)

North Central
South Central
South

NDFD (%)

Corn Forage Starch Content (%) Response to Year in the UW Corn Trials (N= 11,292 plots)
Changes in corn forage yield and quality with harvest date

Each value = mean of 4 hybrids and 4 reps (derived from Darby and Lauer, 2002)
### The Yield And Quality Response Of Corn Silage To Climatic Effects And Cultural Practices

<table>
<thead>
<tr>
<th>Factor</th>
<th>Forage Yield</th>
<th>Dry matter digestibility</th>
<th>NDF</th>
<th>NDFD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing temperature</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Increasing light intensity</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>±</td>
</tr>
<tr>
<td>Increasing stand density</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>±</td>
</tr>
<tr>
<td>Delayed planting date</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>±</td>
</tr>
<tr>
<td>Delayed harvest date</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Increasing N rate</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>±</td>
</tr>
</tbody>
</table>

Source: (Struik, 1983) and (Deinum and Struik, 1989) as modified by (Coors and Lauer, 2001).
Summary

• Difficult to determine how weather influenced the quality of the 2004 corn silage crop.
  ✓ Cool weather would slow development rate.
  ✓ Late planting coupled with a “cool” growing season would likely produce a less mature crop at harvest.

• Most quality differences might be related more to maturity at harvest.
  ✓ NDFD would be increased.
  ✓ Starch content would be decreased.
  ✓ Milk per Ton would not be affected.

• Recommendations for 2005 are unchanged – “Do what you would normally do to optimize grain yield.”
The End of the Row - Questions?
Thanks for your attention!