Legumes in the Northeast USA

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Welcome to Ithaca, NY
College of Agriculture and Life Sciences
Dairy #1 Agricultural Enterprise
## NY Forage Production-2010

(USDA, National Agric. Statistics Service)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Acres Planted</th>
<th>Acres Harvested</th>
<th>Yield (T/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Forage</td>
<td>1,950,000</td>
<td>1,950,000</td>
<td>2.4</td>
</tr>
<tr>
<td>Alfalfa (Hay + Haylage)</td>
<td>740,000</td>
<td>740,000</td>
<td>3.2</td>
</tr>
<tr>
<td>Alfalfa &amp; Alfalfa Mixtures</td>
<td>100,000</td>
<td>100,000</td>
<td></td>
</tr>
</tbody>
</table>
Legumes Most Used

Alfalfa
Red Clover
Birdsfoot Trefoil
Legumes Most Used

Alfalfa
Red Clover
Birdsfoot Trefoil
Forage Yield

Replicated Clonal Evaluation: NE1010
Forage Quality

Fiber Fractions

Lignin

Hemi-Cellulose

Cellulose
Selection for Increased Pectin Concentration in Alfalfa and Impact on Digestibility
Alfalfa Nursery
Alfalfa Diseases
The Big 5

- Bacterial wilt
- Verticillium wilt
- Fusarium wilt
- Phytophthora root rot
- Anthracnose
Alfalfa Crown Rot
Crown Rot Selection Progress

Population and Cycle of Selection

% FRCR Resistance

- 8831 C0
- 8831 C2
- 8831 C3
- 8832 C0
- 8832 C2
- 8832 C3
- 9613 C0
- 9613 C2
- 9613 C3
Potato Leafhopper on Alfalfa
Glandular Trichomes

- Standard Cultivar
- PLH Resistant
Resistant vs. Susceptible
Alfalfa Snout Beetle
Infestation of can with ASB eggs
### Average Severity

(1=best, 5=worst)

<table>
<thead>
<tr>
<th></th>
<th>C0</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.46</td>
<td>3.35</td>
<td>3.23</td>
<td>3.09</td>
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</tbody>
</table>
Clover Root Curculio
CRC feeding damage
Mean CRC ratings (1=no feeding damage, 5=severe damage) for full-sib progeny grouped by parental resistance category.

- **Resistant x Resistant**: 2.8
- **Resistant x Susceptible**:
  - Resistant: 3.2
  - Susceptible: 3.0
- **Susceptible x Susceptible**:
  - Susceptible: 3.6
  - Other: 3.4

**CRC ratings of full-sib progeny grouped by parental resistance category**
Root Regeneration
Root Regeneration
Acid Tolerance
NE1010
Red Clover

First Production Year

Third Production Year
Birdsfoot Trefoil
<table>
<thead>
<tr>
<th>Variety</th>
<th>% R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pardee</td>
<td>50</td>
</tr>
<tr>
<td>Norcen</td>
<td>1</td>
</tr>
<tr>
<td>Viking</td>
<td>1</td>
</tr>
<tr>
<td>Trevig</td>
<td>5</td>
</tr>
<tr>
<td>Witt</td>
<td>0</td>
</tr>
<tr>
<td>AC Langille</td>
<td>4</td>
</tr>
</tbody>
</table>
Birdsfoot Trefoil: Inoculated

Pardee
Birdsfoot Trefoil Rhizomes
Challenges
Character Trait of an Excellent Forage Scientist

Perseverence

Story of two frogs
Creeping Rooted Alfalfa for NE Pastures
Forage Breeding Project

- Donald R. Viands – Project Leader
- Julie L. Hansen – Sr. Research Associate
- Jamie Crawford – Research Support Specialist
- R. Deubler, J. Schiller, Ryan Crawford – Technicians
- Students
Questions?