Pest Management in Silage Crops
From planting to harvesting

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Outline

Getting a good start
- Land preparation
- Fertilization
- Weed control

Insects and diseases
- Main diseases
- Prevention
- Effects on silage quality
How to **kill** the pests?

How to **prevent** the pests?
Preventing...

Give the opportunity/conditions for the plants to succeed!

<table>
<thead>
<tr>
<th>Crop rotation</th>
<th>Conditions at planting</th>
<th>Fertilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover crops</td>
<td>Hybrid selection</td>
<td>Irrigation</td>
</tr>
<tr>
<td>Clear fields</td>
<td>Planting Date</td>
<td>Pest control</td>
</tr>
</tbody>
</table>
Starting off right

Clean site

Crop rotation

Cover crop

Weed suppression prior to planting

Pictures: David Wright
Planting

Early planting date
- Less weeds, more moisture, higher yield potential, cool nights and long days
- Less disease and insect pressure

Right conditions – moisture and temperature -> fast emergence
- Corn – 55 °F soil
- Sorghum - 65 °F soil

Row spacing
- Narrow rows (20 in) – better use of area and resources, faster cover and higher yields
- Complications: equipment (especially sprayers and spreaders)
- Twin rows
Get a good cover, fast!
Seed treatment and starter fertilizers

Soil insecticide
- Counter (terbufos) – wireworm
- Bifitherin – rootworm

Seed treatment
- Concept – Sorghum (protect from Dual herbicide)

Fertilization
- Dry – N, K and micro incorporated 34-0-90-5
- Liquid – NPK 17-56-0
**Fertilization**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Grain (lbs/ac)</th>
<th>Stover (lbs/ac)</th>
<th>Total (lbs/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen</td>
<td>170</td>
<td>70</td>
<td>240</td>
</tr>
<tr>
<td>Phosphorus (as $P_2O_5$)</td>
<td>30</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Potassium (as $K_2O$)</td>
<td>48</td>
<td>192</td>
<td>240</td>
</tr>
<tr>
<td>Calcium</td>
<td>15</td>
<td>42</td>
<td>57</td>
</tr>
<tr>
<td>Magnesium</td>
<td>16</td>
<td>34</td>
<td>60</td>
</tr>
<tr>
<td>Sulfur</td>
<td>14</td>
<td>16</td>
<td>30</td>
</tr>
<tr>
<td>Zinc</td>
<td>0.15</td>
<td>0.54</td>
<td>0.69</td>
</tr>
</tbody>
</table>

EDIS AG202 – Field Corn Production Guide
Choosing the herbicide

What weed and what stage?  Annual, perennial, broadleaf, grass; hit early

Weather conditions  Lack/excess rain (Pendimethalin, Prowl)

Crop stage  Pre-emergent, V4, V8, later

Rotations  Crop sensitivity (Axiom for sorghum and small grains)

Interactions  Accent and counter or organophosphate;

Timeframe  Withdrawn period (Atrazine, Lookout, Accent, Sharpen)
Applications

Pre
- Pre-planting – Atrazine; + broad spectrum (glyphosate); + Prowl for heavily infested areas
- Pre-emergent - Atrazine, Simazine, Axiom, Outlook, Dual,

Post-emergent
- Annual and perennial grasses (Johnsongrass) – Accent (do not apply if used Counter)
- Pigweed and morningglory – Status, Aim, Ladius,
- Sedge – Sandea
- Dicamba – not for lactating cattle

No-till
- Gramoxone 10 – 14 d prior planting
- Sharpen, Integrity (80 d withdrawn period)
- Glyphosate – Roundup Ready (RR) corn
Our protocol for pest control – Corn

At planting
- Dual + Prowl at planting
- Atrazine + crop oil

At 12”
- Fungicide – Headline AMP
- Insecticide if needed – Besiege
- Herbicide – glyphosate if RR, otherwise dicamba or 2,4-D
Insects and diseases
Disease Management
• Infection occurs between 77-82°F
• Polycyclic
• Infection to spore production occurs in 7 days
• Not the same species that infects forage grasses
Box plots of disease severity ratings for southern corn rust with fungicides sprays at V5 and VT for the products indicated. The variety was Dekalb DKC66-97.

Yield savings in bu/A for Priaxor (4 fl oz/A) and Headline AMP (10 fl oz/A) when compared to the untreated control for single sprays at V5 and VT.

Common Ear Rots

Infection commonly occurs at ear tip through silks or as a result of insect feeding.

Infection commonly occurs at base of ear.

[Image of corn ears labeled A, B, and C with different fungi: Gibberella, Penicillium / Trichoderma, and Diplodia.]
Diplodia
Fusarium Ear Rot
Risk Factors and Stressful Conditions Favoring Ear Rot and Grain Mold Development

- Moisture stress
- Extreme weather conditions
- Infected crop residue
- Continuous corn production
- Susceptible hybrids
- Damaged grain
- High moisture storage conditions
- Ear injury
Insect Management

Crop rotation
Host resistance
Scouting
Removal of weedy hosts
Insecticides

Corn earworm
Corn silk fly
Sap beetles
Armyworm
Questions?