Crop Plants Complete

Above ground

Below ground

Above Ground Competition

CO₂

Sunlight

Below Ground Competition

- WATER
- NUTRIENTS

Genetic Diversity

What is it?
Hybrid Genetic Makeup Determines

1. Maturity
2. Plant Characteristics
3. Grain Characteristics
4. Tolerance

Maturity

Calendar Days vs. Heat Units

Grain Characteristics

1. Yield - Highest? - Most stable?
2. Dry down
3. Test weight
4. Special Trials
   - High Oil
   - Low Phytate

Tolerance

1. Drought
2. Insects - Bt
3. Herbicides
4. High pH
5. Cold
Stand Variability

Glyphosate

<table>
<thead>
<tr>
<th>Brand</th>
<th>Salt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roundup (liquid)</td>
<td>IPA</td>
</tr>
<tr>
<td>Roundup Ultra Dry</td>
<td>NH₄</td>
</tr>
<tr>
<td>Generics</td>
<td>IPA</td>
</tr>
<tr>
<td>Touchdown Pro</td>
<td>DA</td>
</tr>
</tbody>
</table>

No-Till Weed Management

- EPP Residual fb Post if needed
- Burndown with/without Residual fb Post

Herbicide Site of Action

II. Amino Acid Synthesis Inhibitor

A. ALS - AHAS Inhibitor
   1. 
   2. 
   3.
B. EPSPS Inhibitor
C. GS Inhibitor
Herbicide Mode of Action

I. Lipid Synthesis Inhibitors
II. Amino Acid Synthesis
III. Seedling Growth Inhibitor
IV. Growth Regulator
V. Photosynthesis Inhibitor
VI. Cell Membrane Disrupter
VII. Pigment Inhibitor

Herbicide Selectivity

- Absorption
- Metabolism
- Translocation
- Insensitive Site of Action

Enzymes

Amino Acids: Plant Lives
No Amino Acids: Plant Dies

Soybean Yield Loss (influenced by timing of weed removal)

Timing of weed removal (Soybean growth stage)

University of Nebraska-Crop Management & Diagnostic Clinics

CMDC – Assorted Years