Dharmen Setaram
Land O’Lakes

- Organized in 1921 as the Minnesota Cooperative Creameries Association
  - By farmers representing more than 300 Minnesota cooperative creameries

- Focus on marketing
  - Value-Added
  - Branded

- Entered Ag Inputs in 1929
Land O’Lakes Today

Second-largest U.S. Ag Cooperative

- #194 on Fortune 500
- Doing business in 50 States, 60+ Countries
- 200+ Facilities
- 9,000 Employees
- Serving 300,000+ producers / member-cooperatives
Land O’Lakes Today

- #1 in butter, deli cheese, dairy-based foodservice
- #2 in shell eggs, #1 in branded/specialty eggs
- #1 in Livestock and Lifestyle feed
- #1 seed and CPP wholesaler
About WinField

- **WinField** is dedicated to serving its customers in a variety of markets:
  - Ornamental
  - Golf
  - Lawn Care
  - Pest Control
  - Aquatics and Vegetative Management
- **WinField** has 80 Service Centers across the U.S and close to 100 Sales Representatives.
WinField Florida – Legacy Companies

• Our Florida business can be tracked back to the Kilgore Seed Company that was founded in the 1920’s in the Wauchula area
  • In 1965 Kilgore Seed purchased land in Plant City and started our Plant City operation
• 1965- Kilgore Seed became Asgrow Kilgore Company
• 1971- Asgrow Kilgore became Asgrow Florida Company
• 1994 – Asgrow Florida was sold to Terra International and became Terra Asgrow
• 1999 – Terra Asgrow was sold to CHS/LOL to form Agro Distribution LLC dba ProSource One
• 2010 – LOL buys out CHS and ProSource One becomes WinField
Products

- Adjuvants
  - Drift Control
  - Water Conditioning Agents

- Herbicides/Dyes
  - Several 2,4-D formulations
  - Lake Colorant and Spray indicators
• Drift Adjuvants

  - The 2 reasons for using a drift control agent are
    > Reduce off target movement of pesticides
    > Get more product on the target
Drift Adjuvants

• Viscosity agents, spray thickeners
  • Increase viscosity and surface tension, which increases droplet size and reduces the amount of small droplets
  • Disadvantage: pattern collapse or streaking and some products may not work well with “low-drift” nozzles.

• Encapsulators
  • Oil film encapsulates the pesticide to create slightly larger droplets
  • Does not change or modify the spray pattern
  • Disadvantage: do not mix well

• Oil-based non encapsulating
  • Charges molecules to stay together and create slightly larger droplets
  • Charge breaks on impact
  • Does not alter spray pattern
Droplex® Adjuvant

- It does not increase spray thickness or encapsulate product
- Creates larger droplets which moves the pesticide to the target, but not TOO large droplets
- Causes some spreading
- Less fines means more pesticide reaches the target
- Improved deposition means pesticide reaches target
- Compatible with fungicides, herbicides, insecticides, and other products
- 8 – 16 fl oz per acre
- 1 gal size

* Data from Downer, Ohio State University, 2004.

** Summary of data from Winfield Solutions, LLC and private researchers. Field studies including various insecticides and fungicides. Adjuvants also included with InterLock treatments may include Preference, Superb HC and other brands. **Summary of data from Winfield Solutions, LLC and private researchers. Field studies with glyphosate, other herbicides and DRT adjuvants.
Which spray coverage provides superior control?

Without Droplex®

With Droplex®
Water Conditioning Agents

- Reduce hard-water antagonism of certain herbicides
- Many spray waters contain calcium, iron, potassium, sodium and magnesium ions
- Ions tie up (antagonize) glyphosate, diquat, 2,4-D amine and other pesticides
Importance of pH

• Mixing herbicides with too acidic or alkaline of water can reduce activity, especially for water with a pH greater than 8.0.
  – Clipper
  – 2,4-D

• Optimally, water with a pH near 7.0 should be used for mixing pesticides.
AirTech™ Adjuvant

- Water conditioner and non-ionic surfactant
- Contains CornSorb Technology
- NIS included for greater herbicide efficacy
- Includes anti-foam
- Excellent mixing capabilities
- Use with glyphosate and other herbicides, especially on large weeds, when dust is present, or poor environmental conditions
- 1 pint to 1 gallon per 100 gallons
- 2.5 gal containers
Breeze™ Adjuvant

- Acidifier, water conditioner and non-ionic surfactant
- Excellent at lowering the pH of spray water
- Use with fungicides, herbicides, or insecticides when lower pH carrier water is needed
- 4 – 96 fl oz per 100 gal
- 2.5 gal container

![Graph showing pH values for Breeze™ Adjuvant at different concentrations.

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Surf-King Plus® Adjuvant

- 95% active ingredient and 5% water
- 75% surfactant load
- Contains a non-ionic surfactant that improves the spreading/wetting and penetrating of products
- Contains buffering agents to lower spray solution pH
- Contains anti-foam to limit foaming
- Main use is with herbicides
- 1 qt, 1 gal, 2.5 gal, 30 gal containers

<table>
<thead>
<tr>
<th>Application</th>
<th>Rate per 100 gallons</th>
</tr>
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<tbody>
<tr>
<td>Herbicides</td>
<td>1-4 pints</td>
</tr>
<tr>
<td>Insecticides</td>
<td>½-2 pints</td>
</tr>
<tr>
<td>Fungicides</td>
<td>½-2 pints</td>
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<tr>
<td>Foliar Applied</td>
<td>8 ounces</td>
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<tr>
<td>Nutrients</td>
<td>Defoliants</td>
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<tr>
<td></td>
<td>2-4 pints</td>
</tr>
</tbody>
</table>
Atmos™ Adjuvant

- High concentrated methylated soy oil
- Contains CornSorb™ Technology
- Designed to improve adhesion and coverage of plant surfaces
- Keeps plant surfaces moist longer (better than crop oil concentrates and non-ionic surfactants)
- Use with herbicides on tough to control weeds
- Lower use rates than standard oils
- 0.75 – 1 pint per acre
- 2-4 pints per 100 gallons
- 2.5 gal container
Winfield has 2,4-D available in the following forms

a. Acid
b. Ester
c. Amine
Rugged™ Herbicide

- 2,4-D Acid (unique formulation)
- 3.49 lb ai/gallon
- Non-volatile
- Low odor
  - Performance ≥ 2,4-D Amine, = Esters
- Provides post-emergent control of broadleaf weeds
- Labeled for turf, veg management, & aquatic uses
Thank You.
Dharmen Setaram