Aminocyclopyrachlor for use on Florida right-of-ways

Mike Durham
University of Florida
Why do we use herbicides in ROW situations?

- Maintain perennial vegetation along roadside
- Maintain bare ground
- Brush control
- Cheaper than mechanical control
- Protect our investment in infrastructure
Roadsides
Hwy 441 – mowing only
Erosion is a real possibility in this situation.
Railways

CPR Standard roadbed and ballast section

GRAVEL BALLAST SECTION
16 FOOT ROADBED
Clean Gravel and Engine Cinders

Note - Put the coarse gravel and boulders on the outer slopes at the end of the ties

Aminocyclopyrachlor

• Growth regulator – similar to:
  – Garlon or Remedy
  – 2, 4-D
  – Milestone (aminopyralid)

• Symptoms:
  – Twisting leaves and stems
  – Yellowing

• Advantages:
  – Non-volatile
  – Both foliar and soil activity
  – Persistent in soil
  – Broad spectrum
Aminocyclopyrachlor

• Areas for registered use:
  – Uncultivated non-ag lands
    • Airports, highways, railroad, etc.
  – Uncultivated and non-producing ag land
    • Fence row, barnyard, barrier strips, etc.
  – Industrial sites – outdoors
    • Lumberyards, pipelines, etc.
  – Natural areas
    • Wildlife management areas, camp grounds, trails, etc.
Aminocyclopyrachlor

• Very low toxicity

• PPE:
  – Long-sleeved shirt and long pants
  – Chemical resistant gloves
  – Socks and shoes

• Re-entry only after spray has dried

• Special concerns when applying near water
New Herbicides

• Vegetation Management
  – Perspective
  – Streamline
  – Viewpoint

• Turf
  – Imprelis
Imprelis

- Developed for the professional turf market
- Recently removed from the market due to tree sensitivity issues.
Perspective

• Active Ingredients:
  – Aminocyclopyrachlor (39.5%)
  – Chlorsulfuron (15.8%)

• Max rate of 11 oz/acre per year

• Suggested uses:
  – Industrial turfgrass
  – Restoration of native grasses
Perspective

• Tolerant, but rate dependant:
  – Bahiagrass
  – Bermudagrass
• Initial yellowing for up to 30 days
• Not Tolerant:
  – St. Augustine
Perspective: Bahiagrass Density

% Reduction

- 2.4 oz/a
- 4.75 oz/a
- 9.5 oz/a

30 DAT
60 DAT

Bar chart showing % Reduction for different densities of Bahiagrass and treatment periods.
Untreated 30 DAT
Perspective 4.75 oz/a 30 DAT
Perspective 9.5 oz/a 30 DAT
Perspective 4.75 oz/a 60 DAT
Perspective 9.5 oz/a 60 DAT
Aminocyclopyrachlor

• Increased injury when tank mixed with Plateau
Untreated 60 DAT
Perspective 4.75 oz/a plus Plateau 2 fl oz/a 60 DAT
Perspective 9.5 oz/a plus
Plateau 4 fl oz/a 60 DAT
# Perspective plus Oust

**Bahiagrass: Mid June Application**

<table>
<thead>
<tr>
<th></th>
<th>Oust 1 oz/a</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Density</td>
</tr>
<tr>
<td>30 DAT</td>
<td>-50%</td>
</tr>
<tr>
<td>60 DAT</td>
<td>-15%</td>
</tr>
<tr>
<td>90 DAT</td>
<td>-10%</td>
</tr>
</tbody>
</table>
### Perspective plus Oust

**Bahiagrass: Mid June Application**

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<thead>
<tr>
<th></th>
<th><strong>Oust 1 oz/a</strong></th>
<th></th>
<th><strong>Perspective 4.75 oz/a</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Density</td>
<td>Seedhead</td>
<td>Density</td>
</tr>
<tr>
<td><strong>30 DAT</strong></td>
<td>-50%</td>
<td>-87%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>60 DAT</strong></td>
<td>-15%</td>
<td>-96%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>90 DAT</strong></td>
<td>-10%</td>
<td>--</td>
<td>-0%</td>
</tr>
</tbody>
</table>
Oust 1 oz/a 30 DAT
Perspective 4.75 oz/a
plus Oust 1 oz/a 30 DAT
Perspective vs Milestone

• Target species:
  Matchstick weed
Perspective vs Milestone

- Target species: Spanish needles
Untreated 60 DAT
Milestone 3 fl oz/a 60 DAT
Perspective 4.75 oz/a 60 DAT
Lantana
## Lantana Control

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
<th>6 months</th>
<th>12 months</th>
<th>18 months</th>
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</thead>
<tbody>
<tr>
<td>Vista (fall)</td>
<td>2.6 pt/a</td>
<td>65</td>
<td>30</td>
<td>26</td>
</tr>
<tr>
<td>Vista (fall/spring)</td>
<td>2.6 pt/a</td>
<td>50</td>
<td>80</td>
<td>75</td>
</tr>
<tr>
<td>Vista + Milestone (fall)</td>
<td>2.6 pt + 7 fl oz</td>
<td>50</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>Vista + Milestone (fall/spring)</td>
<td>2.6 pt + 7 fl oz</td>
<td>70</td>
<td>95</td>
<td>90</td>
</tr>
<tr>
<td>Perspective (fall)</td>
<td>7.7 oz/a</td>
<td>98</td>
<td>93</td>
<td>95</td>
</tr>
<tr>
<td>Perspective (fall/spring)</td>
<td>7.7 oz/a</td>
<td>100</td>
<td>100</td>
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</tr>
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Vista 2 apps
Vista + Milestone 2 apps
Vista + Milestone 2 apps
Perspective 1 appl (8 MAT)
Perspective 2 appl (8 MAT)
Streamline

• Active Ingredients:
  – Aminocyclopyrachlor (39.5%)
  – Metsulfuron methyl (12.6%)
• Max rate of 11.5 oz/acre per year
• Suggested uses:
  – Industrial turfgrass
  – Brush and broadleaf control
Viewpoint

• Active Ingredients:
  – Aminocyclopyrachlor (22.8%)
  – Metsulfuron methyl (7.3%)
  – Imazapyr (31.6%)

• Max rate of 20 oz/acre per year

• Suggested uses:
  – Brush
  – Cut stubble
  – Bare ground
Indaziflam (Bayer): Bare Ground Applications

• Vegetation management (Nov 2011)
  – EsplAnade 200 SC

• Turf and ornamentals
  – Specticle

• Fruit and nut trees
  – Alion
EsplAnade 200 SC

• Active ingredient:
  – Indaziflam 19.05%
    • Growth inhibitor
    • New mode of action

• Non-Crop Areas
  • Rights-of- way, railroads, gravel areas, etc.

• Preemergent Herbicide
  – Annual grasses
  – Annual sedges
  – Broadleaf weeds
EsplAnade 200 SC

- Low toxicity
- PPE:
  - Long sleeved shirt
  - Pants, socks and shoes
  - Chemical resistant gloves
- REI 12 hours
- Special concerns when applying near water
- Max rate of 7 fl oz/acre per application
  - 10 fl oz/year
EsplAnade 200 SC

- Established warm season grasses are tolerant at rates up to 5 fl oz/a:
  - Bermudagrass
  - Buffalograss
  - Bahiagrass
  - Centipedegrass
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<th>Rate</th>
<th>Annual Grass control</th>
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<tbody>
<tr>
<td>EsplAnade</td>
<td>3.5 fl oz/a</td>
<td></td>
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<tr>
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<td></td>
</tr>
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<td>EsplAnade</td>
<td>10.5 fl oz/a</td>
<td></td>
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<tr>
<td>Oust</td>
<td>3 oz/a</td>
<td></td>
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<tr>
<td>Karmex + Oust</td>
<td>5 lb/a + 3 oz/a</td>
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<tr>
<td>Karmex</td>
<td>5 lb/a</td>
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<td>6 lb/a</td>
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Esplanade
Krovar
New Herbicides

• Aminocyclopyrachlor (DuPont)
  – Perspective
  – Streamline
  – Viewpoint
• Indaziflam (Bayer)
  – EsplAnade 200 SC
Questions?