Weed Management in Celery

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Outline

- Common weeds associated with celery
- Current herbicides for celery
- New herbicide for celery
- Herbicide trial
Fall panicum (*Panicum dichotomiflorum*)
Goosegrass (*Eleusine indica*)
Fall panicum

Goosegrass
Fall panicum

Goosegrass
Fall panicum

Goosegrass
Crowfootgrass (*Dactyloctenium aegyptium*)
Southern crabgrass (*Digitaria ciliaris*)
Yellow nutsedge (Cyperus esculentus)
Purple nutsedge (*Cyperus rotundus*)
Purple nutsedge

Yellow nutsedge
Common lambsquarters (*Chenopodium album*)
Spiny amaranth (*Amaranthus spinosus*)
Livid amaranth (*Amaranthus blitum*)
Common purslane (*Portulaca oleracea*)
Common purslane

Livid amaranth

Spiny amaranth
American black nightshade (Solanum americanum)
Ragweed parthenium (*Parthenium hysterophorus*)
Common ragweed (Ambrosia artemisiifolia)
Common ragweed

Ragweed parthenium
Current herbicides: Dual Magnum 7.62 EC

- Common name: S-metolachlor
- Third-party registration (TPR, Inc., Orlando)
- Rate: 1 – 1.33 pints/acre
- Weeds: grasses, sedges
- MOA: VLCFA synthesis inhibitor, 15 (K3)
Current herbicides: Caparol 4L

- Common name: prometryn
- Rate: 1.6 – 3.2 pints/acre
- Weeds: broadleaf and some grass weeds
  - Weeds <2 inches
- MOA: Photosystem II inhibitor, 5 (C1)
Current herbicides: Lorox 50 DF

- Common name: linuron
- Rate: 1 – 2 pounds/acre
- Weeds: broadleaf and certain grass weeds
- MOA: Photosystem II inhibitor, 7 (C2)
Current herbicides: Poast 1.5 EC

- Common name: sethoxydim
- Rate: 1.5 pints/acre
- Weeds: Grass weeds
- MOA: ACCase inhibitor, 1 (A)
New herbicide: Zidua 4.17 SC

MOA: VLCFA synthesis inhibitor, 15 (K3)
- Isoxazoline chemical family

Root-and-shoot growth inhibitor
- Controls susceptible germinating seedlings before or soon after they emerge from the soil

Low-use-rate herbicide
- Provides residual weed control
  - 3.25 fl oz/acre (0.106 lb ai/acre)

Acceptable weed control on high OM soils
# Celery herbicide trial

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate</th>
<th>Timing</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>fl oz/A</td>
<td>lb ai/A</td>
</tr>
<tr>
<td>Zidua</td>
<td>3.25</td>
<td>0.106</td>
</tr>
<tr>
<td>Zidua + Caparol</td>
<td>3.25 + 16</td>
<td>0.106 + 0.5</td>
</tr>
<tr>
<td>Dual Magnum + Caparol</td>
<td>16 + 16</td>
<td>0.95 + 0.5</td>
</tr>
<tr>
<td>Handweeded check</td>
<td></td>
<td></td>
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<tr>
<td>Untreated check</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Bedding: December 9, 2021
- Planting: December 10, 2021
- Spraying: December 14, 2021
- Experimental design
  - RCBD
  - Plot size - 6 ft (2 beds) by 25 ft long

Experimental design
Untreated control – 7 DAT
Handweeded control – 7 DAT
Zidua (3.25 fl oz/A) – 7 DAT
Zidua (3.25 fl oz/A) + Caparol (16 fl oz/A) – 7 DAT
Dual Magnum (16 fl oz/A) + Caparol (16 fl oz/A) – 7 DAT
Untreated control – 56 DAT
Handweeded control – 56 DAT
Zidua (3.25 fl oz/A) – 56 DAT
Zidua (3.25 fl oz/A) + Caparol (16 fl oz/A) – 56 DAT
Dual Magnum (16 fl oz/A) + Caparol (16 fl oz/A) – 56 DAT