Dodder (*Cuscuta* spp.)

- Parasitic weed
- Summer Annual

- Becoming more prevalent in bedding plants
What makes dodder so bad in bedding plants?

- Can engulf the bed
- Impossible to remove selectively
- Must remove the host AND the weed
- Long-lived seeds
- Limited control options
Current control options

- Removal of host plants
  - But if seeds are in the soil???

- Fumigation
  - Expensive and hazardous

- Pre applications of Dacthal (DCPA)
  - Expensive and short residual
Host Resistance???

- Certain tomato varieties have been reported to have resistance to dodder infestation
- No reports on ornamental plant host preference or resistance

Objective: to compare bedding plants for dodder host preference
Methods

- 13 species of bedding plants potted to 4-L pots in pine bark based substrate.
- 2 weeks later substrate was surface seeded with 1/4 teaspoon *Cuscuta pentagona* seeds.
- 12 single pot replicates, each species % canopy coverage of dodder visually evaluated.
Species included

- Petunia
- Calibrachoa
- Salvia farinacea
- Portulaca
- Verbena
- Marigold
- Sweet potato
- Gomphrena
- Scaevola
- Vinca
- Impatiens
- Coleus
- Begonia
Results

Plants differed in dodder growth.

Plant species categorized as “preferred”, “non-preferred” and “non-hosts”.
% Cover -- “preferred hosts”

- Vinca
- Petunia
- Impatiens
- Calibrachoa
- Coleus

Legend:
- a
- b
- c
- d
% Cover -- “non-preferred hosts”

- Vinca: a
- Marigold: e
- Salvia: e
- Portulaca: ef
% Cover -- “Non-hosts”?

% Dodder cover

Vinca  Scaevola  Begonia  Gomphrena  Sweet Pot.  Verbena

0  10  20  30  40  50  60  70  80  90  100

a  fg  g  g  g  g
<table>
<thead>
<tr>
<th>Species</th>
<th>2002</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impatiens 'Dazzler Coral'</td>
<td>90.0 a</td>
<td>87 b</td>
</tr>
<tr>
<td>Petunia</td>
<td>96.2 a</td>
<td>93  a</td>
</tr>
<tr>
<td><strong>Salvia ‘Red &amp; White’ vs ‘Vic. Blue’</strong></td>
<td>67.5 b</td>
<td>12  e</td>
</tr>
<tr>
<td>Snapdragon 'Liberty Rose Pink'</td>
<td>67.5 b</td>
<td>--</td>
</tr>
<tr>
<td>Portulaca ‘Yubi Rose’</td>
<td>22.5 cd</td>
<td>10  ef</td>
</tr>
<tr>
<td><strong>Vinca (Catharanthus)</strong></td>
<td>30.0  c</td>
<td>--</td>
</tr>
<tr>
<td><strong>Calibrachao 'Liricashower Rose'</strong></td>
<td>3.2   e</td>
<td>66  c</td>
</tr>
<tr>
<td>Verbena ‘Homestead Purple’</td>
<td>2.2   e</td>
<td>0    g</td>
</tr>
<tr>
<td>Begonia 'Super Olympia White'</td>
<td>5.5   de</td>
<td>2  g</td>
</tr>
<tr>
<td><strong>Coleus ‘Aurora Stoplight’ vs ‘un-specified sun hybrid’</strong></td>
<td>2.0   e</td>
<td>51  d</td>
</tr>
<tr>
<td>Sweet Potato ‘Sweet Caroline Burgundy’</td>
<td>1.0   e</td>
<td>1    g</td>
</tr>
<tr>
<td>Marigold ‘Safari Yellow’</td>
<td>2.0   e</td>
<td>14  e</td>
</tr>
<tr>
<td>Gomphrena ‘Lavendar Lady’</td>
<td>0.8   e</td>
<td>2    g</td>
</tr>
<tr>
<td>Scaevola</td>
<td>0.5   e</td>
<td>4    fg</td>
</tr>
</tbody>
</table>
2002 vs 2005

Calibrachoa?

Coleus: Varietal difference?

Salvia: Different species?
Dodder can move from “hosts” to “non-hosts” by vegetative spread
Significant to Landscape Managers: plant dodder tolerant species

Dodder cannot easily be controlled in petunia or snapdragons but scaevola, verbena, gomphrena and sweet potato appear to be resistant.