Whitehead Broom Biology and Management
Brent Sellers and Lauren Butler

Outline
• Whitehead broom identification
• Biology
• Background
• Experiments
• Future directions

Identification
• Whitehead broom/shrubby false buttonweed/larra flower
  • Spermacoce verticillata
  • Borreria verticillata (synonym)
• Stems:
  • Square 1st year
  • Rounded 2nd year
• Leaves:
  • Opposite to whorled
  • Pointed at both ends
  • Linear to lanceolate
• Inflorescence:
  • Glomerules in terminal or lateral positions
  • Stems continues to grow through center of inflorescence
Biology, Range, Ecology

• Fine-stemmed and scrambling; 2.5 to 3 ft in height
  • Branching forked or in 3s
  • May root at the nodes
• Native to Central and South America as well as Africa; naturalized in FL
• Moist acid and alkaline soils
• Roadsides, construction sites, pastures, row crops
• Flowers nearly year round in PR and FL
• 49% germination of seed at harvest

Similar Species

• 8 other species
  • S. densiflora a,m
  • S. glabra m
  • S. keyensis n
  • S. latifolia m,m
  • S. neoterminalis n,n
  • S. prostrata n,n
  • S. remota n,n
  • S. tetraquetra a,n

S. verticillata vs. S. neoterminalis
History

• Likely introduced in the late 1940s/early 1950s
• Mole cricket biocontrol program
  • Larra bicolor
    • Nectar sources
    • Partridge pea (Chamaecrista fasciculata; native)
    • White head broom

Other Nectar Sources

<table>
<thead>
<tr>
<th>Common name</th>
<th>Latin name</th>
<th>Status</th>
<th>% of FL Counties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devil’s walkingstick</td>
<td>Aralia spinosa</td>
<td>Native</td>
<td>14</td>
</tr>
<tr>
<td>Blue moldflower</td>
<td>Convolvulus cneorum</td>
<td>Native</td>
<td>65</td>
</tr>
<tr>
<td>Tall elephantfoot</td>
<td>Elephasnius vatus</td>
<td>Native</td>
<td>62</td>
</tr>
<tr>
<td>Scorpion tail</td>
<td>Heritropogon angiospermum</td>
<td>Native</td>
<td>17</td>
</tr>
<tr>
<td>Seaside heliotrope</td>
<td>Heritropogon annosanum</td>
<td>Non-native</td>
<td>21</td>
</tr>
<tr>
<td>Sweet alium</td>
<td>Lobularia maritima</td>
<td>Non-native</td>
<td>3</td>
</tr>
<tr>
<td>White sweetclover</td>
<td>Melilotus albus</td>
<td>Non-native</td>
<td>51</td>
</tr>
<tr>
<td>Scarlet passiflora</td>
<td>Passiflora minata</td>
<td>Non-native</td>
<td>2</td>
</tr>
<tr>
<td>Brazilian pudding</td>
<td>Richardsa brasiliensis</td>
<td>Non-native</td>
<td>60</td>
</tr>
<tr>
<td>Fire barrel goldseed</td>
<td>Solidago triaisa</td>
<td>Native</td>
<td>80</td>
</tr>
</tbody>
</table>

History

• Intentional plantings of white head broom throughout the state
• Calls about control increased dramatically in 2010
• Added to the FLEPPC Category II plant list in 2015
Invasion Curve

White Head Broom Trials: 2011
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Non-ionic surfactant @ 0.25% v/v

White Head Broom Trials: 2013

MSO @ 1% v/v

White Head Broom Trials: 2019

MSO @ 1% v/v
Pasturegard 32 oz + WeedMaster 32 oz; 30 DAT
Sharpen 1 oz; 30 DAT
Velpar 32 oz; 30 DAT
Pasturegard 32 oz + WeedMaster 32 oz; 30 DAT
Sharpen 1 oz; 30 DAT
Velpar 64 oz; 30 DAT
Velpar 32 oz; 180 DAT
32 oz/A 64 oz/A
Research Continues.....

- Sharpen
  - Additional rates
  - Bahiagrass tolerance
- Additional herbicides
  - Flumioxazin
- Is mowing prior to treatment beneficial?
- How does growth stage affect herbicide activity?
- Basic biological parameters

Credits

- Plant identification and Larra wasp pictures:
  - USF Plant Atlas
  - UF/IFAS Entomology and Nematology Department
  - UF Herbarium
- Cooperators:
  - David Shirley, Venus
  - McQueen Ranch, Punta Gorda
  - Barry and Val Lewis, Okeechobee

Webinar Schedule

- February 11 – Dr. Joao Vendramini
  “Additives and inoculants to improve warm-season grass silage quality”
- March 10 – Dr. Maria Silveira
  “Utilization of biosolids in forage production systems in Florida”
- April 14 – Chris Prevatt
  “Searching for the bottom of the cattle price cycle”