Integrated Weed Management

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What is IPM?

• Integrated Pest Management
• All the tools in the toolbox
  – Cultural
  – Mechanical
  – Biological
  – Chemical
Cultural control
Cultural control
Mechanical control
Mechanical control
Biological control

• Natural enemies
Chemical control

• Herbicides
  – Contact/systemic
  – Foliar/water column

• Act on plant processes
  – Photosynthesis
  – AA/protein production
  – Respiration
  – Hormones/growth processes
IPM toolbox

- Cultural
- Mechanical
- Biological
- Chemical
IPM in practice
Alligatorweed

- *Alternanthera philoxeroides*
- S. America late 1800s
- Cultural, mechanical: limited
- Chemical: Ipyr, Imox (ALS), EPSPS, triclopyr
- Bio: *Agasicles hygrophila, Arcola malloi*
Waterhyacinth

- *Eichhornia crassipes*
- Brazil 1880s
- Cultural, mechanical: limited
- Chemical: auxins, diquat, ALS
- Bio: *Neochetina* sp., *Megamelus scutellaris*
Melaleuca

- *Melaleuca quinquenervia*
- Australia late 1800s
- Cultural, mechanical: limited
- Chemical: tri, gly, ipyr (IPM: cut)
- Bio: *Oxyops vitiosa, Boreioglycaspis melaleucae*
Other species with IPM strategies

Tropical soda apple – beetle
Other species with IPM strategies

Brazilian pepper – wasp (adv)
Other species with IPM strategies

Waterlettuce – weevil
Other species with IPM strategies

Salvinia – weevil
Thanks! Questions?

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