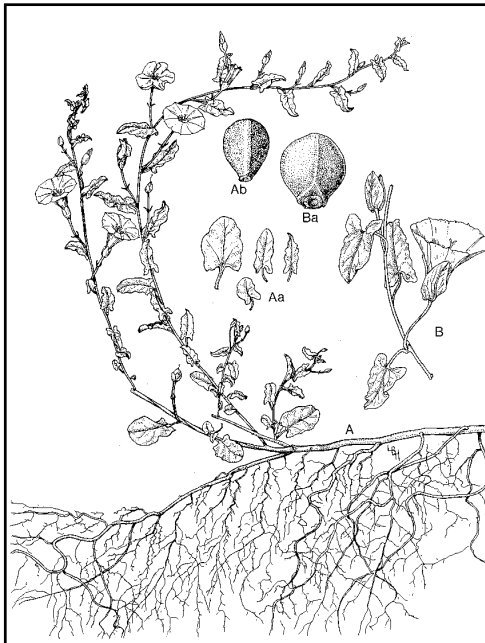


**Bindweed
Mites**

Colorado State University Cooperative Extension

**Thaddeus Gourd
CSU Extension
Adams County**



Field Bindweed

- *Convolvulus arvensis*
- **Native to Europe**
– 1700s
- **Reproduction**
– Seed & Root
- **Biotypes**
- **Top Ten**

Figure by Lucretia Hamilton, from An Illustrated guide to Arizona Weeds, Kittie F Parker, © 1972 The Arizona Board of Regents. Reprinted by permission of the University of Arizona Press.

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Field Bindweed Gall Mites (Bio-control Agent for Field Bindweed)

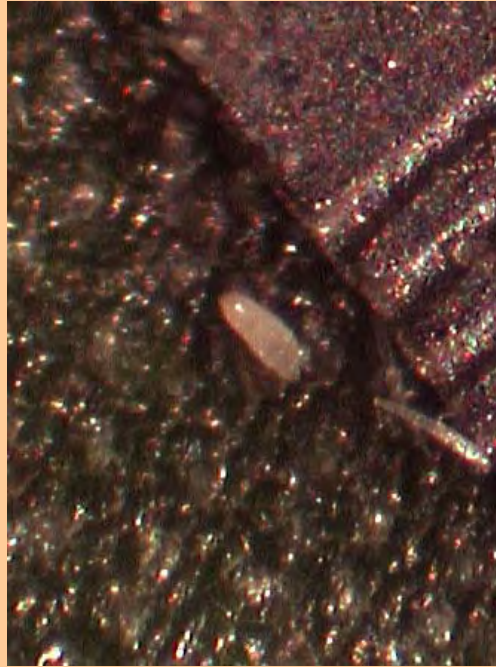


What is a Bindweed Mite?

- Eriophyid mite
– *Aceria malherbae*
- Native to Europe
- Selected by USDA as bio-control agent 1987
- In Colorado?

Bindweed Mite

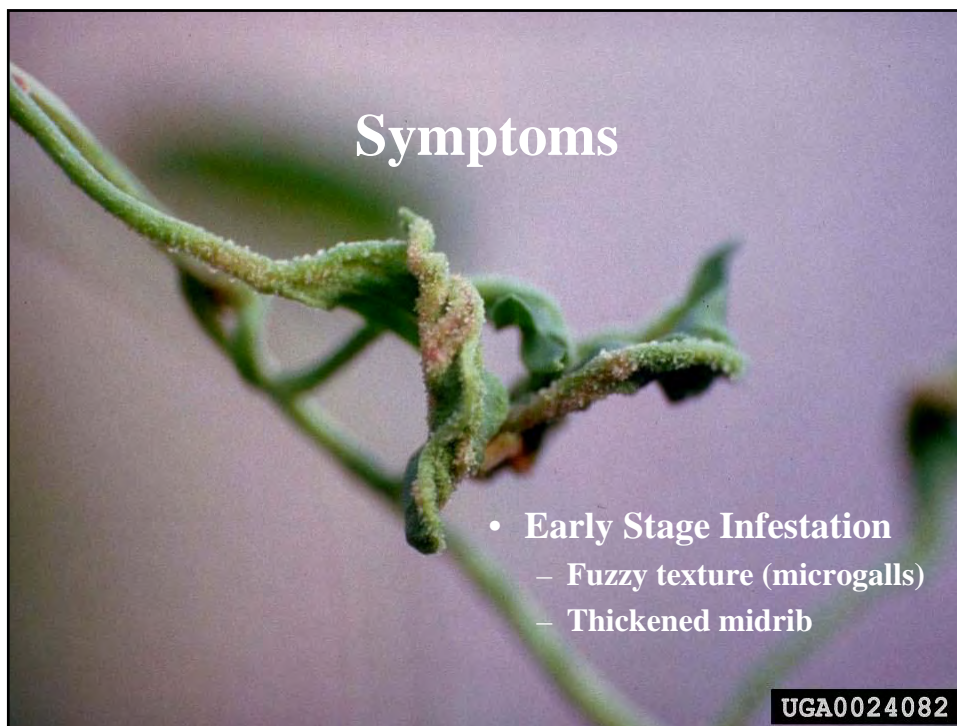
- ~ 0.1 mm, full grown
 - Cannot be seen unaided
- Moves slowly
- Synchronized lifecycle
 - Growing: plant top
 - Dormant: root buds



Host: Bindweed

- Mite *only* attacks:
 - Field Bindweed
 - *Convolvulus arvensis*
 - Wild Morning Glory
 - *Calystegia sepium*
- Nothing else!
 - *NOT* humans, animals or other plants







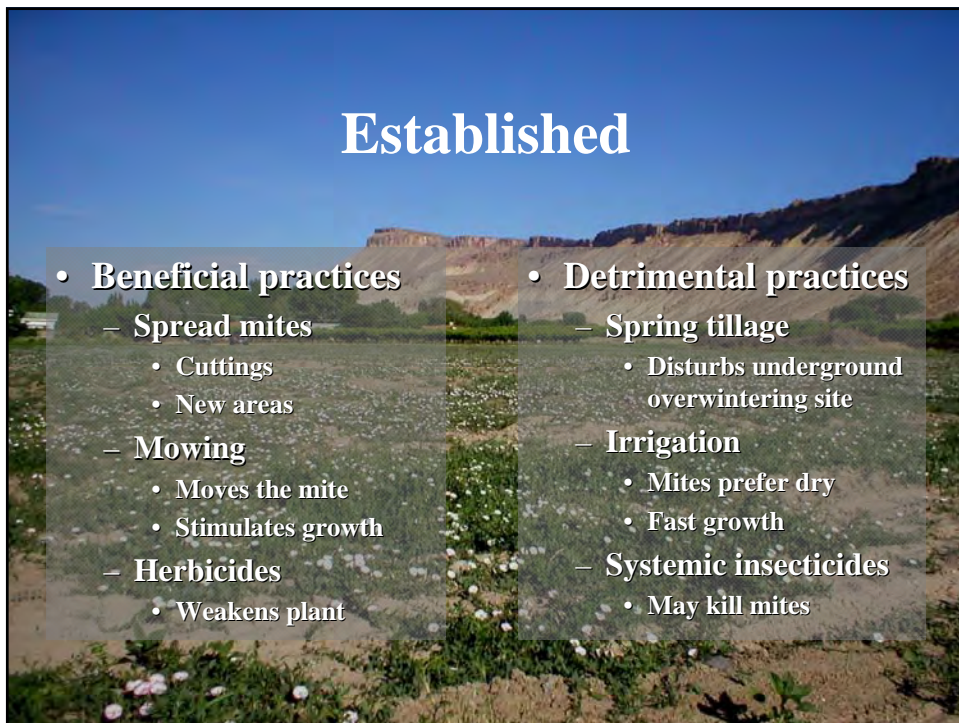
Symptoms

- **Heavy Stage Infestation**
 - Shoots misshapen
 - Inhibited flowering



Release methods

- **Release in actively growing bindweed**
 - Must be done ASAP
- **Release in less vigorous areas**
- **Twist/wrap infested plants to plants on your acreage**
- **When plants dry down, mites leave**



Mites & Herbicides

- Sublethal doses
 - 2,4-D (various)
 - Glyphosate (RoundUp®)
- 25-50% of rate is suggested

Boydston, R.A; Williams, M.M. 2004.
Combined effects of Aceria malherbae and herbicides on field bindweed (Convolvulus arvensis) growth. Weed Science, 52:297-301.

Expectations

- If you expect that all of your bindweed problems will disappear, you ***WILL*** be disappointed.



Expectations

- If you expect that all of your bindweed problems will disappear, you *WILL* be disappointed.
- If you expect that bindweed problems will gradually become more manageable, your chances of succeeding are greater.



Bindweed success =
Weed management success?

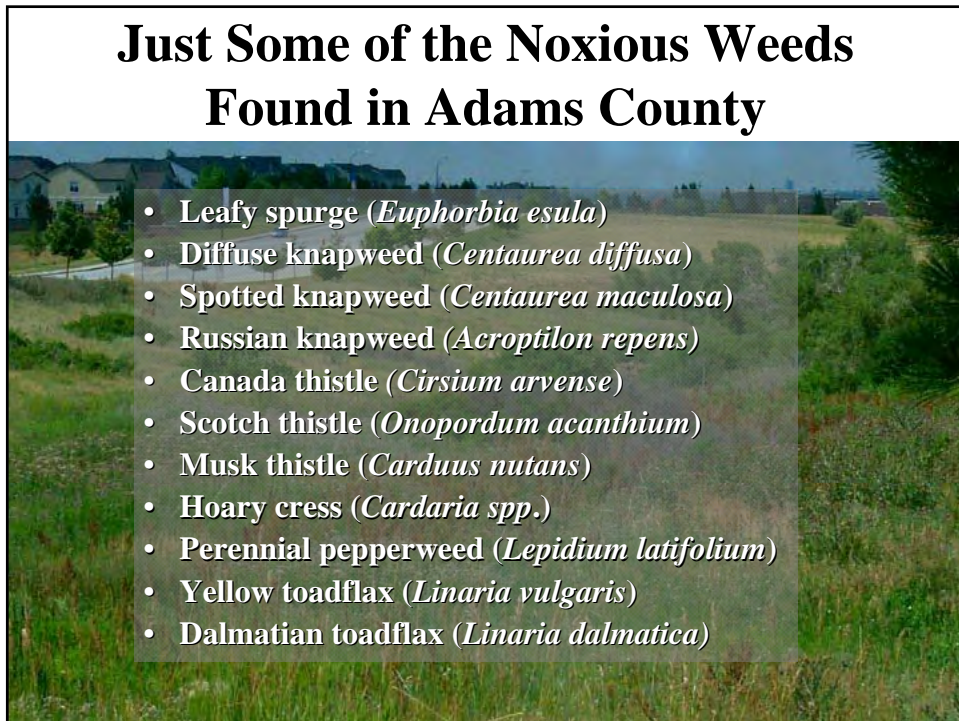
NO!!!

Bindweed Mite Harvest



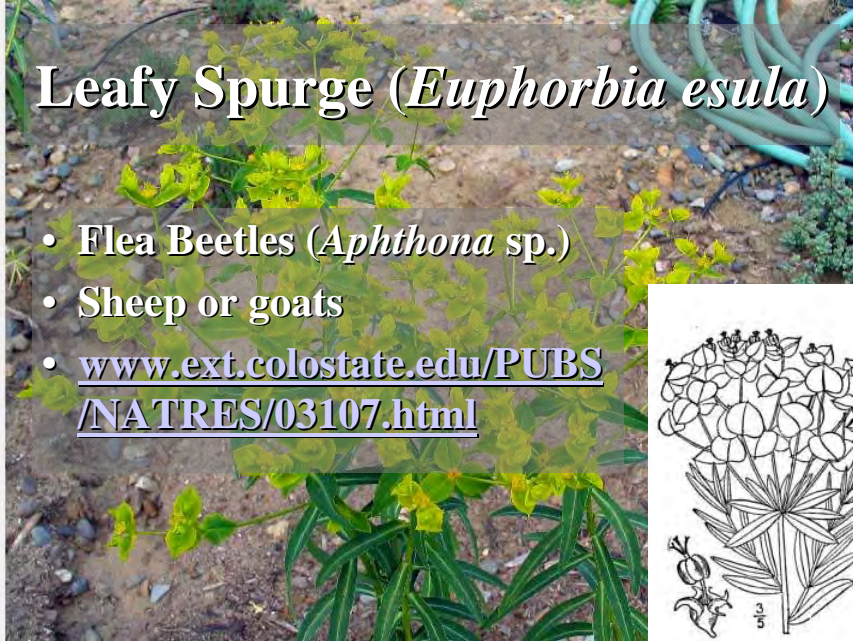
2008 Bindweed Mite Harvesters





Leafy Spurge (*Euphorbia esula*)

- Flea Beetles (*Aphthona* sp.)
- Sheep or goats
- www.ext.colostate.edu/PUBS/NATRES/03107.html

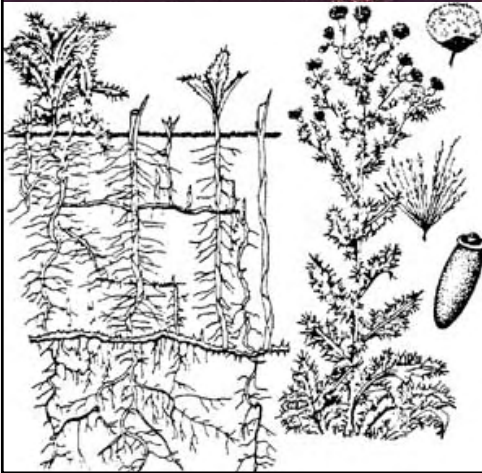


Knapweed (*Centaurea* sp.)

- Seedhead flies (*Urophora* sp.)
- www.ext.colostate.edu/PUBS/NATRES/03110.html



Canada Thistle (*Cirsium arvense*)



- Canada thistle gall fly (*Urophora cardui*)
- www.ext.colostate.edu/PUBS/NATRES/03108.html



Musk Thistle (*Carduus nutans*)



- Musk Thistle Rosette Weevil (*Trichosirocalus horridus*)
- www.ext.colostate.edu/PUBS/NATRES/03102.html



Additional Resources

www.adamscountyextension.org

Click on: [Weed Education](#)

www.ext.colostate.edu/pubs/natres/pubnatr.html

**Colorado Dept. of Agriculture Insectary,
P.O. Box 400, Palisade, CO 81526**