Protecting Your Dahlias From Bugs and Other Perils

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Integrated Pest Management

1. Identification

2. Impact Assessment

3. Intervention
Identification

Identify the pest

Identify the damage

Educate yourself about the pest
Impact – ‘Thresholds’

Pests that can “wipe you out”

Pests that *WILL* cost you “Blues and Highers”

Pests that *MAY* cost you “Blues & Highers’

Pests that are not really pests!
Intervention

Prevention
  – Sanitation
  – Start with healthy plants
  – Plan ahead, learn from the past

Careful monitoring
  – Recognize symptoms

Use what works
  – Surgical precision
Beneficial Insects

Your Friends in the Garden

Recognize and protect them
Syrphid Fly

Commercially Available
Minute Pirate Bug

Commercially Available
Green & Brown Lacewing

Commercially available
Wasps
Lady Bird Beetle Larvae

Commercially available

- Adult
- Larva
- Eggs
- Pupa
Assassin Bugs
Increase Safety to Beneficials

Timing - *Spray evening or early AM*
Coverage - *Target the pest*
Stagger applications to leave untreated reservoirs
Avoid broad spectrum products if possible
Use soil or drip irrigation applied products when possible
Planting and Emergence Pests
Earwigs
– Sanitation
– Traps, tubes
– Baits, attractants containing diatomaceous earth, carbaryl

Slugs and Snails
– Hand picking
– Baited Traps
– Copper strips
– Baits, attractants containing iron phosphate or metaldehyde
Wireworms, Cutworms, & Symphylans

– Soil drenches or granules containing diazinon or carbaryl mixed in before planting

– Cutworms easy to find and control by hand
Foliage Pests
**Aphids**

– Check plants frequently...undersides of leaves & growing points

– Probably vector most viruses

**Light Colored**

– Easily controlled with soaps, neem products, dimethoate, acephate, sprayed on foliage

– Beneficial insects

**Dark Colored**

– Difficult to control. Move into developing buds and shoots

– Remove infested shoots

– Treat at first sign of infestation with systemic products...Merit, Bayer All in One
Worms

– Lots of types

– General ID – “cryptic feeders” and “surface feeders”

– Not controlled systemically

– Contact or stomach products Bt (Bacillus thuringiensis), Diatomaceius Earth, Orthene, Sevin, Mavrik, Talstar
Thrips

- Very small, check deep into growing point
- One or two can cause damage
- Knock down weekly with neem, pyrethrins, Spinosad, Mavrik, Talstar, Orthene, All in One
Two-Spotted Mites

- Check lower leaves frequently
- Like warm, dusty areas...reproduce rapidly
- Dusting or wettable sulfur early, short term
- Avid, Hexygon, Pilon
- Predatory mites very effective......Phytoseulius persimilis
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Conditions they need:
- Two-spotted mite food source
- High humidity & moderate temperature
- Dense plant canopy
**Powdery Mildew**

Wide host range

Infection at 54 -77°F @ 70-100% RH on leaf surface for 4 hours

Mycellium grows 1-3 weeks in leaf

Sporulation at 54 -77°F degrees and 70-90% RH for 8 hours

Early control key to effective control

**Cultural Control**

Increase plant spacing, don’t irrigate late in the day.

**Contact Products**

Potassium Bicarbonate or Sulfur over entire plant at 3-4 leaf stage and repeated 10-14 days

**Systemic Products**

Bayer All in One, Rubigan, Eagle, Compass, Fungi-Fighter, applied at 4-6 leaf stage and repeated every 4 weeks
**Dahlia Smut**

Narrow host range. Spores overwinter in soil. Infection requires splashing soil at 100% RH on leaf surface.

**Control**

- Prevention - with mulch or row cover
- Sanitation – discard infected leaves
- Avoid overhead irrigation
- Mancozeb, Manzate, Copper
Sanitation or Exclusion

Prevent with mulch or row cover to prevent splashing of spores from soil.
Bloom Pests
**Botrytis Cinerea**

Wide host range

Infection at 54 - 85°F @ 100% RH on leaf surface for 6 hours.

Air movement and sanitation key to effective control.
Sanitation

Deadhead spent blooms

Remove dried or yellow leaves
Botrytis Control

- Avoiding splashing water on the foliage.
- Free moisture is needed for spore germination and infection.
- Remove affected plant debris.
- Provide air circulation around the plants.
- Daconil, Mancozeb, Heritage, Medallion, Compass
- Apply fungicide when symptoms first appear.
- Rotate chemicals to prevent building resistance.
Spotted Cucumber Beetle

– *Diabrotica spp.*

– Highly mobile invaders from long distances

– Seasonal population - starts slow, builds fast particularly during hot spells

– Strongly attracted to yellow

– Yellow sticky traps fairly effective

– Knock down frequently with pyrethrins, Talstar, Mavrik, diazinon, Sevin, carbaryl
Thrips

Invade unopened blooms and scar florets
One or two per bloom cause damage
Dead head spent blooms
Systemic products marginally effective
Knock down weekly with pyrethrins, Neem, diazinon, Mavrik, Talstar, Orthene
Treat directly on open and unopened blooms
Dahlia Application Safety

- Use labeled rates
- Be cautious when combining products – experiment or ask
- Anticipate weather
Resources

- University of California at Davis Pest Management Guidelines

www.ipm.ucdavis.edu
Make the bugs work for you!