

PNW Canola Association

Moscow, Idaho

Mark Greene -Grower
Greene Ridge Farms
Asotin, Washington

Flea Beetle



Ladybugs



Cutworm Damage



Cutworm in Soil



Cutworms



Diamondback Moth



Diamondback Moth



Slugs



Slugs



Slugs



Wireworms



Wireworms



► Questions?

► Thank you!



PNW Canola Association Moscow, Idaho

Insect Pests, Beneficial Insects, pH Issues in Canola

Tom Gehring

Helena Agri-Enterprises

Topics Covered

Insect pests of canola
continued.....

Threshold levels of some of
those pests

Beneficial insects of canola

Control of pests, thresholds and
monitoring beneficials

pH issues on canola

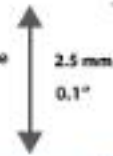
Flea Beetle Damage Visual Beetle Damage Chart

Flea Beetle Damage on Canola

Scout for flea beetle damage in several places throughout the field, including field edges, hedgerows, and bluffs, ideally at five points, in a "W" pattern, checking 10 plants at each point to get a representative sample.



Crucifer
Flea Beetle



Striped
Flea Beetle



10%



20%



25%



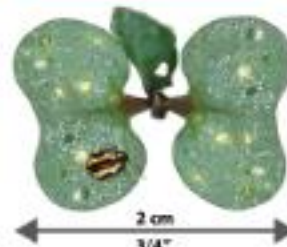
35%



50%



Feeding damage is less of a concern with moderate temperatures, good soil moisture and an adequate plant stand, but it becomes a concern with lower plant stands, lower moisture and higher temperatures.



25% is the action threshold

When approaching the 25% action threshold (nominal economic threshold) consider applying foliar insecticide if prior to the four-leaf stage with actively feeding flea beetles (evidence of fresh feeding wounds and/or damage to newly-emerged leaves) to prevent reaching levels anticipated to cause economic injury (50%).



Stem Feeding

Include the inspection of stems and petioles when flea beetle scouting. No specific threshold exists to evaluate the impact of stem feeding, but due to the function of the stem (supplying water to the leaves) and its fragility when young, stem feeding can be more damaging than leaf defoliation and even cause plant fatality (especially under hot and dry conditions).

Flea Beetle - Do I spray or not?

8 steps to look at!

1. Know your spray threshold level

1. 25% leaf damage, exceptions for slow growth etc.
2. Assess leaf area loss and look at new growth
3. Assess stem damage
4. Assess flea beetle feeding activity
 1. Beetles slow and dopey may have ingested seed insecticide
5. Consider the plant stand
6. Check the crop stage
7. Check canola field frequently
8. If you spray, only use registered pesticides



- ▶ Show up in fields about flowering time and feed on flowers
- ▶ When canola pods develop about ½"-3/4" long, female lays eggs on pod
- ▶ Larvae then develop and eat newly developed seeds in a pod
- ▶ Only one generation per year
 - ▶ Winter canola can be a big problem crop for CSPW damage
 - ▶ Spring canola is usually not much problem because by July, CSPW does on lay eggs and just feeds on the crop
- ▶ Threshold levels
 - ▶ 20 or more CSPW in 10 180 degree sweeps with insect net

Bertha Armyworm

- ADULTS: 3/4 long, pale colored body with pale brown stripes
- LARVAE: All instars feed on leaf margins and crown tissue of host plants at night, hiding near the base of plants during the day
- Use light or pheromone traps to detect the arrival of immigrating adults
- CHEMICAL: Only spray areas where armyworm larvae exceed the economic threshold. Spray at night when larvae are actively feeding
- Economic Threshold in canola—20 larvae/10sq. Ft.



Cutworms

- Cutworm (larvae)
- Found to be parasitized by:
 - Four species of bee flies
 - Four species of tachinid flies
 - Several species of parasitic wasps
 - Ground beetles can also be important predators of cutworms.
 - Birds can also reduce populations
 - Problem is they like to feed at night!



Beneficial Insects of Canola

- Ladybird beetle
- Feeds on a variety of lygus, aphids etc.
- Study has shown they prefer the later instar stages of some of the insect larvae



Crab Spider

- Hosts/Prey Any insects visiting flowers, both harmful and beneficial (small flies, ants, bees and wasps, beetles, small moths, thrips).
- ADULTS: ¼-1/2” long, flattened, either round or elongate body; variously colored (bright to dull),



Ground Beetles

- Hosts/Prey ADULTS:
- Any immature or adult stages of insects they can capture; also earthworms, slugs, and snails.
- Monitoring
 - Use pitfall traps to detect adults. Sift soil or look under soil debris (stones, boards, mulch) to find larvae.
- Conservation Minimizing tillage and avoiding use of toxic pesticides helps protect populations.



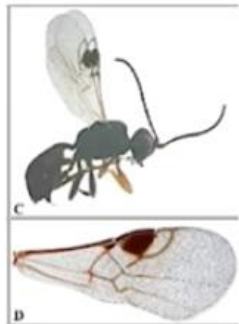
Robber Fly

- Hosts/Prey ADULTS: Wasps and flies main prey; also feed on dragonflies, grasshoppers, moths, and other insects
- Adults use their piercing mouthparts to pierce the soft-body tissue of prey and inject toxic saliva that paralyzes and digests body contents which are sucked up.
- Monitoring ADULTS: Use sweep net to sweep shrubs and tree limbs in clearings in or near wooded areas.
LARVAE: Examine soil, leaf litter

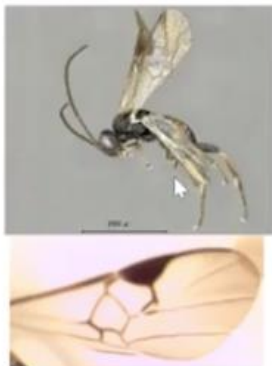


Hymenoptera: Parasitoids

Braconidae (*Peristenus*)



Diolcogaster



Chalcidoidea

Trichomalus perfectus



Tetrastichus julis



Oomyzus incertus

There are more than 32
beneficial insects
preying on your harmful
canola insects!

Take time to identify
and see what is out
there before you spray!

Snipe Flies, Stiletto Flies
Syrphid Flies, Hover Flies
Tachinids
Ambush Bugs, Assassin Bugs
Big Eyed Bugs, Pirate Bugs
Aphid Midge Larvae
Green Lacewing, Damsel Bug

Protect these beneficial insects

- Crop Rotations
- Scouting
- Monitoring
- Spray only when actually needed

Field margins can help with acting as a reservoir for the beneficial insects

Variety of beneficials-

- Diverse control

Insects preference of prey

- Helps control variety of pests

Species: up to 140 have been discovered

- Many predators working in your field

Insect Threshold levels

*Guide only and economics play a big role in when to spray!

The higher the canola price, the more these levels may change.

- ▶ **Lygus - 7/10 sweeps**
- ▶ **Cutworms - 25% stand reduction**
- ▶ **DB moth = 100-150 per 10 sq. ft**
- ▶ **CSP Weevil - 20/10 sweeps**
- ▶ **Flea Beetles -25% leaf damage**

Canola and pH issues

- Canola is sensitive to acidic conditions
- This field had areas of 3.8 pH = 5.8 pH
- Poor Stand, vigor
- Moisture was good
- pH level in the 3"-4" layer was very low
- Insects were worse where pH was low





pH Testing

- Areas of field showed zones of poor and good canola
- Most pH issues were in the 3" profile
- Research has shown that canola yields on strongly acid soils (pH below 5.5) can be substantially increased by lime application.
- Low pH and the disease Club Root in Canada is a serious problem.
- Raising pH is one of the control measures used against this disease.
- Monitor pH levels in your fields for greater yields!



Questions????

Thank You!