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General Insect Management

✓ Monitor on a regular schedule

✓ Always get a positive ID
  • Books/websites
  • County Educators
    Samples
    Pictures

✓ Keep records (variety, location, #’s, etc)
Potato leafhopper

- Wedge-shaped
- Fluorescent green
- Adults
  Small, 1/8 in long, winged
Potato leafhopper

- Nymphs < 1/8 inch long
  Look like adult (smaller)
  Very fast moving
  Feed on underside of leaves
- Adults and nymphs have piercing/sucking mouth parts
  Extract plant sap
  Symptoms call “hopperburn”
Life History

Do not overwinter in WI
  • Arrives in April/May
  • Migration intensity depends on weather patterns
  • 4-5 generations/year
  • Adults may live for 30 days
  • generation time: 28 days

Important Alfalfa Insect Pest
  • Monitor alfalfa cutting in your area
Damage

• Hot/dry weather increases damage potential
• Expect damaging populations from mid June (??) through labor day
Damage Symptoms

Early symptoms
• Yellow around leaf edges

Severe symptoms
• Dead tissue around leaf edges
Monitoring

✔ Scout once/week
✔ Watch for surrounding alfalfa that is being cut
✔ Scout varieties separately
✔ Count nymphs on underside of leaves
✔ Use a net to monitor for adults
✔ Threshold: none
✔ Look for damage
✔ Easy to kill w/ insecticides
Potato Leafhoppers

Questions?????
Two spotted spider mites (TSSM)

- Very small: 1/64 inch
- Closely related to spiders (8 legs)
- Overwinter in grasses
- Hot/Dry weather dramatically increases populations
- Found on underside of leaves
- Feed on leaves and cones
- Pierce cells and extract contents
Photo credits
David Gent
USDA Ag Research Service
Bugwood
Photo credits
David Gent
USDA Ag Research Service
Bugwood
Monitoring

• Use white sheet of paper & handlense
• Look for signs of webbing
• Count mites (adults and immatures) on several leaves on 25-30 plants
  Late July/August sample upper leaves
• Threshold; (Idaho)
  1-2 mites/leaf June – July
    • WI is a different climate
  5-10/leaf Mid July and later
    • Monitor cones
TSSM Management

Look for signs of damage
  • Early signs: stippling
  • Severe damage: bronzing of leaf
  • DO NOT want to play “catch-up” with spider mite damage

Keep plants healthy (avoid stress)
  irrigation
  adequate (not over) fertilization
  disease control

Carefully select miticide
  • Some insecticides not labeled for TSSM
  • Will/may kill beneficial insect and mites
  • “Flare” TSSM populations
TSSM Management

Rotate modes of action
Look at weather forecast before spraying
Re-scout after application
  • After REI expired
  • Up to 7 days residual after application
  • Insecticides/miticides DO NOT kill eggs
Natural Enemies include:
- Lady beetles (adult & larvae)
- Lacewing larvae
- Predatory mites

Routine use of miticides/insecticides
- Costs money
- Can kill beneficial insects/mites
  - Cause TSSM populations to explode
  - If environmental conditions are favorable
- Can create resistance
  - Cause TSSM populations to explode
  - If environmental conditions are favorable

Natural Enemies friendly
- Movento
- Zeal
Two-Spotted Spider Mites

Questions?????
Japanese Beetles

- Adult: beetle
  - ½ inch long
  - Bronzed
  - Metallic green
  - White patches of hairs
- Grubs: non pest in hops
Damage

• Defoliator
• Lacing effect on leaves
• Damage is usually “clumped” w/in a yard
• Adults are migratory
• Monitor grapes/roses/raspberries for first signs of damage
Life History

One generation/year

OW as grubs deep in soil profile

Adults emerge mid/late June

- Peak flight: mid-July
- Feed until late summer
- Eggs laid Mid-July in grasses
Management

• Thorough scouting needed
  Clumped distribution

• Traps ?????

• Threshold
  Healthy plants
  Newly established
Management

Insecticides labeled for JB control
• Azatin.....probably a few others
• Alternative insecticides
  • Find an insecticide labeled for hops
  • Look at another crop for JB control (soybean)
  • Likely that insecticide will control JB in hops
• It is Legal
  ✓ Must follow rates, timing, PHI, etc under the hops label
• Many will be Restricted Use Pesticides (RUP)
Japanese Beetle

Questions ????
Hop Vine Borer

- Adult: moth (non damaging)
- Larvae: caterpillar
Life History

• Overwinter as eggs laid on perennial grasses
• Hatch in spring
• Initially feed on perennial grasses
• Migrate to other host crops.
  • Mid to Late May
Damage

Burrow into bines
Keep field histories
  • Amount of damage
  • Dates of first damage
Control at first signs of damage
Can’t be controlled once in bine
Stalk Borer??
European corn borer

Lowest population in 70+ history of Department of Ag’s survey

Wide host range

Eggs laid on underside of leaves
  • First generation: Mid – late June
  • Early August

Larvae up to an inch long
  • cream to grayish/brown body
  • Black head

Feed w/in bine
Thank you for your time!
Questions??
Hop Aphids

- Small (1/8 inch) soft bodied
- Greenish to black in color
- Pear shaped
- Winged and unwinged
- Piercing/ sucking mouthparts
- Several predatory insects
Damage

• Secrete honeydew
• Can transmit viruses
• Stunting, malformed leaves
Threshold

- Pacific NW: average 5-10 aphids/leaf during flowering