WALNUT HUSK FLY (WHF)

Rhagoletis completa

Description:

Adults:

Adults are about the size of the common house fly with a yellow spot just below the area where the wings are attached and a dark triangular band at the tip of wings. Adult females are slightly larger than males with a pointed abdomen and an ovipositor. Females have a straw colored first leg segment whereas on males it is brown to black.

Eggs:

Eggs are deposited in groups of about 15 below the surface of the husk.

Larvae:

Eggs hatch into white maggots after about five days. Older maggots are yellow with black mouthparts.

Pupae:

Mature larvae drop to the ground and burrow several inches into the soil to pupate.

Left: adult WHF and right: WHF larva. (Source: Jack Kelly Clark, UC IPM).

Hosts:

Walnut is the primary host.

Damage:

- Females sting husks when depositing eggs.
- Maggots feed inside husk, turning it soft and black.
- Husk remains intact, fleshy parts decay and stain nutshell.
- Early infestation could lead to shriveled, darkened kernels and increased mold.
- Late infestations damage shell for in-shell sales.

Left: Adult WHF (source: UC IPM). Right: WHF larvae in husk of walnut (source: PNW Handbooks).

Phenology:

- One generation per year.
- Overwinter as pupae in soil and emerge as adults generally from early June until September.
- Peak emergence is usually July to mid-August.

Lure Type and Maintenance:

- PHEROCON® WHF Peelable Supercharger.
- Replace PHEROCON® WHF Peelable Supercharger lures every 6-8 weeks.

Lure Storage:

- Store in unopened factory sealed packages in a cool place (< 74° F or 24° C maximum) for short periods or refrigerate longer term.
- Refrigerate or freeze unopened packages to carry over for annual storage.

Trap Design:

- PHEROCON® AM/NB TRAP.

Placement Time:

- Traps should be hung in orchard by June 1.

Placement Pattern:

- Place traps in a grid pattern within the orchard.
- Within tree, as high as possible, within an area of dense foliage on the shady north side of trees.
- Place traps in orchard hotspots

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WALNUT HUSK FLY (WHF), *Rhagoletis completa*

Trap Density:

Number of traps	*Acres*	*Hectares*
Minimum of 3	< 30	< 12
2 per 10 acres (4 hectares)	30-100	12-40
1 per 20 acres (8 hectares)	> 100	> 40

Historically highly infested areas should be monitored with additional traps.

Trap Maintenance:

- Check traps at least three times per week.
- Replace traps when adhesive is fouled with dust or insect debris.

Recommendations:

- Apply insecticide treatments when the first female with eggs is captured.
- Continue monitoring after first spray to verify efficacy of first spray treatment.
- Begin monitoring for nut stings 2-3 weeks after first capture of females in traps.
- Check a minimum of 10 nuts from shady areas of 20 trees throughout the orchard.
- Check stem and visible stings to verify the presence of eggs. Treat when egg laying begins.

Source: Recommendations and certain other sections were sourced from UC IPM Walnut Pest Management Guidelines for Walnut Husk Fly and PNW Pest Management Handbooks for Walnut Husk Fly.

Note, always:

- Use only one lure per trap.
- Count and record captures as recommended.
- Change trap as needed.
- Discard lures in trash far from the area of use and remove trash afterwards.
- Follow recommendations.
- Contact local extension authorities and consultants for regional advice.

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