BRAZILIAN APPLE LEAFROLLER (BALR)

Bonagota cranaodes

Description:

Adults:

Adults are light gray in color, 0.3-0.4 in (7-10 mm) in length, and a wingspan of 0.6 in (15 mm).

Eggs:

Egg laid on the smooth side of leaves, are milky white in color and turn darker as they develop.

Larvae:

First instar larvae are yellowish with a dark head, and fully developed larvae vary from yellow green to predominately green depending on diet.

Pupae:

Pupae are initially green and turn a darker brown as they develop.

Left: BALR adult on apple; Center: BALR fourth instar larva; Right: BALR pupa sheltered between apple leaves (source: Botton et al. 2013, INFOTECA-E).

Hosts:

Mainly apples, but other cultivated plants such as plum, pear, poplar, hydrangea, turnip, roses, and clovers.

Damage:

- Damage occurs to both leaves and fruit.
- Larvae build shelters by joining leaves, affixing leaves to fruit, or hiding within fruit cluster.
- Larvae feed on leaves but will also feed on the surface of the fruit when they are in contact with leaves.

Left: RBLR larval feeding damage to leaves and Right: RBLR larval feeding on fruit surface (source: Botton et al. 2013, INFOTECA-E).

Phenology:

- Occurs in orchards throughout the year with lower population densities in the winter.
- During the winter present as larvae found in alternative hosts, mummified fruit, or remaining leaves.
- Population peaks at the end of August and between December and May.

Lure Type and Maintenance:

- PHEROCON® BALR controlled release lure.
- Replace PHEROCON® BALR lures every 4 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 DELTA VI, 1C, IIB, or IIID orange.

Placement Time:

- Traps should be placed in spring before the start of the growing season.

Placement Pattern:

- Within orchard in a grid pattern.
- Within tree 6-7 ft (1.8-2.1 m) high in canopy, unblocked by leaves or developing fruit.

Trap Density:

Number of traps	*Acres*	*Hectares*
Minimum of 2	< 10	< 4
One trap per 5-10 acres (2-4 hectares)	10-100	4-40

Trap Maintenance:

- Check daily until biofix, then twice per week thereafter.
- Replace trap liners every 4 weeks, or when fouled with dust or insect debris.

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Recommendations:

- Populations present between December and May can cause significant damage and economic losses if control measures are not adopted.
- Adults moth captures should be recorded at least twice per week and treatment decisions considered after a mean capture of 20 adults is reached per trap per week.
- Control can be achieved using insecticides when used in combination with insecticides to control other pests, such as the oriental fruit moth.

Source: Recommendations and certain other sections were sourced from Compendium of Apple and Pear Diseases and Pests, Second Edition, Fruit Surface Damage.

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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