

# LOBESIA BOTRANA

## European Grapevine Moth

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European grapevine moth *Lobesia botrana* is native to southern Italy and is thought to have originated from Austria. It has been introduced to Europe, north and west Africa, the Middle East, eastern Russia, Japan, and Chile.

The European grapevine moth most commonly lives on grape plants in agricultural areas. However it also lives on berries as well as twenty-five other plants. These include carnations, cherries, currants, lilacs, nectarines, and plums. *Lobesia botrana* thrives in somewhat dry climates, such as the areas of California suitable for producing wine.

It takes about one to three days after mating for the female to lay her eggs. The first generation of eggs are attached on or near the flower bunch. A female can lay up to 35 eggs per day for 6 days. On average, a single female lays 80 to 140 eggs, though this depends on the generation. Later generation eggs are laid singly and directly on berries. This is where *L. botrana* remain during the larval and pupal stage of development.

### Reproduction

Males and females of *Lobesia botrana* take flight at dusk to find mates shortly after emerging from pupation. Mating occurs in flight. Pheromones are likely secreted to attract mates. Most females only mate once, though they are capable of mating more than once. Males likely mate multiple times with multiple females.

### Development

Depending on the environmental temperature, the European grapevine moth can have up to four life cycles per year, although two to three is the most common. Pupae are in a resting state during the winter in hidden places to hide from predators. Adults emerge from pupation when air temperatures are warm enough (over 10 degrees Celsius). Males emerge about a week before females. The first-generation moths are usually the largest but do the least damage on the grapevines. Females lay eggs one or three days after mating. The first generation eggs are laid singly near the flower cluster. Eggs hatch after 3 to 11, with hatching occurring sooner in warmer, more favorable temperatures. The larvae of the first generation feed on the flower parts. Larval development takes 20 to 30 days, depending on temperature. Non-diapausing pupae develop in 6 to 14 days before emerging as adults. These adults mate and produce another generation, and depending on the region, the cycle repeats before winter. The last generation produces diapausing pupae. Eggs of the second and third generation moths are usually laid directly on the berries. The larvae of these generations are the most damaging since they feed on the berry itself.

## Global distribution

This insect occurs in Central and Southern Europe, Northern Africa, the Middle East, Central Asia, Japan and Thailand. The moth was recently found in Chile.

## Plant hosts

The moth is best known as a pest of grapes (*Vitisvinifera*), though it is polyphagous and has a wide host range across 27 plant families. Other plant hosts include carnations, black berries, cherries, currants, lilacs, nectarines and plums.

## Biology

The moth has two to four generations per year and is active from early spring to late summer. A female moth deposits one or a few eggs on or near buds, pedicels, flowers or fruits of host plants. Larvae spin silken webs to tie leaves, inflorescences or fruit clusters. The spring generation larvae feed on flower buds and pupate within webbed plant parts. The summer generation larvae feed on and pupate in berries, which predispose berries to molds and rots. The moth overwinters as a pupa at various locations such as under leaf litter, in the soil and under grapevine bark. Adults feed on nectar.

## Identification

- Adult: 5-7 mm wingspan; forewings have cream-white color with gray, black and brown markings; hind wings are white (male) or dark gray (female).
- Larva: Up to 10 mm long; body yellowish-green to grayish-green; skin may be translucent leaving the gut visible; head and thoracic plate brownish-yellow; caterpillar is very agile when disturbed.
- Pupa: 5-6 mm long, brown.
- Eggs: Lentil-shaped, 1 mm long; color initially yellowish and later turns grey; eggs are found on stems and berries.

## Signs of infestation

- Larva-fed grapes may turn brown, mold or rot.

## How to control LOBESIA BOTRANA ?

Related products and innovations:

### Attract & kill solution:

IQ LOB-GEL (environmentally friendly new attract and kill gel solution).

### Pheromones traps solution:

IQ LOBESIA ( Sexual pheromone trap with field longevity 4-6 weeks )

