GYPSY MOTH (GM)

Lymantria dispar

Description:

Adults:

Males have a slender body, are grey-brown in color with dark wing markings, plumose antennae, and a wingspan of 3 – 4 cm. The female has a larger wingspan of 4 – 7 cm and are larger bodied than the males. Females are off white in color with wavy, black bands across the forewings.

Eggs:

Gray, pellet-like eggs (about 1 mm in dimeter) are laid in masses, from 80 to 1200 eggs. Egg masses are covered by a dense, yellowish coating of hair from the female abdomen and are found mainly on tree trunks, but can also be found on rocks, walls, fences, or other places.

Larvae:

First instar larvae are grayish black in color, and later instars are more colorful. The head is predominately dark in early instars and yellow in later instars. Fully grown larvae are black with 11 pairs of tubercles along the top surface with 5 blue pairs and 6 red pairs of tubercles.

Pupae:

Dark brown and matted with reddish hairs and are attached to tree trunks or other objects by silken threads.

Distribution:

Of Eurasian origin, and accidentally introduced into the US in 1869 spreading rapidly and quickly becoming a serious pest. Gypsy moth is now widely established and likely occupies all portions of the temperate world where oaks and other suitable host plants occur.

Top left: adult male (brown) and female (white). Top right: GM egg mass on tree. Bottom: GM larva. (source: Purdue Extension).

Hosts:

Broad range of host plants that it utilizes, including trees such as maple, birch, oak, aspen, pine, spruce, apple, and many others.

Left: larvae feeding on oak leaves. Right: completely defoliated oak trees. (source: UNH Extension Gypsy Moth fact sheet).

Damage:

- Defoliators of hard and softwood trees.
- Hatching larvae start feeding on flushing buds and later on newly expanded leaves.
- High populations often result in total tree defoliation, often across large spatial areas.

Phenology:

- One generation per year. Overwintering eggs hatch when host trees produce new leaves, depending on climatic situation.
- Larval stage lasts about 8 weeks and pupal development is usually completed within 2 weeks.
- Males emerge 1 or 2 days before females.
- Adults are short-lived, surviving for less than 1 week where no feeding occurs.

Lure Type and Maintenance:

- PHEROCON® GM String Lure.
- Replace PHEROCON® GM string lures every 16 weeks..

Lure Storage:

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

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GYPSY MOTH (GM), *Lymantria dispar*

Trap Design:

- PHEROCON® 1C, PHEROCON® IIC, or PHEROCON® III DELTA trap.

Placement Time:

- Traps should be placed prior to male moth emergence on preferred host trees.
- Estimate date by which traps must be set by determining the earliest date moths were captured in previous years.

Placement Pattern:

- Woodland edges are best for trap placement; male moths typically follow woodland edges and lines of tree growth and do not frequent open areas.
- Place trap on the windward side so the prevailing wind currents will carry the pheromone into the woods.
- Place traps 1.2 – 1.5 m high directly on tree trunks using string tied around trunk to hang trap.
- If possible, place traps in shady areas. Do not place traps where foliage or branches will block the trap openings.
- If trap cannot be hung on a host tree, another vertical surface such as a telephone pole within 100 m of a host tree can be used.

Trap Density:

Detection and Exclusion in Urban Landscapes

- The purpose of a detection survey is to determine through trapping where isolated infestations occur as soon as possible after introduction.
- A minimum of two randomly set traps should be used. Additional traps may be necessary depending on the size of the property, but no more than 12 traps should be used.
- When possible, place traps in all four cardinal directions on the property.

Population Delimiting Survey

- The purpose of a delimiting survey is to determine presence and approximate population size in the outer boundaries of an infestation.
- A trap array of 16 to 36 traps per square mile (2.6 square km) over an area of 1 to 4 square miles.
- Center the trap array grid on the current infestation and place traps in all four cardinal directions.

Trap Maintenance:

- Check traps every 10-14 days.
- Replace traps every 3 – 4 weeks, or whenever fouled with dust or debris.

Recommendations:

- Destroy egg masses during fall and winter by spraying them with horticultural oil labeled for gypsy moth egg masses or by scraping them off and killing them.
- Place barrier bands on tree trunks in late April. Replace barrier bands with collection bands made of burlap in June

Source: Recommendations and certain other sections were sourced from USDA Gypsy Moth Program Manual, CABI Invasive Species Compendium Gypsy Moth Datasheet, and Michigan State University IPM.

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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