

(revision date:4/4/2022)

Geranium: Tobacco budworm

Use Integrated Pest Management (IPM) for successful plant problem management.

Biology

Tobacco budworm larvae attack several ornamental flowers including petunia, rose, geranium, and nicotiana. They feed primarily on buds, petals, and developing seed pods, but will feed on shoot tips and foliage if flower buds are not available. On most hosts, larvae prefer to tunnel into buds, but they will also feed on the petals of opened flowers (especially on petunia). Damaged buds fail to open, resulting in loss of color in floral plantings. If buds open, flowers and leaves appear ragged or tattered. The adult is a greenish-brown moth with cream-colored bands on the wings. It is about 3/4 inch long with a wingspan of about 1 1/2 inches. Eggs are laid on blossoms, fruit, or shoot tips of plants. Very young larvae are yellowish or light yellow-green, but the color of older larvae is variable. Mature larvae may be light to dark green, brown, tan, or reddish. These older larvae usually have stripes along the sides and a brown head. Mature larvae drop to the ground and pupate in the soil around host plants. There are typically two or more generations per year. Tobacco budworm overwinters as pupae in the soil.

Management Options

Non-Chemical Management

- ~ Monitor plants closely for damage. Handpick and destroy larvae and infested buds on roses, petunias, and geraniums.
- ~ Scout for larvae at dusk, when they are most active. Check for actively-feeding larvae, small holes in buds and flowers, and caterpillar droppings (frass or feces) associated with damaged buds.
- ~ Consider planting less-susceptible plants. For instance, ivy geranium is reported to be damaged less frequently than standard horticultural geraniums.
- ~ When overwintering plants in containers, remove soil and repot plants to reduce numbers of overwintering insects.
- ~ Rototilling has been suggested as a possible management strategy for soil-pupating larvae, but the efficacy is not known.
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- Manage weeds in and around gardens to remove habitat and alternate food sources for tobacco budworm.
- ~ Avoid use of broad-spectrum insecticides which kill natural predators of garden pests.

Select non-chemical management options as your first choice!

Chemical Management

IMPORTANT: Visit Home and Garden Fact Sheets for more information on using pesticides

Tobacco budworm, particularly mature larvae, is reported to be resistant to many common garden insecticides. Manage with cultural controls whenever possible. *Bacillus thuringiensis* (Bt) is somewhat effective if applied when eggs or damage are first noticed. However, Bt must be consumed by young, actively-feeding larvae and only works where the young larvae are feeding on the SURFACE of the plant. Bt is NOT effective against larvae feeding within buds and will not provide reliable control of mature larvae. Synthetic pyrethroids such as bifenthrin, cyfluthrin, or esfenvalerate may have some efficacy against tobacco budworm, but results are unconfirmed in the Pacific Northwest. CAUTION: Pyrethroid and spinosad pesticides are toxic to bees. To reduce risk to pollinating bees, make pesticide applications in the evening after bees are done working for the day. Do not apply on or near flowering plants.

Listed below are examples of pesticides that are legal in Washington. Always read and follow all label directions.

- ~ ferti-lome Dipel Dust
 - active ingredient: *Bacillus thuringiensis* subsp. *kurstaki*
 - EPA reg no: 7401-290

- ~ Monterey Garden Insect Spray [Organic]
 - active ingredient: *spinosad* (*spinosyn A+D*)
 - EPA reg no: 62719-314-54705
- ~ Safer Brand Garden Dust RTU [Organic]
 - active ingredient: *Bacillus thuringiensis subsp. kurstaki*
 - EPA reg no: 36488-25-42697
- ~ This list may not include all products registered for this use.

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Images



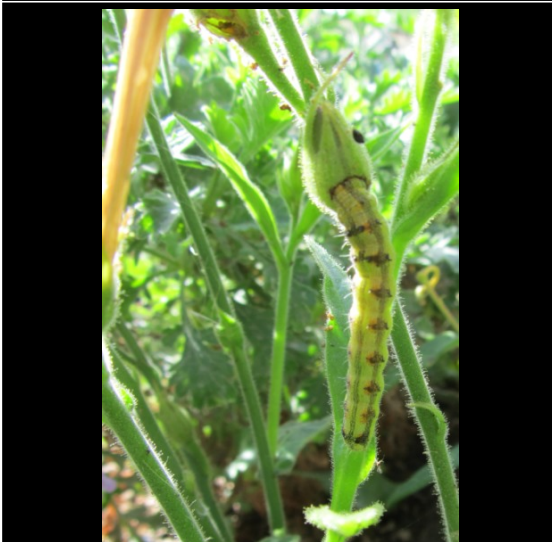
~ Caption: Tobacco budworm damage on geranium leaf
~ Photo by: J. Berger, bugwood.org



~ Caption: Tobacco budworm feeding on blossoms
~ Photo by: W. Cranshaw, Colo St Univ, bugwood.org



~ Caption: Adult tobacco budworm moth
~ Photo by: J. Berger, bugwood.org



~ Caption: Tobacco budworm feeding on nicotiana
~ Photo by: S.D. Spain



*~ Caption: Tobacco budworm (red form) feeding on petunia
~ Photo by: S.D. Spain*