

Pests on Easter Lilies

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Growers are focused on crop scheduling for Easter Lilies, but need to monitor for certain key pests including root rots, *botrytis*, aphids, bulb mites and fungus gnats. Physiological problems may occur as growers adjust their heat and light levels to keep Easter lilies "on track". Blasting of flowers is common and may be due to high soluble salt levels, fluctuating water levels and, occasionally, to viruses.

Root Rots

Root rot is most often due to *Pythium*, but *Rhizoctonia* can also cause problems. As the roots become decayed, growers will see a gradual yellowing of the lower leaves. Growers tend to have a problem when they are running their houses "warm", when roots have been stressed by high soluble salt levels or when wounded by water stress, ie. letting the plants become very dry and then watering.

The New England Floricultural Crop Pest Management...Guide recommends Banrot 40 WP, or 8G, Subdue, Truban 25 EC, or Terrazole 35 WP for management of root rots. Dr. Goldsberry, a plant pathologist with Colorado State University, suggested that growers use a more acid growing medium, with a pH of 6.0 instead of the recommended pH of 6.8 to 7.2, to manage *Pythium*.

Botrytis

Botrytis cinerea or Gray Mold may cause spotting on the petals. Easter lilies that are held in cold storage and whose tissues are physiologically aged and weakened are more susceptible to attack by *Botrytis*.

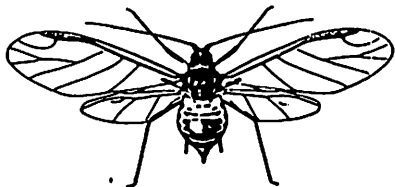
Botrytis elliptica, causes streaking of lily leaves, especially during commercial bulb production. However, *B. elliptica* has occurred on greenhouse-grown lilies in New England. Growers should look for distinct yellow streaks and a "green

island" effect. On Asiatic hybrid lilies, streaks are red instead of yellow.

On greenhouse-grown lilies, the lower leaves on older plants are more likely to become infected by *B. elliptica* than are the upper leaves. Infection by conidia starts on the lower leaf surface, therefore, growers need to spray fungicides so that the lower leaf surface is thoroughly covered. Gray mold (*B. cinerea*) may become a secondary invader of lesions caused by this disease. The *New England Floricultural Crop Pest Management...Guide* recommends Chipco 26019, Cleary's 3336-F, Exotherm-Termil, Kocide 101 WP, Daconil 2787 F and Ormalin 50 WP or FL for the management of *Botrytis*.

Aphids

Aphids are the most common insect pest on Easter lilies. The melon and foxglove aphids are the most serious of the many species of aphids that attack lilies. Aphids damage Easter lilies by removing plant sap, excreting honeydew on leaves, by transmitting viruses and reducing the lilies's aesthetic value and marketability.



The melon aphid, *Aphis gossypii*, is a small (1/16" long), yellow, green or almost black aphid with cornicles or "tailpipes" that are completely black. The melon aphid may vector viruses including lily symptomless virus and cucumber mosaic virus. Together these viruses may cause fleck disease which flecks the leaves and produces plants with small, weakened flowers.

Growers need to carefully inspect their plants for melon aphids, as small infestations are difficult to detect. Melon aphids are very small and tend to be found all along the plant stem. Unlike other aphids, they are not just found at the growing tip. Melon aphids do not develop into winged forms as readily as other aphids, so few winged adults will be seen on yellow sticky cards when a serious infestation has occurred. Look for melon aphids on weeds, especially shepherd's purse, lamb's quarters and balsam (*Impatiens balsamina*).

The foxglove aphid, *Acyrtosiphon solani*, is a common pest of lilies. This aphid is light green with a dark patch near its cornicles. The foxglove aphid causes yellow spotting and curling of lily leaves as they expand. Foxglove aphids may feed on flower buds, causing thickened, deformed buds which may then split.

The potato aphid, *Macrosiphum euphorbiae*, is pink and green with long cornicles. It transmits cucumber mosaic virus which is often associated with split flower buds.

Bulb Mites

Bulb mites, *Rhizoglyphus robini*, are generally found feeding on injured or dead bulb scales. However, bulb mites may also feed on healthy tissue, resulting in rotted bulbs and weak and stunted Easter lilies. Bulb mites are often "associated" with the *Pythium* root rot. Certain fungicide treatments for *Pythium* are not as effective in reducing root rots when there are high mite populations. In one particular study, mite populations needed to be reduced for the selected fungicide treatments for *Pythium* to be most effective.

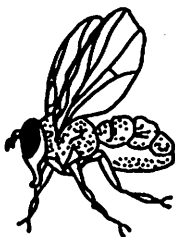
Growers should inspect bulbs when they are purchased and discard or destroy soft bulbs. To manage light infestations of bulb mites, dip bulbs into 120°F water for 30 minutes. (Only dip CTF-treated bulbs, for if case-cooled bulbs are dipped, the hot water treatment will negate the vernalizing effect of bulb cooling.)

Fungus Gnats

Adult fungus gnats are small, (less than 1/8-inch long), delicate, black insects with long legs and antennae. (Shore fly adults are more robust in appearance with much shorter antennae and legs). Fungus gnat larvae are small, white and slender with a distinctive black head capsule and are usually found in the top inch of growing medium. (Shore fly larvae are yellowish brown without a distinctive head capsule.)



Monitor for adult fungus gnats by placing yellow sticky cards horizontally just above the soil surface. Treatment options against the larvae include Knox-Out, a microencapsu-



lated form of Diazinon, and Gnatrol, a formulation of *Bacillus thuringiensis* (BT). Gnatrol persists in the soil for only 48 hours, so repeat applications are needed to be effective. If all stages of fungus gnats are present, three applications at one-week intervals will be needed. Beneficial nematodes (Exhibit) are best applied late in the afternoon or evening against the larvae. Formulations of pyrethrin (PT 1100, PT 1600 A) and resmethrin (PT 1200) are recommended by *New England Floricultural Crop Pest Management...Guide* against fungus gnat adults.

Monitor for root rots, aphids, bulb mites and fungus gnats early to ensure a healthy and marketable Easter lily crop.

References

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