

# Linden



|                 |  |  |  |  |  |  | Plant Problem               |
|-----------------|--|--|--|--|--|--|-----------------------------|
| November 21-30  |  |  |  |  |  |  | Aphid, Giant Bark           |
| November 11-20  |  |  |  |  |  |  | Scale, Cottony Maple        |
| November 1-10   |  |  |  |  |  |  | Twig Pruner Borer           |
| October 21-31   |  |  |  |  |  |  | Anthracnose                 |
| October 11-20   |  |  |  |  |  |  | Cankerworms, Spring & Fall  |
| October 1-10    |  |  |  |  |  |  | Cercospora Leaf Spot        |
| September 21-30 |  |  |  |  |  |  | Japanese Beetle             |
| September 11-20 |  |  |  |  |  |  | Lace Bug, Linden (Basswood) |
| September 1-10  |  |  |  |  |  |  | Leafroller, Fruittree       |
| August 21-31    |  |  |  |  |  |  | Linden Looper               |
| August 11-20    |  |  |  |  |  |  | Mite, Spindle Gall          |
| August 1-10     |  |  |  |  |  |  | Yellownecked Caterpillar    |
| July 21-31      |  |  |  |  |  |  | Verticillium Wilt           |
| July 11-20      |  |  |  |  |  |  | Borers, Round- & Flatheaded |
| July 1-10       |  |  |  |  |  |  |                             |
| June 21-30      |  |  |  |  |  |  |                             |
| June 11-20      |  |  |  |  |  |  |                             |
| June 1-10       |  |  |  |  |  |  |                             |
| May 21-31       |  |  |  |  |  |  |                             |
| May 11-20       |  |  |  |  |  |  |                             |
| May 1-10        |  |  |  |  |  |  |                             |
| April 21-30     |  |  |  |  |  |  |                             |
| April 11-20     |  |  |  |  |  |  |                             |
| April 1-10      |  |  |  |  |  |  |                             |
| March 21-31     |  |  |  |  |  |  |                             |
| March 11-20     |  |  |  |  |  |  |                             |
| March 1-10      |  |  |  |  |  |  |                             |

KEY: fruit flower branches leaves trunk crown roots

# Linden

## Plant Problem

## Signs/Symptoms

## Treatment

### *Aphid, Giant Bark*



Large, one-quarter inch long, gray-brown, spotted, long-legged aphids in dense colonies on new twigs; many winged. Heavily infested branches may be stressed or wilted.

These aphids have many hosts and are most evident in late summer. Older established trees tolerate them well, but monitor newly planted trees. For severe infestations, dislodge aphids with a strong spray of water, or treat with a contact insecticide.

### *Scale, Cottony Maple*



Brown, adult hemispherical scales are attached, often in clusters, to twigs. Each has a large, bulging, cottony ovisac containing eggs. Nymphs are attached to leaves in the summer.

Nymphs ("crawlers") hatch from ovisacs in late June-early July and crawl to foliage, where they feed on leaf undersides through the summer. In cases where infestations threaten tree health, apply a horticultural oil, insecticidal soap or contact insecticide to kill nymphs.

### *Twig Pruner Borer*



Larger twigs break off and fall to the ground in late summer. Inspection shows the twig is cleanly cut from within by a mature larva. Bark remains on the cut when the twig breaks.

Gather and destroy broken twigs, as they contain mature larvae. This species attacks only dead or severely weakened trees, so there is little justification for insecticidal control. A related species, the oak twig pruner, attacks healthy red oaks and should be monitored.

### *Anthracnose*



Small, circular to irregular spots that are tan, dark brown or black.

Sanitation. Improve air circulation. Apply foliar fungicide at budswell and repeat according to label instructions.

### *Cankerworms, Spring and Fall*



Ragged holes in leaves; only veins may remain. These "inchworms" are greenish, brown or black and move in a looping fashion. Some may hang from silken threads when disturbed.

Healthy trees tolerate considerable defoliation; treat only if severe and when cankerworms are abundant and small. Microbial insecticides are effective and safe alternatives to chemical insecticides, especially in situations where drift is a concern.

## Plant Problem

## Signs/Symptoms

## Treatment

### *Cercospora Leaf Spot*



Brown circular lesions with dark brown borders. Lesions coalesce. Premature defoliation with severe infection.

Sanitation. Improve air circulation.

### *Japanese Beetle*



Leaves are skeletonized, have ragged holes, or are completely eaten. Metallic green scarab beetles with coppery wings actively feed in clusters during the day.

Pick off beetles in the early morning and drown in a bucket of soapy water. Spray foliage with neem oil as a deterrent. Capture beetles with a Japanese Beetle pheromone trap through the season. Spray beetles and foliage with an insecticide.

### *Lace Bug, Linden (Basswood)*



Whitish-yellow flecks first on upper surfaces of leaves; eventually leaves become yellow or bronzy-brown. Leaf undersides with small, flattened, lacy bugs and tarry fecal spots.

The brownish nymphs cannot fly and are more easily controlled. A strong stream of slightly soapy water from a hose-end sprayer will dislodge and kill many. Other options include a spray oil, insecticidal soap, conventional insecticide, or systemic insecticide.

### *Leafroller, Fruittree*



Buds with holes, webbing and frass. Leaves rolled together with webbing and skeletonized or devoured. These green worms with shiny black heads wriggle violently when disturbed.

Rarely justifiable to control, as infestations tend to be spotty, and healthy trees tolerate even extensive defoliation. Should control be warranted, make several applications of a microbial insecticide, such as a product containing *Bacillus thuringiensis* or spinosad.

### *Linden Looper*



Ragged holes in leaves; only veins may remain. These "inchworms" are yellow with 10 dark wavy lines along the top half of the body. They move in a looping fashion.

Healthy trees tolerate considerable defoliation; treat only if severe and when loopers are abundant and small. Microbial insecticides are effective when applied with thorough coverage and repeated; otherwise, apply a chemical insecticide according to label directions.

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## Plant Problem

## Signs/Symptoms

## Treatment

### *Mite, Spindle Gall*



Greenish or red, spindle shaped pouch galls on the upper surface of leaves, with openings on the undersides.

The galls are not at all harmful to host trees. There is no need to control the mites which cause formation of the galls in the spring.

### *Yellownecked Caterpillar*



Caterpillars have narrow, black and white stripes along the body and an orange-yellow "neck" behind the head. They feed in groups and raise their bodies up when disturbed.

Infestations are seldom serious, however, small trees and entire branches can be defoliated. Young caterpillars can be controlled with a microbial insecticide, a horticultural oil or an insecticidal soap. Do not treat mature caterpillars, as they soon cease feeding.

### *Verticillium Wilt*



Leaves turn yellow at the margins; margins eventually turn brown and dry. Sudden wilting of leaves; typically only one side of the tree wilts. The wood is chocolate-brown in bands, streaks or flecks. Tree death.

Sanitation. Avoid root injury. Avoid water stress. Replace with non-susceptible host.

### *Borers, Roundheaded & Flatheaded*



Branches show dieback. Beetle exit holes may be evident, as well as sawdust-like frass on the ground. Bark may be cracked or loose, or swollen cankers and scarring may show.

Monitor for exit holes in May-June. Thereafter, treat with an appropriate borer spray insecticide until August 1. Keep the plant host healthy by regular watering and mulching. For flatheaded borers, an option is to apply a systemic insecticide as a soil drench.