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Lilac Bacterial Blight: *Pseudomonas syringae* pv. *syringae*

Introduction

Bacterial blight of lilac, also known as shoot or blossom blight, is caused by the bacterium *Pseudomonas syringae* pv. *syringae.* The pathogen is capable of causing damage to all types of lilacs including Japanese, Chinese, Persian and common varieties. Some researchers suggest that white flowering varieties may be more susceptible to infection than other varieties. The disease is usually associated with plants that have been stressed by drought conditions, improper fertilization, and/or have been wounded. The pathogen has also been reported on Forsythia, Blueberry, and other ornamental plants.

Figure 1: Leaves often show damage around the margins and/or along the central vein (provided by **Karen L. Snover-Clift, Cornell University)**

Symptoms and Signs

Infections result in the appearance of brown spots on the leaves and stems on the plants. The spots may enlarge and cause malformations of the leaf tissue (**Fig. 1**). Leaves may die and drop from the stems. The symptoms may move from the leaves to the stems as the disease progresses, turning the tissue black and causing it to wilt (**Fig. 2**). The stems infection causes girdling of the tissue resulting in the death of shoots and blossoms.

Figure 2: Twigs turn black and wilt from the tips back to the stem. (provided by **Karen L. Snover-Clift, Cornell University)**

Disease Cycle

New infections are initiated in the spring during wet weather. The bacterium may have overwintered in disease cankers on the plants, on healthy plant material, in plant debris, in perennial weeds, and/or in the soil around the area. The bacterium is spread to new growth of the susceptible plant in the spring by insect vectors, on pruning tools, blowing wind and splashing rain. Once the bacterium reaches the host plant, it needs a natural opening or wound to gain access to the internal tissues. When infection takes

place it produced the symptoms listed above.

Management Strategies

Cultural Management: Take the proper actions required to keep the plant as healthy as possible. Practice proper fertilization and water management. Stresses caused by the lack of nutrients and/or water can predispose the plants to an infection. Avoid wetting the foliage and overhead irrigation to minimize splashing of the bacterium on to the host plants. Prune plants to allow for increased air circulation through the canopy. Also proper spacing of plants is recommended.

Resistant Varieties: Some varieties of lilac show a resistance to infections by the Bacterial Blight pathogen. Some varieties that have shown good resistance characteristics include *Syringae oblata* var. *dilatata* 'Cheyenne', S. vulgaris 'Edith Cavelle', 'Fr. John L. Fiala', 'General Sheridan','Katherine Havenmayer', 'Krasavitsa Moskvy', 'Montaigne', 'Nadezhda', and 'President Grevy', *S. chinensis* 'Red Rothamagensis' and 'Saugeana' and *S. meyeri*. Some varieties that show poor resistance characteristics include *S. hyacinthiflora* 'Annabel', *S. vulgaris* 'Agincourt Beauty', 'Bridal Memories', 'Burgundy Queen', 'California Rose', 'Charles Joly', 'Charm', 'Edward Boissier', 'Edward Gardner', 'Etna', 'Firmament', 'Lavendar Lady', 'Little Boy Blue', 'Miss Ellen Willmott', 'Monge', 'Olimpiada Kolesnilova', 'Paul Thirion', 'Royal Purple', Ruhm van Horstenstein', 'Wonderblue', and 'Yankee Doodle'.

Pruning: Infected branches should be pruned 20 to 25 cm (10-12 inches) below the visible infection. Pruning should be done during dry weather to minimize the chance of spreading the pathogen. Pruned branches should be destroyed or discarded. Always sterilize pruning tools between cuts to prevent spreading the bacterium to other areas on the tree.

Chemical Management: Pesticides should only be used if the disease is severe. In New York State, homeowners may be able to use Phyton 27 (EPA Reg. No. 49538-) for management of Bacterial Blight. Apply once in September, and make another before the fall rainy period begins. Other products may also be registered, but be certain any pesticide purchased is labeled for this use, and follow label instructions for managing this pest.

Reference:

Perry, Leonard, 2000., http://pss.uvm.edu/ppp/wplilacs.html. Lilac trials and photos. University of Vermont.

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READ THE LABEL BEFORE APPLYING ANY PESTICIDE! Changes in pesticide regulations occur constantly. All pesticides distributed, sold, and/or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional DEC office.

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