

Black Knot of Plum and Cherry

Bulletin #5091

Introduction

Black Knot is one of the most common diseases of plum and cherry (and other *Prunus* spp.) in Maine. It is caused by a fungus (*Apiosporina morbosa*) which can severely limit the production of fruit trees or ruin the esthetic value of ornamentals.

Environmental Conditions

In the spring the fungus produces infective spores during rainy periods which are forcibly ejected. These spores are splashed by the rain and blown by the wind to land on susceptible plant tissue. These spores can germinate and infect new tissues during wet periods as short as 6 hours at the optimal temperature for infection (70-75°F). Infection occurs from April through June especially on the current season's growth.

Symptoms

This disease appears as obvious hard black elongated swellings (knots) which may be 1-6" or more in length. The knots are scattered throughout the tree with the number increasing in successive years if the condition is left untreated. When the symptoms first appear during the Autumn following infection, it appears as an inconspicuous swelling on the current season's shoots. As growth resumes the following spring, the bark splits and the knots are greenish and soft but become hardened and black by the end of the second year.

Survival and Dispersal

The fungus over-winters in the stem of the infected host and erupts during the spring. These early infections produce asexual spores (conidia) which may infect the host. As the knot darkens through the summer and the

following winter, sexual spores (ascospores) are produced and it is these spores which cause most infections. If the knot has girdled the stem sufficiently to cause its death the infection will stop. Otherwise the knot will continue to expand and produce new spores in successive years.

Control

Black knot can be controlled using a combination of prevention and sanitation.

1. Remove all knots and swellings by pruning 3-4" below the knot during the dormant season before April 1. Where infections occur on larger branches which should be saved, cut the infection out down to the wood and 2-3" from its edge.
2. Burn, bury, or otherwise remove prunings from the area because they may still be an active source of spores.
3. Severely infected trees should be removed entirely.
4. Cut and remove wild hosts of the disease.
5. Use resistant varieties if disease pressure is high.
6. Preventative sprays may be necessary if nearby disease sources cannot be eliminated or when bringing a heavily infected tree back to health. A dormant spray of lime sulfur may be helpful when pruning heavily infected trees. Fungicides which have been effective against black knot include: captan, copper hydroxide, thiophanate-methyl, lime-sulfur, and sulfur. Sprays should be applied at budbreak and every week to two weeks, especially before rain, until terminal growth stops.

**When Using Pesticides
ALWAYS FOLLOW
LABEL DIRECTIONS!**

**Bruce A. Watt
Extension Plant Pathologist
2004**

**Where trade names are used, no discrim-
-ination is intended and no endorsement by
Cooperative Extension is implied.**