

Black knot is a disease of *Prunus* species that causes twig and branch swelling and discoloration, resulting in girdling and dieback of branches and sometimes the main stem. Black knot is caused by the fungus *Apiosporina morbosa*. The infection may develop over a number of years.



Infected chokecherry



Black knot on the branch

Hosts and Damage:

Plants that are susceptible to this fungus include almonds, apricots, cherries and plums. The first symptoms are light brown, warty swellings about 1 cm long on the current shoots in late summer or the following spring. The fungus continues to grow in these tissues throughout the second growing season, increasing the length and diameter of the knots. By fall of the second year after infection, the knots are coal-black and woody.

At first, the knots are only about 1 cm across and cover only one side of the twig. By the time the knots turn black, they may be 10 to 15 cm long and may completely encircle the limb. Knots 30 cm or more in length are not uncommon. The knots continue to expand in following years until the branch becomes girdled and dies. Older knots are frequently invaded by wood-boring insects. Infected trees become aesthetically unpleasant after a few years as a result of limb death and stunting of trees.

Infection can occur on both healthy and mechanically injured woody tissue of the current season's growth. The infecting spores arise from the black knots, they are spread by wind and rain. Mature spores are usually present from the last week of March or early April through the first week of June. Fruiting bodies of the fungus are formed on the outside of the knots during fall and winter. The fungus overwinters in infected branches and knots. The disease cycle normally takes two years to complete.

Specific Management Practices for Control of the Black Knot:

- New plantings of plums or cherries should not be placed next to trees bearing black knots.
- Once trees are infected, the knots should be pruned out at least 10 cm below any visible knot, since the fungus mycelium will penetrate the inner bark in advance of any visible swellings.
- Pruning to remove infected twigs and branches should be done before new growth begins in the spring to prevent spores from spreading from the old knots to the new shoots.
- The pruned-out branches should be disposed in plastic bags or burned in a fireplace immediately because knots on these branches will continue to produce spores for several weeks after pruning.

General Management Practices to Improve Plant Health:

- Water your trees during dry spells. Infrequent, but deep soaking preferably during the early morning hours is recommended. Water absorbing roots are located within the first 25 cm of the surface and extend outward further than the height of the tree.
- Place organic mulch, (e.g. wood chips), or living mulch, (e.g. ground covers) around the tree base to keep the soil moist for longer periods and encourage healthier roots.
- Avoid any unnecessary excavating, grade changes, soil compaction, root cutting or hard resurfacing around trees as these activities destroy vital roots which may lead to tree decline or death.
- Refrain from using high levels of salt or herbicides around trees.

Forest Health Care is a holistic approach to tree care that focuses on improving the health of trees in an urban environment. Our objective is a healthy, sustainable urban forest. Trees in urban forests are often stressed by compacted soil, drought, poor planting and pruning techniques, air pollution, road salt, damage from construction and much more. Trees planted in the right sites, and properly maintained, are less likely to suffer and are more resistant to pest problems.

Pest problems are managed using a decision making process that considers the following:

- Identification of the host and the pest.
- Monitoring of the host and the pest.
- Selection of the appropriate management strategy.
- Evaluation of the management plan.

Our focus is on pest management programs that are environmentally, socially and economically sound.