



Black Knot of Stone Fruit

Nicole Gauthier
Plant Pathology
Extension Specialist

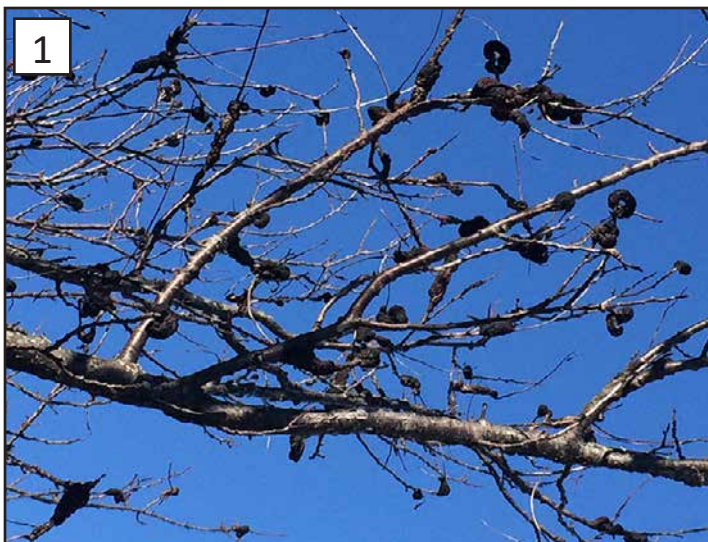
Dennis Morgeson
Horticulture
Extension Agent

IMPORTANCE

Black knot is a common, often serious, disease of stone fruit, primarily affecting plums and cherries in Kentucky. Ornamental *Prunus* species, as well as wild plums and cherries, may also be affected. Trees in both commercial and residential plantings are susceptible.

SYMPTOMS

Black knot is aptly named for the conspicuous black knotty growths that form on infected branches (FIGURE 1). Initially, however, these irregular swellings or knots are small and light brown (FIGURE 2). One year after infection, the enlarging knots become olive-green with a velvety surface. As the season progresses, swellings harden, become brittle, and turn black (FIGURE 3), reaching lengths of 6 inches by the end of the growing season. Often only one side of a limb is affected (FIGURE 4); but, in some cases, limbs may become completely encircled. Knots continue to expand each year until girdled branches eventually die.



CAUSE & DISEASE DEVELOPMENT

Black knot is caused by the fungus *Apiosporina morbosa* (syn. *Dibotryon morbosum*), which overwinters in knots on previously infected twigs and branches. Spores develop within knots in spring between bud break to shuck split and are spread by wind and rain. Only elongating (actively growing) twigs of the current season's growth are susceptible. While infection takes place in spring, knot development is not evident until autumn.

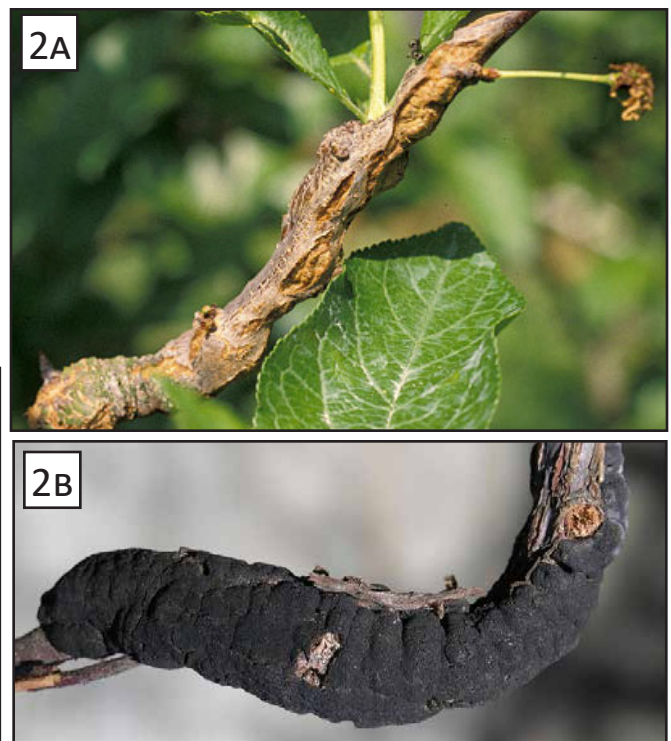


FIGURE 1. BLACK KNOT DISEASE IS EASILY RECOGNIZED, EVEN FROM A DISTANCE, BY THE BLACK KNOTTY GROWTHS APPEARING ON INFECTED BRANCHES.

FIGURE 2. EARLY INFECTIONS APPEAR AS LIGHT BROWN SWELLINGS (A), LATER TURNING BLACK (B).



DISEASE MANAGEMENT

Pruning and sanitation are the primary means for reducing or eliminating black knot. Fungicide applications may be used in conjunction with cultural practices, but are often not warranted.

Pruning

Pruning is best accomplished in autumn or winter after leaves drop, which makes it easier to locate branches with galls. Cuts should be made at branch unions at least 6 to 8 inches below knots. A second inspection in April (before buds open) is recommended to remove any newly formed knots. Complete removal of trees may be necessary if trunks and large limbs become girdled.

Sanitation

All diseased wood should be removed from the planting and/or destroyed; avoid leaving infective clippings on the orchard floor. Removal of wild plum and cherry trees in the vicinity of cultivated trees can help reduce inoculum (infective spores).

Fungicides

If black knot is a persistent problem, fungicide sprays can be applied in spring to protect young, expanding twigs. Fungicides are not curative, and they are ineffective unless an eradication program of pruning and sanitation is followed.

For specific recommended fungicides, homeowners should refer to Extension publication, *Disease and Insect Control for Home Grown Fruit in Kentucky* (ID 21), while commercial growers should refer to *Midwest Fruit Pest Management Guide* (ID-232)

FIGURE 3. KNOTS BECOME BLACK AND BRITTLE AS THE GROWING SEASON PROGRESSES.

FIGURE 4. BLACK KNOT CANKERS OFTEN DEVELOP ON ONE SIDE OF A BRANCH, EXPANDING EACH YEAR.

ADDITIONAL RESOURCES

- Disease and Insect Control Program for Homegrown Fruit in Kentucky, including Organic Alternatives (ID-21) <http://www.ca.uky.edu/agc/pubs/id/id21/id21.pdf>
- Midwest Fruit Pest Management Guide (ID-232) https://ag.purdue.edu/departments/hla/extension/_docs/id-465.pdf

August 2024

Editor: Cheryl Kaiser, Plant Pathology Extension Support

Photos: University of Kentucky—Dennis Moregeson (1), John Strang (2A), and Nicole Gauthier (4); Bugwood.org—Bruce Watt, University of Maine (2B) and Ansel Oommen (3)

Revised from the fact sheet, *Black Knot* (PPFS-FR-T-04) by John Hartman and Paul Bachi