College of Agriculture, Food and Environment
Cooperative Extension Service

Plant Pathology Fact Sheet **PPFS-OR-W-11**

Juniper Twig Blights

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Importance

Twig and branch dieback is extremely common in many juniper plantings in Kentucky. While other factors can be responsible for these general symptoms, Phomopsis twig blight (Figure 1) or Kabatina twig blight (Figure 2) are often the cause.

Hosts

Both diseases affect several species of *Juniperus*, including Eastern red cedar, common juniper, and creeping juniper. Arborvitae is also susceptible.

Symptoms

The overall symptoms of both diseases are similar. Small branches up to about ½ inch in diameter are susceptible to infection. Infected shoot tips initially become pale green before turning brown and dying (Figures 1 & 2). Symptoms progress from branch tips inward toward the main stem and from lower branches upward. Lesions (cankers) and fungal fruiting bodies may be evident at the base of diseased shoots. While cankers may develop on a main branch, large branches are seldom girdled.

Figure 1. Symptoms of Phomopsis twig blight on juniper appear on new growth, moving downward and stopping at the previous season's wood. **Figure 2.** Symptoms of Kabatina twig blight develop on one-year old wood; tissue dies from the infection site upward to the branch tips.

Figure 3. *Phomopsis* produces black fruiting bodies on diseased needles and twigs, appearing like tiny black specks to the un-aided eye. **Figure 4.** *Kabatina* fungal fruiting bodies are visible on mature juniper stems and appear white to gray, eventually turning black.

Phomopsis twig blight symptoms are typically first observed in mid-summer. Young succulent growth is especially susceptible to infection, while mature, non-wounded shoots are not. Dieback occurs on new growth and can extend downward, stopping at the previous season's wood; small cankers may be visible at this juncture. Fungal fruiting structures (pycnidia) appear as tiny black specks at the base of ashy-gray infected shoots; they are readily found on needles and twigs that have died and dried up (Figure 3).

Kabatina twig blight develops on older branches that are at least 1-year-old. Yellow to brown symptoms are evident in late winter or early spring following infections from the previous autumn. The pathogen requires a small wound for infection, such as those due to mite or insect feeding, winter injury, etc. Fruiting bodies (acervuli) produced at the base of infected tissues are initially white to grey, later becoming black (Figure 4). Needle drop may occur in early to mid-summer.

Cause & Disease Development

Phomopsis twig blight is caused by *Phomopsis juniperovora,* while Kabatina twig blight is caused by *Kabatina juniperi*. Both fungi overwinter in infected twigs and on plant debris on the ground. During wet weather, fungal fruiting bodies release spores (conidia), which are spread by rain splash.

Phomopsis primarily infects succulent new growth during wet weather in spring as temperatures rise (60°F to 80°F; optimum 75°F), but additional infections may continue throughout summer when conditions are favorable and young succulent tissue is present.

Kabatina infects through wounds in one-year-old growth in late-summer or autumn when weather is wet and warm (65°F to 80°F; optimum 75°F), but symptoms may not be evident until late winter or spring. Infections are more common in damaged, stressed, or non-vigorous plants.

Key Differences

Phomopsis and Kabatina twig blights have a similar appearance, making it difficult to differentiate between them based on symptoms alone. The information in the following table can help distinguish between these two diseases.

	Phomopsis Twig Blight	Kabatina Twig Blight
Growth stage affected	New growth	1-year-old branches
Timing of symptom development	Mid-summer	Early spring before new growth begins
Fungal fruiting bodies	Pycnidia; black; appear on ashy-colored needles and twigs	Acervuli; initially white/grey, later black; appear on dark, sunken stem tissue

Disease Management

- **Tolerant cultivars**

Avoid planting highly susceptible cultivars. Select cultivars that are known to be resistant; unfortunately, few cultivars are resistant to both diseases.

- **Pruning and sanitation**

Prune infected twigs back to live wood (at least 2 inches below infections) when conditions are dry to minimize the spread of fungal spores. Pruning cuts should be made with sharp blades to reduce damage at the cut end. Avoid excessive shearing. Remove pruning debris from the site and destroy.

- **Avoid wetting needles**

If overhead irrigation is used, water early in early morning so foliage can dry more rapidly.

- **Increase air circulation**

Pruning and spacing of plants for improved air circulation will help dry needles and reduce humidity within canopies.

- **Fungicides**

Early-season applications of an approved fungicide can be used to protect new shoot growth from *Phomopsis* infections. Contact a local county Extension agent for currently recommended fungicides. There are no fungicides registered to manage *Kabatina* infections.

- **Protect from wounds**

Guard against mechanical/physical injury as much as possible. Insect pests, such as juniper midge, and spider mites can create wounds necessary for infections and should be managed with an approved insecticide/miticide.

Additional Resources

- Woody Plant Disease Management Guide for Nurseries and Landscapes (ID-88)
http://www.ca.uky.edu/agc/pubs/id/id88/id88.pdf

- Pest Control Guide for Nursery Crops and Landscape Plantings in the Southeastern U.S.
https://content.ces.ncsu.edu/southeastern-us-pest-control-guide-for-nursery-crops-and-landscape-plantings

- Landscape Sanitation (PPFS-GEN-04)
https://plantpathology.ca.uky.edu/files/ppfs-gen-04.pdf

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