

Juniper Tip Blights

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In Virginia, juniper tip blight is caused by one of two different fungi, *Phomopsis juniperovora* or *Kabatina juniperi*. Symptoms of the two diseases are identical; however, some aspects of their control differ. Therefore, correct identification of the causal agent is important. These fungi can also attack other hosts, including *Cryptomeria*, *Chamaecyparis*, and *Thuja* species. They seldom cause significant damage in landscapes unless weather conditions become favorable for disease development. However, they can be very destructive in seedbeds, cutting beds, and lined-out stock in nurseries.

Symptoms

Visible symptoms include browning and dieback of young needles and shoot tips (Fig. 1). Gray lesions usually girdle the shoot at the base of the dead tissue. Tiny, black or grayish fungal fruiting bodies may be visible in the gray lesions. On highly susceptible hosts, the fungus may invade and girdle larger stems, resulting in browning and death of major branches; however, this degree of disease severity is rare. Both *Kabatina* tip blight and *Phomopsis* tip blight are most damaging on younger plants.



Fig. 1. *Phomopsis* tip blight on juniper.
(Photo by R. C. Lambe)

Symptoms of tip blight diseases can be easily confused with damage from either of two different insects, the juniper midge or the juniper tip midge. Both insects deposit their eggs inside young juniper shoots. The developing larvae mine the inside of the shoot and cause death of shoot tips. If affected shoot tips are carefully examined with a hand lens, small holes can be seen where the adult insect exited the shoot. These holes distinguish this type of damage from *Phomopsis* or *Kabatina* tip blight.

Disease Cycle

Phomopsis Tip Blight

During prolonged wet, cool periods in spring or fall, spores of *Phomopsis juniperovora* ooze from black fruiting bodies (Fig. 2) and are spread by splashing rain or overhead irrigation to other branches and adjacent healthy plants. Spores of this fungus can be produced throughout the summer, but most infections occur in spring and fall. Fungal spores germinate and invade young, healthy twigs. Older twigs are resistant to infection. The blight fungus penetrates young tissues rapidly and may kill first-year seedlings.

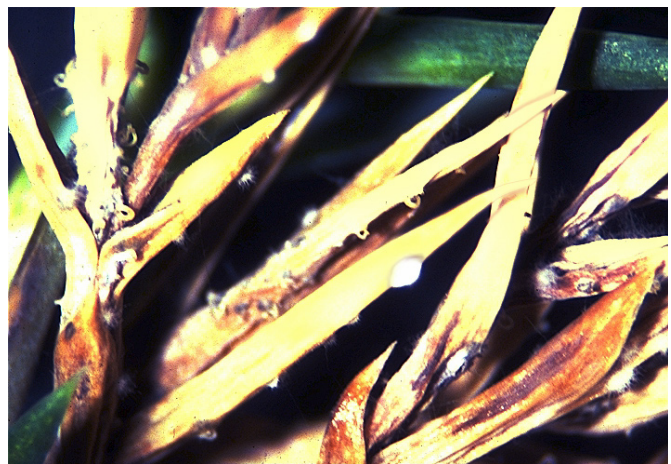


Fig. 2. Spores exuding from fruiting bodies of the fungus *Phomopsis juniperovora*. (Photo by M.A. Hansen)

Kabatina Tip Blight

Kabatina juniperi produces its spores in the fall, but symptoms do not appear until late winter or very early spring (Fig. 3). Unlike *Phomopsis juniperovora*, *Kabatina juniperi* infects through wounds caused by insects or mechanical damage. It does not invade healthy twigs.



Kabatina tip blight on juniper.
(Photo by M.A. Hansen)

Control

Cultural Control

Viable spores of these fungi have been recovered from branches that have been dead for as long as two years. All blighted twig tips should be removed and burned or buried to eliminate the sources of infection. Pruning or shearing should be done on a dry day to reduce spread of the fungus to other plants on wet tools. Overhead irrigation, which spreads fungal spores, should be avoided.

Resistance

Certain cultivars of juniper have been shown to have resistance to one or both of these diseases in field trials conducted in several states. Refer to Tables 1-3, which include information from resistance trials conducted in Illinois, Indiana, Kentucky, and Ohio.

Table 1.

Juniperus species and cultivars with resistance to *Phomopsis* tip blight

J. chinensis 'Femina'
J. chinensis 'Iowa'
J. chinensis 'Keteleeri'
J. chinensis 'Mountbatten'
J. chinensis 'Pfitzeriana'
J. chinensis 'Pfitzeriana Aurea'
J. chinensis 'Robusta'
J. chinensis 'Robusta Green'
J. chinensis var. *sargentii*
J. chinensis var. *sargentii* 'Glauca'
J. chinensis 'Wintergreen'
J. communis 'Ashfordii'
J. communis 'Aurea-spica'
J. communis 'Depressa'
J. communis 'Hulkjaerhus'
J. communis 'Aurea'
J. communis 'Repanda'
J. conferta
J. horizontalis 'Depressa Aurea'
J. sabina 'Arcadia'
J. sabina 'Broadmoor'
J. sabina 'Knap Hill'
J. sabina 'Skandia'
J. scopulorum 'Silver King'
J. squamata 'Campbellii'
J. squamata 'Prostrata'
J. squamata 'Pumila'
J. squamata var. *fargesii*
J. virginiana 'Tripartita'

Table 2.

Juniperus species and cultivars with resistance to *Kabatina* tip blight

J. chinensis 'Aurea Gold Coast'
J. chinensis 'Hetzii Glauca'
J. chinensis 'Keteleeri'
J. chinensis 'Mountbatten'
J. chinensis 'Pfitzeriana'
J. chinensis 'Pfitzeriana Aurea'
J. chinensis 'Robusta Green'
J. chinensis var. *sargentii* 'Glauca'
J. chinensis var. *sargentii* 'Viridis'
J. chinensis 'Wintergreen'
J. communis 'Hornibrooki'
J. horizontalis 'Marcella'
J. squamata 'Prostrata'
J. virginiana 'Prostrata Glauca'

Table 3.

Juniperus species and cultivars with resistance to both *Kabatina* tip blight and *Phomopsis* tip blight

J. chinensis 'Keteleeri'
J. chinensis 'Mountbatten'
J. chinensis 'Pfitzeriana'
J. chinensis 'Pfitzeriana Aurea'
J. chinensis 'Robusta Green'
J. chinensis var. *sargentii* 'Glauca'
J. chinensis 'Wintergreen'
J. squamata 'Prostrata'

Chemical Control

The fungicides, thiophanate methyl (e.g. Cleary 3336) and mancozeb (e.g. Fore, Dithane, and Protect), are registered for control of both *Phomopsis* and *Kabatina* tip blights, but because the fungi have different infection periods, timing of application for the two diseases differs. Treatment for *Phomopsis* tip blight should begin in early spring and continue at 10-14 day intervals. Spring treatments are not effective for *Kabatina* tip blight. Fungicide applications should begin in the fall for *Kabatina* tip blight. For information on rates of application, refer to the label or the information on *Phomopsis* needle and twig blight in the current Virginia Pest Management Guide for Home Grounds and Animals (VCE Publication 456-018) or the Virginia Pest Management Guide for Horticultural and Forest Crops (VCE Publication 456-017), <http://pubs.ext.vt.edu/456-017/>. For information on the proper use of pesticides and fungicides, refer to any current VCE Pest Management Guide.

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