

Problem: Needle Drop and Twig Dieback of Blue Spruce



Host: Blue spruce

Description: Blue spruce is native to the Rocky Mountain region and thrives at high altitudes and relatively cool seasonal temperatures. Although this tree is widely planted in Kansas, it is not well-adapted to the harsh environmental conditions found in our state. Blue spruce tends to be shallow rooted, and is very sensitive to infertile soil, poor drainage, shade, drought and winter drying outside of its native range.

Extended periods of hot, dry weather can damage the tree. Any of these factors can result in a gradual decline of the tree. Adverse environmental conditions can lead to purpling of inner needles, needle drop, branch dieback or tree mortality. Damage caused by poor growing conditions often are confused with infectious diseases like *Sirococcus* shoot blight, *Cytospora* Canker and *Rhizosphaera* needlecast.

Blue spruce is also sensitive to herbicides applied to home lawns to control broadleaf weeds. Certain phenoxy-type herbicides may be absorbed by the shallow roots or foliage and cause considerable damage. Some twisting or distortion of new growth may be observed, but more commonly the needles turn purple and drop from the tree. In the case of root absorption, damage to branches may follow a spiral pattern up the tree. This is because the water conducting system of the trees tends to twist inside the trunk, and anything absorbed by a root on one side of the tree is translocated in a spiral pattern. Blue spruce is not well-adapted to the state and should only be planted in protected areas with moist, well-drained soils. Growers should understand the

potential problems and risks in growing this tree in Kansas. Other conifers, including baldcypress, Scots, Austrian and ponderosa pines, and junipers are better choices for landscape and ornamental plantings.

Recommendations: Several techniques may be used to alleviate environmental and chemical stresses to established blue spruce. Young trees should be mulched with shredded bark or some other type of organic mulch (straw, etc). Do not use any type of plastic mulch. Place the mulch to a depth of 3 to 4 inches around the tree in a radius of at least 3 to 4 feet. Trees should be watered regularly throughout the growing season (at least twice a month) and occasionally during dry, winter months. Fertilization generally is not required. Avoid the use of any herbicide, but especially phenoxy-herbicide types near the root zone of the tree. Remember that the root zone extends beyond the tree crown.

References:

1. [What's Going on with Blue Spruce?](#), Michigan State University Extension News, March 7, 2011

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