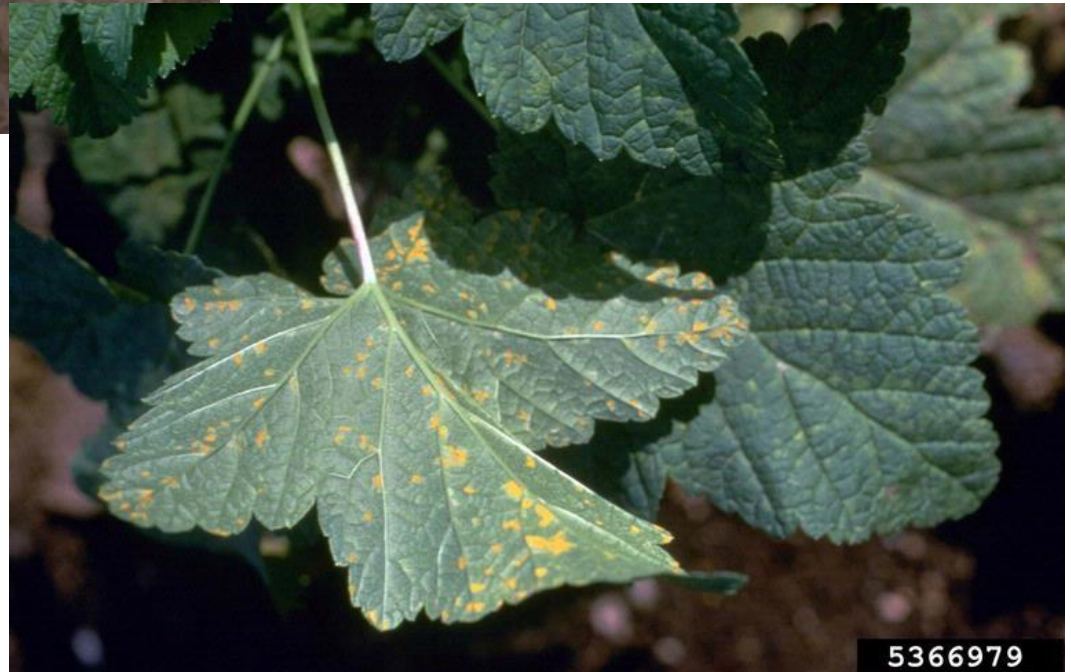


white pine blister rust (*Cronartium ribicola*)



canker on white pine
HOST

leaf spots on ribes
ALTERNATE HOST



white pine blister rust

Cronartium ribicola

White pine blister rust is the most serious disease of eastern white pine. The fungus completes two of its five spore stages in the bark of pines and three stages on the leaves of certain plants of the genus *Ribes* (gooseberries and currants). The fungus infection in pine begins in the needles, then spreads into the stems and branches. Trees are ultimately killed by trunk infections, which usually come from branch infections. Not all branch infections reach the trunk; many die after the branch is killed.

During the first or second season after the tree is infected, the diseased bark becomes yellow to orange and the stem swells and blisters. The blisters soon burst, releasing spores (pycniospores). The scars from the blisters remain. One more season passes, and the following spring aecia appear near or in the scars. The aecia are white blisters that soon rupture to release orange-yellow aeciospores, which can infect *Ribes* leaves as far as 200 miles away. Aecia are produced each year until the tree dies.

About 2 weeks after the *Ribes* leaves are infected, uredia form on the undersides of the leaves. Uredia produce urediospores. Individual urediospores are wind-borne only short distances. However, because spore production and infection may be repeated up to seven times in a single summer, this means of spread is quite effective.

In late summer or early fall, telia appear on the undersides of *Ribes* leaves. They resemble slender, brown bristles, and are often so abundant that they form a felt-like mat. The telia produce teliospores, which in turn germinate to form structures called promycelia. The promycelium produces the spores that infect pines. The spores can infect pines no farther than a mile from the *Ribes* plant, and weather conditions must be moist and cool. Most infections occur close to the ground, where the most humid and coolest air is found.