

# Forest Pest Bulletin



DEPARTMENT OF AGRICULTURE  
AND NATURAL RESOURCES  
DIVISION OF RESOURCE  
CONSERVATION & FORESTRY

BULLETIN NUMBER 25

Revised: June 2021

## COTTONWOOD RUST

### CAUSAL AGENT

*Melampsora medusae*

### HOSTS

Cottonwood rust affects all sizes of Cottonwoods (*Populus deltoides*) and Aspens (*Populus tremuloides*). Willows can also be infected by a related species (*M. epitea*). Particularly trees in plantations and nurseries.

### SYMPTOMS

Yellow or orange pustules, containing spores, form on the under-surface of the leaf in midsummer. Dark brown fungal growths form in the fall. The primary effect of the rust on Cottonwoods is premature leaf drop with accompanying loss of vigor. The early loss of leaves likely reduces carbohydrate reserves in tree roots which may be responsible for the decline of some Cottonwoods in windbreaks.



Figure 1. Rust infected cottonwood leaf.  
Robert L. Anderson, USDA  
Forest Service,  
[www.forestryimages.org](http://www.forestryimages.org)

### LIFE CYCLE

The orange pustules, seen in summer, are the reproductive state of the fungus. They are replaced by dark brown pustules which develop in fall and winter Cottonwood rust also has an alternate host – Larch (*Larix*). The aeciospores are released from the Larch and can travel very long distances to infect Cottonwoods. The infected Cottonwoods will produce urediniospores and infect other, nearby Cottonwoods (and themselves). The disease overwinters on the fallen leaves. New infections continue the cycle and can come from Larches as far away as Canada.

### MANAGEMENT

The impact of this disease can be reduced by use of resistant varieties of Cottonwoods. Cottonwoods in forest stands need no treatments. It is important to avoid planting monocultures of the same tree species to reduce the chance of widespread damage when an outbreak occurs.

Due to numerous pesticide labels and/or label changes, be sure the product label includes the intended use prior to purchase or use. Please read and follow all pesticide label instructions and wear the protective equipment required. Spraying pesticides overhead increases the risk of exposure to the applicator and increases the likelihood of drift to non-target areas. Consider the use of a commercial applicator when spraying large trees due to the added risk of exposure

and equipment needs. The mention of a specific product name does not constitute endorsement of that product by the South Dakota Department of Agriculture and Natural Resources.

For further information contact your nearest South Dakota Division of Resource Conservation and Forestry office. Hot Springs 605-745-5820; Lead 605-584-2300; Mitchell 605-995-8189; Pierre 605-773-3623; Rapid City 605-394-2395; Sioux Falls 605-362-2830; Watertown 605-882-5367.

The South Dakota Resource Conservation and Forestry Division is an equal opportunity service provider. Services are provided to all persons without regard to race, color, religion, gender, age, disability, national origin or political beliefs. To file a complaint of discrimination, contact the Director, South Dakota Human Rights Division, 118 West Capitol Ave, Pierre, South Dakota 57501 or call (605)773-4493 (voice or TDD). The division is a recipient of Federal funds.