

# WANTED! Common barberry plants, the alternate host for stem rust which attacks wheat and barley.

The federal eradication program for the common barberry (*Berberis vulgaris*) ended in 1981. However, stem rust recurred in wheat and barley in the Pacific Northwest (PNW) starting in 2007.

Barberry plants have regrown and are spreading the rust that can cause wide-reaching yield loss (even up to 100%) in wheat and barley.

Few of the wheat and barley varieties grown

currently in the PNW are resistant to the stem rust races found since 2007. Stem rust infection may occur in the fall, but usually is not seen until May or June, or even until dark clouds of spores occur at harvest.

Growers should monitor grain crops regularly from mid-June onward (especially after late-season rain) and contact their extension educator with fungicide application questions.

Please help us find these plants which usually grow around old homesteads. Report stem rust-infected crops or common barberry bush locations to your county extension office or at [www.PNWstemrust.wsu.edu](http://www.PNWstemrust.wsu.edu).

Scientists plan to monitor barberry bushes found to see if they are a source of stem rust infection, and then landowners should eradicate the barberry.



Common barberry plants can grow 8 to 10 feet tall and they are easiest to spot in the fall as they retain their leaves longer than most shrubs.



Common barberry plants bear yellow flowers in May and June that produce clusters of red fruit in the fall.



Common barberry leaves have spiny edges and 3 or more spines at the base of the leaf. The inner wood is yellow. The rust-resistant Japanese barberry (grown often in landscaping) has smooth-edged leaves with usually 1 spine at the leaf base.



## The life cycle of stem rust

Barberry is essential in spreading the stem rust pathogen. The stem rust fungus has 3 different life stages:

1. It survives over winter on infected wheat or barley stubble.
2. In the spring it moves on to common barberry—its alternate host—where it produces (via a sexual process) new races or biotypes.
3. The rust fungus then moves on to susceptible wheat or barley plants where it reproduces asexually every 10 to 14 days. It can spread great distances by the end of the season, especially if there is late-season rain.



**Stage 1**  
**Fall and Winter:** By harvest, the rust appears as black spores on the plant stems and heads and will create dark patches in barley and wheat stubble.



**Stage 2**  
**Spring:** Sexual spores on common barberry leaves and berries.



**Stage 3**  
**Summer:** Early in the season, reddish-brown stem rust spores appear on infected wheat and barley stems and leaves.