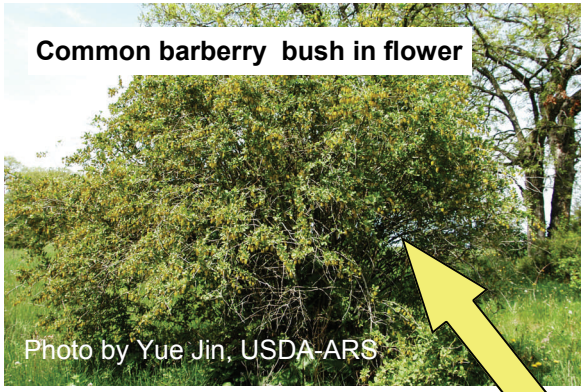
Wanted Alive!

Common Barberry Plants

Why?

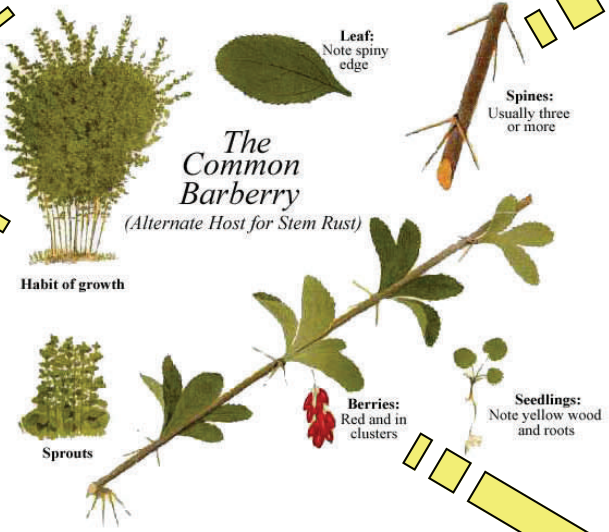
Barberry is the Alternate Host for Stem Rust Which Attacks Wheat and Barley



Many years after barberry (*Berberis vulgaris*) plants were eradicated from Stevens County, stem rust recurred in spring barley fields in the Arden and Colville areas in 2007 & 2008.

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

Please help us to find these plants—which usually grow around old homesteads...



Please report common barberry bush locations to the Stevens County Noxious Weed Control Board (509-684-7590) or to Diana Roberts, WSU Spokane County Extension (509-477-2167).

Flyer created by Diana Roberts, PhD, Agronomist,
Washington State University Extension

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. They 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—but the **rust-resistant Japanese barberry** (*grown often in landscaping*) has smooth-edged leaves with usually **1 spine** at the leaf base.

WASHINGTON STATE UNIVERSITY EXTENSION

USDA ARS United States Department Of Agriculture Agricultural Research Service

Common Barberry Hosts Stem Rust Which Causes Yield Loss in Wheat or Barley


Sexual aeciospores on common barberry

Photo by Yue Jin, USDA-ARS

Barberry is essential in spreading the 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 rain in August.

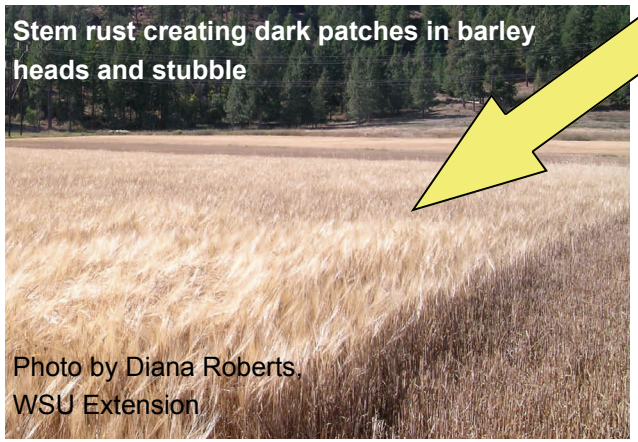
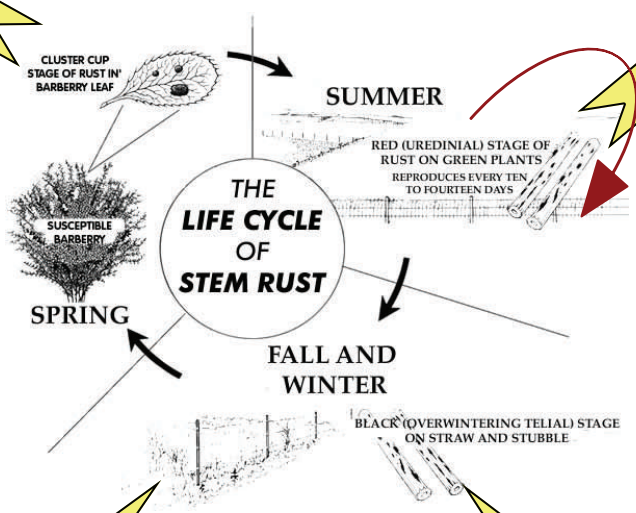

Stem rust creating dark patches in barley heads and stubble

Photo by Diana Roberts, WSU Extension



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

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Early in the season, red-brown stem rust urediniospores appear on infected wheat and barley stems. By harvest they appear as black teliospores on the plant stems and heads.


Red-brown urediniospores

None of the wheat and barley varieties grown currently in Washington are resistant to the stem rust races found in 2007 and 2008. Stem rust infection occurs first in May or June, but it is often not seen until black clouds of spores occur at harvest.

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


Black teliospores on barley stems and heads

Photo by Diana Roberts, WSU Extension