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FORT COLLINS, COLO.

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# Colorado Agricultural College

## EXTENSION SERVICE

Fort Collins, Colorado

H. T. FRENCH, Director

# ERADICATE COMMON BARBERRY

It Is An Enemy of Wheat

By W. W. ROBBINS and  
H. E. VASEY

## FIGHT WHEAT RUST

**BANISH  
THE  
BARBERRY**



**SPREADER OF  
STEM RUST.**

**AND SAVE  
THE  
WHEAT**

*The COMMON BARBERRY  
SPREADS WHEAT RUST*

**THE JAPANESE BARBERRY IS HARMLESS**

**SAVE**  
JAPANESE BARBERRY  
It is harmless

**KILL**  
COMMON BARBERRY  
It spreads wheat rust

**HOW COMMON BARBERRY  
SPREADS WHEAT RUST**





**IT'S A CASE OF BARBERRY OR BREAD**

**PLUCK THIS RUINOUS THORN FROM  
THE SIDE OF THE FARMER**

U. S. DEPARTMENT OF AGRICULTURE

Fig. 1.

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# ERADICATE COMMON BARBERRY

## It Is An Enemy of Wheat

By W. W. ROBBINS and  
H. E. VASEY

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Colorado raised 31,276,986 bushels of small grain (wheat, oats, rye and barley) in 1917. It is estimated that if it had not been for the attacks of rust, the output for the State would have been an additional 300,000 bushels. The rust caused a loss of about 200,000,000 bushels of wheat alone in the United States in 1916.

Cereals are the most important staple crops. Rust seriously lowers their yield.

**The loss from rust can be greatly reduced by eradicating the common tall barberry (*Berberis vulgaris*). This shrub harbors and spreads the stem rust of cereals and is particularly destructive to wheat. It should be eradicated immediately.**

C. L. Marlatt, chairman of the Federal Horticultural Board, says: "During the past few years the Bureau of Plant Industry of the Department of Agriculture has been conducting a careful survey to determine the relationship of the common barberry to destructive epidemics of black or stem rust of wheat now prevalent throughout the spring-wheat area. This survey indicates clearly that the common barberry (*Berberis vulgaris*) is one of the important factors in the development of serious rust epidemics, if it is not indeed the main and practically the only factor. These conclusions are further supported by the experiences of the past few years in Denmark where the common barberry has been eradicated. No rust epidemics have occurred in Denmark since the eradication has been accomplished."

### **RESOLUTION ON BARBERRY BY COLORADO COUNCIL OF DEFENSE**

"Whereas, it has been demonstrated by the most accurate scientific work that the black stem rust of wheat and other cereals and grasses develops on both the green and purple varieties of common barberry (*Berberis vulgaris*) bushes in the spring, producing countless numbers of minute spores which may be carried long distances

by the wind to wheat, other cereals and grasses, and whereas the chief wheat-producing states, under the encouragement of the U. S. Department of Agriculture, are engaged in the eradication of common barberry in order to increase food production; and whereas, it has been shown in this and certain European countries that black rust has disappeared gradually and contemporaneously with the barberry bush; and, whereas we have in the Japanese barberry (*Berberis thunbergii*) a variety which is immune to rust and may be planted with safety: Therefore, be it

RESOLVED, That we, the State Council of Defense, request that there be no further planting of any barberry (*Berberis spp.*) bushes except the species and variety known as Japanese barberry (*Berberis thunbergii*), and that all barberry bushes except the immune variety above mentioned be destroyed on all premises within the bounds of the State of Colorado. Further, we declare the barberry varieties which support the black stem rust, a pest, and we support the State Entomologist in his efforts to enforce the provisions of the Colorado Pest Inspection Act."



Fig. 2. The common barberry (*Berberis vulgaris*). This tall species is an enemy of wheat. Eradicate it.

**STATE HAS LAW AGAINST SUCH PESTS**

From Colorado's Amended Pest Law:

"Section 6. Whenever the State Entomologist, his deputy, or county inspector, has reason to believe, or has been credibly informed, that within the State there exist lands infested by pests which are liable to spread to the injury of others, it shall be his duty to make investigation of the suspected premises, and if they are found so infested, shall notify the owner or persons in charge or control of such premises, in writing, of the nature, extent and location of the infection and demand that within a specified time certain specified work shall be done on the infested premises for the extermination of the pests, and if the occupant of the infested property refuses or fails to do effective work on the premises in accordance with the instructions of the officer in charge, such officer shall take possession of the infested premises, and do the work necessary for the extermination of said pests, as provided in this Act. The reasonable and necessary expenses for doing such work shall be paid by the county without unnecessary delay, upon filing with the county commissioners of the certificate of the State Entomologist showing the necessity for such work, the reasonable cost and expenses thereof, and giving a description of the land or property upon which the work was done. And, upon filing such certificates, such charges shall become a lien on the property treated, collectable as taxes by the county treasurer upon the filing of such certificate with him in the event the property treated is real estate, or, in the event of personal property,



Fig. 3. The Japanese Barberry. (*Berberis thunbergii*) A low, very ornamental shrub. It is immune to wheat rust. Plant it.

it shall be effected by levy and sale after ten days' advertising, as required by law upon the delivery of such certificate to any officer authorized by

law to make levy and sale under execution. PROVIDED, HOWEVER, that either the State Entomologist or the county inspector may, where cause exists outside of any pest inspection district as above provided, pursue the same remedies in all respects as to such lands and owners of lands outside of any such district the same as though embraced within a pest inspection district."

## STATE ENTOMOLOGIST ORDERS EXTERMINATION OF COMMON BARBERRY

"It has been determined that, without the presence of the common barberry, (*Berberis vulgaris*), upon which to pass one stage in its existence, the very destructive fungus on wheat and other grains commonly called "black" or "stem rust," or simply "rust" by the farmers, cannot thrive or become seriously injurious.

"The United States Department of Agriculture strongly urges the destruction of this shrub in all the grain-growing states, and our own State Council of Defense has requested its destruction in Colorado, that our most important crops for human food production may be materially increased.

"Therefore, by authority vested in me by the Amended Horticultural Inspection Act, Chapter 131 of the Session Laws of Colorado for 1917, I hereby declare the common barberry, (*Berberis vulgaris*), both the green and purple varieties, to be a pest, harboring a serious disease to grains and grasses, and order its extermination wherever it occurs in the State of Colorado, the extermination to be completed by \_\_\_\_\_ . (Date to be set in each case.)

"The small Japanese barberry, (*Berberis thunbergii*), distinguished by having simple unbranched spines at the bases of the leaves, and leaves with smooth edges free from sharp points, does not harbor the rust, is highly ornamental, and need not be destroyed.

"C. P. GILLETTE, State Entomologist."

Inspectors will travel about the State and will have authority to enforce the law.

Do not make it necessary, however, for the State Entomologist to compel you to remove the barberries on your premises. Do it cheerfully as a patriotic duty. Do it now. Fewer barberries means more wheat—more food for you, your family, our soldiers, and our allies.

## LIFE HISTORY OF STEM-RUST OF WHEAT (Fig. 1)

A life history is a life cycle. Let us start with the red or summer rust on wheat stem. The tiny spores produced in countless numbers in the rusted spots are readily blown by the wind to other wheat plants which they soon infect. The disease spreads rapidly from plant to plant and from field to field. Later in the season the red spores are replaced by black or winter rust which forms dark streaks on the stems. The black or winter spores live throughout the winter on stubble. In the spring these black spores are blown by the wind and find congenial lodgment *only on common barberry*. The *barberry rust* stage appears on leaves and fruit, forming characteristic cluster cups. The barberry rust spores infest wheat again producing the red or summer rust again.

Remove barberry and destroy the life cycle.

It is often asked "Why remove barberries in the towns and cities so far removed from wheat fields?" For this reason: There are a number of native grasses which are susceptible to the spores from barberry, and these grasses produce spores in turn which may infect wheat. Thus, it travels from native grass to native grass and thence to wheat.

The stem rust of wheat develops on a number of species of wheat grasses (*Agropyron*), rye grasses (*Elymus*) and wild barley (*Hordeum jubatum*).

## TWO KINDS OF BARBERRY

*Destroy* the common barberry (*Berberis vulgaris*), both green and purple varieties. It harbors the rust, and is a menace to the wheat crop. The purple variety sometimes goes under the name (*Berberis purpurea*).

Plant the Japanese barberry (*Berberis thunbergii*). It is immune to rust. It is harmless.

*Size*.—The common barberry grows from 4 to 6 feet tall (Fig. 2). The Japanese barberry is seldom over 3 feet high (Fig. 3).

*Leaves*.—The common barberry has leaves with toothed edge. The Japanese barberry has leaves with even edge (Fig. 4).



Common

Japanese



Common

Japanese

*Spines.*—The common barberry has triple spines. The Japanese barberry has spines singly disposed on stems (Fig. 4).

*Flowers and Berries.*—The common barberry has flowers and berries in clusters. The Japanese barberry has flowers and berries usually borne singly (Fig. 1).

If you are in doubt as to the identity of the barberries, send a specimen to the Botanist, Colorado Agricultural College, Fort Collins, Colorado.

Do not dig out the Japanese barberry.

*How to Dig the Barberry.*—Be sure to dig down deep enough to get the entire crown and the larger roots. Burn the plants. If the plants produce sprouts, dig them out. Plants can be removed any time during the year.

Be on the watch for barberries along farm roads, and wherever you happen to be. Report location to Botanist or State Entomologist, Colorado Agricultural College, Fort Collins.

Plant some other shrub where a barberry is dug up. A few shrubs that can be recommended for Colorado are Japanese barberry, Spiraeas, lilacs, Japanese honeysuckle, Opulaster, Golden Currant, and European privet.

Fig. 4. Twigs and leaves of Common and Japanese barberries. They are easily distinguished.