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# Potato Rhizoctonia

## *Symptoms*
## *Cause*
## *Control*

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IDAHO Agricultural Extension Service
Bulletin 377
February 1962

# Potato Rhizoctonia

## *Symptoms, Cause, and Control*

by

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and

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Rhizoctonia is one of the most threatening potato diseases in Idaho. Caused by a soil borne fungus native to Idaho soils, rhizoctonia is present in all fields. Attacks by this fungus result in decreased potato yields and an increase in numbers of knobby and green-end tubers.

## Symptoms

**Stems and Stolons.** Rhizoctonia infection is most easily recognized by lesions on stolons and the below-ground portion of the stems. When the reddish-brown-to-black lesion girdles the potato plant's stem, the tubers can no longer get foodstuff for storage. This may cause the plant to form new tubers near the soil surface above the lesion. If the stem is girdled near the soil surface, the plant may even form aerial tubers in the axils of its leaves. Tubers are formed on stolons. When the stolons are girdled, tuber development may cease or never occur.

**Foliage.** In the foliage of the Russet Burbank variety, one can often detect rhizoctonia by observing the amount of bloom and the presence of seed balls. Plants severely attacked by the fungus often show an extra heavy bloom. Top leaves of these plants have a lighter-than-normal green color and are somewhat pinched along the midrib. Do not confuse these top symptoms with nitrogen deficiency or current-season

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leafroll. Nitrogen deficiency produces yellowing without leaf pinching. Leafroll produces yellowing and rolling of the top leaves rather than the pinching caused by rhizoctonia.

**Tubers.** Potato tubers infected with rhizoctonia develop a brown to black scurf on the skin often referred to by housewives as "dirt that won't wash off."

**This below-ground portion of a potato stem shows the typical reddish-brown rhizoctonia lesions. Notice the stems and some of the stolons that have been girdled.**

## Symptoms Affecting Development

The extent of rhizoctonia damage in a field depends upon the organism's population in the soil and a suitable environment for its attack on the potato plants.

**Population of Organisms.** The population of "Rhizoc" fungus tends to increase when potatoes follow sugar beets in the rotation. Small grains, corn, and clovers tend to reduce populations. Alfalfa, beans, and peas tend to maintain them. Certain common weeds – red-root (pig weed), mustard, and lambs

quarter—may increase populations of rhizoctonia fungus in the soil.

There is some evidence that grain stubble returned to the soil in the fall and green manures plowed down in the spring preceding potatoes decrease populations.

**Conditions for Development.** Soil temperatures below 55 degrees favor disease development on potatoes. Potatoes growing in soils that are wet, compact, low in organic matter, or low in nitrogen may be severely attacked by the fungus.

## Control

Rhizoctonia fungus cannot be eradicated from the soil. Therefore, control is an attempt to reduce severity of the disease. Here are some suggestions that will help in your control program:

Never follow potatoes or sugar beets with potatoes.

Plant potatoes following a grain crop with the stubble plowed down in the fall or green manures returned in the spring.

Practice thorough weed control.

Avoid planting when soil temperatures are below 55 degrees.

Keep soil in the hill as loose as possible.

Avoid over-irrigation.

**Published and distributed in furtherance of the Acts of May 8 and June 30, 1914, by the University of Idaho Agricultural Extension Service, James E. Kraus, Director; and the U. S. Department of Agriculture, cooperating.**