

## *Sclerotinia sclerotiorum* (Lib.)

**INVASIVE SPECIES ATTACKED:** Diffuse knapweed (*Centaurea diffusa*)  
Spotted knapweed (*C. biebersteinii*)

**TYPE OF AGENT:** Root, leaf and stem fungus

**COLLECTABILITY:** Not permitted

**ORIGIN:** Native to Canada

### DESCRIPTION AND LIFE CYCLE

#### Reproductive stage:

*Sclerotinia sclerotiorum* are single cell structures which reproduce asexually. Fruiting spores develop in open cup-and-saucer like structures. Water and moist soils encourage spread and lengthen its infective period.

#### Overwintering stage:

It survives through the winter in an overwintering structure called sclerotia.

### EFFECTIVENESS ON HOST PLANT

*S. sclerotiorum* causes rapid and total plant collapse. In studies it was identified to cause death to 10% of flowering knapweed plants. Plants attacked exhibit wilt as the fungus infects the leaves, stems and roots. It effectively kills juvenile spotted knapweed plants and decreases stand density. Seedlings infected with the rust are killed within two weeks. *S. sclerotiorum* is most effective in dense plant stands. It reduces spotted knapweed productivity by 75%.

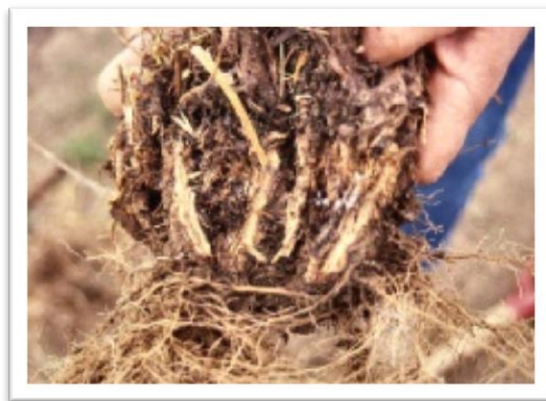


Fig. 1. *S. sclerotiorum* on spotted knapweed root

### HABITAT AND DISTRIBUTION

#### Native:

According to the CABI Invasive Species Compendium, *S. sclerotiorum* is quite widespread throughout the world. The preferred habitat and distribution of *S. sclerotiorum* in North America is not well documented.

*S. sclerotiorum* occurs in a wide variety of habitats, thriving and spreading in moist or irrigated conditions. It has a wide host range, affecting 383 plant species, but does not affect trees or grasses. It can establish in dry habitat, but it is unable to produce fruiting spores in dry conditions.

#### British Columbia:

The two *S. sclerotiorum* test sites were in the Interior Douglas-fir biogeoclimatic zone (see below).

### BRITISH COLUMBIA RECORD

#### Origin:

*S. sclerotiorum* is native to B.C.

#### History:

*S. sclerotiorum* is a naturally occurring soil borne fungus found in B.C. In 1981, Agriculture and Agri-Food Canada and the Provincial Ministry of Agriculture established two sites in B.C., one at Westwold on spotted knapweed and the other was at Pritchard on diffuse knapweed..

#### Field results:

In the biocontrol propagation plots at Kamloops, *S. sclerotiorum* was a pest that attacked knapweed host plants. Once the plants were inoculated they did not recover and eventually died.

#### Collection for redistribution:

Redistribution is not recommended as it will also affect favourable crops.

## NOTES

- *S. sclerotiorum* infection had increased production costs of approved biological control agents.
- It also interferes with vegetable and seed oil crops, notably canola, safflower and sunflower.
- *Cyphocleonus achates*, a root feeding agent, may assist with inoculation during oviposition.

## REFERENCES

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