

*Camellia*

**Flower Blight**

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# Camellia Flower Blight

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Camellia growers in Oregon must now learn to recognize and control flower blight, the first serious disease of Camellia japonica to appear in North America. This disease was first reported in Japan in 1919 and probably was brought into California with imported nursery stock. Flower blight was observed in a nursery in central California in 1938 and apparently spread from there to other Pacific Coast nurseries and to a number of nurseries in the southern states. So far as is known camellia flower blight affects all varieties of Camellia japonica but does not affect any other ornamental plants.

## How to Recognize Camellia Flower Blight

The disease may be recognized by the brown spots which develop on the petals of camellia flowers (Figure 4). These spots are small at first but become larger and cover the whole petal. After a few days the whole flower becomes brown. The spots can be distinguished easily from weather injury, which is usually lighter in color and limited to the outer margin of camellia flowers. Presence of the disease may be determined also by examining dried flowers underneath a camellia plant. Infected flowers have at the base, the hard brown or black inactive stage of the fungus (Figure 1). The only way the disease can be recognized is by the effect on the flower. No other part of the camellia plant is affected.

## Cause of the Disease

Camellia flower blight is caused by a fungus (Sclerotinia camelliae) similar to the one that causes brown rot of cherries, peaches, and plums. The fungus is inactive in the bases of old, infected flowers from late spring to January, when it again becomes active and spore cups develop (Figure 3). Each spore cup may contain several million spores which are released into the air and carried by the wind to open camellia flowers. When the spores fall on camellia flowers they germinate and grow into the flower petals. As a result of this infection, brown spots develop and the whole flower becomes brown. Within a few weeks the bases of the petals become fleshy and the inactive form of the fungus (Figure 1) develops again. This inactive form, which is known as a sclerotium (Figure 2), may remain in the plant debris and soil under a camellia plant for several years and may serve as a source of infection each spring when the camellias are in bloom.

# How to Control Camellia Flower Blight

At present an extensive program of sanitation seems the best way to combat camellia flower blight. Control of this disease will require careful attention and the full cooperation of commercial growers, camellia fanciers, and individuals with home plantings. Control is complicated by the fact that the fungus has been shown to live in the soil in an inactive stage for several years and serve as a source of spore cups each year. Development of an effective chemical-control program for the disease will be difficult since the inactive form of the fungus is very resistant to chemicals and protective flower spraying is undesirable and would probably be ineffective. Therefore, the following control program is suggested until further control measures can be developed:

## Control in home plantings

1. Remove and destroy any camellia flowers that show the flower blight disease. This will prevent the inactive stage of the fungus from becoming mixed with soil and leaves beneath camellia plants.

2. If the flower blight disease has been observed previously in a planting, remove all old leaves, flowers, and other plant debris from underneath the camellia plants.

3. All diseased camellia flowers and plant debris should be burned or buried deeply to prevent the development of spore cups. In no case should such material be placed on a compost heap.

4. If spore cups still develop under camellia plants after all leaves and debris are removed, it is likely that they are growing up from old flowers buried in the soil. These can be eliminated by removing the top 3 or 4 inches of soil from beneath the camellia plants and replacing it with new soil.

5. The value of a mulch of sawdust or peat moss in preventing development of spore cups is not known. It is suggested that if a mulch is used, however, a uniform layer at least 4 inches deep should be applied, since spore cups may grow up 2 to 3 inches from a diseased flower.

## Control in commercial plantings

When a nursery is found to be infested with camellia flower blight the following steps are suggested for the propagation of camellias under blight-free conditions:

1. Use only lining-out stock known to be propagated in soil free from sclerotia of the flower-blight fungus.

2. Plant in soil on which camellias have not previously been grown and at as great a distance as possible from old camellia plantings.

3. Keep all flower buds removed to prevent clean planting from becoming infested.
4. Prevent transfer of plant debris and soil from infested areas to new planting.
5. When bringing in older plants from other areas, remove all flower parts from the plants and the top two or three inches of soil from the ball to avoid introducing sclerotia of the flower-blight fungus.
6. Clean up all old camellia plantings. Rake up and burn all dead flowers and plant debris and dispose of new blooms as soon as spots develop on the petals.
7. Encourage all camellia growers, commercial and private, to attempt to prevent further spread of camellia flower blight by observing all sanitary precautions before moving from infested plantings.

## Points to Remember in Combatting Camellia Flower Blight

To effectively combat camellia flower blight the following points about the disease must be kept in mind:

1. The flowers are the only part of the plant affected by the disease.
2. During the part of the year from late spring to January, the fungus that causes camellia flower blight is in an inactive form in old, diseased flowers.
3. From these old, diseased flowers, spore cups grow up in January, February, March, and April and release spores which may be carried by the wind for several hundred yards to open camellia flowers. Spread of the disease from nursery to nursery by wind-blown spores should not be an important factor since the spores are short-lived and soon die unless they reach an open flower.
4. Camellia flowers can become infected in only one way--by spores from the spore cups. The disease does not spread from flower to flower on a plant.
5. The disease may be introduced into a planting by wind-blown spores, by sclerotia in the soil around balled plants, or by diseased flowers being carried into a planting.

# Development of Camellia Flower Blight

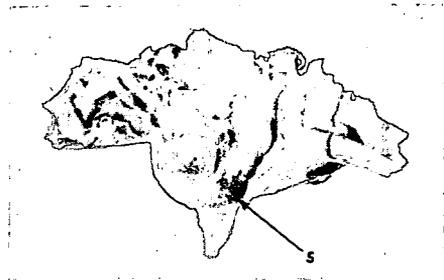


Figure 1

Figure 1. Dried camellia flower with inactive form (sclerotium) of fungus (s) in base.

Figure 2. Sclerotia taken from the base of dried diseased flowers. Upper row—complete rosette formed by enlargement of bases of petals. Lower row—single petals.

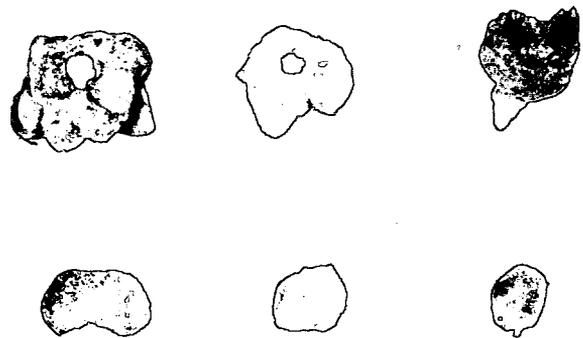


Figure 2

Figure 3. Spore cups growing from old flower base (a) and from single petal (b).

Figure 4. Spots on petals of camellia flower following infection of petals by spores.

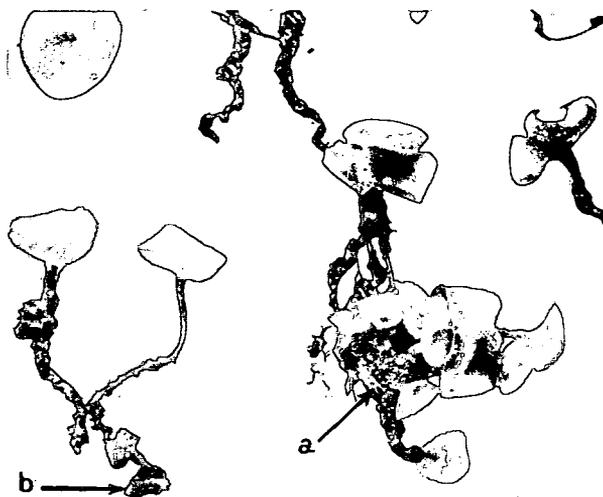


Figure 3



Figure 4