

# Little Cherry Disease

September 2024

## Introduction

Little Cherry Disease is a severe disease of cherries that was first detected in North America almost 90 years ago. Since then, there have been periods of increased detections. In British Columbia (B.C.), there has been increasing cases of Little Cherry Disease in the last 5 years.

## Causal Agent

Two viruses cause Little Cherry Disease. Little cherry virus 1 has been present in B.C. since at least 1999.

Little cherry virus 2 was first detected in the Kootenays in the 1930's and in the Okanagan in 1969. Little cherry virus 2 is more of an economic concern than Little cherry virus 1.

X-disease (Western X), caused by a phytoplasma (*Candidatus Phytoplasma pruni*), was first confirmed in B.C. in 2022 but has been typically associated with Little Cherry Disease due to symptoms on cherries being similar. X-disease can also impact other stone fruit and has a wider host range.



Figure 1. Little cherry virus 2 infected sweet cherry cv. 'Lapins' (photo credit: BCMAF).



Figure 2. Little cherry virus 2 infected sweet cherry cv. 'Sweetheart' (photo credit: BCMAF).

## Symptoms

Symptoms can be variable depending on the variety and strain of the virus present. Symptoms include small fruits which do not ripen fully and have little flavour. The fruits are half to two-thirds normal size, dull red, and on some varieties, fruits may be pointed with flat sides.

Symptoms of Little cherry virus 1 appear to be less severe than for Little cherry virus 2.

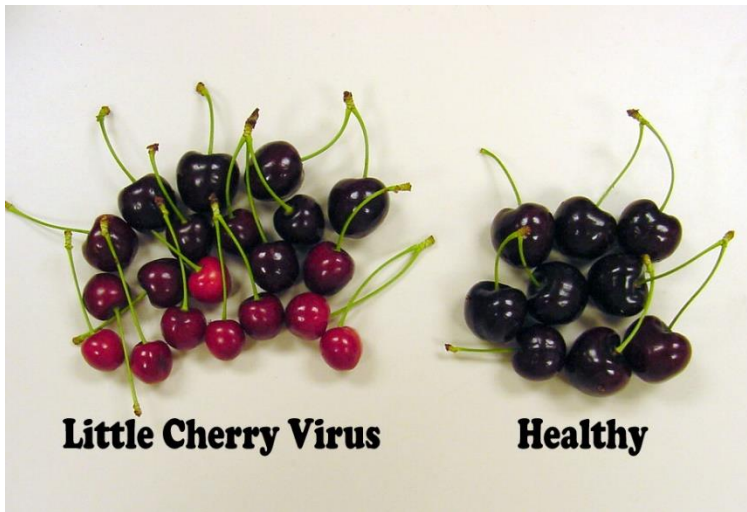


Figure 3. Comparison of Little cherry virus 2 infected fruit vs healthy (photo credit: BCMAF)

Symptoms will often progress over several years. In the first year of infection, the symptoms may be limited to one branch or cluster. As the disease progresses, there may be declining of a whole tree declining and overall yield.

## Life Cycle

The insect vector is not known for Little cherry virus 1. Little cherry virus 2 is transmitted by its vectors, the apple and grape mealybug. Both viruses are also readily transmitted by grafting, including propagation and root grafting between

trees. They are not transmitted by pollen, seed, soil or by pruning tools. Little cherry virus 1 can also be spread by propagation.

## Host Range

The host range of Little cherry virus 1 and 2 is limited to a few species within the *Prunus* genus including sweet cherry, sour cherry and ornamental flowering cherries.

Ornamental flowering cherries are not permitted to be grown in the Okanagan, Creston and Similkameen Valleys as per the Plant Protection Act Little Cherry Control Regulation (B.C. Reg. 34/83).



Figure 4. Limb dieback on Little cherry virus 2 infected cherry tree cv. 'Lapins' (photo credit: BCMAF).

## Distribution

In B.C., surveys conducted by the B.C. Ministry of Agriculture and Food (BCMAF) of symptomatic trees from 2021 to 2024, Little cherry virus 2 has been detected in the Cawston, Creston and Penticton areas. Based on previous surveys, Little cherry virus 1 appears to be more widely distributed, with positive trees detected from all areas of the Okanagan/Similkameen and Creston valleys.

## Management

- Avoid planting infected stock or using budwood from trees that have not been tested for the pathogens. Samples can be sent to the BCMAF Plant Health Laboratory in Abbotsford or to other accredited laboratories for diagnosis of the causal agents.
- Remove all trees known or suspected to be infected with Little Cherry Disease to limit spread. Carefully inspect fruit quality on trees in high-risk areas for symptoms. Roots/stumps can harbour the disease so ensure complete tree removal or treat stumps with herbicide immediately after cutting.
- Notify the BCMAF of Little Cherry Disease suspected trees. Trees with Little cherry virus must be removed under the guidelines of the B.C. Plant Protection Act, [Little Cherry Control Regulation](#).
- Do not interplant cherry trees amongst older cherry trees that may be carrying the viruses. It is best to remove whole blocks of older cherry trees before replanting to cherry, particularly in orchards or districts with a history of Little Cherry Disease.



Figure 5. Examples of samples for X-disease lab testing (photo credit: BCMAF).

- Monitor for the vectors. Mealybugs have not been found in cherry orchards based on the surveys conducted by the BCMAF.
- Do not plant ornamental flowering cherries as they can be symptomless carriers of Little Cherry Disease pathogens. It is illegal to plant flowering cherries in the Little Cherry Disease regulated areas, including the Okanagan and Creston.

## How to Sample

**What:** Submit four five-inch (13 cm) cuttings from the diseased limb(s) including leaves, and fruit stems (Figure 5). Remove fruit from the sample but leave the fruit stems. Fruit often becomes secondarily infected with fungi and can contaminate the sample.

**Where:** When trees have symptoms, sample from symptomatic limbs. If trees have no symptoms, sample from each leader.

**When:** The week before harvest to mid-August.

**Sample condition:** Keep samples moist and cool (package with a cold pack). The pathogen is harder to detect in old and dried samples.

