

# Leafhopper Foliar Activity on Apple Trees and Fruit Crops



## Plant Hosts and Distribution

Various species of leafhoppers may be found on different host crops including apple, chokecherry, saskatoon, raspberry and strawberry. They are found in all geographical regions.

## Biology

Leafhoppers (see photos 1, 2, 3) are present from late May through to early October. Leafhoppers are small wedge-shaped insects; 3-5 mm in length and their colour varies from white to pale green to yellow to black. Some have a single generation per year, while others can have many generations per year. Many of the species found in Canada do not overwinter here but get moved in on wind currents from the United States in May and June. They are very active insects and fly or jump when disturbed. Feeding is done on the underside of leaves by piercing the plant tissue and sucking out juices.



Photo 1: leafhopper spp. nymph on apple leaf.



Photo 2: potato leafhopper nymph.



Photo 3: Potato leafhopper adult.

## Symptoms and Damage

Type of damage often depends on the species causing the damage. Leafhoppers are seldom a cause for concern in apple, saskatoon and strawberry (see photo 6). Since damage is typically limited to leaf damage, and not to the fruit, yields are usually not affected. Hot, dry weather favours rapid development and population growth of leafhoppers. The rose leafhopper can be abundant in raspberry and causes leaves to have a mottled or whitish appearance, usually in July.

Potato leafhopper feeding activity on apple trees can be a concern in orchards with a past history of fire blight. However, there has been no research that has shown a direct link between potato leafhopper activity and spread of fire blight from tree to tree within an orchard. Some United States extension factsheets recommend as a precaution applying a product that can potentially suppress fire blight only when potato leafhopper presence has been confirmed (see table 1). Potato leafhopper damage on apple leaves results in curling of leaf tips (see photo 4), especially leaves near the fruit clusters, and a browning of leaf margins,

also called “hopper burn” (see photo 5). “Hopper burn” leaf damage is a characteristic symptom of potato leafhoppers.



Photo 4: leafhopper leaf curling damage. A.Mintenko

Photo 5: hopper burn damage on apple

Photo 6: leafhopper damage on strawberry leaves.

In chokecherry, leafhoppers are a concern as a vector of Western X-disease. Western X-disease is caused by a mycoplasma-like organism that is spread by leafhoppers. It is known in Saskatchewan, North and South Dakota, Wyoming and Minnesota. Symptoms include development of greenish-yellow leaves in late June. In July, leaves turn red and there is usually twig die-back.

## Scouting Techniques

Leafhoppers may be monitored using yellow sticky traps. When leafhoppers are abundant, they may be monitored by visually inspecting the underside of leaves.

## Economic Thresholds

No economic thresholds have been established for leafhoppers on any of the four primary fruit crops. Control measures should be undertaken on apple, raspberry, and saskatoon only when numbers are very high (>10/plant). Damage in strawberry plantings generally occurs only in year of establishment. In raspberry, control may be warranted, but only when insects are widespread and damage is obvious. Chokecherry is the crop where leafhoppers are the most serious concern because of Western X disease. Good weed control is essential, as weeds provides cover for the leafhoppers when they are not on the host plant. Apple orchards planted near hay fields may observe increased leafhopper activity after the hay field is cut.

Table 1: Bearing and Non-Bearing Apple Leafhopper Management Chart

Product	Group	REI*	PHI**
Aceta 70 WP	4	12 hrs	7 days
Assail 70 WP	4	12 hrs	7 days
Calypso 480 SC	4	12 hrs	30 days
Cormoran	4/15	12 hrs	14 days
Sivanto Prime	4D	12 hrs	14 days
Theme 480 SC	4	12 hrs	30 days

\*REI = re-entry interval, \*\*PHI = pre-harvest interval

Insecticide information from: [Pesticide Label Search - Health Canada \(hc-sc.gc.ca\)](https://www.hc-sc.gc.ca/pest/label-search/)

The information provided in these tables is general information only. Read pesticide label for usage and rates.

## References

[Province of Manitoba | agriculture - Leafhopper \(gov.mb.ca\)](https://www.gov.mb.ca/agriculture/)

[Province of Manitoba | agriculture - Apple Production in Manitoba \(gov.mb.ca\)](https://www.gov.mb.ca/agriculture/apple-production/)

## Contact Us

This factsheet was developed by Anthony Mintenko, Manitoba Agriculture Fruit Crop Specialist and John Gavloski, Provincial Entomologist Manitoba Agriculture.

For more information, contact the department:

Online [www.manitoba.ca/agriculture](https://www.manitoba.ca/agriculture)

Email [crops@gov.mb.ca](mailto:crops@gov.mb.ca)

Phone 1-844-769-6224