



CHLOROSIS OF FRUIT TREES & ORNAMENTALS

(non infectious)

This non-parasitic disease is common on fruit trees and on certain ornamentals in Western Canada. The leaf symptoms suggest the cause is a deficiency of available iron. Although iron is an abundant trace element in soil, plants may have difficulty in absorbing enough in high lime or calcareous soils. Other conditions also favor iron deficiency such as high soil pH (alkalinity), excess phosphates in soil, excess moisture along with low soil temperature and excess quantities of copper and manganese in acid soils.

SYMPTOMS – Leaves turn yellow between the veins, leaving the veins a darker green. Symptoms first occur on new leaves where tissue between the veins gradually turns yellow while the veins remain green. If unchecked this condition may advance throughout the plant and the tips and margins of some leaves may turn brown then become dry and brittle. Only a branch of a tree or perhaps only a few trees in an area may be affected. It is possible to have an affected and a healthy tree of the same plant species growing side by side. In severe cases, when the entire tree is affected, the plants will lose their leaves, and if the condition is not corrected, the plant will become unproductive and die.

CONTROL – Because of the complex nature of iron nutrition, treatments are not always successful. In soils where iron deficiency is a problem, control involves treatments to alleviate the conditions and the use of tolerant plant species.

1. **Foliar sprays:** Spraying plants with a solution of iron salts is often effective as a temporary measure but not for complete control. At the onset of symptoms spray leaves with a ferrous (iron) sulphate solution (one ounce ferrous sulphate in one gallon of water plus 5 to 6 drops of lemon juice). Spray as a very fine mist, otherwise leaves may be damaged and in this regard, addition of several drops of mild detergent per gallon would be beneficial. On a field scale one gallon would cover 1,000 square feet and 40 to 50 gallons would cover one acre. Successive treatments may be needed during the season whenever leaves start showing symptoms. If the treatment was successful, plants should begin to green up about 10 days after spraying.
2. **Soil Application:** The most effective control is by the use of iron chelates (available at our Garden Centre). Apply iron chelates to the soil in early spring at rates of approximately one tablespoon per inch of tree trunk diameter (or as per directions on container). The compound should be applied in small holes around the base out to the drip line of the tree and then liberally watered in. This method take a little longer to green up the leaves but has a longer effectiveness.