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COMMON PLANT DISEASES AND CONTROL IN ONTARIO

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Tree diseases can be found in any area where forest trees grow. Infectious diseases produced by biotic pathogens emerge over time as the pathogens interact with a favourable environment and susceptible host plants. Environmental conditions that produce plant stress, particularly drought-induced moisture deficits, predispose plants to forest pathogen attack. Some illnesses are exclusive to a single species, whereas others affect a variety of hosts. Fungi, bacteria, viruses, parasitic plants, nematodes, and other microbes are among the pathogens that cause tree illnesses. Insects can help illness spread by acting as vectors, creating wounds that allow pathogens to enter, and other roles. Abiotic variables that are directly harmful to tree health, such as freezing temperatures and air pollution, produce non-infectious forest diseases. Changes in climate are expected to have an impact on the prevalence and severity of certain non-infectious disorders. In the case of infectious diseases, changes in climatic circumstances can have a significant impact on the outcome of pathogen-host-insect interactions in forest settings. A forest's ability to sustain commodities and services at current levels will be influenced by a cascade of many changes. Infected trees suffer direct damage to host tissues, which can result in tree death. In this article we discuss some common diseases of trees, causing pests, the life cycle of pests, symptoms and control measures.

Gypsy Moth

LDD Moth Disease

LDD Moth Disease

The LDD Moth Disease is caused by Gypsy moth (Lymantria dispar dispar) and the host species of attack is Oak (Quercus) and Birch (Betula). In Ontario, LDD moth outbreaks occur every 7 to 10 years. Larvae eat leaves whole or gnaw holes in them. Spongy egg masses can be seen on the trunks and branches of afflicted trees in late July. Shrubs and plants in the understory may also be damaged. Trees and shrubs are entirely defoliated over wide areas during severe outbreaks; despite the trees' ability to generate a fresh crop of leaves over the summer, the damage results in significant growth loss. Trees that have been defoliated are more vulnerable to secondary pests, drought, and poor growing circumstances.

Life Cycle

The egg, caterpillar, pupa, and moth are the four stages of the LDD moth's life cycle. Caterpillars begin as little as 2mm and moult three to four times, increasing in size each time. Caterpillars can grow to be 5-6cm long by the time they reach their final moult. They have five blue and red dot pairs on the back and are black and hairy.

Control Measures

Physically remove LDD moth egg masses in the summer and fall. Scrape eggs into a container with a putty knife or trowel, then soak them in soapy water for several days to kill them. Apply adhesive bands or burlap around trees in the spring to trap emerging LDD moth caterpillars.

Larch Casebearer Disease

Larch Casebearer

Larch Casebearer Disease

The Larch Casebearer Disease is caused by Larch casebearer (Coleophora laricella) and the host species of attack is Tamarack (Larix laricina). Small silver-grey moths can be spotted flying about the tops of larches in the summer. The presence of cases on twigs near buds can be easily observed in the autumn after the needles have been shed. The larch casebearer's damage is mirrored in the drying and browning of young needles.

Life Cycle

The adults of the Larch casebearer are little grey moths. In June, they emerge and lay their eggs individually on the needles. Larvae bore into needles directly, which they mine until late in the summer. Larvae attach their casings to a twig or a needle near the conclusion of their development and transform into pupae. After the needles have shed, the presence of cases on twigs near buds can be easily observed in the autumn. The casing appears to be small, light brown, and in the shape of a cigar.

Control Measures

Agathis pumila and Chrysocharis laricinellae were added to help manage the larch casebearer. Insecticides can also be used to protect trees.

Cedar Leafminer Disease

Cedar Leafminer

Cedar Leafminer Disease

The Cedar Leafminer Disease is caused by Brown cedar leafminer (Coleotechnites thujaella) and the host species of attack is Cedar (Cedrus). Cedar leafminers eat the leaves, starting on the tree's outermost branches and working their way up to the trunk. When the leaves are fed, they turn yellow and then brown. During the following growing season, damaged leaves fall off. The loss of leaves is most visible in the spring. Most leafminer-infested trees recover. Leafminers can cause trees to lose up to 80% of their leaves, yet they can still survive. Repeated infestations, on the other hand, can damage trees.

Life Cycle

Cedar leafminer moths are active from May through July. Female moths lay eggs on the terminals of cedar trees after mating. The small caterpillars feed within the leaves after the eggs hatch a few weeks later. They make tunnels through the leaves while they eat. The caterpillars spend the winter in the tunnels and resume feeding in the spring. When the caterpillars reach adulthood, they transition to the pupa stage. They transform from caterpillars to moths during this motionless period. The pupa stage is spent by some leafminer species inside the tunnels. Others create silken cocoons that they cling to the leaves' exteriors.

Control Measures

Infested ornamental trees are possible. Twigs can be clipped in the winter to keep them from spreading.

Beech Bark Disease

Woolly Beech Scale

Beech Bark Disease

The Beech Bark Disease is caused by Beech scale or Woolly beech scale (Cryptococcus fagisuga) and the host species of attack is American beech (Fagus grandifolia) European beech. The scales are the first to appear; their numbers increase at first, then fall as the bark dies, fungal fruiting bodies appear, and cankers form. Canker formation, canopy thinning, limb dieback/breakage, and/or tree death are common indications of infestation and/or infection.

Life Cycle

Wind, animals, and the movement of beech wood with undamaged bark spread beech scale insects. Insects attack healthy beech trees, which rapidly expand in population over time. The scale insects' feeding punctures damage the living bark and creates crevices through which the causative fungus enters the tree. Rain splash and wind distribute fungal spores, which enter the bark through scale wounds. The duration between scale infestation and the manifestation of fungal infection has been reported to be anywhere between 2 and 10 years. Small cankers grow on the bark surfaces as a result of the fungus. Late summer and fall produce little orange-red fruiting bodies.

Control Measures

Because beech scale insects and fungus can spread accidentally to non-infested woods, don't move firewood. In places with high scale infestation levels, keep resistant trees that haven't been affected by scale insects. When managing forests, keep beech trees that show no evidence of scaling.

Armillaria Root Rot

Dark Honey Fungus

Armillaria Root Rot

The Armillaria Root rot is caused by Dark Honey Fungus (Armillaria ostoyae) and the host species of attack is Balsam fir (Abies balsamifera) Birch (Betula), Spruce (Picea) and Pine (Pinus). Armillaria root rot disease can affect trees without causing visible signs. The upper foliage of damaged trees becomes sparse, the leaves become smaller, and the twigs perish. Between the surface of the inner bark and the outer sapwood, infected trees frequently have a moist, whitish coating of fungal filaments (mycelial mat). Clusters of honey-colored mushrooms emerge at the base of trees or on the adjacent soil surface in the fall. The disease typically kills trees in forest stands, either singly or in clusters known as disease centres, which will continue to expand as the disease spreads.

Life Cycle

A causal fungus that lives in the soil and becomes aggressive on trees when the tree's developing conditions are poor. Drought, soil compaction, root injury, nutrient deficiencies, and insect defoliation are some of the conditions that can occur. The infection starts when a fungus that lives in the ground releases filaments that infect healthy roots. It spreads from the root collar to the tree trunk, causing sapwood rot in the affected areas and eventually causing the tree to die. Golden yellow fruiting bodies generate spores in the fall, which are distributed by the wind.

Control Measures

Affected trees are unlikely to be saved. The host tree, on the other hand, may be preserved if the illness is

According to environment Canada the nation of Canada hosts approximately 17,000 identified species of trees, flowers, herbs, ferns, mosses and other flora.

diagnosed early enough. Avoid the factors that cause tree vigour to wane to avoid the disease. Avoid replanting in the same spot where a diseased tree was removed since Armillaria root rot can last for years.

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