



Insectary Notes

MAY / JUNE 2010

From the Editor

As the summer progresses, things get more interesting in the forest insect and disease world. Sirococcus shoot blight concerns prompted an aerial survey: an update is on page 7.

As we have received many calls on the damage to roadside trees, Gina has written an article on Tree Susceptibility to Road Salt Injury.

And in keeping with the Forest Health promise to take many more pictures this year, there are articles on the whitespotted sawyer, the butterfly atlas, and galls on maple.

'Til next time,

Jacqui

Editing . . . a Rewording Activity

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Say What and Quotes . . .

The best way to garden is to put on a wide-brimmed straw hat and some old clothes. And with a hoe in one hand and a cold drink in the other, tell somebody else where to dig. -Texas Bix Bender

My wife's a water sign. I'm an earth sign. Together we make mud. -Rodney Dangerfield

A weed is a plant that has mastered every survival skill except for learning how to grow in rows. -Doug Larson

When did my wild oats turn to prunes and all bran? -Lucy Parker

Bulb: potential flower buried in Autumn, never to be seen again. -Henry Beard

Gardening requires lots of water - most of it in the form of perspiration. -Lou Erickson

The road to success is always under construction. -Unk.

A child of five would understand this. Send someone to fetch a child of five. -Groucho Marx

Why is it called 'after dark' when it really is 'after light'?

Disease Focus

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Sirococcus Shoot Blight

Mike LeBlanc

Introduction

Sirococcus shoot blight is caused by the fungus *Sirococcus conigenus* (DC.) P. Cannon & Minter. This disease was first described in Nova Scotia in 1974, but it was not until the early 1980's that extensive damage was noticed. The fungus infects the new shoots of conifers. In Nova Scotia, red pine growing in foggy coastal areas is most affected. An aerial survey (NSDNR) conducted in 1994 found that 139 of 849 red pine plantations (16%) had symptoms of Sirococcus shoot blight. In addition, 90% of immature-mature plantations found along the Fundy and Atlantic Coasts were affected. Since 1994, many red pine plantations along the Fundy Shore have been completely killed.



Fig. 1: Red pine mortality caused by *Sirococcus* shoot blight in Perch Lake, Pictou Co., 21 May 2010.

Photo: M. LeBlanc

Life History

Young needles are infected; and then the fungus grows into the elongating shoots, where cankers form. The fungus spreads within the succulent shoot tissue, but rarely into older wood. Growth is restricted in the cankered areas, causing the shoot tip to curl over and form a crook.

Small, black, erupting fruiting bodies, or pycnidia, form under the dead needle sheaths. These fruiting bodies produce large numbers of slender, transparent spores, or conidia. The conidia are spread to nearby hosts by water drops, which splash from rain or heavy fog. When the humidity is high, temperatures are mild, and the light is low, the conidia germinate and infect host trees. In some conifer species, the fungus may occur on cone scales and be seedborne.



Damage Symptoms

On red pine, young, elongating shoots will curl; fully elongated needles tend to droop. First symptoms appear after the middle of July with yellowing and crooked immature shoots. These, later turn orange or red and mostly fall of the tree. Fully mature shoots begin to die and turn orange by late August. These symptoms persist through fall and winter and sometimes into the following spring when they take on a rusty and washed out appearance.

Control Options

Prune and destroy affected shoots before spore release period (late May - June) to minimize local spread of disease. Remove small pockets of infection in an otherwise healthy plantation by cutting infected overstory and understory trees. This procedure will minimize Sirococcus damage to the remaining healthy stand.

Avoid microclimatic conditions favourable for infection in Sirococcus hazard areas. Humid, shady planting sites, such as small forest openings (diameter less than height of surrounding trees); shaded sites north and west of a stand of tall trees; and steep north or west slopes are potential hazard areas and should not be planted with red pine.

Do not plant red pine seedlings under or adjacent to infected trees. A minimum buffer zone should be twice the height of the infected trees. This buffer zone can be left unplanted or it can be managed for deciduous species or immune or resistant conifers, such as white spruce, black spruce, balsam fir, or larch. As a precaution, newly established red pine plantations should be checked 5 years after planting to make sure the fungus has not spread into the plantations. If the fungus is present, carry out appropriate control measures to ensure that major inoculum sources are eliminated.

See the [Project Update](#) section on page 7 for more information on the Sirococcus Survey.

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Best T-Shirts of Summer

(around a picture of dandelions) I Fought the Lawn and the Lawn Won.

I Suffer Occasional Delusions of Adequacy.

At My Age, I've Seen It All, Done It All, Heard It All . . . I Just Can't Remember It All.

First Things First, but Not Necessarily in That Order.

Veni, Vedi, Visa: I came. I Saw. I Did a Little Shopping.

Provincial Forest Entomologist's Overview

..... What's the Buzz?

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Tree Susceptibility to Road Salt Injury

Gina Penny

During these times of sunny days and warm temperatures it may seem strange to be thinking about winter weather and road salt. However, if you've driven along the highways of Nova Scotia this spring you can probably guess what I'm thinking about. Red needles on white pines growing along the roadsides; a telltale sign of salt injury.

Due to Nova Scotia's winter conditions, road de-icing salt (NaCl) is routinely applied in large quantities. Road salt is great at keeping pavement ice free and drivers safe however, it can also contribute to the injury and decline of many road side plants. There are two general types of salt injury: injury from direct contact with road salt and injury from salt accumulation in the soil.



Fig.2: Salt injury to roadside pine. Note uninjured spruce in the background.

Photo: M. LeBlanc

On evergreens, severe damage results mainly from salt spray deposited by passing traffic. Salt spray causes the needles to brown; beginning at the tip and progressing to the base. Needle browning becomes evident in late winter, intensifying over time. Winter salt spray damage to deciduous trees causes bud death and twig die back. Growth occurring after this damage can develop a tuft-like "witches' broom" appearance. Symptoms of salt spray injury are most severe on sensitive plants, close to the highway, but can extend up to 100m or more down wind of traffic.

Salt leeching into the soil via runoff is also of concern as salt readily absorbs water. When high quantities accumulate in the soil around a plant's root system it absorbs most of the water that would normally be available to the roots. This results in a drought-like situation since the roots are unable to absorb enough water even though there is plenty of soil moisture.

Runoff contains dissolved salts and when salt dissolves the sodium (Na⁺) and chloride (Cl⁻) ions separate. Chloride ions can be taken up by the roots and transported to the leaves where they interfere with chlorophyll production and photosynthesis. Sodium can restrict the plant's ability to take up necessary nutrients such as potassium and magnesium, both of which are essential for the manufacture of chlorophyll. High levels of sodium can also change the structure of the soil, causing it to become compacted. This severely restricts root access to water and oxygen.

Soil salt damage to deciduous trees often becomes evident late in the summer or during periods of hot, dry weather. However, it may take several years for injury to become apparent. The symptoms include stunting and poor vigor, terminal dieback, premature leaf drop, leaf tipburn and leaf marginal scorch.

The degree of damage from salt build up in the soil depends on several variables:

- direction and concentration of run-off
- the amount of snowfall and timing of rains
- the type of soil
- the condition of the plants

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The schoolteacher was taking his first golfing lesson.
"Is the word spelled p-u-t or p-u-t-t?" he asked the instructor.
"P-u-t-t is correct," he replied.
"Put means to place a thing where you want it. Putt means merely a vain attempt to do the same thing."



Bits and Pieces

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Butterfly Atlas

Jeff Ogden



Fig. 3: Mourning cloak butterfly.

Photo: J. Ogden

2010 has been designated the “Year of Biodiversity,” and insect biodiversity is a subject very close to my heart. With more than 30,000 species to choose from your choices are virtually endless, but a new project headed by the Atlantic Canada Conservation Data Centre in Sackville, NB has narrowed my focus for the next few years. Last year I was asked to participate in establishing the region’s first Butterfly Atlas.

Similar to the Maritime Breeding Bird Atlas, this program is dependent on volunteers interested in nature to be the researchers and collect or photograph the butterflies they see

over the next five years. It is hoped this project will provide a better understanding of butterfly species abundance, distribution, and range within the Maritime provinces and determine which species or habitats should be considered for protection in the future. Anyone can get involved and everyone is encouraged to participate. For details check out their website . . . <http://www.accdc.com/butterflyatlas/About.html>



Fig. 4: Red admiral butterfly.

Photo: J. Ogden

Whitespotted Sawyer

Jacqui Gordon



Fig 5: Whitespotted sawyer beetle (male), 12 June 2010.

Photo: J. Gordon

This little fellow was spotted flying in Kings County on 12 June. We’ve also been picking them up in the brown spruce longhorn beetle traps. The whitespotted sawyer is common throughout Nova Scotia. The beetle seems to be making a bit of an early appearance as I’m used to seeing them more commonly in July.

It does not cause tree mortality. The damage is done after the tree is dead or felled. The larvae chew galleries into the wood, causing the log to be unsuitable for milling.

The degree of “whitespotting” varies from just one spot at the top of the wing covers (elytra) to many white spots.

They can be confused with the Asian Longhorn Beetle. The main differences between our native whitespotted sawyer beetle and the Asian longhorn beetle (invasive) are:

1. Overall Appearance - The ALB is glossy black and very smooth. The WSS is bronzy black and more dimpled.
2. Antennae - The ALB has distinctly banded white and black antennae. The WSS female has faintly banded antennae and the WSS male has all black antennae.
3. The ALB (20 - 35 mm) is larger than the WSS (15 - 28 mm) but that’s a bit subjective if you’re not looking at them both at the same time.



What do you get if you divide the circumference of a pumpkin by its diameter?
Pumpkin pi.

What do you get if you cross a four leaf clover with poison ivy?
A rash of good luck.

Project Update

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Sirococcus Aerial Survey

taken from a report provided by James Bruce, Risk Services

In the late spring of 2010, Forest Protection conducted an aerial survey of the red pine stands in the St Marys watershed, between the communities of Trafalgar and Aspen, looking for shoot dieback and tree mortality resulting from infection by *Sirococcus conigenus*, a shoot blight.

The overall survey area was determined by identifying red pine plantations in the forest inventory and drawing upon a previous *Sirococcus* survey effort coordinated in 2007/2008 by the Forest Health Section.

This survey identified 740 locations covering a total of 1951 hectares, with damage levels ranging from zero to severe. 1578 hectares had some level of damage from *Sirococcus*.

Monitor Watch

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Eyespot Gall on Maple

Jacqui Gordon



Fig. 6: Eyespot gall on maple.

Photo: J. Gordon

I spotted an eyespot gall! These galls are beginning to show up on maple. They are caused by a small midge (true fly). The fly lays its eggs in the undersurface of the leaves. The maggot that hatches develops quickly and produces a growth regulating hormone that causes the bright red and yellow rings around the gall, usually in June. The maggot inside the gall completes its development in about 10 days, drops to the ground to pupate, and transforms into an adult. There is only one generation each year and there is no control necessary. The galls generally do not harm the tree.

Reference:

Grand Traverse Conservation District

<http://www.gtcd.org/news/maple-eyespot-gall/>

The Last Laugh . . .

While crossing the US-Mexican border on his bicycle, the man was stopped by a guard who pointed to two sacks the man had on his shoulders. "What's in the bags?", asked the guard.

"Sand," said the cyclist.

"Get them off - we'll take a look," said the guard.

The Cyclist did as he was told, emptied the bags, and proving they contained nothing but sand, reloaded the bags, put them on his shoulders and continued across the border.

Two weeks later, the same thing happened. Again the guard demanded to see the two bags, which again contained nothing but sand. This went on every week for six months, until one day the cyclist with the sand bags failed to appear.

A few days later, the guard happened to meet the cyclist downtown. "Say friend, you sure had us crazy", said the guard. "We knew you were smuggling something across the border. I won't say a word - but what is it you were smuggling?" "Bicycles!"



Driving to work, a gentleman had to swerve to avoid a box that fell out of a truck in front of him. Seconds later, a policeman pulled him over for reckless driving. Fortunately, another officer had seen the carton in the road. The policemen stopped traffic and recovered the box. It was found to contain large upholstery tacks.

"I'm sorry sir," the first trooper told the driver, "but I am still going to have to write you a ticket."

Amazed, the driver asked for what.

The trooper replied, "Tacks evasion."

A man had been driving all night and by morning was still far from his destination. He decided to stop at the next city he came to, and park somewhere quiet so he could get an hour or two of sleep. As luck would have it, the quiet place he chose happened to be on one of the city's major jogging routes. No sooner had he settled back to snooze when there came a knocking on his window. He looked out and saw a jogger running in place.

"Yes?"

"Excuse me, sir," the jogger said, "do you have the time?" The man looked at the car clock and answered, "8:15". The jogger said thanks and left. The man settled back again, and was just dozing off when there was another knock on the window and another jogger.

"Excuse me, sir, do you have the time?"

"8:25!"

The jogger said thanks and left. Now the man could see other joggers passing by and he knew it was only a matter of time before another one disturbed him. To avoid the problem, he got out a pen and paper and put a sign in his window saying, "I do not know the time!" Once again he settled back to sleep. He was just dozing off when there was another knock on the window.

"Sir, sir? It's 8:45!"

