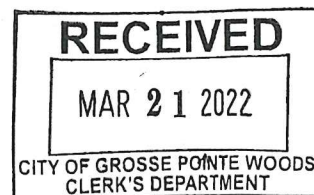


MEMO 22-11



TO: Frank Schulte, City Administrator

FROM: James Kowalski, Director of Public Services *J.K.*

DATE: March 15, 2022

SUBJECT: Request to Remove and Replace the Two Colorado Blue Spruce Pines at Robert E. Novitke Municipal Center

While decorating the two Colorado Blue Spruce Pines at the Robert E. Novitke Municipal Center for the past holiday season, it was discovered that both trees are showing signs of distress with rotted limbs and top dieback. The city's contractor Marshall Landscape Inc. examined the trees at our request and diagnosed both trees with multiple issues that included Pitch Mass Borer (insect infiltration), Cytospora Canker (disease of lower branches), and Spruce Needle Rust (fungus which defoliates the limbs). They also discovered girdling roots as the base of one of the trees, which chokes the roots that feeds the tree and weakens the root base.

Marshall Landscape Inc.'s owner, Brett Marshall, stated that an aggressive spray program may extend the life of the trees a few more years, but ultimately they will need to be removed. He stated the city would be farther ahead replacing the trees now with two new 12-14 foot Norway Spruce Pines. These particular trees grow an average of 2-3 feet per year and grow up to 40-60 feet tall, with a spread of 25-30 feet in diameter. The Norway Spruce Pines also have a strong root base that are able to withstand high winds.

Therefore, I am requesting that the Department of Public Works remove the two Colorado Blue Spruce Pines at the Robert E. Novitke Municipal Center. I further request the purchase and planting of two new 12-14 foot Norway Spruce Pines provided by Landscape Source, 17448 26 Mile Road, Macomb, MI 48042 in the amount of \$3,200.00.

This is a not a budgeted item included in the 2021/2022 fiscal year budget and will require a budget transfer from City Hall & Grounds Operating Supplies account no. 101-444-757.000 into City Hall & Grounds Contractual Services account no. 101-444-818.000 in the amount of \$3,200.00.

I do not believe any benefit will accrue to the City by seeking further bids. Approved for Council consideration.



Frank Schulte, City Administrator

3-15-22

Date

Fund Certification:

Account numbers and amounts have been verified as presented.



Shawn Murphy, Treasurer/Comptroller

3-21-2022

Date



24343 Gibson
Warren, MI 48089
www.marshalllandscape.com

(586) 427-6577 Macomb
(313) 885-7272 Wayne
(586) 427-6926 Fax



Turf Grass Services • Plant Health Care • Exterior Pest Control • Athletic Field

City of Grosse Pointe Woods
James Kowalski
1200 Parkway Drive
Grosse Pointe Woods, MI 48236

January 29, 2022

Dear Jim,

At your request, I stopped by the GPW Municipal Building on Mack Ave to take a closer look at the two Colorado blue spruce outside the main entrance doors.

Both trees are in a state of decline.

I have found evidence of Pitch Mass Borer, Cytospora Canker, and Needle Rust, all three of these common problems are very aggressive and deadly. I have enclosed some information of what exactly what you are dealing with. The north tree, (the smallest) also shows evidence of girdling roots, which would account for its smaller size and limb dieback.

Unfortunately, a very aggressive spray program will be needed to attempt to gain control each year along with root excavation to the North tree.

I believe GPW would be farther ahead to remove the two Spruce and install new Conifers this spring.

I hope this information will help with your decision.

Brett Marshall
Marshall Landscape Inc.
ISA # MI-3804A



The Plant Doctor's LANDSCAPE TIPS

By David L. Roberts, Ph.D, Michigan State University Extension

CYTOSPORA CANCKER OF SPRUCE

INTRODUCTION:

Spruce trees (*Picea* sp.) represent a group of Conifers that are widely utilized in landscapes throughout North America. Among the spruces, there are many different species that contribute various growth characteristics, colors and textures that may enhance various aspects of our landscapes. Some of these different species and varieties include Colorado Blue, White, Spartan, Norway, and Dwarf Alberta.

Invariably, as with other plants, spruces contract their own pests and disease problems. One of the most common diseases on spruces is known as Cytospora canker, caused by the fungus *Cytospora kunzei* (also reported as *Valsa* or *Leucostoma kunzei*). Colorado blue spruce (*Picea pungens* 'glauca') and Norway spruce (*Picea abies*) appear to be the most susceptible. This fungus, or various closely related forms, may also attack hemlocks (*Tsuga* sp.), firs (*Abies* sp.) and larches (*Larix* sp.).

DIAGNOSIS AND SYMPTOMS:

Cytospora initially attacks the lower branches of spruce trees, resulting in lower branch dieback (Photo 1). Most commonly, older trees, ex. larger than 20-30 feet in height, are most susceptible. Close inspection of afflicted trees will usually disclose resinous areas on affected branches known as cankers (Photo 2). These resinous areas represent sap secretions (bleeding) from branch areas damaged by Cytospora fungal activity. Cankers destroy the vascular tissue of the branch, leading to branch death. In succeeding years, the fungus may spread to nearby branches as it advances upward into the tree. Spread may occur through splashing rain, by birds and other mechanical means. This advance of the fungus from lower to lower middle to middle branches may take many years. In general, even in advanced cases, trees are rarely killed by the fungus; most likely, trees reach an age and size in which many secondary pests, diseases and stresses work together to lead to the ultimate death of spruce trees. Overall, Cytospora canker is probably more of an aesthetically damaging disease than a life threatening problem.

The Cytospora fungus generally does not attack young, healthy spruce trees. Another disease known as Phomopsis canker (Photo 3) may attack and kill younger spruces and should not be confused with Cytospora canker (Photo 4).

MANAGEMENT OF CYTOSPORA CANCKER:

Cytospora canker is a very difficult disease to manage. And because the disease causes cosmetic rather than life threatening concerns, some of the following suggestions may help minimize adverse appearance effects of the disease on specific trees in the landscape.

Cultural: Because it is believed that older trees in a stressed condition are most susceptible, it is wise to maintain good nutrition and vigor in susceptible trees. Interestingly, Colorado blue spruce in their natural Rocky Mountain habitat rarely contract Cytospora canker. Hence, a spruce's optimal natural inclination may be toward lower nutrition and moisture than often encountered in many well maintained landscapes. Certainly, avoid frequent irrigation and wetting of branches on spruce trees; fungal diseases require moisture to sporulate, spread and infect new plant tissue. Also, avoid wounding lower branches with lawn equipment and weed trimmers; wounds create sites where the fungus may invade particular branches. Proactive pruning may be beneficial; examine lower branches of spruce trees for the telltale signs of resinous cankers, and prune them out even if the branch has not died. Proactive pruning may break the disease cycle on specific trees. Pruning also improves the aesthetic appearance of affected trees.

Chemical Management: In general, it is believed that chemical fungicides have traditionally not been effective in managing Cytospora canker. Some recent studies performed by the author and others indicate that some trunk injection procedures may provide some relief from Cytospora canker for two years. Chemical treatments have proven to be highly effective for Phomopsis canker on smaller spruces. ■



Photo 1: Typical symptoms of Cytospora canker on older spruces result in lower branch dieback.



Photo 2: Cytospora canker result in branch cankers as evidenced by the bleeding of resin from the area on the branch invaded by the fungus.



Photo 3: Cytospora canker should not be confused with Phomopsis canker, which attacks smaller spruces.



Photo 4: On medium sized spruce trees, it may be difficult to discern Phomopsis canker from Cytospora canker (note branch dieback typical of both). In such cases, a lab test may be necessary.



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Development of Landscape Tips was sponsored by MSU and MGIA.



The Plant Doctor's LANDSCAPE TIPS

By David L. Roberts, Ph.D., Senior Academic Specialist, College of Agriculture and Natural Resources, Michigan State University

PITCH MASS BORER

INTRODUCTION:

Pitch Mass Borer (*Synanthedon pini*=*Vespa mima pini*=PMB) is an insect (or complex of insects) that attacks various conifers in the landscape and natural areas. PMB may attack a variety of conifers but is most commonly seen on eastern white, Scotts, and Austrian pines, and on white, Norway and Colorado Blue spruces. The PMB bores into the trunks of trees and disrupts the vascular system. It generally takes numerous attacks for the insect to instigate symptoms on trees (Photo 1). The adult PMB is a clear wing insect that resembles a yellow jacket.

SYMPTOMS AND INSECT CYCLE:

PMB possesses a relatively simple life cycle. Adults appear in the summer months when female adults lay eggs on the bark of conifers during June and July. Often, eggs are deposited near wounds such as branch collars (Photo 2) where branches have been pruned from trees and on other areas of the trunk. The eggs hatch and the tiny larvae bore through the bark to the inner bark and sap wood (cambial tissues) where they excavate tissues to make a feeding hole. Continuous flow of sap from these feeding areas eventually causes a mass of pitch on the bark of the tree; these globs of pitch (masses) may attain 3-4 inches diameter (Photo 3 and Insert). It may take 2-3 years for the insect to complete its life cycle.

The feeding by PMB larvae is not considered particularly serious by many experts, however, advanced infestations may result in the most obvious symptoms of PMB infestations, which are dead tops and branches (Photo 1). Infestations usually occur long before symptoms develop. Many trees may appear perfectly healthy but on close scrutiny of the trunk, copious resin secretions running down the trunks of trees are common (Photos 4).

PMB may be confused with Zimmerman Pine Moth (ZPM) on some conifers. The two borers may be present on the same trees in some landscapes. On some occasions, apparently because of high population levels, PMB and ZPM may cross-attack from their regular host trees. For more information on ZPM, review the article "Zimmerman Pine Moth" in the April 2009 issue of *The Landsculptor*. PMB may also be confused with other problems such as girdling injury (Photo 5) or other diseases; PMB on eastern white pine (Photo 6), for example, may be confused with Pitch Canker, caused by a *Fusarium* sp. fungus.



Photo 1: Pitch Mass Borer may cause top dieback and limb death on conifers, in this case spruce. Multiple leaders may also be an indication of PMB on trees.

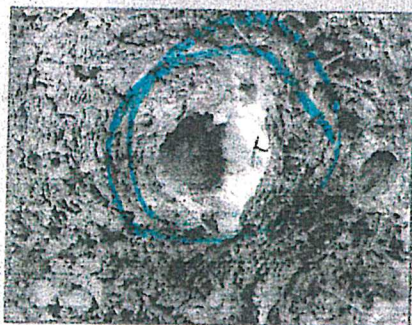


Photo 2: It is not uncommon to see evidence of PMB near wounds such as previous branch removals.



Photo 3 and Insert: Signs of PMB include copious sap secretions and globs of pitch on the trunks of affected trees. Depending on time of year, peeling back the pitch mass may reveal the larval culprit. Destroying the larvae is a biological control procedure-my condolences to "The Society for the Fair Treatment of Larval-Like Critters."



MANAGING PMB:

PMB is very difficult to manage. Although there are undoubtedly some natural predators, parasite and pathogens that attack PMB, many tree owners and arborists usually cannot rely on nature to correct PMB infestations on conifers. Following are some possible recommendations that may be considered in PMB management.

"Sanitation": Provided one doesn't mind contaminating knives and other utensils, physical removal of larvae might be practical where there are pitch masses on smaller trees or where pitch masses are easily accessible (Photo 3 and insert). By physical removal, it is suggested that the larvae be removed from the pitch masses and destroyed before they undergo metamorphosis into an adult. This technique might not be very practical for most arborists, but it may reduce somewhat the population of PMB in the immediate area or on a particularly valuable tree. Sanitation may also be described in very general terms, including tree removals, when their continued presence would cause PMB population buildup on less desirable or less important trees in the landscape.

Species Selection: This management tool may also be somewhat impractical but where new tree installations are going into landscape areas that have been "devastated" by PMB, it might be best to install trees that are not susceptible or as susceptible to the pest. As an example, arborvitae is not susceptible, whereas Colorado Blue Spruce is very susceptible. Also, for example, Norway spruce is susceptible but not nearly as susceptible as Blue Spruce.

Water and Nutrition: To the author's knowledge, little is known about nutrition and moisture effects on PMB, but if it behaves as many borers do, the borer is more likely attracted to trees that have either been wounded or under stress. If true, then it would be advisable to minimize stress as much as possible. Excess irrigation and crowding of trees are some examples of stresses.

Insecticides: As with Zimmerman Pine Moth, PMB is very difficult to manage with chemicals even though this may be one of the easiest and most effective (?) options. Undoubtedly, the reason why PMB is so difficult to manage is because the insect resides deep in resin masses where it is protected from exposure to chemicals. Insecticide applications are usually timed for mid-July when egg laying by adults or hatching of eggs and burrowing begins by larvae. Apply a registered insecticide for control of clear wing borers according to label directions. Imidacloprid products are often applied for managing many tree borers (boring beetles and weevils) but are largely ineffective for clear wing borers. ■

For more information, please feel free to email David Roberts at robertsd@msu.edu or contact a professional plant health care provider. The author, MSU and MGIA do not endorse any particular products. If using pesticides, be sure to read and follow label directions.

Development of Landscape Tips was sponsored by MSU and MGIA.



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Photo 4: This spruce tree exhibited no outward sign of problems (no top or branch dieback); however, the Niagara Falls-like appearance of sap on the trunk indicates a rather advanced infestation by the PMB.



Photo 5: The girdling guy wire left in this tree may be confused with PMB attack.



Photo 6: On eastern white pine PMB attack may result in an almost white trunk due to abundant resin secretions. Despite the abundance of resin on its trunk, this tree shows very little outward symptoms of problems, except for some possible stress and slowing of annual growth.



The Plant Doctor's LANDSCAPE TIPS

By David L. Roberts, Ph.D., Senior Academic Specialist, College of Agriculture and Natural Resources, Michigan State University



Photo 1: Many spruce trees around Michigan are burdened with decline, which may be caused by a variety of disease and pest issues.



Photo 2: These Colorado blue spruce trees are afflicted with spruce needle rust, albeit at fairly low incidence at this time. It would not be unusual for such trees to be affected by several disease and pest issues in the spruce decline syndrome. Even though some defoliation is evident, the diagnosis of spruce needle rust, along with other diseases such as needlecast, requires close-up examination.



Photo 3: In the earlier stages of foliar infections on this Colorado Blue Spruce, note the needle banding typical of rust (or other foliar diseases) when spruce needles become infected and "sick." This is actual banding from Weir's Rust. (Photo credit: Marshal Baeckeroot)

SPRUCE NEEDLE RUST

INTRODUCTION:

Spruce trees, especially Colorado Blue, may contract a variety of maladies. Sometimes the accumulation of these maladies may lead to "Spruce Decline" (Photo 1: also see "Spruce Decline" in the February 2013 issue of the *Landscape Sculptor*). One group of diseases that is not often considered as a contributor to "decline" is "Spruce Needle Rust." Most species of spruce are susceptible to Needle Rust. Needle Rust, caused by "rust fungi" typically in the genus *Chrysomyxa*, is not particularly common or devastating, but at times may lead to more defoliation than we would anticipate or desire. Hence, it is important that we learn how to diagnose and manage the various rust diseases on spruce trees (*Picea* sp.).

HETEROECIOUS VS. AUTOECIOUS RUSTS:

Perhaps the following is a little more information than the average person would care to know, but it can be important for diagnosis and management considerations. There are several types of needle rusts on spruce. Some of these rust fungi require an alternate host plants ("Hetero") to complete their disease cycle, much like "Cedar-Apple Rust" on *Malus* (apple, crabapple) and juniper. Such rust diseases that require an alternate host are termed "Heteroecious." Other rust diseases require no alternate host plant and are self-propagating ("Auto") on the same host (spruce); these rusts are termed "Autoecious."

In the case of Heteroecious needle rusts on spruce (there are several), members of the *Ericaceae* plant family such as Leather Leaf (*Chamaedaphne calyculata*), Labrador Tea (*Ledum groenlandicum*) and Bearberry (*Arctostaphylos uva-ursi*) serve as alternate hosts.

With regard to Autoecious Needle Rust diseases, Weir's Rust (aka cushion rust caused by *Chrysomyxa weirii*) is a prime example, which, by definition, does not require an alternate host. Weir's Rust is native to the forests of the western United States but began showing up in eastern states in the mid 1990s. More recently, Weir's Rust has been found in several Midwestern states, including Michigan.

SYMPTOMS, DIAGNOSIS & DISEASE CYCLE:

There are several common symptoms associated with spruce needle rust diseases. Perhaps the most alarming symptom is defoliation of branches, similar to the various needlecast diseases (Photo 2). If one is not careful in their observations, the needle rust diseases may be mistaken for the various needlecast diseases. Initial symptoms of needle rust included discolored needles (yellowish, light green) and banding on the needles (Photos 3 & 4); these symptoms may mimic a variety of needlecast diseases as well. Particularly diagnostic of needle rusts is the eventual development of yellowish tube-like projections (Heterocyclic) or pustules (Weir's) that release orange-yellow spores (Photos 5 & 6).

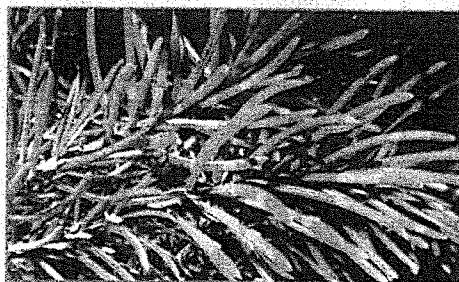


Photo 4: This Serbian Spruce has a moderately advanced incidence of spruce (Weir's) needle rust that is likely to lead to significant defoliation. Note the yellow, banded areas.

Weir's rust can be differentiated from other spruce needle rusts and other needle diseases (Photo 7) fairly easily on the basis of symptoms and disease



Landscape Source
17448 26 Mile Road
Macomb, MI 48042

17448 26 Mile Rd.
Macomb, MI 48042
Phone: 586-677-7480
FAX :586-677-7483
www.landscapesource.com

Phone: (586) 677-7480

Fax: (586) 677-7483

Date: 3/3/2022

Quote: Attn: Jim Kowalski
City of Grosse Pointe Woods
Ph: (313) 343-2460
Fax: (313) 343-2622

spruce in front of city hall replacement

Quote By: David Soulliere

DESCRIPTION	Size	Quan.	Planted
			Price ea.
Norway Spruce	12-13'	2	\$ 1,600.00
Installed with fertilizer and mycorrhiza			
Delivery			
city will remove existing tree and grind stump			
		Total	\$ 3,200.00

Plant material prices are delivered and planted prices including
Assure 5-5-5 Fertilizer with Mycorrhizae and mulch
Call Dave with questions (586) 634-5515

Signature: _____

Date: 3/4/2022

Note:

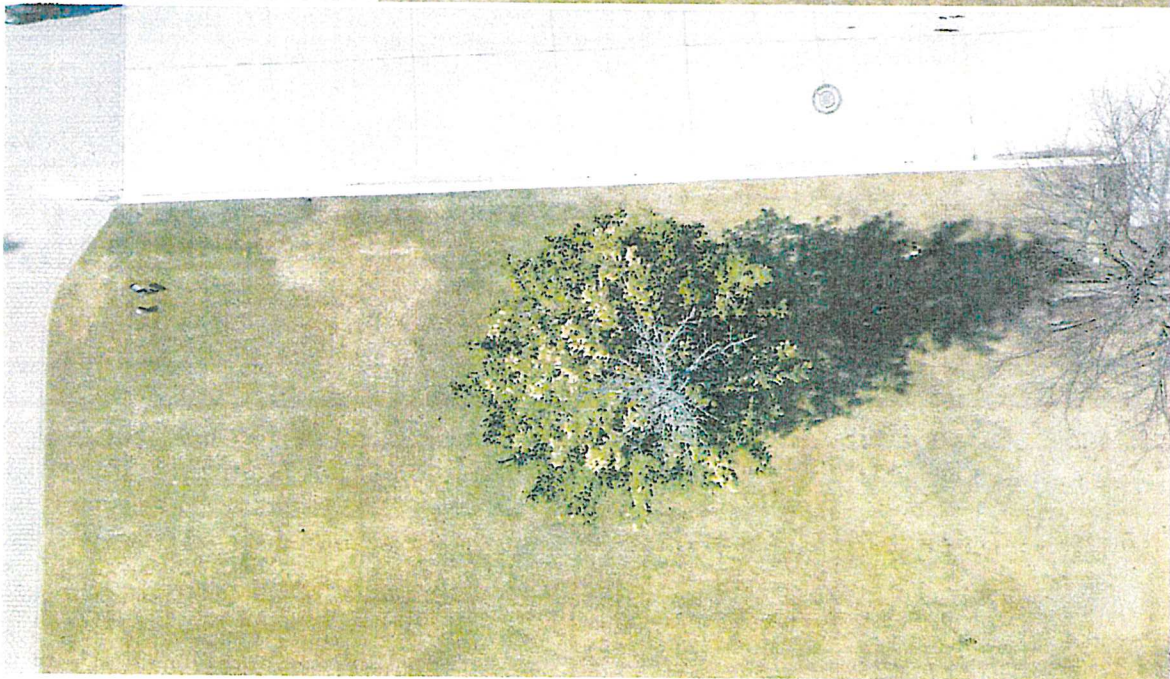
NORTH PINE TREE



NORTH PINE TREE



NORTH PINE TREE



SOUTH PINE TREE



SOUTH PINE TREE



SOUTH PINE TREE



SOUTH PINE TREE

