**Photo 1:** Japanese maples were particularly affected by frost injury during the spring of 2012.

**Photo 2:** Although the damage on this Japanese maple leaf could appear similar to anthracnose, this is actually frost injury.

**Photo 3:** This sycamore is affected with frost and anthracnose. Although it appears dead, it will be fully re-leafed by mid-summer.

# The Plant Doctor's LANDSCAPE TIPS

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## 2012 SPRING REVIEW

### INTRODUCTION:

This spring of 2012 could be described as normally abnormal for Michigan. Many of us question whether we even had any winter. And, buds on some trees and shrubs were breaking in late January and February. Even with the very mild winter, we still expect to see some forms of winter injury, especially frost injury. Some industry personnel have asked what we can expect to see as the result of the mild winter and early spring, sometimes implying that insect pests might survive better. I often reply "uncertainty" because predators, parasites and diseases of the insect pests might also survive better. I suspect that due to the rather early and long spring that the period for disease development (spore release and infection) may have been extended, possibly resulting in greater incidence of some diseases such as scab on crabapple and tar spot on maple. Time will tell. One interesting observation is that as long as flowers on trees and shrubs were not frosted, many regions exhibited brilliant blooms that remained fresh and beautiful for a very long time.

In this issue of the Plant Doctor's Landscape Tips, I wanted to provide an update on several of the more prominent, interesting and alarming issues I've been seeing. As always, I welcome comments from my colleagues in the industry; I'm always interested in interesting phenomena, and it provides me with opportunities to share these aspects with other members of the industry. Please feel free to contact me via email, robertsd@msu.edu, if you observe anything you'd like to share or if I can be of assistance in ferreting out the cause of the problem.

### SEVERAL SPECIFIC ISSUES:

**Frost or Anthracnose?** Due to the early developing spring, many plant huggers wanted to get out in March or April to plant tomatoes or install various flowers and landscape plantings. However, even though the spring was several weeks ahead of schedule in many locations around Michigan, the potential for frost injury was very real. It must be remembered that while we had a relatively mild winter and early spring, the frost-free date is still in late May in Michigan. Not surprisingly, extensive frost injury was encountered on plants. The occurrence of frost injury depended on the time of the cold temperature, location/elevation, and the stage of development of specific plants and their tissues. Japanese maple, for example was especially hard affected by frost (Photo 1). Other trees exhibited frost injury in various forms. Distortion and cupping of foliage was noted and may be confused with herbicide injury. In some cases, frost injury may be confused with or may mimic foliar diseases such as anthracnose (Photos 2 & 3); it is also possible that frost and disease may occur in tandem. Regrettably, there are some reports that some trees were unnecessarily removed because homeowners believed the trees would not recover. In most instances of frost injury (or foliar disease activity), trees and shrubs should recover just fine.

**Two-lined Chestnut Borer (TLCB):** TLCB (Agrilus bilineatus) is a flat-headed wood boring beetle related to the Emerald Ash Borer and Bronze Birch Borer. Other than chestnut, oaks (Quercus sp.) appear to be the most susceptible genus of tree affected by the insect. Over the past several years, I have noted a marked increase in the activity of this supposed native pest. Or, perhaps the "increase in activity" is due to my becoming more aware of the problem. Unfortunately, declining oaks are not often scrutinized early and carefully enough to disclose TLCB infestations (Photo 4). As with the EAB, TLCB activity on the lower trunk (Photo 4 insert) of the tree indicates advanced stages of infestation and tree doom. I've almost reached

the universal conclusion that if branch dieback is observed in a large oak tree, we'd better strongly consider that TLCB is involved even though many other problems, such as disease, may cause similar symptoms. By some standards, the TLCB is considered a borderline secondary pest that attacks stressed trees. However, when does a mature, grand, old oak never encounter stress? I have also noted that many oaks in a specific area are affected as though the TLCB is spreading in an epicenter-style movement. It may be wise to consider insecticide treatments similar to those applied for Emerald Ash Borer in some high value tree situations to help trees through stressful periods and/or where there appears to be an "epicenter" of TLCB activity.

**Spruce Decline:** Many spruce trees around Michigan are declining (Photo 5), a phenomenon that I have referred to as "Spruce Decline" for lack of better terminology. Although we are accustomed to various common diseases and insects such as Cytospora canker, Rhizosphaera needlecast, spruce gall adelgids, etc., these traditional problems generally do not result in severe decline and death of spruce trees. Disregarding Imprelis herbicide as a major contributing factor affecting spruce decline for most landscapes, new factors appear to be accelerating or causing a more serious decline in spruce. Over the past couple of decades, Phomopsis canker appears to have moved from smaller nursery-sized trees into larger landscape trees. Phomopsis appears to be more aggressive and lethal than some of the other diseases. In some cases new needlecast diseases, Diplodia tip blight, Pitch Mass Borer and other problems are also associated with declining spruce. It is not unusual to discover several diseases and insects attacking one tree; perhaps all are contributing to spruce decline. In the case of diseases, virtually all are favored by abundant moisture from precipitation and/or irrigation. From the standpoint of valuable spruces that warrant treatments, a good "brew" or "elixir" for managing most of the above mentioned diseases would be a combination of a benzimidazole carbamate fungicide (thiophanate methyl or thiophanate ethyl) sold under trade names such as T Methyl G, Cleary 3336, etc. and a contact fungicide such as a copper fungicide or mancozeb or Dithane, or chlorothalonil (Daconil 2782, etc.). Fungicides are most effective if applied during the spring and early summer.

**EAB and Lilac Borer:** Ash trees have really been taking it on the chin, uh, limb. With the advent of the lethal Emerald Ash Borer, Fraxinus for landscape use has become a liability rather than an asset. Of the original population of ash trees in southeast Michigan, the area of introduction of EAB into North America, very few have survived (it must be qualified that many new ash seedlings and shoots from killed tree stumps are emerging in this area, essentially keeping the EAB population alive and well). Of the few that have survived, virtually all are being treated with chemicals to prevent serious injury and decline from EAB (Photo 6). A frustration that is likely to compound EAB treatments is that in some locations, other borers are attacking ash trees. One particular borer that has been identified at several locations is the Lilac Borer (Podosesia syringae (Harris)). The Lilac Borer (LB, aka by some as Ash Borer) tunnels deeper into the wood than EAB. Because the LB is a round-headed borer, emergence holes are larger and rounded when compared to the D-shaped holes of EAB (Photo 6 insert). Because the LB is a clear winged moth, some of the treatments utilized for EAB management may not be effective against LB; this seems to be especially true for imidacloprid-type products. For those arborists who are managing ash trees for EAB, it would be prudent to carefully examine trees for the presence of other borers and to make sure that the insecticides you are using will also manage other types of borers. If necessary, combinations of insecticides may be advised.

*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.*

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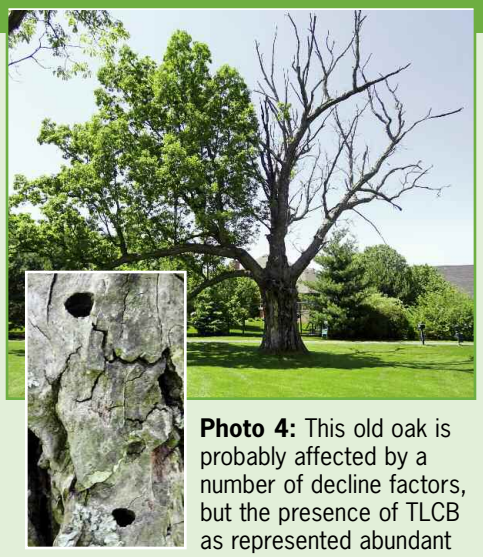

**Photo 4:** This old oak is probably affected by a number of decline factors, but the presence of TLCB as represented abundant D-shaped emergence holes (Inset) on the lower trunk indicates a serious infestation.

**Photo 5:** Many spruce are declining around Michigan. Often several insect pests and diseases are associated with the decline. Phomopsis canker is particularly serious on spruce.

**Photo 3:** These ash trees have been treated to prevent EAB decline since 2001. Unfortunately, these trees are now being attacked by what is presumed to be the Lilac Borer. The perfectly formed round hole (Inset) is typical of LB and is readily distinguished from jagged woodpecker holes. Not all insecticides applied for EAB will manage the LB.