The Plant Doctor's LANDSCAPE TIPS

By Dr. David L. Roberts, The Plant Doctor LLC a.k.a. The Tree Doctor

SLEUTHING IMAZAPYR & OTHER HERBICIDE PHYTOTOXICITY "IT'S DEJA VUE ALL OVER AGAIN"

INTRODUCTION

Yogi Berra once quipped, "It's Deja Vue all over again", a redundant phrase denoting something repetitive or eerily familiar. Similar phrases by Berra were known as "Yogisms". Well, here I am again (Robertsisms?) sharing some more recent experiences about herbicide phytotoxicity on plants, especially from what I view as one of the most common culprits of such problems, Imazapyr herbicide. Incidentally, in case it's not evident, Phytotoxicity is a fancy name, if not more scientific term, for Plant (Phyto) toxicity. Determining the cause of plant decline or death can involve some serious detective work. Investigations often prove successful . . . whereas in other instances, our efforts may not always be fruitful. Follow along as I share a couple of my most recent examples.

Louise's Lakefront Property: Louise lived on a beautiful lakefront property. She made special efforts to maintain her landscape in meticulous if not manicured condition. She lamented that in the spring of 2025, several of her trees did not leaf out properly and appeared almost dead. All other trees in her landscape produced abundant, luxurious, healthy foliage. She contacted her arborist, Ray, for assistance in determining what was wrong and hoped the malady wouldn't spread to her other trees. In examining the trees, Ray could find no serious pest or disease problems. As a certified arborist, he knew a great deal about tree issues but was perplexed about this situation. However, Ray immediately recalled attending a lecture I had given about herbicide problems on trees; Louise's dilemma appeared eerily familiar with what I had taught. Ray contacted me for assistance. In the spring, the affected trees appeared practically dead but by the time I arrived at Louise's residence in early August, I was told that the afflicted trees looked a little better . . . some foliage had slowly emerged (Photos 1A & 1B).

Suspecting an herbicide phytotoxicity problem, Ray and I asked for the herbicides that Louise had applied. From a shed, she produced the products shown in Photo 2. In examining the products, we discovered that Glyphosate, Triclopyr, Diquat Dibromide, Dicamba, and Mecoprop were among the active ingredients. As they say, "so many chemicals, so little time". But no Imazapyr, which is what I had expected. Hmmm. I explained that most of the chemicals in these products would not likely cause the

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Photo 2

Photo 2: Upon my arrival, I immediately noticed that the symptoms on her afflicted trees appeared similar to Imazapyr herbicide injury, which I had diagnosed all over Michigan and which I had written about in several previous *Landsculptor* articles. Suspecting an herbicide issue, Ray and I asked Louise what chemicals she applied in her landscape. She produced the herbicides shown, knowing the difference between herbicides, fungicides, insecticides, of which she also had a nice selection.

Photo 1A

Photo 1B

Photos 1A & 1B: Louise was very concerned that the foliage of several of her trees did not properly emerge in the spring of 2025. At the request of her arborist, I arrived in early August to help diagnose the cause of decline of her trees; Louise was very concerned the problem would spread to her other trees. Photo 1A is an image taken from her landscape/home view while Photo1B was taken from her lakeside dock. The tall tree is a Tulip Poplar while the smaller tree is a Silver Maple. Note that in both 1A & 1B, another Silver Maple (right) is not affected.

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observed symptoms, unless they were terribly misapplied. Louise immediately redirected us to consider that the neighbor's had been treating weeds in the lake with herbicides, So had the Lake Association. I noted, however, that the neighbor's trees and other trees around the lake showed no symptoms of decline or death. Adding to the confusion, Louise didn't know what chemicals had been applied to the lake. Uh oh, now what? This matter could take a lot more sleuthing than I had intended.

Subsequently, I asked Louise if she had applied any herbicides down by the lake. She didn't think so, at least in recent memory. I had noticed the location of affected trees in relation to the beach and cattails (Photo 1B). Plus, the fact that one silver maple was severely affected while another adjacent silver maple was not; note the orientation of the Tulip Poplar and silver maples to the beach and cattails (Photo 1B). What really caught my eye was the lack of plants/weeds on the beach near the cattails. The bare/open space on the beach didn't seem natural, especially knowing how deeply rooted, "rhizomaceous", and "invasive" cattails could be. I continued to press Louise to determine if she was sure she had never used an herbicide there. She finally acknowledged that she had some "special stuff" that she may have applied a year or two ago to control Phragmites and Cattails. In further discussion, it seems a close friend had given her some stuff that was "rare" and "difficult to get", the reason she kept it in the basement. We asked if we could see it, and she retrieved it (Photo 3). Imazapyr!! Exactly what I expected!! Bingo, case solved!!

Photo 3

Photo 3: When Louise finally produced a "special" herbicide that a close friend had given her for control of Phragmites and Cattails, Ray and I knew the cause for her tree decline. Imazapyr (Inset). Note closeup of beach area and proximity of affected trees, nonaffected trees, and sandy area devoid of Cattails. Imazapyr is just one of many products sold under the Alligare brand name, much like "Roundup". I related that the trees could recover, perhaps in another year or two. I also suggested that she dispose of the Imazapyr stuff and never use it on her property again, because tree and shrub roots could be found in every square foot of her landscape. I offered to take it off her hands for teaching purposes, but she clutched the bottle like it was liquid gold.

Larry's Lakefront Property: Larry, who also lived on another lakefront property about 50 miles from Louise, had a primo lakeside landscape and put a lot of time and effort into his planting design and maintaining his plants in a healthy state. Larry contacted Ray about an apparent tree death, and he didn't want the "disease" to spread to other plantings. Again, Ray suspected herbicide phytotoxicity and asked me to assist him. The multi-stemmed Serviceberry in Photo 4 possessed little to no foliage. Some of the foliage had tried to emerge and promptly wilted (Photo 4 upper Inset); a few other tiny green shoots appeared viable. We asked Larry if he had applied any herbicides in its vicinity (note bare mulch in Photo 4 lower Inset); he said he hadn't applied herbicides there but had applied some other stuff (Ferti-Lome). We asked to see his products (Photo 5). The Ferti-Lome product he showed us contained a fungicide, insecticide, and miticide, which would likely not cause the symptoms on his serviceberry (Photo 5, Lower Center Inset). His arsenal of herbicides included the following active ingredients: Glyphosate, Triclopyr, and 2,4-D among others. But no Imazapyr. There could be several explanations for his Serviceberry's symptoms. Perhaps he had applied Imazapyr the year before and had discarded the container (Imazapyr symptoms typically show up the year after application). Or it is possible that Glyphosate or Triclopyr applied to the lower thin-barked trunks or to green epicormic shoots

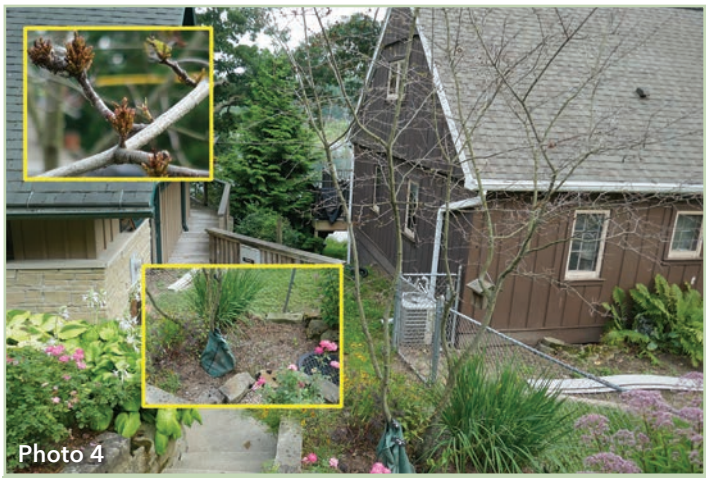

Photo 4: Larry's Serviceberry was devoid of foliage and was clearly affected by some malady. Much of the foliage had tried to emerge and promptly wilted (Photo 4, Upper Inset). Upon initial scrutiny, I suspected an herbicide problem, perhaps Imazapyr, like Louise experienced. Note bare mulch area without weeds (Photo 4, Lower Inset) where an herbicide could've been applied.

(suckers) may have been absorbed and caused these symptoms. Regardless, we informed Larry that the tree could recover because it still exhibited a green cambium and some green shoots. Larry's situation was not easy to resolve, probably because all pertinent information was not available in the short time we could devote to the investigation.

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Photo 5: Larry produced a variety of herbicides and other products from his garage. He only admitted to using Ferti-Lome in the vicinity of his Serviceberry (Lower Middle Inset); like Roundup and Alligare products, the Ferti-Lome brand may contain a variety of herbicides, other pesticides, and fertilizers. None of the products currently in Larry's possession contained Imazapyr. It is possible that an Imazapyr product was applied the previous year, and the container was discarded. Or, the tree's thin-barked trunk or epicormic shoots (suckers) might have absorbed enough Glyphosate or Triclopyr herbicide to cause the observed growth issues after spot treatment to the mulch.

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Detours: Invariably, when I visit properties, I am asked, "While you're here, could you look at . . . ?". I make every effort to accommodate, so, we proceeded to take a stroll throughout the landscape to look at a plethora of trees and shrubs. For example, Larry wondered why his sycamore had deformed leaves (Photo 6), suspecting possible herbicide damage. I explained that the tree was a London Planetree affected by Powdery Mildew. Subsequently, he asked why his red oak was dropping leaves (Photo 7). Larry had heard of Oak Wilt and suspected his oak may have this dreaded disease. It did. Larry further explained that a large branch had broken from the oak and came down during a storm in the spring (Photo 7 Inset). Larry also directed our attention to a group of trees (Photo 8, circled) across the lake that had been pruned at the wrong time of year; they had all died of Oak Wilt.

Photo 6: Larry suspected possible herbicide injury to his sycamore's distorted foliage (Inset). Actually, his tree was a London Planetree affected by Powdery Mildew. American Sycamore tends to be more susceptible to debilitating Anthracnose while it close relative, London Planetree, typically contracts Powdery Mildew.

Photo 7: Larry's red oak was experiencing copious leaf drop, much like Oak Wilt, which he suspected he had (green arrow). He explained that a large branch had broken from the tree during a storm, likely providing the avenue for Overland transmission of the deadly Oak Wilt fungus (Inset, yellow arrow). Containing Oak Wilt in this residential lakefront Oak forest will be difficult.

Photo 8: Larry directed my attention across his lake to where a group of oaks (circled) had been pruned at the wrong time of year. All injured trees had died of Oak Wilt.

CONCLUSION

Investigating tree and landscape problems can be daunting. Herbicides represent a special threat to the health of plants we manage because, well, they kill plants or seriously maim them. Plants exposed to herbicides may exhibit a diverse variety of symptoms, ranging from minor foliar distortion to growth impediments to plant death. Confounding the matter, herbicide-induced plant problems may mimic diseases, pests or other cultural and environmental instigators of plant problems. Sleuthing herbicide problems in landscapes can be quite challenging. In Louise's case, she was reluctant to provide all information that was needed to solve the "crime". Complicating the matter even further, we may not be aware of all the inputs that homeowners do themselves or are performed by other companies. It is only natural for our clients (and us) to assume a defensive position because we would never knowingly do anything wrong.

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CELEBRATING EXCELLENCE
GOLD AWARD WINNER FOCUS

This month's featured project won gold awards in both Residential Landscape Reconstruction along with Residential Landscape Maintenance. It showcases the creation of a formal koi pond designed to connect a rose garden with a lower-level walkout, complete with garden paths and seating areas. Ongoing maintenance includes lawn care, seasonal color, and rose garden management.

FROM LUSH TO LAVISH

Homeowner requested a formal Koi Pond to compliment her existing landscape. This was to include ground paths to connect the existing rose garden with her lower level walk-out while providing sitting spaces for her to enjoy the new space.

Challenges: Location of the garden made construction a challenge along with getting the homeowner to decide on the proper size of the pond for the space. Drainage during construction was an issue.

MAINTAINING EXCELLENCE

Over the years, the team has maintained the property with comprehensive lawn and bed maintenance, seasonal color changes in container plantings, and an ongoing pruning program. They also manage the homeowner's extensive rose collection. Some landscape changes have been made to add color and interest to various spaces throughout the landscape.

Challenges: Deer have been the main point of contention on this project.

GOLD AWARDS WINNER

Category:
Residential Landscape Reconstruction over $250,000

Category:
Residential Landscape Maintenance

Company:
Great Lakes Landscape Design

Designer:
Jeremy Locke