Seasonal Report

WACHTEL 1935 90 YEARS 2025 TREE SCIENCE

WACHTEL TREE SCIENCE INC.

"Keeping Trees Healthy and Beautiful Since 1935"

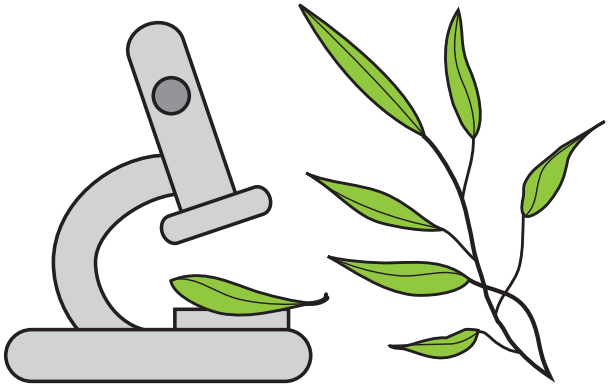
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Induced Resistance – Enhancing a Tree's Immune System

Jake Kubisiak, Board Certified Master Arborist IL-1392B

Plants naturally resist infections through a process called Systemic Acquired Resistance (SAR). This is similar to our own immune system. The understanding of this phenomenon is quite complicated, involving numerous hormones, proteins and other compounds inside and outside of the plant. When a tree is attacked by pests, bacteria, or fungi, it activates internal defenses to stop the spread of disease. Even more impressive, this resistance can spread to other parts of the tree, helping protect it before another attack happens. Scientists have studied SAR for over a century, and today, research is revealing ways we can **boost a tree's immune system** before it even gets sick. This approach, called **Induced Resistance (IR),** uses certain treatments to help trees strengthen their natural defenses. Treatments are being researched and are being implemented in several areas of agriculture. Tree care has begun to benefit from this research and more options may become available as more work is completed.



Why It Matters for Your Trees

Trees in urban areas face many challenges—compacted and poor soil, pollution, and exposure to pests or injury. Healthy trees can fight off diseases better, but urban stress makes them more vulnerable. By using IR treatments, we may be able to help trees resist infections and even improve their overall health.

One promising material used in tree care is **potassium phosphite,** which has shown positive effects in reducing impacts of fungal infections while strengthening root growth and drought tolerance. A variety of other materials have also been found to create an induced response in trees. The knowledge of how well these materials work, at what time and how to apply is still in need of more effort before treatments can be recommended.

If you have concerns about your trees or want to learn more about available treatments, contact your Wachtel Tree Science Certified Arborist. Science is making tree care more effective than ever, and your trees could benefit from these advancements!

WI-002

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On TRAQ: Detecting the Hidden Hazards in Trees

By Matthew Siesco, ISA Certified Arborist WI-0959A, ISA Tree Risk Assessment Qualified

To fully understand and appreciate trees, we as humans must slow down and attune to 'tree time.' It's easy to forget the old majestic oak once began as a small sapling. High winds, drought, site changes, and pest issues all influence the way trees grow and thrive in their unique environment. However, when the stress on a tree overwhelms its natural ability to adapt, defects and weakness can form within the tree, often hidden under the bark or high in the crown. Unlike humans, trees do not heal their wounds; instead, they seal them off, preserving (and often hiding) evidence for the duration of its life.

This need for deeper insight has led to the development of the Tree Risk Assessment Qualification (TRAQ) process. **TRAQ educates arborists on a systematic approach to evaluating tree hazards and the risk they pose to the surrounding environment.** The assessment can range from **basic visual inspection** from ground level to an **advanced exam** using highly specialized tools throughout the tree. After completing the examination, a detailed report explains the results providing a course of action. At Wachtel Tree Science, we have adapted all levels of TRAQ into our services with qualified arborists on staff and advanced tools to help detect hazards in trees.



Brooke Stemple uses a resistograph on a silver maple.

The Resistograph is a key tool for our advanced assessments. It utilizes a micro-drill bit that bores into the wood, detecting sound wood and decay. It presents a graphic readout, taking our assessment from an educated guess to a data-backed, objective report. The results of the resistograph offer clear guidance for recommended next steps for the tree, which can be hazard mitigation through pruning, adding support systems, or potential removal of the tree.

To live amongst trees and enjoy their benefits, we must accept that there is a level of risk involved. The TRAQ process aims to provide an accurate assessment of these risks, bringing peace of mind and promoting responsible management practices. If you have a tree in question that could benefit from a TRAQ assessment, please contact your Wachtel Tree Science Certified Arborist.

Got Bark?

By Nathan Schuettpelz, Registered Consulting Arborist #732

Wachtel Tree Science is committed to innovation in keeping your trees healthy and happy. This year we are celebrating 90 years of doing so! Employee education through industry-related conferences keeps us up to date with research and opinions on tree care that may be outside our normal professional circles. It was at just such a conference that I was introduced to the research of Professor Dirk Dujesiefken, and how we may assist a tree's response to surface level wounding.

The concept is this: if a tree has been damaged, where bark has been removed or loosened from the trunk, but living tissues remain in the wound area, there is potential for these living tissues to multiply and cover the wound area. Research has shown that keeping the impacted area moist and blocked from harmful UV-ray degradation can help stimulate the living tissues to rapidly grow and cover the wound. Protecting the impacted area is accomplished by covering the wound with opaque plastic wrap that is temporarily secured in place.

Response timing is critical when performing this type of treatment. Best results to preserve any living tissue occur when the treatment is applied WITHIN TEN DAYS OF INJURY.

The research into this wound treatment goes back to the mid-1990s and has continued through the mid-2010s. It has been widely adopted by European tree care, but is still relatively new to us. As the manager of our consulting services, I am looking for up to ten willing participants (first come, first served) so we can determine if this is a service we can reliably replicate. Here is my request for you, our client. If a tree on your property has been damaged where bark has been removed from the trunk (e.g., vehicle strikes or wildlife damage) and you are certain the damage has occurred WITHIN THE PAST WEEK, please call immediately. We would like to perform this service for your trees and monitor how the tree responds over the following year. In doing so, we may evolve the way we keep your trees healthy and beautiful for many more years. Thank You!





Bark recently removed from a street tree (left). Temporary cover over damaged bark (right).

Scan this QR code for a European perspective on urban tree management.

Woodchip Mulch: How it Nourishes and Protects Your Soil

By Brooke Stemple, ISA Certified Urban Forest Specialist RM-8302AM

Did you know that mulching the root zone of your trees is one of the best ways to improve their health? Properly applied organic mulch offers numerous benefits, including weed suppression, moisture retention, temperature regulation, and nutrient addition. These benefits enhance the soil ecosystem, creating healthier conditions for tree roots to grow!

Water availability is crucial for tree health, as trees rely on fine absorbing roots in the soil to access water. Two major obstacles to water availability are soil compaction and turfgrass roots. Woodchip mulch helps prevent soil compaction by acting as a cushion against forces like heavy equipment, frequent foot traffic, or even rainfall. Turfgrass roots also restrict water movement in the soil. Mowed turfgrass forms a dense mat of roots near the surface, soaking up water before it can reach the deeper roots of trees.

Mulch also improves water availability by intercepting rainfall and slowing evaporation. When water soaks into the mulch, it holds onto the moisture and slowly seeps water into the soil below. This reduces water runoff, making woodchip mulch a better choice than rock mulch, which doesn't absorb water. Additionally, mulch reduces evaporation by shielding the soil from sunlight and wind. This is crucial during hot, dry weather when trees need every drop of water. By blocking sunlight and wind, mulch also helps regulate soil temperature, keeping it cooler in summer and warmer in winter.

The organic nature of mulch is its most valuable feature. Materials like wood chips, grass clippings, and shredded leaves come from living organisms. As these materials break down over time, with the help of fungi and bacteria, they become "organic matter." Nutrient-rich organic matter releases nutrients into the soil, which are then absorbed by fine tree roots. Fully decomposed organic matter becomes humus—a dark, spongy material that improves soil structure and enhances its ability to retain water and nutrients. Nonorganic mulches, like rock or plastic, do not decompose and therefore lack these benefits.

We encourage you to evaluate your yard to see if you can install mulch for your trees. You can apply organic mulch on your own or with a company after choosing your preferred mulch supplier. If you need assistance evaluating your yard, our ISA Certified Arborists will happily assist!

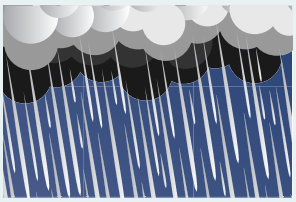
Two Wrongs Don't Make a Right

By Tony Arnoldi, Board Certified Master Arborist WI-0102B

This is an oft heard adage that may help to frame the discussion I wish to present. I have documented the tree stresses that have resulted from the last several years in previous issues of this newsletter: record wet weather years alternating with years of drought. In 2024 both extremes happened in the **same year.**

Record amounts of moisture promoted a good allotment of growth to be put on in May, June and part of July, but shortly afterwards the heat and drought turned on. The extra amount of new, soft tissue to be supported during drought was a deep strain on trees that lasted the entire growing season.

It is stressful enough for trees when these swings happen over **years,** but the strain was seen to be **greater** when this happened in a **single** growing season. The first half of 2024 was so incredibly wet that it was difficult to get the number of dry days needed to accomplish protective spray programs. Yet it was a mere ten days after the last of the regular rains happened in July that the heat and dryness turned on, the





soils dried up and began to crack open, and drought stress started to show up on many trees and shrubs.

Many people reasoned that the rainy period "covered" for the dry half of the year. They were not providing supplemental water to new plants or to those that typically needed it. As dry conditions have largely prevailed over the last three or four years, watering becomes more critical when the soil does get dry. Actually, the overly wet period produced **its** stresses **and** the droughty period produced its own stresses. These taken together yielded **a greater stress** than simply from their sum.

As trees lose more of their foliage and fine roots, or develop off-color foliage or dieback as responses to these stresses, help will be needed to promote their recovery. These stress signs and symptoms **accelerated** in the latter half of 2024. Much of what can be done to compensate these stresses and damages relate to **rebuilding feeder roots and their protective root rhizosphere:**

- Spring and/or fall-timed fertilization with root biostimulants.
- Root inoculation with beneficial mycorrhizal fungi to increase root function.
- Compost tea soil application to help build root rhizospheres and connections to the soil food web.
- Micronutrients with root biostimulants to help correct deficiencies/chlorosis.
- Root zone enhancement for more profoundly stressed trees.

Consult with your Wachtel Tree Science Certified Arborist to assess the conditions of your valuable woody ornamentals and to ensure that you keep your estate looking healthy and beautiful.

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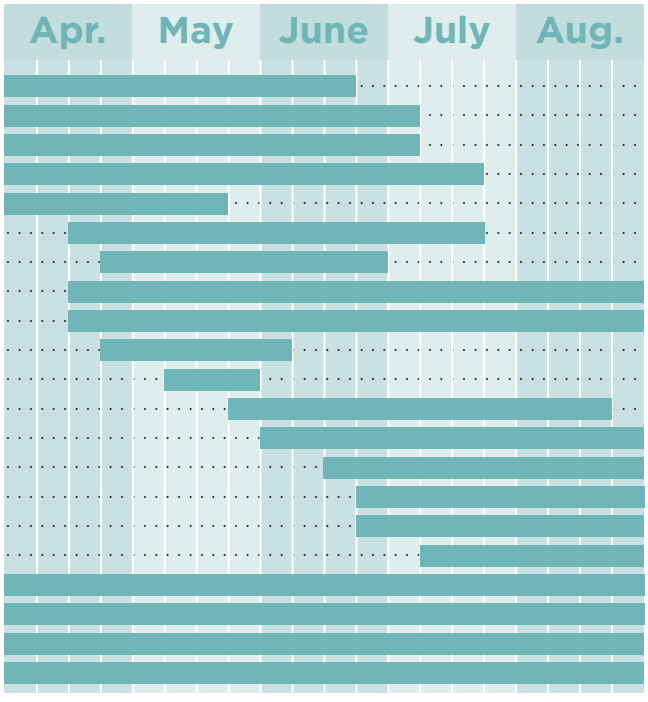
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Plant Health Care Calendar | 262-538-1900

2025 Spring & Summer



Call us to plant a tree!

Have your trees assessed for insects and diseases!