

# ;; Heads Up !!

August 2016



## You've arrived!!

You absolutely know that you're a member of the 'A-List' when some life form is named after you. Scientists say about five million insects and other crawly or flighty critters are without a binomial (genus AND species) name...yet. There just aren't that many superstars who, in some way, remind scientists of the animals they're studying. Above are 7 bugs ("bugs" used generically rather than scientifically) named for the following celebrities: Johnny Cash; Beyoncé; J-Lo; George W. Bush; Darth Vader; Shakira and Angelina Jolie. How many can you match? See page 6 for answers.

## White Rust

An axiom you can take to the bank about rust fungi is that the visual sign on a plant is ALWAYS rust-colored. That means some shade of orange.

Well, isn't there ALWAYS an exception to the rule? While White Rust appears very rust-like it is not a true rust. No shade of orange here.

*Albugo candida* causes damage on radishes, mustards, spinach and other crucifers. You won't find anything in Hortsense but **PNW** will be a treasure trove of information for you.



White rust on *Arabis caucasica* (Wall Rockcress)

## Top 3 August Plant Problems We've Seen

**Scab** (*Venturia inaequalis*) damages many Malus species (e.g., apple, crab)

**Lace bugs** on azalea and rhodies. The nymph and the adult stage do damage

**Anthracnose** (*Discula destructiva*) on dogwoods

Questions...comments...feedback on ;; Heads Up !! ?  
...contact Elaine Anderson

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## Behold The Mighty, Humble Leaf

Some of us Master Gardeners are far removed from our initial introduction to Botany and need a little refresher about a leaf and its parts.

The simple leaf is critical to our diagnosis of plant problems for a number of reasons. The first crucial point is that the leaf (along with a flower, seed or fruit) usually is sufficient to identify a plant.

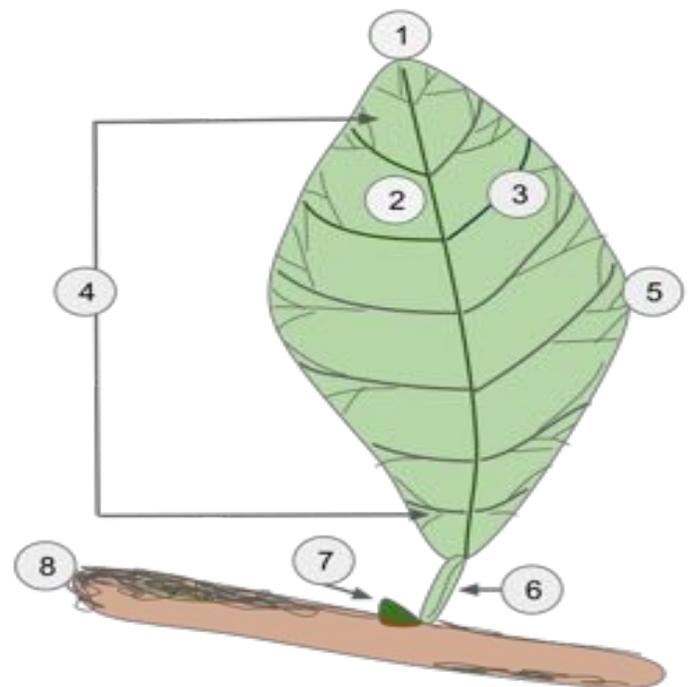
;; Heads Up !! has often shared anecdotal information that some clients don't always 'know' their plants. It's often, "the big, leafy thingy in the backyard with icky black gunk on it every summer." Or it's, "the plant we gave Mom on Mothers' Day so we call it the 'Henrietta' tree." Such information is not useful to you if you're trying to find problems that may affect the sample you've been given. But, knowing the leaf's shape, margin, vein structure and arrangement on the stem, can be useful in making an ID key work. It's not always easy...but eminently satisfying when you can.

After positively ID'ing the plant, it is important to look at a "good" leaf closely for diagnostic purposes. A "good" leaf, should appear alive and have some chlorophyll in its blade.

Always make sure your **clinic name** is on the plant diagnosis/plant ID form you submit to the Diagnostic Lab.  
Also insure your **client's email** address is legible.

It should not be desiccated, in tatters or obviously dead. It should have its petiole attached to the stem so you can observe the axil. It should reveal its margins and venation along with an intact midrib. If this all sounds Greek, the diagram below might prove beneficial. Can you name all the parts? Answers on page 6.

By looking at the leaf...really looking at it...you might detect insect activity (sucking, chewing, honeydew); fungal fruiting bodies on either side; perhaps even viral or bacterial evidence. And be especially aware of any evidence of poor culture.

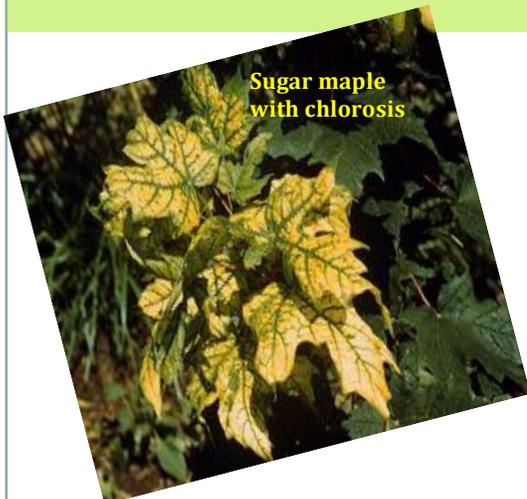


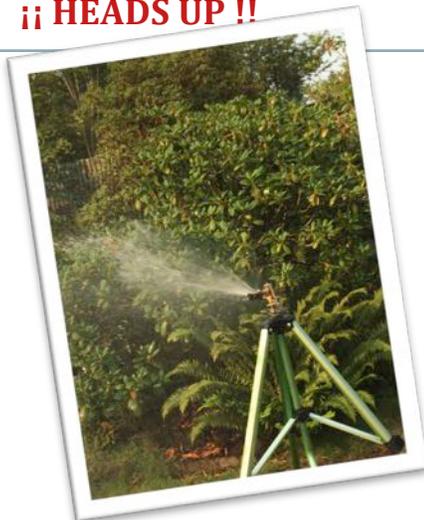
By Awakening Conscience (Own work) [CC BY-SA 4.0 (<http://creativecommons.org/licenses/by-sa/4.0>)], via Wikimedia Commons

## Verticillium Wilt

**Verticillium wilt** is a fungus that damages urban shade trees resulting in premature yellowing (chlorosis), wilting, loss of leaves and branch dieback. Leaves may drop earlier in fall and buds may fail to open in spring. Trees may appear healthy in winter but fail to leaf out in the spring and eventually die.

While Japanese maples (*Acer palmatum*) make up the bulk of our Verticillium diagnoses, many other plants, both trees, herbaceous plants and veggies are susceptible to the fungus. (Continued on page 5)





Marie Spartali Stillman [Public domain], via Wikimedia Commons  
 "A lady in the garden at Kelmescott Manor, Gloucestershire"

## Watering As An Art Form

Each August we receive many stressed plant samples in the diagnostic lab. While the simple "cultural" answer is: "wrong plant in the wrong place," sometimes this can be overcome if the client takes extra care of the stressed plant no matter where they're placed. And that usually comes down to something that King County doesn't have much of in the summer: water. As the Slovakian proverb says, pure water is the world's first and foremost medicine. So, the proverbial question is: How much should a client water the garden? The short answer is . . . well, there is no short answer. Watering is an art form, with four variables.

1. **The weather** We may not need to water at all in April, the rainy season. Typically, our gardens will need less water in June than they need in August and September. But in any given month, water requirements may vary. Temperatures can be cruising along in the 70's and suddenly we get several days of temperatures in the 90's. When temperatures dramatically increase, plants may be transpiring more water than is available for them to take up. When we fail to increase watering at those times, plants can suffer drought stress, heat stress and scorch. **Water according to the weather.** (Continued on Page 4)



### You've Seen It Before, But You Just Can't Say...

what it is. This much you do know: it's a rhododendron; it's stunted and obviously stressed. So what is causing these rather attractive, but thoroughly inappropriate, red leaves? And what about the brownness? Answer: leaf scorch. Or you if you want to sound CSI-ish, "**marginal leaf necrosis.**" "Necrosis" is a particularly good client-attention-getting word. It's premature death of cells caused by too much sun, too much or too little water; improper soil conditions (remember that our rhodies love an acidic pH of 4.5~6) or, in this case, the damage is from salt because the rhodie is planted too close to some very high seawater tides.

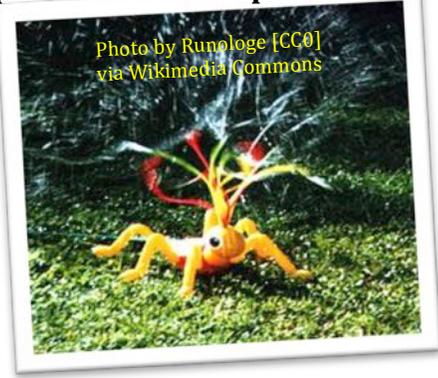
**Watering Art** (continued from Page 3)



2. **The soil** Very sandy soil doesn't retain water well and requires more frequent watering. The other extreme is soil high in clay. Clay slows drainage resulting in overwatering. Prolonged overwatering can lead to drowned roots (plant roots require oxygen) or root diseases which are fostered by overly wet soils. Good soil contains a mineral part and an organic part. The mineral part is a mix of sand, silt and clay. The organic part is primarily decaying vegetation which acts like a sponge helping the soil to retain water. Organic material also feeds the microorganisms in the soil which are beneficial to plants. A good soil mix will also allow pore space for air so roots can breathe. **Water according to the soil.**

3. **The terrain/environment** Plants on berms or slopes may require more water during hot periods, and generally, plantings that are south and west-facing tend to require more water than plants that are north and east-facing. Large trees tend to take up water creating local dry areas. **Water according to the terrain/environment.**

4. **The requirements of the plant** As we say, "right plant right place". Pines don't do well in wet environments and most ferns like shady moist environments. **Water according to the requirements of the plant.**



Encourage clients to learn about the water requirements of their plants and the various microenvironments in their landscapes. There are no pat answers on watering but one sure and very important action that must be taken is: a little dig into the soil. The soil should be damp but not wet or dusty dry. How deep to dig depends on the plant – in vegetable gardens just four to six inches – in landscapes and lawns eight to twelve. Oh...and when watering, do it early in the day.

How much should clients water? Did we mention it's an art form?

**More from the Diagnostic Lab Database for August with Links**

**Beans:** Fusarium wilt; root rot; gray mold

**Cedar:** shoot blight; flagging →→→

**Cherry:** shothole, brown rot

**Dahlia:** root rot

**Grape:** erineum mites

**Hydrangea:** leaf scorch; sawflies

**Laurel:** sawflies; root weevils; aphids



**Pear:** leaf spot; rusts

**Plum:** shothole; plum pockets

**Raspberry:** phytophthera; grasshoppers

**Rhododendrons:** powdery mildew; root rot

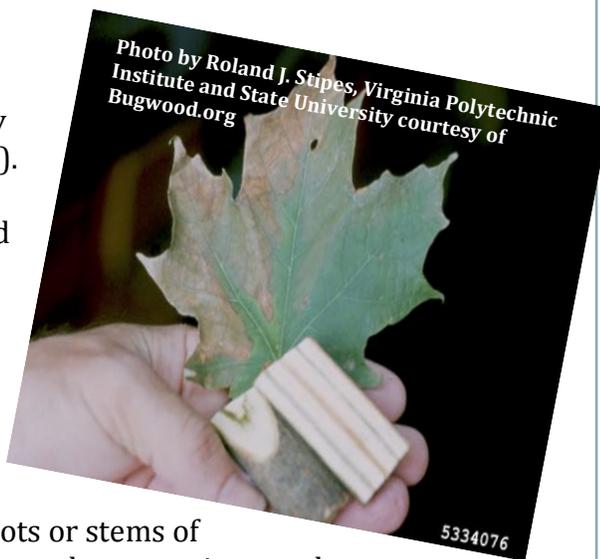
**Rose:** black spot; rose slug

**Tomatoes:** late blight; nutritional deficiency

**Verticillium Wilt (continued from page 2 )**

The list includes: dahlia (do you think it’s merely a coincidence that one of the most common strains of the fungus is named *Verticillium dahliae*?) chrysanthemum, potato, smoke bush and many more (do a Wikipedia search if you want to be completely overwhelmed by susceptible plants in our King County gardens).

Signs of the disease in plant debris are small, black, thick-walled pinhead-sized fungal structures called microsclerotia. And the quick and dirty test the diagnostic lab uses: detecting brown or black streaks under the bark on a branch or stem at least as big as your thumb, (use a knife to cut a vertical portion of the branch/stem). The disease can only be definitively confirmed by Verticillium specific laboratory analysis.



The fungus penetrates the roots or stems of susceptible plants through wounds or openings, and colonizes in the water-flowing tissue or xylem. Toxins block the upward flow of water resulting in wilting leaves and branch dieback. The plant creates resins or gum to block the toxins, forming the streaks in the growth rings whose color varies by host. As the plant dies, the fungi colonize and are released into the soil as the plant decomposes.

Sometimes only part of the plant may wilt. Occasionally trees may be saved when symptomatic branches are pruned out. Maples, in particular, can show acute, rapid die-off. Stress factors such as drought and improper fertilization can contribute to the disease.

Verticillium wilt resides in landscape soil for more than ten years and is spread in contaminated soil by wind or water. If the disease is suspected, avoid spreading soil from around the affected plants. Remove and destroy any plants that exhibit symptoms and avoid replanting with susceptible plants.

**Sun Tzu’s “The Art of War” Starring the Parasitoid Wasp**



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The garden is a battlefield pitting the good with the damaging. We try to grow beautiful plants that provide joy. But contrary forces, led by destructive insects, often impede our progress. If humans are atop the “food chain” of life, we should be able to outwit our enemies. But, to our dismay, most of us don’t have the passion for continual warfare.

Any student of (garden) management strategy should be familiar with Sun Tzu’s classic treatise on “The Art of War” which offers a number of old but surprisingly contemporary aphorisms to winning the battle. Perhaps one of the best is: “In all fighting, the direct method may be used for joining battle, but indirect methods will be needed in order to secure victory. In battle, there are not more than two methods of attack—the direct and the indirect; yet these...(Continued on page 6)

