Drought Continues to Plague The Plains

As I write to you today, I'm not only the resident Hort Nerd, but the Ag Guy. I've been fielding as many or all of the inquiries from our traditional agriculture folks. Lately, there's been more calls than normal. The drought has gotten so bad, farmers are scrambling to test their fields for nitrate toxicity. Since most fields haven't produced well or aren't even worth bailing as hay, they can be grazed as long as nitrates aren't too high. Hay prices are through the roof, and some are price gouging. Water sources are becoming limited and I'd hate to know how low the Garber-Wellington aquifer is. I know gardeners, market growers, and others in horticulture have been struggling too. I've seen too many drought stricken fields. I'm concerned for our local farmers. I've let my lawn go dormant, I water only once a week if I can help it. I turn off the faucet when I brush my teeth. I only wash large loads of laundry. I send good vibes to the weather gods. I'm continually hopeful, but please remember to do your part to conserve water.

Extreme Heat Can Take a Toll on Plants

So far, the metro area has had 20+ days peaking at or over 100 degrees. These temperatures have been brutal to the lawn and garden. My lawn actually hurts to walk on it's so brown and brittle. I also have one of the most xeric plants, a Chaste Tree (Vitex) that is wilting! I've gotten a ton of questions relating to heat stress. It's not uncommon for your plants to wilt, have some browning on the leaves, or die back during these conditions. This is especially true if water is limited or your plants are exposed to full sun all day. What can you do to help eek your plants through these tough conditions?

Apply 1-2 inches of water per week in one application. This amount will tend to wet the top 6” of soil, which is sufficient for shrubs, flowers, and lawns. However, some plants may need more hydration depending on exposure, age, soil type, and water needs of the specific plant. Whenever you water, do it infrequent yet deeply to encourage the plant roots to move deeper into the soil and help them survive times of drought stress. Frequent, small amounts of water will lead to shallow root systems more likely to suffer in the heat.

If your plants don’t perk up a few hours after watering, make sure you’re not watering too much. Both over watering and under watering will tend to look the same—wilting of the leaves. If you dig a few inches down in the soil and it is very wet, cease watering until it dries out. Also, to be the most effective and efficient, water before the heat of the day. If you are applying water as above and your plants still look sad, it could be a survival mechanism. Some deciduous plants (especially trees like River Birch, Cottonwood, and Willows) will drop leaves in response to high temperatures. This is referred to as cladeptosis. It is easier for the plant to stop photosynthesis than to try and compete with the high temperatures and scorching sun.

In addition, you may see some marginal or entire browning of the leaves. This is not uncommon and may be referred to as scorched, however not the type caused by a pathogen. In this case, continue watering regularly and monitor the plant. If the limbs bend and not break, your plant still has some life left in it. In early fall your plants may bounce back and send out some new growth before dying or going dormant for the winter.

Bermudagrass lawns love heat. But in extreme temperatures with low or no water, warm season lawns may turn brown, or go “dormant.” Bermudagrass can remain brown for several weeks before permanent damage is done. If you are watering, fertilizer can be applied monthly until late August on most warm season lawns. It is recommended you don’t fertilize unless you can water immediately to prevent burning.

Another option for new plants and the vegetable gardens would be to add a shade structure. This can be as simple as a tarp suspended above the area and can sometimes be enough of a break from the heat and sun to make a difference. Make sure whatever structure you use there is plenty of airflow for the plants. Keep in mind fruit set on tomatoes and other vegetables may cease until temperatures decrease. If you do lose plants due to heat and drought, choose replacement plants that can take the heat and don’t use as much water. Water rationing and restrictions could limit the amount of water we can apply to the landscape in the future. There are many plants that are drought tolerant in Oklahoma. See the Oklahoma Proven plant list at oklahomaproven.okstate.edu.
Cover cropping is something I think most home gardeners feel they can’t do because of the smaller scale of a garden. I was one of them until I decided to look for options. There isn’t a ton of information if you measure your growing area in feet instead of acres. However, I was surprised that even if you have a small patch, you can tailor a program to suit your needs. And the soil will thank you for it later.

Cover cropping is pushed in the traditional agriculture arena. Basically a cover crop is a way to protect and add back to the soil in the off season. Cover crops add organic matter to the soil when incorporated, prevent erosion, add nitrogen back to the soil in the case of legumes, and may also keep weeds at bay. This is especially important for large farms, but it can also be a tool that home gardeners can use. And why not? We strive for these things too.

Some plants can release sugars and other substances via the root system, moving energy (and microbes!) down into the soil. Maybe even further than you normally dig. For example, oats and rye may penetrate 6’ into the soil. I’m sure it’s much less in our clay soils, but still. Most gardens are bare in the winter, except maybe a remnant of straw or compost. If you are leaving your soil bare, you are missing out on an opportunity to improve your soil easily by planting cold hardy crops. Cool season cover crops include cereal grains, vetches, peas, clovers, and alfalfa. Summer cover crops can be a great way to shade or outcompete weeds. These crops include buckwheat, alfalfa, sudangrass, soybean, cowpea, and mustard. Cover crops can produce a friable or crumbly soil, whether it’s a bumpy, nitrogen rich root on a pea or a mass of fibrous rye roots. Also, Bermuda grass and other warm season grasses won’t grow in shade, so having a cover crop may choke out or inhibit some grass establishment. Bio-drilling is another method that people may use to loosen or “drill” compacted soil by using deep rooted plants. These plants may include oilseed or daikon radishes with spear like, stabbing roots. Drilling can also occur when deep rooted plants are left to die in place. The root holes created allow water and air exchange, improving tight soil conditions. In addition, the next crop grown can easily follow the previous root holes and benefit from the remains of the old plants.

The hang up with gardeners using a cover crop in the home garden is incorporating it into the soil. If you don’t own a tiller or prefer not to till, you might think there is no option for you. However, most crops can simply be pulled, mowed or chopped and incorporated by hand, into a compost pile, or left as a mulch. A word of caution, many cover crops can become weedy, so they should be chopped or incorporated before they set seed. In addition, wait at least 2-3 weeks to plant after incorporating the cover crop into the soil. Some grasses and cereal crops can have a negative effect on plant growth. Another option would be to turn some chickens loose in the garden. Do be sure there aren’t any plants you want to keep, as chickens may devour them.

When choosing what type of cover crop to grow, it may be a good idea to start small, using one corner of the garden first. Then, when you figure out how you want to do it, go all out.

To combat invasive weeds during the summer, buckwheat (Fagopyron esculentum) may be an option. Buckwheat can be planted in summer for a 3-4 week cover. This would sacrifice one area of the garden for a time, but for problem weeds it may be worth it. Sow seeds in moist soil after the chance of frost has passed, and within a week you have a stand of green plants. Buckwheat will get 2’ high and bloom in roughly 30 days or less. Buckwheat will attract bees and other pollinators and is easy to take down by pulling or cutting at the soil line. Let the dead plants lie on top as a surface mulch and plant through them. Composting or chopping into the soil are other options.

Mid September to late October is the best time to start cool season cover crops. One popular method is mixing oats (Avena sativa) with peas, such as Austrian winter peas (Pisum sativum). Chop these plants just before the peas bloom in spring for an organic matter boost before planting. Both peas and oats make some growth when planted early fall, and in spring the peas will climb up the oats. It may take some work to get the plants out of the way before vegetable planting, so do it before they get too large. Mid to late March or before is ideal in our area, which allows at least 2-3 weeks before planting summer vegetables. Mow down the peas and oats first, then pull, dig, or chop your way through.

Hairy vetch (Vicia villosa) is another nitrogen adding legume that can be used. It is a cool season crop and should be planted accordingly. Vetch is a huge soil improver and quickly killed by using a hoe to slash just below the crown. If you behead hairy vetch a month before planting tomatoes and peppers, you can plant directly thorough the dried legume with little digging.

Plant barley (Hordeum vulgare) while the soil is still warm in mid September. Barley, a close relative of wheat, is a fast-growing grain great for harnessing excess fertilizer. For this purpose cover crops may be called “catch” crops, preventing leaching of leftover nitrogen and storing it for later use. Barley offers a good yield of organic matter.

Cereal Rye (Secale cereale), can be sown later than barley, is cold tolerant, but not winter hardy. Rye may die with the first hard freeze, but it will still hold and protect soil. In spring, plant directly through the mulch if the stems aren’t too tough. Rye is a good source of winter greens for chickens as well.

There are many other options for cover crops such as bush beans, greens, cowpea, clover, corn or even flowers like borage, calendula, marigolds, cosmos, or sunflowers. So don’t overlook those in seed catalogs or among your leftover seeds. Remember the goal is quick establishment and cover, but also ease of removal. By using a cover crop, you will be able to protect your valuable soil food web.
Landscape Design Tip

When choosing plants for the landscape, group plants together that have varying textures. This can add depth and interest to the garden. For example, a fine textured grass with a broadleaved flowering plant, next to a fine leaved foliage plant, etc. Don’t overdo it with flowers only, as your eyes need a place to “rest.” A lot of texture can be achieved with only foliage plants, as seen in the picture to the left.
Arkansas Bluestar is a native perennial and the Perennial Plant Associations Plant of the Year for 2011. It is also in the running for the perennial Oklahoma Proven selection for 2012. Bluestar will attract butterflies and hummingbirds and gets roughly 3’ tall and at least as wide. This plant likes part sun and may do a bit better in an east facing location. However, I think it could take full sun with the right care. Arkansas Bluestar has average to dry water needs and has interesting foliage even without flowers. In my opinion, this plant is a native knock-out! It has interesting needle like leaves and striking clusters of bluish flowers topping each stem. The foliage changes a bright yellow-orange in fall adding another element to this already strong performer. I need one of these in my garden.

Arkansas Bluestar
Amsonia hubrichtii

Photo courtesy of homesteadgardens.wordpress.com and thegardenbuzz.com