



## Supporting your garden all season long...

One of the most asked questions that I get is “**why are my—pick any plant** (tomato, cucumber, squash, marigolds, zinnias – any basic annual plant you can name)—**dying off so early in the season?**”

If you’ve had a garden for any length of time then you know that this happens a lot. You get the garden started well at the end of May. It grows pretty well during June and into July and then ... August comes along...it’s hotter, more humid, less rain and the plants are ready to really produce ... and instead... the plants begin to fade away. They get diseases of all kinds, insects attack, production of flowers or fruit falls off and it looks like the season is done before Labor Day.

Sound familiar??? In fact, it’s so familiar that a lot of people think that that is the normal life cycle of garden plants. It’s frustrating to spend so much time at the beginning of the season only to have it all end in a whimper. It doesn’t have to be that way at all. You can have solid plant production up to and (believe it or not!) through a light frost if you want it.

Here’s the simple explanation that is true for all plants, but especially for those that grow from seed and complete their life cycle (germination, growing, flowering and producing seed) in one growing season. **The plants are literally running out of energy, like a battery running out of charge.** The neat thing is that this is something you can learn to manage ☺

Let’s start with some basics..

- **CHECK YOUR OWN EXPECTATIONS:** Many of our ideas about our yards and gardens are formed through the marketing efforts of large companies with something to sell - and the lawn is the biggest target so we’ll use that as an example:
- How perfect does your lawn have to be? Select option 1, 2 or 3 ☺
  - 1. Nothing other than bluegrass – that matt deep green look of a golf course
  - 2. A mix of grass types with a little broadleaf growth is ok
  - 3. Anything green that can be cut will do fine
- **OBSERVE:** Take a good look at what's happening in and about your yard. Your yard connects to others and finally to the local ecosystem.
  - Do you need a shovel/trowel for the gardens or can your fingers "walk" down into the soil? How about a soil test?
  - Is the lawn green and reasonably resistant to stress?
  - Are the flower and vegetable gardens productive?
  - How about the trees and shrubs - do they look good?
  - Are there pests in evidence? Are there lots of holes in lots of leaves??
- **SUPPORT THE YARD'S BIOLOGICAL SYSTEMS:** When you do choose to act, select options that support the health of the entire yard (which includes you, your children and your pets).



*Work with the soil first.* The soil is the foundation of everything that happens. Most construction and extensive landscaping causes severe damage to the soil by destroying the soil's structure. This leaves you with compaction as a major problem. That's a good place to start.

Good soil structure allows water, air and roots to penetrate deep into the earth. This provides for drought resistance, resiliency and water percolation - all desirable for a healthy system.

Use organic fertilizers like North Country Organic's Pro-Gro and Espoma's Plant-tone or make your own using compost, alfalfa meal (N), rock phosphate (P) and greensand (K) as well as other mineral and organic materials. These support the entire soil food web not just the green top part of the plant.

It takes 3-5 years to transition a chemically dependent lawn and yard. Think of it as withdrawal. Do it too fast and the patient dies. Do it right and the patient goes on to live a productive life.

Now look at the rest of the yard. Identify the "hot spot" zones. These are the areas that always cause problems. Perhaps it is a dogwood with anthracnose, azaleas with lace bug, roses with black spot, grass with chinch bugs and grubs.



- **Figure** out what the problem is.
  - Is the soil really awful right there? Work to fix it.
  - Is the plant placed correctly? Use the right plant, right place concept.
- **Decide** whether the plant is valuable to you in some way. If so, learn as much as you can about the plant in order to manage it correctly.
- **Work** to increase diversity in all areas of the yard. Mono-crops of any kind are vulnerable to stress and attack. Plant diversity encourages diversity of animals and insects as well. This allows for the greater chance that natural controls will be present if a problem does develop.

**This is where the practical applications of words like rhizosphere and phylloshpere come in (and are these a blast from your high school past!!)...**

Here's a quick review of the **rhizosphere**... It's the area directly around the plant's roots that is colonized by bacteria and fungi that exchange the minerals and larger molecules that they accumulate from the wider soil for the carbohydrates that the plant sheds from its roots. In fact, a healthy plant can shed up to 60% of its carbohydrate production (remember that weird process called photosynthesis?) into the rhizosphere.

The more good microbes there are around the plant's roots the less bad microbes there will be – there just isn't space for them. *“The rhizosphere is really just a very active marketplace where the producers and decomposers get together to barter with each other. Plants, the producers, offer bacteria carbohydrates they have produced which the bacteria use as an energy source. In return bacteria, the decomposers, digest soil minerals and rock powders to obtain nutrients which go to the plants and, ultimately, into the foods we eat. Jon Frank”*

As you might imagine – long season management starts with the soil. In brief, you might think of your soil like that battery mentioned above. Soil chemistry runs on positive and negative ions (cations and anions) and there needs to be enough of the right kind to support the entire plant structure or the plant starts to fail as it matures. It takes a lot of energy to produce flowers and ripen fruit. When my brother was working with me one season, he likened the soil work we did to plugging the soil into a recharger and that's essentially right. But, enough of that! You've heard it before and there's more to the story...

Even if you've done your soil homework, your plants can still hit an energy deficit. Here are a few things to keep in mind for **July-October**.



**Start with inoculated plants:** All of the seedlings that I start are inoculated with beneficial microbes at germination and again the night before they're picked up. Any young plants that I buy in are inoculated upon arrival and again before they leave here. This gets the plants off to the best start they can have and greatly helps them to adjust well to your garden (if you remember to plant them promptly!). I've been doing this for the past four years but never mentioned it before because most people are (or have been) scared of microbes. The world has come a long way!

You can inoculate any plants that you buy from any source.



**Water:** You need water to keep the soil's micro-organisms working for you and the plant. This keeps the ions and larger molecules mentioned above moving through the system with the water that your plants need. **To do:** Set up some kind of **drip irrigation** around your plants. It can be drip tape, soaker hoses or other products all designed to get water to the soil and let it seep in slowly. You can cover your irrigation and get even more bang for your water buck by cutting down on evaporation from the emitting water. This is a great place to tie in rain barrels (that can be pumped out with a sump pump) or even look at a gray water system. Overhead irrigation is an option but much less desirable – it easily evaporates, spreads diseases and rarely penetrates summer soils well.



Use **liquid fertilizer** in the irrigation lines or use a watering can. I use Neptune's Harvest fish hydrolysate and kelp (excellent food source for micro-organisms), molasses (carbohydrate for root zone), a touch of castile soap or yucca extract(makes it easier for water to move through the soil – use a little more if the soil is really dry) and a microbial soil inoculant if the soil is really dry. **Recipe:** looks something like this: 1 tbl fish, 1 tbl molasses, short squirt of castile and ¼ tsp of microbes in a gallon of water. Plan to use this quickly because it is actually a living product and it will exhaust the oxygen in the water. Don't let it sit for more than a couple of hours – and in the shade at that. Double this if you've kept water available to the plants, but you really don't have enough juice in the soil. Do not double this if water is part of your problem – water first until water has reached 3-4" into the soil.



Use a **foliar spray** on the leaves of the plant. This can be amazingly effective because plants can take up both minerals and sugars through the leaves. This is sort of like using an IV for the plant, straight into the vein so to speak. The trick is to apply the liquid before the dew dries in the morning or after the heat has well left the day, usually after 6pm in the evening. This makes it a great job to do as you walk around your yard at the end of the day. **How:** You can use the same mix as listed above or you can tailor it to the specific needs of the plants in your yard – example: You know your soil is low in calcium, boron and potassium. You can add appropriate materials to your foliar spray and the plants can take that directly in through the stomata to the plant sap. You can also tailor the microbes, there's more and more research being done on the phyllosphere (there's that word again!).

I've used the above approach to keep heavily grown containers in excellent color and production all the way through the first frost of October. It's easy once you get the system set up. I have that small crate that has everything I need – easy to carry and easy to measure from – that I mentioned earlier. Add a watering can, or bucket or irrigation line injector and your good to go!

## **Three extra words... but easy words this time!!**

**'Observe...Remember...Compare'** These are essential skills – in ascending order – for learning anything and are critical to becoming a good gardener. I have over 30 years of experience with these three (they're old friends!), and I still feel like I'm a beginner. I work to strengthen these everywhere I go. This is one of the few things that does actually strengthen and get better over time – YAYAYAY! You have to be able to really notice a thing in its setting before you can begin to understand it; then – and only then – can you respond appropriately. The cool thing is that this makes the world a **WHOLE LOT MORE INTERESTING THAN YOU MIGHT THINK!** Keep an eye out for ants farming aphids this year. ☺

The mineral and nutrient value of soils for flower production (think intense color and fragrance), food quality and the health of the environment are critically important and of increasing interest. You can help by looking to the health of your own yard and planning for the future. **Flower and food garden designs and maintenance need to change to reflect climate conditions and provide for micro-climate buffering – and only you can do the job for your own piece of the planet!**

If you do decide that your problem is severe enough to warrant a pesticide application (after thinking all of your situation through), then make sure you have the **right pesticide for the right pest** (use online or library resources to identify the pest and its lifecycle and know when to step in for greatest effectiveness) and use spot applications in order to minimize environmental contamination. If possible find the least toxic control that will still do the job.