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NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

By John Ferguson

I have been spending a lot of time at my farm near La Grange this summer as my retirement home is being built.

I have many ancient very large Live Oaks on the property where the limbs stretch and touch the ground, the temperature is near 100 degrees and I walk under the canopy of the Oaks and suddenly it is 10 degrees cooler or more.

Or when I am driving around in my ATV and I drive into a bottom that is heavily forested and suddenly the temperature feels 15 degrees cooler or more.

This experience has me thinking about the importance of planting trees. So, I want to share a little of what I have learned about planting trees in Fayette County.

The pastures of the property were severely degraded when my wife and I purchased it eight years ago. I have been busy planting trees as part of the ecological habitat restoration. There are five distinct soil types on the property that allows for a variety of species. These soils range from sandy loam to heavy clay to limestone rock. To date I have planted a total of 2,400 trees and shrubs of 174 species, each with a purpose (121 trees and 54 shrub species).

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Originally the property had some Bastrop Pines growing on it as it is on the edge of the Lost Pines area. The pines were clear cut for buildings in the 1800's and the rest cleared to grow cotton. I love pines and the benefits they provide hence I started there.

{Humorous Side Note: In year one I purchased 1,000 pine seedlings and had a commercial company plant them. As a new land owner, I wanted the agricultural exemption for tax purposes. I was told that donkeys qualified for the exemption and I was given seven donkeys. I discovered later that it was only in some counties and not in Fayette County where I was.

I also planted over twenty 10-gallon Bastrop pine trees near where the future home site was. Within two weeks the donkeys had eaten every one of them, even the big trees with 1.5-inch diameter trunks were chewed to the ground! I found out that Pine trees have many times more vitamin-C in them than an orange hence a nutritious food snack for the donkeys. They ate everything else I planted also. Hence, I quickly found them a new home in South Texas where they were used to protect sheep from coyotes.}

When I was in college my parents had a piece of property in East Texas. I could plant trees there without doing anything and they grew fine. Like Brenda, I am basically a Lazy Gardener. I quickly learned that growing trees on the Eastern edge of the hill country was a different experience than East Texas.

Thus, in year two I started over and I participated in the Texas Forest Service's reforestation program. I purchased 2,000 bare root Bastrop Pine seedlings that had an 8-inch-long root ball, and were about 15 inches tall. I used a battery powered soil drill to create the planting hole that I could drop the seedling into and quickly plant them in a few seconds.

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Of those trees that survived, some are almost 20 feet tall and some are still only 2-3 feet tall. This is due to different soil types, nutritional density, and quality of the soil. Deer have also killed over 1,000 of the pine trees along with other trees by rubbing the bark off them.

There were also two years of extreme drought during the eight years. My lake went down over 10 feet and I had three hypoxia events that killed all my fish. My small pond went dry. Then as nature compensated for the drought, we had over 16 inches of rain in one day creating a massive amount of flooding. The soil and weather conditions have made gardening tough. I have yet to have the theoretical or mythical "Normal" weather.

Planting trees – What I have learned

Lesson 1: After the experience with the donkeys all the other tree species were planted in cages or had brush barricades around them to keep the deer away.

Lesson 2: At first, I only used mulch around the tree as part of the planting process. As an experiment I used the mulch from the counties recycling center (about 20 cubic yards) and compared it to using aged native mulch from Nature's Way Resources.

For example, I would purchase 10 trees of the same species. Half were planted with the recycled mulch and the other half were with the good aged native mulch. Almost all the plants with the mulch from the recycling center died while those with the aged native mulch, survival jumped to around 50% despite the drought (little or zero supplemental watering). Good quality mulch makes a big difference.

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Lesson 3: Next, I started adding a good organic fertilizer (Microlife™) to the backfill mix and around the tree on the surface before I mulched. Results improved; however, animals would dig up the plants to eat the fertilizer.

On a suggestion from Mike Serant the owner of Microlife™, I switched from the regular Microlife (green bag) to the Microlife Ultimate (blue bag) which has humates in it. The animals do not like the smell of humates hence they leave it alone. As a result, I started seeing improved growth and survival but not good.

Lesson 4: After reading a research paper on how mycorrhizal fungi help plants survive drought, I started adding mycorrhizal spores to the root ball and backfill mix. Again, survival and growth improved some more.

Lesson 5: Since the property was cotton farmed for many decades, until the soil was extremely worn out and would no longer grow cotton. I surmised that it was deficient in minor and micronutrients since cotton is a heavy feeder. So, I started adding Re-mineralizer in the bottom of the planting hole, to the back fill mix and on the surface around the tree before mulching. Again, I saw additional improvements in growth and establishment.

Lesson 6: The soils were very low in organic matter (almost zero) due to the years of farming. So, I started experimenting with adding a 25% compost (I used both the leaf mold and fungal composts and they performed equally well) to the backfill mix in addition to the re-mineralizer, mycorrhizal spores, and fertilizer. I used a 15-gallon metal bucket to break up the soil clods, remove root fragments, and mix in the compost and other ingredients by rolling it till evenly mixed. Survival and growth have both increased again despite another heat wave and drought that we are currently experiencing.

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Growth rates have significantly increased and survival is approaching 90% of trees planted.

I know that it was not a good time to plant trees but I thought I would experiment. At the end of April, I planted five Desert Willows (cultivar "Bubba") using the techniques above and they are thriving and have already started blooming, just laughing off the heat and drought.

It has become obvious, that by not being lazy and cutting corners, and by performing the planting techniques above, I could have success in a very difficult environment.

Most of the species that died due to deer or climate have been replaced and using the complete methods above are doing fine.

I now have Willows, Black cherries, Black Locust, Texas Mulberries and more that I planted that are near twenty feet tall. There are five different species of wild plums (multiple plants each) that have begun to sucker and form thickets and many other pleasant surprises from the Buckeyes (both yellow and red) to Redbuds (Eastern, Texas, and Mexican) and Mexican plums that are doing well.

It has been a fascinating journey in learning what works and what does not.

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