



## NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

**By John Ferguson**

Many of you know that I have been working on a habitat reconstruction at my retirement property near La Grange. Last week I planted 20 Texas Redbuds (*Cercis canadensis var. texensis*). These were purchased through the rural land's reforestation program by the Texas Forest Service.

During my research I discovered that there is a white form of this tree often sold by the common names Texas White and Royal White. I checked with several of our local growers and they are all sold out.

Hence, I was wondering if any of our readers have any experience with this variety and are aware of anyone whom is selling it.

I am reading a new book on fungi and their role in horticulture. In nature many to most plants form symbiotic relations with fungi in the soil. Especially the mycorrhizal fungi. These good fungi help the plant collect water and nutrients, produce plant growth hormones, and help protect the plant from disease and pest insects.

New research has found that many species of plants from grasses to vegetables and flowers, due to hybridization and selected breeding, have lost the ability to work with

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symbiotic fungi in the soil. The result is that these modern varieties are much more susceptible to insects and diseases and require much more care.

For example, I often hear on the gardening shows folks calling in about mildew on their crepe myrtles. I have never had this issue as my crepes are over 40 years old. At my farm, according to the county forester, there are a few crepes that are over 80 years old. They never get fertilized or watered, they grow in poor soils from heavy clay to limestone, they never get disease or pests, and they are full of bees and other pollinators. So, I wonder if the modern problems may be a result of the breeding and loss of the beneficial fungi.

Mycorrhizal fungi also provide other services to plants and soils. For example, they can loosen clay soils and help create good soil structure. In sandy soils they can glue the sand particles to their hyphae keeping it from eroding and again build soil structure as shown in the photo below.



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Mycorrhizal fungi also have the ability to help balance soil nutrients and bring them into balance. The hardness of a soil is often a function of the calcium (Ca) to magnesium (Mg) ratio. If there is an excess of calcium, these good fungi can form calcium oxalate crystals on their hyphae by pulling the excess calcium out of the soil solution so it is no longer available, correcting the mineral imbalance.

However, if we apply a fungicide, till the soil, apply artificial fertilizers, not to mention pesticides or herbicides, we kill many of these good guys and we lose the services they provide.

This is another reason why properly made composts and composted (aged) native mulches work so well as they are natural bioinoculants in addition to their many other benefits.

If you want to learn more on this subject there is a very good article from Acres USA magazine that can be found at [ecofarmingdaily.com](http://ecofarmingdaily.com)

It seems like every time I open a journal or newsletter there is another study being released on the dangers of glyphosate which is used in the brand Round Up.

A paper in the Journal of Neuroinflammation (2022) has found this toxic chemical can infiltrate the brain and increase pro-inflammatory cytokines which are linked to neurodegenerative disorders.

They found the damage was dose dependent, hence the more glyphosate one is exposed to, the greater the damage.

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Another reason to avoid GMO products as they have the highest level of this toxic chemical on them and purchase organically certified foods whenever possible. The best solution is to grow one's own food organically.

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