



www.natureswayresources.com

NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

By John Ferguson

Subject: fungi-algae bioinoculants sprayable mulch gardening and mental bees

Research by the Czech Academy of Sciences have discovered a new symbiotic relationship between fungi and algae. The fungi *corticoid basidiomycetes* that are common in temperate forests, when forming a partnership with algae is called “alcobiosis.”

Thru DNA mapping they confirmed this type partnership was very common with many fungal species. The algae were found to be alive, active, and engaged in photosynthesis while living inside the fungal hyphae.

The researchers also discovered that the spread of these alcobioses was aided by small gastropods (slugs and snails) whom feed on the fungi. The excrement from these gastropods contained viable cells of both the algae and fungi.

The next question is why do these microbes form the partnership and why? Scientific Reports (2023)

101 Sherbrook Circle • Conroe, Tx 77385-7750
(936) 321-6990 Metro • (936) 273-1200 Conroe



www.natureswayresources.com

We are learning more and more every day about the importance of microbes to have health soil so we have healthy plants. A study in the Journal HortTechnology (2023) was on the use of commercial bioinoculants.

Bioinoculants may be bacteria, algae, fungi, or other microbes. The researchers tested three different brands of commercial bioinoculants on grapevines. They found that mycorrhizal colonization of the roots was increased, grapevine petiole nutrient concentration was increased, additionally root diameter, root length, root density was also increased.

Some brands contain humates, work castings, or other amendments in one package. We are all familiar with the Microlife™ line of fertilizers both granular and liquids. They also produce a very good bioinoculant called MicroGro™.

New research in weed control has produced biobased sprayable mulch (BSM) which are an alternative to herbicides. According to a multi-year trial published in HortTechnology (2023), these films were very effective in reducing weeds up to 96% in some cases.

They found that using in combination with corn gluten meal increased its effectiveness. University studies have found corn gluten meal to be effective on at least 22 species of common weeds. It contains around 10% nitrogen hence as it breaks down it acts as a slow-release fertilizer.

101 Sherbrook Circle • Conroe, Tx 77385-7750
(936) 321-6990 Metro • (936) 273-1200 Conroe



www.natureswayresources.com

Another research paper published in HortTechnology (2023) has found that gardening effects our brain function. They found that the function and connectivity was activated by soil preparation, weeding, fertilizing, etc.

The study provided evidence that gardening can stimulate positive emotions, meditation, creativity, attention, and relaxation and reduce depression.

A new study has found that when the gut bacteria receive nutrients from plants, they signal the brain to turn off the eat more food messages that lead to over eating and obesity. Journal Gut (2023)

Another reason to eat organically grown food grown on healthy soil full of primary nutrients, trace elements and micro-nutrients.

Speaking of nutrition, a paper published in the journal Scientific Reports (2023) was on bees. We have known for some time that bee's main source of carbohydrates come from nectar, while they get protein and fat from pollen.

This study used DNA mapping on pollen and honey to find out which flowers the bees were using. They found out that the bees were more selective than previously thought and only use a fraction of the available plants.

101 Sherbrook Circle • Conroe, Tx 77385-7750
(936) 321-6990 Metro • (936) 273-1200 Conroe



www.natureswayresources.com

As gardeners we know that different fruits and vegetables are high in different nutrients. Similarly, bees select flowers that have the nutrients they require to be healthy.

I recently finished reading an interesting book on the fascinating insects we know as bees. Bees have a form of intelligence that lets them memorize data and evaluate food sources. They also have different senses than mammals that allows them certain advantages in their ecological niche.

The Mind of A Bee, by Lars Chittka, 2022, Princeton University Press,

ISBN 978-0-691-18047-2,

101 Sherbrook Circle • Conroe, Tx 77385-7750
(936) 321-6990 Metro • (936) 273-1200 Conroe