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JOHN'S CORNER:

NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

by John Ferguson

A paper published in the Journal of Environmental Research Letters has found that dangerous nitrate from artificial fertilizers is building up in soils and the toxic effects can persist for decades after it is no longer applied. Exposure to nitrate enters waterways and causes hypoxic conditions creating dead zones in rivers and our oceans. This nitrate pollution also causes many human health problems such as "blue baby syndrome". As a result, cities are spending hundreds of millions of taxpayer dollars to remove it from our drinking water.

Another study from the University of Missouri has found that plants can sense when they are being eaten and send out defense mechanisms to stop it. They found that when a caterpillar eats a leave it produces vibrations that tell the plant to activate its defense mechanisms. The researchers recorded the vibrations and then played it back to a plant without caterpillars and the plant turned on its defense mechanisms.

A study from the University of California published in the Journal Ecology Letters has found that excess nutrient input from artificial fertilizers creates an imbalance in the interactions between plants and microbes. Plants produce carbohydrates that we call "root exudates" that feed the beneficial microbes. In return, the microbes protect the plant against soil pathogens and insect attack. When plants were fed nutrients from artificial fertilizers, they did not produce the root exudates and the good microbes quit protecting the roots allowing pathogens to attack the plant. This resulted in less plant growth. I first read about this issue back in 1999 in an article published in the Journal of Environmental Horticulture that found that Lace Bugs were attracted to plants fed artificial fertilizers. The same amount of nutrients supplied organically did not attract the lace bugs to the plants.

A study from the University of Guelph in Canada found that even low levels of pesticides affected the foraging behavior of bumblebees. It hindered their ability to learn the skill needed to extract pollen

and nectar. Other studies have shown that low levels of pesticides far below the legal limit caused memory problems for honeybees as they forgot where the flowers were located.

The government is pushing GMO crops on us that have much higher levels of pesticides. Dementia is a rapidly growing issue in our society, as we eat these contaminated foods, I suspect there is a correlation.