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NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

By John Ferguson

Subject: plant viruses fire ants & fungi antioxidants and Alzheimer's native mulches
and fire ants tomatoes

A paper published a few years ago found that plant viruses prefer cultivated areas. Around 50% of all plant diseases are viral in nature, a team of international scientists from France and South Africa discovered (ISME journal 2018).

From their work there have now been 1,400 plant viruses cataloged so far with many yet to be cataloged. The researchers found that plant viruses (diseases) were found much more often in cultivated areas.

A new study published in the journal of Alzheimer's disease by researchers at the Virginia Tech Carilion School of Medicine, has found that brains with Alzheimer's disease, have lower dietary levels of lutein, zeaxanthin, lycopene, and vitamin-E.

The report by the Dorey Craft team found that carotenoids which are powerful antioxidants, which are found in colorful plants. Lutein is especially abundant in kale and spinach, and zeaxanthin is highest in corn and orange peppers.

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The title of a recent article caught my attention: “Odors produced by soil microbes attract red fire ants to safer nest sites”

For decades we have known that aged (partially composted) native mulches tend to discourage to outright suppress fire ants’ populations, while other mulches like barks and dyed mulches since they lack the beneficial fungi, they effectively attract or make good homes for fire ants.

We now know the reason why this occurs.

Newly mated fire ant queens (*Solenopsis Invicta*) select nest sites with relatively low pathogen risk by detecting odors produced by soil bacteria that inhibit the growth of the ant infecting fungi.

The researchers found that the fire ant preferred to nest in locations containing actinobacteria, which produce compounds that inhibit the growth of pathogenic fungi harmful to the ants. PLOS Pathogens 2020

Many of us have observed that we do not find fire ants in the forest where there is lots of fungal species present. However, in the sunny grassy areas (bacteria dominated) soils, we also have lots of fire ants (*Solenopsis invicta*).

A new study from researchers at UC Berkely has found that spraying tomatoes with microbes (bacteria) from healthy tomatoes helped protect it from disease. There were two surprises from the study -

- 1) artificial fertilizers reduced a plants ability to protect itself from disease.

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2) They discovered that lower doses of transferred bacteria gave better disease suppression than high doses

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God's creation is amazing!

1 Timothy 4:4 (NIV) For everything God created is good, and **nothing is to be rejected** if it is received with thanksgiving,

Job 12:7 (NIV) "But ask the animals, and they will teach you, or the birds of the air, and they will tell you; 8) or speak to the earth, and it will teach you, or let the fish of the sea inform you.

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