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JOHN'S CORNER:

NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

by John Ferguson

I read today that organic food sales set a new record in 2020 of \$56 Billion! More and more people are learning that most of our health problems are caused by the extremely poor quality of our food supply, hence turning to organic products and growing one's own food.

The Pesticide Action Network (PAN) database has a lot of information on the quality of food and the toxic chemicals that are on them. One can learn more at the link below.

[Read More](#)

Once the website is open there are 3 links, PAN's home, What's on MY Food and Honey Bee Haven which is all about pollinators. The One shown below allows one to click on a food type (carrots, blueberries, etc.) and shows the pesticides that have been found on them. One can then click on the "Organic" and see what was found on them.

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In recent years more and more research articles are finding that plants and even microbes have a form of intelligence. A paper in the journal Proceedings of the National Academy of Sciences (2021) has found that the single cell organism *Physarum polycephalum* a common slime mold, has several properties of intelligence. A few weeks ago, I mention that studies have shown that slime molds have memories.

Researchers at the Max Planck Institute and Technical University of Munich, have found slime molds also have the ability to solve complex problems like finding the shortest path through a maze.

“It does this by growing and disintegrating its tubes, hence weaves memories of food encounters directly into the architecture of the network like body and uses the stored information when making future decisions.”



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The University of California -Riverside has released a new study on parasitic plants like mistletoe. Mistletoe has the ability to use sunlight to produce its own food even though it prefers to siphon off water and nutrients from host trees.

However, when two different mistletoe plants were attacking the same tree (host), they increase their photosynthesis to produce the nutrients they need, sharing the tree and causing the tree less harm.

Somehow the mistletoe plants know they are sharing and change their metabolism to prevent killing the host. Journal Current Biology (2021)

I read an interesting finding in the newsletter 'ecofarming daily' a while back. Studying a single rye plant (*Secale cereale*), they found the plants has about 13,000,000 (13 million) roots, with a surface area of 282 square yards.

It also had 14,000,000,000 (14 billion) root hairs with a surface area of 480 square yards. All this root mass was in only 0.06 cubic yard (1.6 cubic feet) of soil.

The surface area of the below ground plant was **139 times larger** than the above ground portion.

This illustrates why even small changes to one's soil can have large effects on a plant. This finding strengthens the argument: "healthy soil = healthy plants".

A study from the University of Guelph has found that the neonicotinoid pesticide imidacloprid is extremely harmful to bees, especially ground nesting bees. They found that ground nesting Squash bees dug 85% fewer nests, collected less pollen, and produced 89% fewer offspring when exposed to this chemical.



Ground nesting bees make up 70% of all bee species that are important to pollination of our food supply. Scientific Reports (2021).

Comment: I wonder what it does to a women's reproductive cycle when we eat produce with this toxic chemical on it?

On the positive side, there is a new movement in the sustainability organic agriculture area called "Regenerative Farming or Regenerative Agriculture".

This modern method not only produces high quality and nutrient dense food, it has the ability to solve the soil crisis, the food crisis, the climate crisis, and the crisis of democracy.

Ronnie Cummins of the "[Organic Consumers Association](#)" had a nice article on this subject.