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NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

By John Ferguson

Nature never stops amazing me with its mysteries. Researchers have found that the invasive ambrosia beetle known as the black stem borer, raises its own food. It prefers dead wood where it can farm a species of fungus that it carries with them in special pockets inside the female's heads.

These beetles and fungi produce pheromones that attracts other beetles by smell, telling other beetles they have found a good home, which causes them to aggregate into large populations. Researchers believe that by disrupting the communication it may provide control of this pest. *Frontiers in Microbiology* (2023).

Speaking of pheromones, the silk moth family have very sensitive antennas to smells. These moths have sensitive eyes and powerful scent detecting antennas, hence when the female produces pheromones a male can sense one single molecule and find females from six miles away.

Lunas are a beautiful moth with long tails that are common to the silk moth family. Scientists have studied these moths regarding what purpose the tails serve in nature. Predation from birds or bats, sexual selection, etc.

Scientists have discovered the long tails evolved solely to help the moths escape bats which the tail is believed to disrupt the reflected sonar signal, and the longer the tail the

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greater its effectiveness (the tails had no effect on bird predation). Journal Biology Letters and Behavioral Ecology (2023)

More and more gardeners are planting food for pollinators like bees, butterflies, and moths. The Luna moth uses species like black walnut, hickory, willows, sweetgums, black cherry, and others as host plants for its larva.

Many gardeners experience soil diseases in warm and moist soils that are common along the gulf coast during the summer. There are a few things a gardener can do to help lower the possibility of soil diseases.

To reduce the risk to our gardens we must increase the density and diversity of the soil biology. Gardeners can do this by several processes.

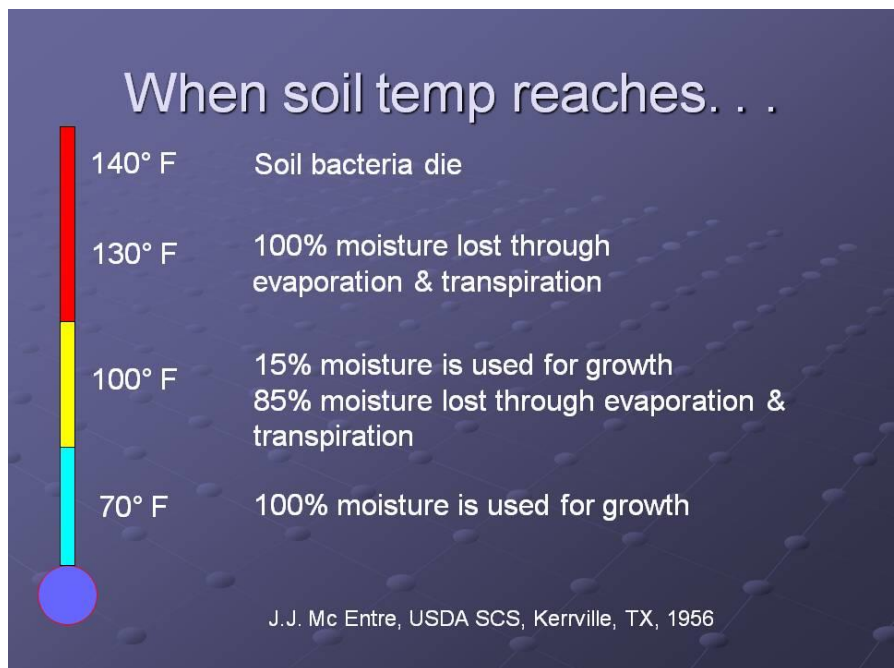
- 1) Routinely use trace and micro-nutrients that are often deficient in our soils by applying products like Re-mineralizer.
- 2) Build organic matter by using compost, humates, composted (aged) native mulches, and cover crops.
- 3) Foliar applications of seaweed, fish emulsion, agricultural molasses, ground crab or shrimp shells feed and stimulate beneficial microbes. The Microlife™ products like Super Seaweed and Ocean Harvest work great.
- 4) Biological inoculants like mycorrhizae fungus and beneficial bacteria should be used at planting time

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- 5) Humic and fulmic acid drenches can stimulate beneficial microbes
- 6) Use rainwater for irrigation or at least filter municipal water as it is full of chemicals that kill the microbes which prevent disease.
- 7) Using a several inch thick layer, of aged native mulch keeps soils cooler allowing the good microbes to grow and work. It also helps feed earthworms which help destroy many bad microbes and stimulate the growth of good ones.

The above steps help plants grow stronger and faster with more flowers and fruits.

A good quality aged native mulch layer that is 3-4 inches thick, is essential in many ways. The chart below indicates how important keeping the soil cool is to a plant's health. Aged Native Mulches are very effective in keeping soils cool and provide many other benefits.



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Water filters to remove the toxic chlorine, chloramine and fluoride are available. The more one waters their garden the more important they are.

If one has an organically rich soil and only waters occasionally, then soil microbe populations will recover from the damage. If one waters weekly or more then the microbial population does not have time to recover and filters remove the toxic chemicals to help protect our soil.



Filters like the one shown below are available that will screw onto your outside water faucet, then your water hose attaches to the other end of the filter, hence extremely easy to use.

They are available at some garden centers or online retailers. It is also available direct from the manufacturer for \$56.99 at www.boogiebrew.net

The literature states that the Plus model will treat 45,000 gallons of water removes chlorine (99%), chloramine (87%), fluoride, mercury and other heavy metals, DDT, and some other pesticides.