



## Soil Secrets

# Soil Secrets Simple Truths

“Humus is an absolutely essential component in soil for optimum plant health”

Michael Martin Melendrez

I'm often asked to try to help out the companies that sell our products by providing some tech support and encouragement in using our material. Your concerns in getting the product sold is certainly a valid one and one that we all face as we enter this new paradigm of **Soil Nutritional Support and Turf Care** rather than chemical fertilization. Fortunately we have the USDA on our side now, whereas 5 years ago, that agency was totally antagonistic towards the idea of Organics being a better option over In-Organic Chemical fertilizers, today that is not the case. In fact, the USDA NRCS has an entire web site devoted to the Soil Food Web and its beneficial microorganisms. The USDA has also taken over the authority for regulating and standardizing the Organic Certification process nation wide which I feel has helped give us a competitive edge. The research and evidence are overwhelming that chemical fertilization has done lifelong harm to individuals, the environment-air-soil and water and can be shown to be causing a huge waste of water in Agriculture and Landscapes.

My advice to you is to keep it simple and stick to what I call '**Michael's 6 rules of simple truths**':

1. Chemical Fertilizers cause a build up of salts in the soil which cause Osmotic Potential problems where water moves out of the plant and into the soil (water is attracted to the salt) and potentially requiring a great deal more water to be needed to maintain turgor in the plants cells.
2. Chemical Fertilizers can cause a loss of the natural biology that all plants must have in order to uptake water and nutrients from the soil. Remember, most of this uptake process is happening with the symbiotic association the plant has with a community of microorganisms in the soil. If the microorganisms are reduced or eliminated from the soil ecosystem and association, than the plant cannot uptake all that it needs properly. This results in the plant community becoming vulnerable to disease, intolerant of drought, easily stressed and never healthy. **Green does not always translate to healthy.**
3. Chemical Fertilizers can cause soils to collapse, becoming anaerobic just inches beneath the surface and in turf areas, results in Black Layer Disease, a common problem on Golf Courses.
4. No plant or landscape can be healthy without the soil being healthy and with a complete Soil Food Web.
5. No Chemical In-Organic fertilizer has ever made a soil healthier.
6. If a Chemical In-Organic fertilizer cannot make a soil healthier, than they cannot make a landscape or the plants in that landscape healthier! Remember, rule 4 says that the soil must be healthy before the plant can be healthy.

Please feel free to hand this out to your clients or hopeful customers. And remember to please have them read the labels, because even a good thing can be used poorly, possibly resulting in harm.

See page 2 for an interesting article concerning the impact chemical fertilizers have had on one of nature's creatures.

**Health & science**

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By Pieter Johnson, Center for Limnology

**Deformities in frogs linked to increased fertilizer use**

**Malformations on the rise:** This northern leopard frog has two extra legs.

By Dan Vergano  
USA TODAY

The growing number of deformities in frogs, toads and salamanders nationwide may be caused by an outbreak of parasitic worms tied to fertilizer use, a historical survey of wetlands suggests.

The plague of deformed frogs, which was first widely noted in the 1990s, represents a threat to many amphibian populations, says ecologist Pieter Johnson of the University of Wisconsin-Madison. Reporting in the current *Conserva-*

*tion Biology*, he surveys five decades of malformation data from wetlands in California, Colorado, Idaho, Mississippi, Montana, Ohio and Texas.

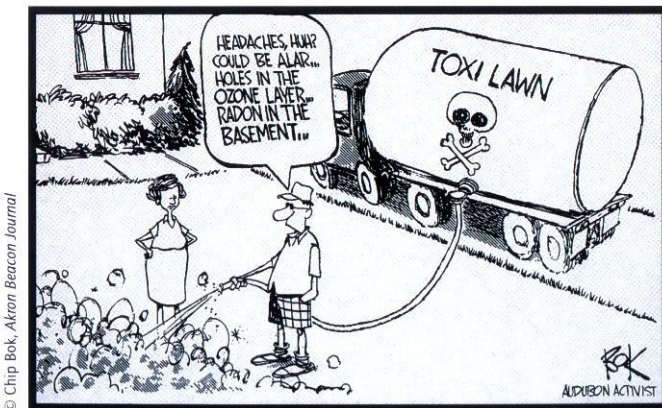
"In some areas, more than 50% of the amphibians are deformed," Johnson says.

Incidents of amphibian deformations go back at least 40 years but have steadily increased over time, the analysis shows. Parasitic worms have emerged as the lead culprit in recent years.

The worms live part of their lives in snails, then infest the hind legs

of tadpoles and finally infect birds that eat amphibians. Malformed frogs are more readily snapped up, spreading the parasite further. Johnson reports that farm ponds and reservoirs receiving the heaviest doses of fertilizers have more snails, more parasites and more deformed frogs.

"Amphibians are reproducing more and more in these man-made ponds as wetlands are developed away," he says. Tests during the summer should show whether limiting fertilizers can relieve the parasite outbreaks.



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"It may be doubted whether there are many other animals which have played so important a part in the history of the world as have these lowly organised creatures." - Charles Darwin on Worms

