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JOHN'S CORNER

TIME FOR SOME UPDATES &TRIVIA

By John Ferguson

BIO-CHAR UPDATE

I read an article this week from the journal of the American Phytopathological Society (Vol. 100, No. 9, 2010) titled "Induction of Systemic Resistance in Plants by Biochar, a Soil-Applied Carbon Sequestering Agent". I wrote an overview of Bio-char as a soil amendment back in the May 19, 2014 newsletter, however as I read interesting new research articles I will be doing updates as needed to keep our readers informed.

Bio-char has many benefits as a soil amendment and now researchers are also finding benefits for disease control in the soil and on a plants foliage, and in insect control. Previous work has shown that biochar had a suppressive effect on Fusarium root rot in asparagus plants.

This paper looked at several common diseases of tomatoes and peppers and the effects of biochar 3% and 5% by volume of the soil and potting media. They found:

Powdery mildew (Leveillula taurica) - Pepper plants grown in a biochar amended soil or potting medium (coconut fiber) has a significantly lower severity of powdery mildew. Note: The coconut fiber medium was found to be more conducive to disease development than the soil media.

Gray Mold (Botrytis cinerea) - Pepper and tomatoes plants were grown in a potting medium with 5% biochar. There was a 58% reduction of disease symptoms in the biochar amended pepper plants, and a 75% reduction in disease symptoms in the tomato plants as compared to the non-amended control.

In addition, bio-char significantly reduced the symptoms of broad mite (Polyphagotarsonemus latus) on the pepper canopy!

The exact mechanism is not known but believed to be a combination of two forms of resistance; Systemic Acquired Resistance (SAR) and Induced Systemic Resistance (ISR).

SOYBEAN MEAL UPDATE

Last issue I was talking about soybean meal as a natural fertilizer and the problems and dangers caused by genetically modified (GMO) soybean meal. I read a couple articles this past week on this issue.

The first was a report out of Denmark where pigs were fed GMO soybeans. Immediately the pigs developed diarrhea and shortly later developed stomach ulcers and bloat (also seen in cows, horses and other livestock). Piglets were born with birth defects and other health problems. It is believed that the health effects were caused by Round-Up residuals on and in the soybeans. When the pigs were put on non-GMO feed the health problems cleared up. It has been suggested that the toxins in the GMO soybeans if used as a natural fertilizer would be absorbed by plants.

The other report out of Brazil found that GMO soybeans lead to an increase in fungal infections and lower crop yield.

ALFALFA MEAL UPDATE:

I recently read a report on what happens to the nutrients when an alfalfa field had been treated with the herbicide Roundup.

% Reduction of Nutrients in Alfalfa by Glyphosate

Nitrogen	13%
Phosphorous	15%
Potassium	46%
Calcium	17%
Magnesium	26%
Sulfur	52%
Boron	18%
Copper	20%
Iron	49%
Manganese	31%
Zinc	18%

The value of Alfalfa meal as a natural fertilizer is greatly reduced if treated with Round-Up. Hence, only buy certified organic alfalfa for your garden.

Food for thought:
If Round-up affects Alfalfa, I wonder how many of our food crops are also affected with decreased nutrients. More and more food crops are genetically modified (GMO) to withstand much higher doses of Round-up. With dozens (hundreds?) of human health problems, caused or at least aggravated, by the lack of nutrients in our food supply it makes me wonder why anyone would even purchase food that was not certified organic.

MULCH UPDATE:
Plants like Vinca sp. are known to host the fungal disease Phytopthora citricola and Pine Bark mulch has been shown to stimulate its growth.

Tree Care Industry Magazine -July 2014

TRIVIA:
The August issue of Acres, USA reported that researchers at Virginia Tech college of Agriculture and Life Sciences have found a natural and effective way to kill Poison Ivy. They found a naturally occurring fungus (Colletotrichum fioriniae) that kills this toxic weed. They believe that it will be relatively easy to develop a soil granule with this fungus that can be applied to poison ivy infested areas to infect and kill the plant. The full report can be found in the journal "Plant Disease".

When I read a report like this I remember that God tells us in the book of Job to, "study nature and let it teach us".