Missouri Ag News

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Organic Matter the Dark Gold…….

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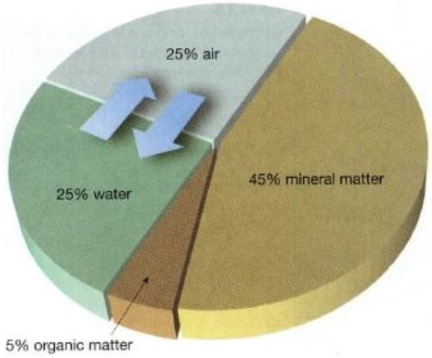
"The plough is one of the most ancient and most valuable of man's inventions, but long before he existed, the land was in fact regularly ploughed, and still continues to be ploughed by earthworms. It may be doubted whether there are many other animals which have played so important a part in history of the world as these lowly organized creatures." – Charles Darwin

Farmers know well how to select a variety and plant it; how to control weeds, pest and diseases; and how to fertilize and water plants. So the question still remains. Why the ability to grow 300 bushels of corn and 100 bushels of soybean still seems outside the grasp of many farmers?

To answer this question, I will start by asking another question. How many farmers know about the health and condition of their soils? Considering that the soil is the foundation of the entire farming operation. It is not surprising that our most successful farmers that consistently produce high yields are focused on growing the soil rather than the crop.

Why don't more farmers "grow the soil"? Well, it is just like our bodies, we can get by with supplements and medications without investing in cultivating a healthy lifestyle. But, eventually our health declines and our demand for supplements and medication increases just for us to remain functional. Surprisingly, we all know what to do to stay healthy, but it is not until we find ourselves in a doctor's office or in a hospital bed are we forced to change and do what we already knew. It is the same with the soil. All farmers know or have heard many times the importance of growing the soil by improving soil health by enhancing soil organic matter.

Typical soil make-up



In my opinion, organic matter is to a soil like blood flowing through our bodies. For example, if you're a blood donor and you give blood regularly, but your body does not replenish itself.

Dark Gold continued……

Over time, donating blood despite the good intentions will eventually weaken or kill you. Well, this is what we are doing to our soil each time we put a plough to it. Considering, that organic matter breaks down each year depending on your environment, more rapidly in warmer than cooler conditions. Point to note, you will lose organic matter naturally, but your management can either greatly accelerate or reduce the rate of loss.

Soil on the left received no organic matter, that in the middle had organic matter added and the soil on the right was undisturbed. - Photo by William Cullina

Soil organic matter affects both the chemical and physical properties of the soil and its overall health. Its composition and breakdown rate affects the diversity and biological activity of soil organisms, plant nutrient availability, soil structure and porosity, water infiltration rate, and water holding capacity.

Building organic matter in a soil system is a function of numerous factors 1) organic matter inputs (residues and roots), 2) climate (rainfall and temperature), 3) physical and chemical properties of the soil and 4) land use and management.

Back to the question why farmers don't grow the soil? 1) Rebuilding soil organic matter through appropriate farming practices may take several years, especially in dry land areas where limited moisture reduces biomass production and soil biological activity. 2) Identifying soil management practices that promote soil organic matter formation, moisture retention and ensure productivity and profitability for farmers in the short-term can be very difficult. Contrary to the two points above, it is not impossible to build soil organic matter; it might be difficult and require some change in our farming practice. Another point to note, cover crops and no-till are good starting points for anyone interested in building soil organic matter. *Note that regardless of the practice used, green growing material doesn't build organic matter, but brown dead material in the field does.*

In closing, maybe it is time to start thinking about growing your soil as well as your crop. You can start by evaluating your soil by monitoring soil organic matter. The University of Missouri soil health laboratory provides analyses of physical, chemical and biological soil health indicators. For more information contact your local extension office, the soil health laboratory at 573 -882-3704, and/or visit the website http://engineering.missouri.edu/soil/soil-health/.

AJ Foster, Agronomy Specialist, University of Missouri, Bloomfield, MO.

Wheat Planting

When selecting a variety, utilize university performance trials such as University of Missouri, http://varietytesting.missouri.edu/. With the increased level of Fusarium this past season, be sure saved seed has been cleaned, germination tested and treated with a fungicide seed treatment labeled for Fusarium soilborne disease. A list of those products can be found in the Pest Management Guide, M171, http://extension.missouri.edu/p/M171. Seed treatments will not prevent the risk of Fusarium head blight (scab) in the spring. The combination of avoiding known susceptible varieties and the use of timely fungicide labeled specifically for scab during flowering is the prevention protocol to help reduce vomitoxin levels.

Optimal planting window for wheat is October 10 through October 30. Wheat can be planted before and after this window which may be necessary depending on your situation. However, planting prior to this optimum window can increase the risk of yield loss due to insect pressure such as Hessian fly or aphid buildup, aphid vectored barley yellow dwarf virus (BYDV) or spring freeze injury. Planting after this window can increase the risk of poor fall tiller development and winter injury, such as heaving.

Optimum planting equipment for wheat is a drill. Optimal seeding rate should be between 1.3 to 1.5 million pure live seeds per acre. Increasing this number may be necessary under no-till systems or if planting is delayed outside optimal window. An optimal final fall stand should be approximately 30 to 35 plants per square foot. More plants than optimal may result in increased lodging and powdery mildew development next spring. Optimal seed depth is ½ to 1.5 inches. Shallow planting can result in more heaving and winter kill while planting deeper that 1.5 inches increases the potential for delayed emergence and poor tiller development. Optimum number of tillers per plant by winter vernalization period is two.

Anthony Ohmes, Agronomy Specialist, University of Missouri, Jackson, MO

Midwest Winter Vegetable Production Conference

Monday & Tuesday, November 10 and 11, 2014 *

Continental Banquet Center 2728 North Rangeline, Joplin, MO 64801

To register go to webbcityfarmersmarket.com

Monday, November 10 (8:00 a.m.)

For beginners (high tunnel sites, choices of equipment, costs and returns) *or* for experienced high tunnel growers (high tunnel maintenance and rehabbing equipment and long term soil management); winter production crop choices and planning for our region; maximizing high tunnel production; high tunnel heating alternatives; low tunnel production; and high tunnel mesclun and greens production or high tunnel strawberry production

Tuesday, November 11 (9:00 a.m.)

Managing and record keeping for maximum production; food safety update; post harvest handling; panel – marketing opportunities (schools, restaurants and grocery stores.) A farm tour will follow. Location will be determined closer to conference time.

Fall Pasture Weed Management

Three perennial weeds to target this fall with herbicides are brambles (blackberry), horsenettle, and thistles. Blackberry control is best accomplished 2 to 3 weeks prior to the first frost. Blackberry plants should NOT be mowed the same season as herbicide application. If the blackberry has been mowed this summer, control will be greatly reduced. Products that have performed best in university trials include herbicides containing the active ingredients metsulfuron or triclopyr. Spot spraying provides good results, reduces injury to fescue from metsulfuron and is more economical. Horsenettle control is best accomplished after flowering with products containing picloram. Control thistles in the rosette stage with products such as aminopyralid + 2,4-D which provide good control plus offer some residual. 2,4-D alone provides good control of thistles in the rosette stage but offers no residual activity.

Anthony Ohmes, Agronomy Specialist, University of Missouri, Jackson, MO

Dairy Producers

2014 Farm Bill: Margin Protection Program signup deadline is November 28 . To help answer questions workshops and webinars are being offered by MU Extension and USDA-FSA. The workshop scheduled for Southeast Region is Tuesday, October 14 from 10 am to 12 pm. Workshop is located at the Cape Girardeau Extension Center in Jackson, MO. Attached is a link to the website that has the flyer.

http://www.agebb.missouri.edu/dairy/events/index.htm

Watermelon Meeting

American Legion in Kennett, MO

Wednesday, December 3, 2014

Lunch is provided through our sponsors. For more information or to let us know you will attend call: 573-686-8064

EPA Emergency Exemption (Section 18) of Transform WG

Dr. Moneen Jones has just posted on her blog that a Section 18 for Transform WG has been approved for control of sugarcane aphid in Missouri grain sorghum. You can read her post and find the link to the Section 18 label at the following link: http://bootheelagpestmanagement.com/2014/09/11/epa-approves-sec-18-for-use-of-transform-wg-to-control-sugarcane-aphid-in-missouri-sorghum/

Sudden Death Syndrome (SDS) in Soybean

For more information and photos on soybean diseases refer to IPM Guide 1002, "Soybean Diseases" at http://extension.missouri.edu/p/IPM1002.

Following last season's bout with SDS in our area, this year has not seen any relief. Sudden Death Syndrome (SDS) is caused by the soil borne fungus *Fusarium solani.* Soil borne pathogens enter into host plants through the root system. Therefore, foliar fungicides would not control SDS.

Sudden Death Syndrome foliage symptoms begin in the upper canopy after reproductive development begins. Symptoms include yellow blotches between leaf veins that turn reddish brown in the center. The leaf veins will stay green. Leaf tissue will dry and leaves will curl upwards. Typically SDS is found in patches in a field. Similar symptoms can be caused by stem canker and brown stem rot, but neither of these diseases are common in Missouri.

Conditions favoring Sudden Death Syndrome include high soil moisture during vegetative growth stages and frequently associated with below normal temperatures at or near bloom. SDS may be found in both upland and river bottom fields. However, do not hold off on irrigating beans that are filling pods. SDS is usually found in patches; therefore, manage the rest of the field for maximum yield. Infection is sometimes associated with fields that have Soybean Cyst Nematode (SCN). If you planted a variety susceptible to SCN or have never tested a field for SCN, you may consider sampling this fall after harvest.

Losses associated with Sudden Death Syndrome will range from trace losses up to 80% loss depending on variety and when symptoms first appear. The later it appears, less yield loss associated. Most common yield loss range is 5 – 15%. Management options are limited to variety selection, improving drainage, staggering planting dates, avoid continuous soybeans, avoid crop stress and timely harvest.

Cercospora Leaf Blight/Leaf Spot

Cercospora leaf blight and leaf spot are caused by the fungus *Cercospora kikuchii* is most commonly associated with seed called purple seed stain. Initial foliar symptoms of Cercospora blight begin when plants begin to set seed. The upper trifoliate leaves exposed to sun will have a dark, reddish purple color highlighted with bronze. Cercospora leaf spot will be in the upper most trifoliates and begin with reddish purple to brown lesions followed by premature yellowing.

Symptoms typically do not progress down the plants more than one or two nodes. Fungicides are labeled for preventative management. Once symptoms are noticed in the field infection has already occurred. The disease typically only affects the two upper most nodes and infection is typically late season. Pods can be infected which can cause the purple staining of seeds.

Warm, humid weather favors disease development. Yields are not usually reduced, but seed stain may be evident at harvest. Management includes crop rotation, labeled fungicides prior to onset of disease, and if stained seed must be planted the use of a fungicide seed treatment is recommended.

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Future Meetings & Events -

Midwest Winter Vegetable Production Conference - November 10 to 11, 2014. Continental Banquet Center in Joplin, MO. Register at webbcityfarmersmarket.com.

Watermelon Meeting December 3, 2014. American Legion in Kennett, MO beginning at 8:30 a.m. Please RSVP at 686-8064 if you plan to attend.

Commodities and markets - http://extension.missouri.edu/scott/crop-budgets.aspx

2014 Farm Bill - http://extension.missouri.edu/scott/Farm-bill.aspx