St. Joseph County Soil & Water Conservation District

CONSERVATION KALEIDOSCOPE

Today's Visions for Tomorrow's Future

March/April 2017
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2903 Gary Drive, Ste 1, Plymouth, IN 46563
Website: stjosephswcd.org

Telephone (574) 936-2024
e-mail: info@stjosephswcd.org

What's Going On...

Events hosted by the St. Joseph County SWCD & Our Partners in Conservation

March

11th-12th - Unity Gardens Growing Summit - visit their website for classes and info. www.theunitygardens.org

12th - Daylight saving time begins. Don't forget to move your clocks forward.

21st - Monthly Board Meeting Open to the Public 6:30 PM **LOCATION:** Butterfly Room Centre Township Library at Kern and Miami Roads in South Bend - 1150 Kern Road South Bend, IN 46614

April

14th - Good Friday - County Holiday

18th - Monthly Board Meeting Open to the Public 7 PM **LOCATION:** Alligator Room Centre Township Library at Kern and Miami Roads in South Bend - 1150 Kern Road South Bend, IN 46614

May

16th - Monthly Board Meeting Open to the Public 7 PM **LOCATION:** Alligator Room Centre Township Library at Kern and Miami Roads in South Bend - 1150 Kern Road South Bend, IN 46614

29th - Memorial Day - Office Closed

What To Do With Irrigation Pivot Corners

In 1948, center pivot irrigation was invented as a means to improve water distribution in crop fields. This was a great improvement in water distribution compared to flood irrigation, however, center pivots have created a new dilemma: the pivot corner. Pivot corners are troublesome. Square parcels with a circular system leave unused corners that can amount to 15 to 20% of the available area in a square parcel. The result is a large portion of unused ground that could be used to help bring in pollinators, insects, wind breaks or other beneficial practices.

Standard pivot circle (left) next to a pivot with a swing arm (right) near Aberdeen, Idaho. Image from Google Maps.

The most common solution to pivot corners is to leave it empty or ignored. Unaddressed corners can be difficult to manage and can quickly become a weed patch and a source of contamination to the surrounding fields. Mechanical and/or chemical fallow practices can be used to control weeds, but these are time consuming and expensive, causing the farmer to spend valuable resources managing ground with no production value or benefit.

Technological innovations have provided a few additional options to get value out of pivot corners. Linear or lateral move irrigation systems are designed for rectangular parcels of land. End guns and swing arms extend the reach of the center pivot system into the corners bringing more land under production. The equipment for these systems is expensive, but the additional expense involved may be recouped with the increased available acreage of high value crops. Portable hand lines, wheel lines, drip irrigations systems and pod systems can also be installed into pivot corners to work in conjunction with the pivot.

An additional option is the use of smaller pivots to fill the corners and inter spaces. Smaller circles situated in the corners left by larger circles effectively fill unused space providing more farmable land. Smaller pivots also eliminate the need for swing arms and provide more uniform water distribution.

Pollinator Habitat

Unused pivot corners are an ideal location for pollinator plantings. Pollinator plantings rich in wildflowers are known to provide nectar and pollen for bees, butterflies, wasps and other insects. Many of the world's crop species benefit from insect pollination; in North America, bees pollinate billions of dollars' worth of crops annually. Nearly one quarter of our diet comes from crops whose production benefits from pollinating bees.

A diverse wildflower mix can provide food and habitat to pollinators, beneficial insects and other wildlife. Photo by Derek Tilley, USDA-NRCS.

Pollinators, including bees, moths, flies, beetles, wasps, desert bats, hummingbirds, and butterflies, are critical to the function of terrestrial ecosystems because they enhance plant reproduction. Despite their importance, pollinators are threatened world-wide by habitat loss, habitat fragmentation, improper pesticide use, disease and parasites. This has serious economic implications for humans and for maintaining ecosystem diversity and stability.

Effective pollinator plantings contain a diversity of flowers that bloom through the entire growing season to provide a steady supply of nectar and pollen. This means having flowers of different colors, shapes and sizes that blossom in the spring, midsummer and late summer to early fall.

To read about Insectaries, Cover Habitat and Permanent Cover, & other considerations visit our February 9, 2017 blog posting at www.stjosephswcd.org/blog.

No Till Gardening

Taking what we know of large scale production to your home garden.

Photo Source: http://learn.eartheasy.com/2009/01/no-till-gardening

If you're a gardener, then you know that getting your space ready for planting is the most strenuous task. Traditionally, gardeners will dig or turn over the top layer of soil before planting to get rid of weeds, and make it easier to plant crops. This also speeds up the decomposition of crop residue, weeds and other organic matter.

We know there is a complex, symbiotic relationship that exists between the soil surface and the underlying micro-organisms, which contributes to a natural, healthy soil structure. Digging into the bed can interfere with this process and disturb the natural growing environment. It can also cause soil compaction and erosion, and worst of all, it can bring dormant weed seeds to the surface where they will sprout.

Benefits of no-till gardening

Promotes natural aeration and drainage. Worms and other soil life are important to healthy soil structure, their tunnels providing aeration and drainage, and their excretions bind together soil crumbs. No-till systems are said to be freer of pests and disease, possibly due to a more balanced soil population being allowed to build up in this comparatively undisturbed environment, and by encouraging the buildup of beneficial soil fungi.

Saves water. Thick layers of mulch allow water to pass through easily while shading the soil. This reduces water lost to evaporation while maintaining a moist growing environment beneficial for root growth.

Reduces or eliminates the need to weed. Most garden soils contain weed seeds which lay dormant until the soil is disturbed and the seeds become exposed to light. With no-till gardening, these seeds will remain dormant indefinitely. Of course, some weeds will appear in the beds, borne by wind or birds. These weeds are easy to remove by hand if you pull them early in the morning or shortly after watering, while the soil is damp.

Saves time and energy. Whether you turn your garden beds by hand or use a gas-powered rototiller, you'll save energy by using the no-till method. Although some effort is required in gathering materials for mulching, and applying the mulch during the growing season, no digging or turning of the soil is required.

No-till gardening helps soil retain carbon. Healthy topsoil contains carbon-enriched humus and decaying organic matter that provides nutrients to plants. Soils low in humus can't maintain the carbon-dependent nutrients essential to healthy crop production, resulting in the need to use more fertilizers. Tilling the soil speeds the breakdown or organic matter, which releases nutrients too quickly. A steady, slow release of nutrients is more beneficial to plant growth.

Builds earthworm population. The moist conditions of the soil beneath mulch creates the ideal environment for earthworms, whose activity aerates the soil and stimulates root growth.

Helps reduce soil erosion. A lack of carbon in soil may promote erosion, as topsoil and fertilizers are often washed or blown away from garden beds.

Getting started in no-till gardening.

Prepare the bed before adopting the no-till method. You will need to establish a good, fertile soil structure before you can expect good results with the no-till/mulch method.

Use mulch liberally, in layers. When planting seedlings, pull the mulch back and dig into the surface just enough to set the plant.

'Top dress' amendments. Compost, peat, lime, wood ashes and other material are easily added to the bed without digging them in then add mulch to cover.

Cut back on watering. The use of mulch retains moisture, thereby reducing the need for frequent watering.

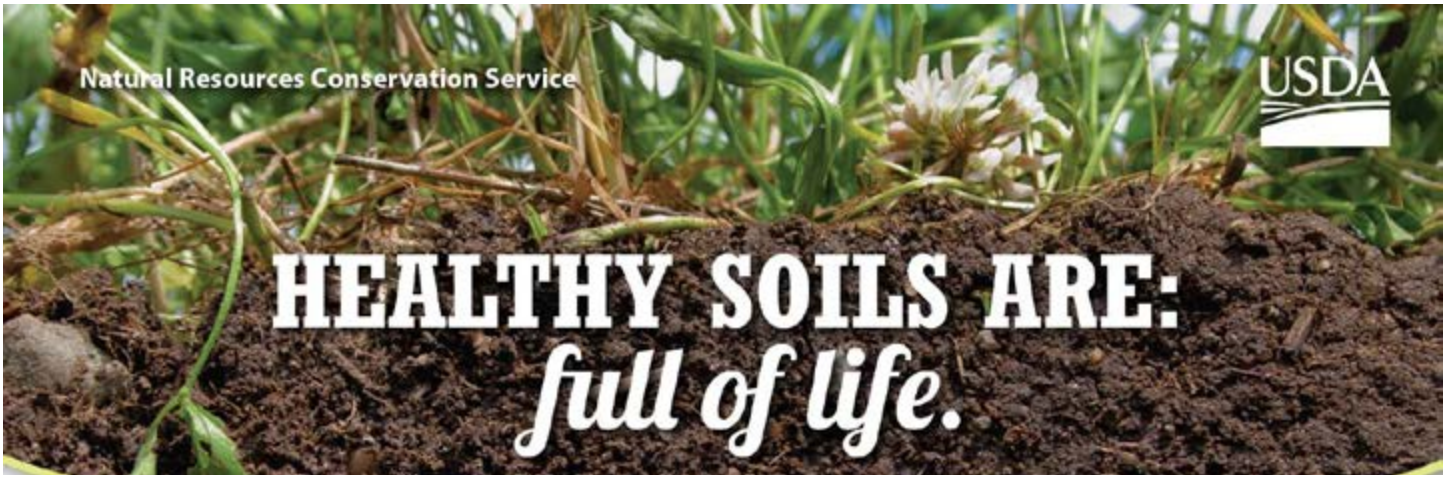
Cover crops. These can be planted during the off-season for a garden bed as a way of discouraging weeds from becoming established, and to return essential nutrients to the soil.

Avoid compacting the soil. Avoid stepping on the bed, as this compacts the soil.

It should be noted that "no-till" does not mean "no-work". As the mulch breaks down and settles into the soil, new mulch needs to be added. This should be done in a timely way, because if the soil surface is exposed to direct watering, and heavy rain, it compacts. You may need to break up (till) the soil before planting the next crop, and this defeats the purpose of the no-till method.

In conclusion, no-till gardening requires some experimenting to find the right techniques for your growing area. Ideally, one or two 'extra' beds in the garden can be used for testing cover crops and spring planting methods. Over time, the remaining garden beds can be transitioned to no-till. If you have a good supply of mulching materials and reapply them as necessary throughout the growing season, you can enjoy the benefits of a productive garden with less work in the spring, less weeding and less water used throughout the summer.

(Source: http://learn.eartheasy.com/2009/01/no-till-gardening)



It's alive!

Many people don't realize that soil, especially healthy soil, is full of life. Millions of species and billions of organisms make up a complex and diverse mix of microscopic and macroscopic life that represents the greatest concentration of biomass anywhere on the planet. Bacteria, algae, microscopic insects, earthworms, beetles, ants, mites, and fungi are among them. All together, their value has been estimated at $1.5 trillion a year worldwide.

Like other living creatures, the organisms in the soil also need food and shelter. Some feed on dead organic matter, and some eat other microbes. As a group, they cycle nutrients, build the soil and give it structure. The healthiest soils are those with a diversity and abundance of life. Farmers with the healthiest soils nurture that life by creating a diversity of plant life above the soil surface, with year-round ground cover, no tillage, and judicious pesticide use.

Farming for the microbes that care for us

Estimates vary, but if you could weigh all the organisms in the top six inches of soil on an acre of land, you'd find they would weigh between 2,500 pounds to more than 5,000 pounds, depending on how healthy the soil is. That is a LOT of life. What these low-lying creatures lack in size, they make up for in numbers. Consider bacteria, the soil microbes with the highest numbers, for example. You can fit 40 million of them on the end of one pin. In fact, there are more soil microorganisms (microbes for short) in a teaspoonful of soil than there are people on the earth.

Understanding that the soil is full of life is a game-changer for farmers who are farming with healthy soils in mind. For those producers, farming centers around feeding the organisms that build healthy soils. These farmers understand that tillage, the turning of the soil that has been the standard for growing crops for years and years, is disruptive to soil microbes and destructive to the soil system. Instead, they disturb the soil as little as possible. And, they grow a diversity of living plants in the soil as much of the time as practical, covering the soil and offering food to soil microbes through living roots. Those soil organisms, in turn, cycle nutrients back to the plant, allowing it to grow and flourish. It's a natural, symbiotic system that leads to healthy soils and more sustainable and profitable agriculture.

To learn more about soil health, and to meet some of the farmers who are "Unlocking the Secrets in the Soil," visit www.nrcs.usda.gov.

Experts Talk Soil Health

Written by USDA's Natural Resources Conservation Service

Discover the cover: Farmers realize benefits, challenges of soil-improving cover crops

A growing number of farmers throughout the nation have "discovered the cover"—and for some very good reasons. They're increasingly recognizing that by using cover crops and diverse rotations, it's possible to actually improve the health and function of their soil. According to David Lamm, a soil health expert with USDA's Natural Resources Conservation Service in Greensboro, N.C., farmers are also reaping the benefits healthy soils bring to their operations in the form of better nutrient cycling, improved water infiltration and more consistent yields over time.

"The principles of building healthy soils are the same everywhere—you have to stop tilling the soil and switch from a monoculture crop rotation to one with a diversity of crops that should include cover crops," Lamm said. "But the path to soil health is different on each farm." Lamm said that keeping the soil covered and growing with living roots is a critical component in improving the health and function of the soil. "That means understanding how to manage cover crops in a soil health management system. And that can be one of the biggest challenges farmers face." According to Lamm, cover crop and cash crop selections and rotation sequences should be chosen to fit the farmer's resource concerns and priorities, and the resources available at that farm.

For more information on how to "Unlock the Secrets in Your Soil," visit www.nrcs.usda.gov.

St. Joseph County Soil & Water Conservation District

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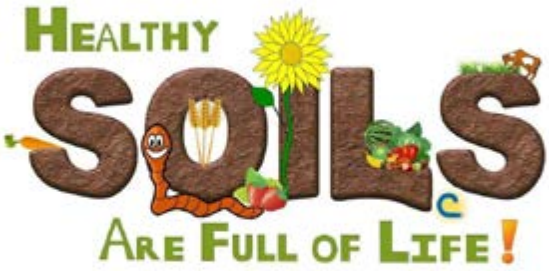

Posters are due by April 13, 2017

Check out our website: www.stjosephswcd.org for complete details

Rick Glassman, St. Joseph County SWCD Education Coordinator, still has dates available for the 2016-2017 school year. Contact him today to reserve your date at Richard.glassman@in.nacdnet.net.

Are you ready to "GO GREEN" and help us save money and natural resources? We can deliver your "Conservation Kaleidoscope" newsletter by email … Give us a call or send us an email and tell us you'd like to "GO GREEN" THANK YOU!!!!

Scan me to go Green!