THE REPORTER

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St. Charles County Soil & Water CONSERVATION DISTRICT

76th Annual Meeting of Cooperators Held in St. Peters

Once again, St. Charles County landowners cooperating in conservation programs gathered for the Annual Meeting of the St. Charles County Soil and Water Conservation District. The evening is an opportunity for the district to say "thank-you" to the men and women working in agriculture in the county, and to give them updates on current conservation programs at both the state and federal levels.

A Thanksgiving-style dinner was enjoyed as part of a tradition that began 76 years ago when the district hosted workers from the Civilian Conservation Corps (CCC) who were far from their homes during the Thanksgiving holiday. The CCC workers were stationed at Cuivre River State Park where they were building roads, bridges, paths and stone buildings. The CCC, a program of the New Deal, enlisted unemployed, unmarried men to perform construction and conservation-related work on public land. President Roosevelt's program was aimed at providing work for a struggling citizenship, and at improving forest resources, preventing soil erosion, and providing flood control.

Since that first dinner in 1941, the SWCD has served turkey, mashed potatoes, stuffing, and corn alongside a variety of dishes brought by attendees.

The night always includes a guest speaker, and this year it was Agriculture Business Specialist Ken Bolte. Ken spoke about the importance of financial and estate planning, and why it should be done sooner than later. Life changing events happen unexpectedly, so it's important to make decisions now. Ken offered important advice that can help landowners begin to have a conversation with family members and estate planners.

SWCD Board Chairman Adam Bonderer (left) presents the Cooperator of the Year Award to Brian Rehmeier, accepting on behalf of Rehmeier Farms.

Another tradition of the annual meeting is to present the Cooperator of the Year Award to a landowner who has showed a commitment to conservation farming, and who has actively participated in cost-share programs. This year, the SWCD Board of Supervisors chose Rehemeier Farms.

The Rehmeier family has been active in conservation farming for more than 75 years, beginning with the late Edward Rehmeier who worked for the soil and water conservation districts of the 1940s, and who was a member of the local township Farm Program committee.

The Rehmeier's settled in St. Charles County in 1844, and the land has been in the family over a span of seven generations. Edward's son, Layton, is the current patriarch of this hard-working family; and Layton's sons, Rick and Dean, are the current owners and operators of the family business. Working alongside their grandfather, dads and uncles are numerous sons, grandsons and great-grandsons.

Conservation practices implemented by Rehmeier Farms include: Forest Stand Improvement, Brush Management to eliminate invasive species, Comprehensive Nutrient Management, a Manure Transfer System, Terraces and Pest Management. Always interested in research and new technology, the Rehmeiers recently took part in a manure-to-oil transformation process to demonstrate this technology's use in road pavement.

The Rehmeiers stay active in all aspects of the agricultural community and work to have a farm that is both economically and environmentally sustainable.

See pg. 2 for door prize donors

What You Need to Know About Ephemeral Gully Erosion

You may hear your NRCS conservationist, or your SWCD technician, mentioning that ephemeral gully erosion can put you "out of compliance". This is a serious consequence for something that is relatively easy to identify and fix.

The Natural Resources Conservation Service has recently identified several states, Missouri included, where this type of gully erosion is causing the loss of tons of topsoil. In the past, cropland farmers would just disc up the soil around the shallow gully, filling it in for the cropping season, only to see that it had returned after harvest.

Identifying the Gully

Ephemeral (temporary) gullies are usually not deeper than a typical tilling depth, can be quite wide, and usually remove nutrient rich topsoil from the field.

Here are some facts compiled by the NRCS:

- They recur in the same area each time they form rather than randomly at different places on a slope.
- They frequently form in well-defined, shallow depressions in natural drainageways upstream from incised channels or gullies.
- They usually occur in the upper reaches of a drainage network.
- They are usually dentritic (branching or tree-like, but may have other patterns caused by row alignment or other characteristics of field operations.
- They are generally wider, deeper and longer than the rills on the field.
- They can occur in depressions into which rows or tillage marks lead.
- They can form along sloping rows or tillage marks.
- They are partially or totally erased and filled by tillage operations. The filling results in soil deterioration over a larger area than the gully itself. Soil is typically removed to the depth of the tillage layer.
- They can occur on terraced fields where overtopping of the terraces occurs or where piping occurs below the terrace embankment.
- They can occur in the channel of gradient terraces.

Compliance Issue

The NRCS has made it a priority to identify and resolve ephemeral gully erosion issues on land that is enrolled in USDA programs, including crop insurance. Fixing ephemeral gullies through conservation practices protects productivity and water quality and allows farmers with highly erodible land to continue receiving USDA farm program benefits.

Discing or smoothing the gullies will not fix the problem. And you risk losing your USDA farm program benefits. When in doubt, visit your local NRCS office before performing any tillage that is not part of your conservation plan on HEL land.

There are several natural resources conservation practices and management options available to help farmers voluntarily fix ephemeral gullies on their fields. Additional practices to consider include: conservation crop rotation, contour buffer strips, contour farming, strip cropping, critical area planting, and water and sediment control basin.

For more information, contact Shawn Keller at 636-922-2833, ext. 3.

Annual Meeting Door Prize Donors:

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Conservation Compliance:

The 1985 Farm Bill required Conservation Compliance for all USDA program participants if they farm highly erodible land (HEL). ANY tillage not accounted for in your conservation plan may put you out of compliance.

When in doubt, contact NRCS!

Envirothon Teams Study at the Meramec River Near Gray Summit

The St. Louis Regional Envirothon held a training for high school students at the Shaw Nature Preserve in Gray Summit. Topics included Soils and Land Use, and Aquatic Ecology. Envirothon students are preparing for the competition which will be held in April of 2018, and will include ecosystem stations where students will answer questions in soils, aquatics, forestry, wildlife and a current issue. This year's current issue is *Western Rangeland Management: Balancing Diverse Views*, and is a topic chosen by this year's host state, Idaho. The Natural Resources Conservation Service's State Grazing Lands Specialist, Dee Vanderburg will be writing Missouri's test for the state level of the competition.

Teams earning the top three positions at the St. Louis Regional event will compete in the state event in May. One team from the state event will represent Missouri in Idaho in August.

Top left—Denise Otto, MDC Aquatic Biologist, (back) provided river ecology education for the teams.

Soil Science 101– Soil & the Carbon Cycle

At one time, many years ago, scientists considered the carbon cycle to be a perfect system. Carbon was returned to the atmosphere nearly as quickly as it was removed. However increased consumption of fossil fuels has added carbon to the atmosphere faster than green plants can remove it.

The cycle is taught in middle and high school classes. Carbon is present in the atmosphere as carbon dioxide. Plants use carbon dioxide to make organic compounds such as carbohydrates and fats. Animals cannot synthesize organic compounds this way, so they obtain the necessary building blocks by eating green plants and other animals.

Carbon dioxide is returned to the air as a byproduct of respiration in both plants and animals, and by the process of decay which is the respiratory activity of decomposers. Organic matter that does not completely decompose can become incorporated into the earth's crust.

According to NASA, humans have increased atmospheric CO_2 concentration by more than a third since the Industrial Revolution began. It is considered a major player in climate change, and is one of the four atmospheric gases that block heat from escaping the atmosphere and contribute to the greenhouse effect.

Soils indirectly influence climate change because they play a role in the carbon cycle. Some atmospheric carbon comes from the soil when organic matter is oxidized to CO_2. Living plants reverse the process, removing CO_2 from the atmosphere and fixing it in plant tissue in the process of photosynthesis. Some of that plant material is returned to the soil.

Vigorous plant growth and high levels of organic matter in the soil help to lower CO_2 in the atmosphere. Also conservation practices that stop soil erosion can reduce the soil's release of CO_2.

Loss of organic matter in the soil, and the diminishing of plant life on the surface, greatly reduces the carbon available for plants and increases the odds that the carbon will be released back into the atmosphere.

Carbon sequestration is long-term storage of carbon in oceans, soils, vegetation and geologic formations. While oceans store the most carbon, the soil stores 75% of carbon present on land surfaces, so the soil is a very important part of the carbon cycle.

Soil Organic Matter (SOM) includes decomposing plants and animals, millions of microbes including bacteria, fungi, nematodes, etc., and soil minerals. SOM can remain in the soil indefinitely, or it can be quickly released through certain activities such as tilling, erosion, eruptions, earthquakes.

Managing your soil resource will not only improve the health of your crops and livestock, but will also improve the health of your world. No-till, cover-cropping, and crop rotation will keep the soil in place, improve the vigor of crops, and keep organic matter (carbon) in your soil.

Use Pesticides Wisely for the Health of Your Community

Pesticides in agriculture are valued for the control of insects, plant disease agents, weeds, nematodes and other pests. Insecticides, fungicides and herbicides are all pesticides that, when used carefully and properly, are both safe and effective. These chemicals are designed to be toxic, but are considered "safe" when used according to label directions.

Anyone can purchase and use pesticides, but commercial applicators must first obtain a license from the Department of Agriculture to apply pesticides commercially. Some chemicals that the Environmental Protection Agency have deemed "highly toxic" and that may cause harm to the environment, are classified for *restricted use*. Restricted use items may only be purchased and applied by a certified pesticide applicator.

When using pesticides on your farm, or in your garden, it's important to know the toxicity level of the chemical, and the steps you can take to lower your exposure, and lower the risk to damaging the environment.

Pesticide labels carry certain signal words indicating their relative danger to humans. The most toxic chemicals will have the words "danger" and "poison" on the label, and will feature a skull and cross-bones symbol. Just a taste, or a teaspoon or less, would be enough to kill a person. Moderately toxic pesticides will have the word "warning" on the label; and lower toxicity pesticides will carry the word "caution". It would take an ounce or up to a pint to cause the death of a person from consumption of a lower toxicity pesticide.

It's important to reduce your exposure no matter what level of toxicity is employed in your quest to rid the plot of pests.

Protective clothing is a must. Long pants, a long-sleeved shirt, and good solid shoes are basic. The applicator should also wear a hat, gloves, mask and goggles to protect him/her from spray drift. Coveralls and boots should be added when mixing, loading and applying on large areas. Protective gear should never be made of leather since it can absorb the chemicals.

It is required by law that applicators follow the label instructions. Sometimes there are 12 to 14 different steps involved in the instructions, everything from checking wind speed to using the proper nozzles. Don't skip any steps. There is a reason for each one and it involves protecting you, wildlife and your neighbors.

Farmers with large tracts of land should also be aware of sensitive areas on their farms. For example, a field uphill from a creek might require a pesticide that is less toxic to fish, or has a shorter life span in the environment. Sensitive areas on the farm include streams, wells, and bare ground areas.

The pesticide label will also have instructions for the required waiting period between application and harvest. If the proper dose is applied at the proper time, the risk to consumers is greatly reduced.

Always store your pesticides in their original containers with their proper labels. They should be stored in an area with good ventilation, and with warning signs and first aid and spill cleanup gear nearby. Keep stored pesticides out of direct sunlight, and do not allow them to freeze. Most can be stored for up to 2 years.

Disposing of these chemicals takes great care. The best thing to do is to use them following the label instructions. However, even empty containers will have small amounts of pesticides and must be disposed of properly to avoid environmental contamination. If possible, add a diluting agent to the nearly empty container and pour the mix into the sprayer to spread on the field. Do this twice more before puncturing the empty and rinsed container and throwing it away.

It is extremely important that large landowners and farmers keep good records of pesticide applications. Not only is this required by law, but it will benefit your farm management goals as you look back and see what pests were managed, how and at what time. Records may also protect you by establishing proof if you should ever be involved in a damage suit. Your county Missouri Extension office can help you establish a record keeping format.

Additional suggestions:

- Choose the right pesticide for the right pest. When in doubt, check with your county extension agent.
- Do not use a chemical on a plant or pest that is not listed on the label.
- Do not spray when temperatures are over 85 degrees.
- Do not spray under high winds.
- Spray later in the evening to avoid pollinators.
- Whenever possible, and especially in small home gardens, use alternative methods for pest control.