K-STATE Research and Extension | Meadowlark District

October 1, 2021

Jody G. Holthaus
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Livestock and Natural Resources

Slow Sand Filters for Safe Livestock Water

A project this summer to make pond water safe for livestock was the construction of Slow Sand filters. This technology has been used since the 1890's. It has been used for small municipalities for human drinking water and researched by 18 Universities.

A committee of Extension folks, some retired, worked on the design of the filters.

The filter is made from easily found supplies, making it easy for a farmer/rancher to reproduce. Chemical totes are used with PVC plumbing, with a layer of gravel, geotextile fabric and then at least 18 inches of sand. Water from the pond is pumped using Solar power, backed up by batteries. The pond water enters the filter through the top. A biofilm forms on the top layer of the sand, that filters out the Blue/green algae, ecoli and other toxins. As the filter fills up, water is released through the side valve into a stock tank.

The pump can be put on a timer and a float can be used in the filter to ensure proper water levels. Although, the filters have not been tested extensively, they do show promise of cleaning up the water from questionable farm ponds.

Two slow sand filters have been constructed and are portable, if needed temporarily for an emergency.

This project was funded with a grant from KCARE-Kansas Center for Agricultural Resources and the Environment and the Kansas Center for Sustainable Agriculture and Alternative Crops. Support for the project was given by the Meadowlark Extension District.

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David G. Hallauer
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Crops & Soils/Horticulture

Soybean Cyst Nematode Testing

Harvest is a great time to make an 'on the go' evaluation of a farm's performance as we finish out the crop year. Not only can you see physical differences in the field as you harvest, but see how they correlate on yield monitor software as well.

For soybean growers, harvest is a great opportunity to determine the reason behind lower yielding portions of individual farms. A quick look at fertility and soil maps can eliminate some issues, particularly when it comes to thinner soil types, etc…, and yet some spots may be lower yielding for no apparent reason. That's when it might be time to consider soybean cyst nematode (SCN) pressure.

Soybean cyst nematodes are a microscopic organism capable in high numbers of causing significant yield losses – without visual symptomology. As such, regular sampling is encouraged to help growers monitor SCN numbers. Immediately following harvest is a great time to check for SCN, and it can be done as soil samples are pulled for nutrient analysis as well.

Divide fields in to sections based on cropping history, yield, soil type, or, in fairly uniform fields, smaller sub fields. From each area, collect 10 to 20 cores from a depth of six to eight inches while walking in a systemic pattern across the sample area. Mix cores together and submit one pint of soil in a plastic bag. Samples should be refrigerated until shipping and shipped as quickly as possible via overnight means to a testing lab of your choice.

If you are a Meadowlark Extension District grower interested in free SCN testing available on a **limited** basis through the KSU Plant Disease Diagnostic Lab, contact me at any District Office or e-mail me at dhallaue@ksu.edu . Sample numbers are limited. Inquire soon.

Tall in the Fall? Turf Questions Answered…

Whether it's because we don't want to mow one more time – or we're actually interested in turf grass health – you'll often hear recommendations made about allowing lawns to grow tall prior to the onset of winter. Fact is, it's probably not the best idea.

If turf has been mowed at an appropriate height all summer, there's no need to change now. Extra 'cover' isn't likely to prevent cold injury to crowns, and a canopy left too high during the winter may lay over and mat down, leading to winter-diseases like snow mold. You're much better off implementing other facets of a sound turf grass management program like fertilizing, watering and continued appropriate mowing through the remainder of the fall.

Bottom line: stay within the recommended mowing height range. For tall fescue turf grass species, that's two and a half to three and a half inches. For Kentucky bluegrass lawns, two to three inches in height is appropriate. These heights will encourage carbohydrate storage in the root system going in to fall – and benefit the lawn as green up begins again next spring.

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Cindy Williams
Meadowlark Extension District
Food, Nutrition, Health, and Safety

Safely Preserving Sweet Potatoes and Tomatoes for Fall

With the arrival of fall, many people enjoy canning their produce to enjoy during the colder months and holidays. Two common canned favorites during fall are sweet potatoes and tomatoes. Kansas State University food scientist Karen Blakeslee shares tips and safety precautions for home canning.

She says that food preservation by means of canning is backed by years of science and was much-utilized method in times where food was scarce for fall and winter seasons. However, despite food preservation's time-backed safety, older recipes may not be ideal.

"The science is evolving, so over the years the recommendations to preserve food safely have evolved," said Blakeslee. Who is also coordinator of K-State's Rapid Response Center for food science. "food preservation methods and practices of yester-year may not be safe for today." To ensure food safety, Blakeslee advises only using recipes that are up-to-date. In other words, recipes that are older than 1994 or older are considered outdated as processing times has changed since that date.

While sweet potatoes and tomatoes are vegetables, the two foods differ in their acid content. Sweet potatoes are a low-acid food. Blakeslee said the canning requirements for sweet potatoes include:

- Pressure canning to get the temperature up to 240°F to destroy the dangerous food pathogen, Clostridium botulinum.
- Cut potatoes into chunks or pieces, do not puree or mash. Heat cannot move adequately through the jar of dense mash.

Tomatoes are in between a low-acid and high-acid food, and Blakeslee outlines the different canning requirements:

- Do not can tomatoes that have been on the vine during a frost or freeze. The acidity has changed throughout the temperature change and bacterial pathogens are more likely to have invaded.
- Tomatoes that are overripe may also not be ideal to dan, a s tomatoes acidity decreases as they mature—again, making bacteria more likely to grow. Ensure correct canning temperatures are reached to kill bacteria.
- Tomatoes not subject to a frost or freeze can be safely canned using a pressure canner or water bath canner. With either method, extra acid must be added to ensure safety.

After your produce is canned, there are still a couple safety measures to consider. Store canned food in a cool, dry, dark location and use within one year. Blakeslee recommends using Kansas State University's resources for safe food preservation and trusted canning recipes.

Remember to adjust your processing for your location to account for higher elevations in your area.

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Nancy Nelson
Meadowlark Extension District
Family Life

Exercise and Diabetes

Experts agree that walking is one of the best exercises for people with diabetes. It is relaxing, easy, can be done almost anywhere, and is highly effective at controlling blood glucose levels.

If you have diabetes, there are important things to consider before you start. In addition to general physical activity recommendations, here are specific considerations. Get approval from your healthcare provider for any new exercise program. They can also point out special precautions you should take based on the type of diabetes you have.

Wear the right shoes. Foot health is extra important for anyone with diabetes. It can be hard to detect blisters, abrasion, and skin breaks because foot numbness is a symptom of diabetes. Shoes should fit comfortably, have plenty of room in the toe area, and should not rub at the heel.

Socks are important, too. Avoid cotton socks that bunch up and retain moisture. Choose socks that wick away sweat and prevent blisters.

Be prepared. Wear a diabetes ID bracelet or something to alert others that you have diabetes. Carry glucose pills or an appropriate snack in case your blood sugar drops.

Ask your doctor when you should check blood glucose levels related to exercise (before, during, or after). Be aware that insulin requirements will change with exercise. Do a foot check after each walking session.