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Orange County Agri-News

GET THE DIRT ON ORANGE COUNTY AGRICULTURE

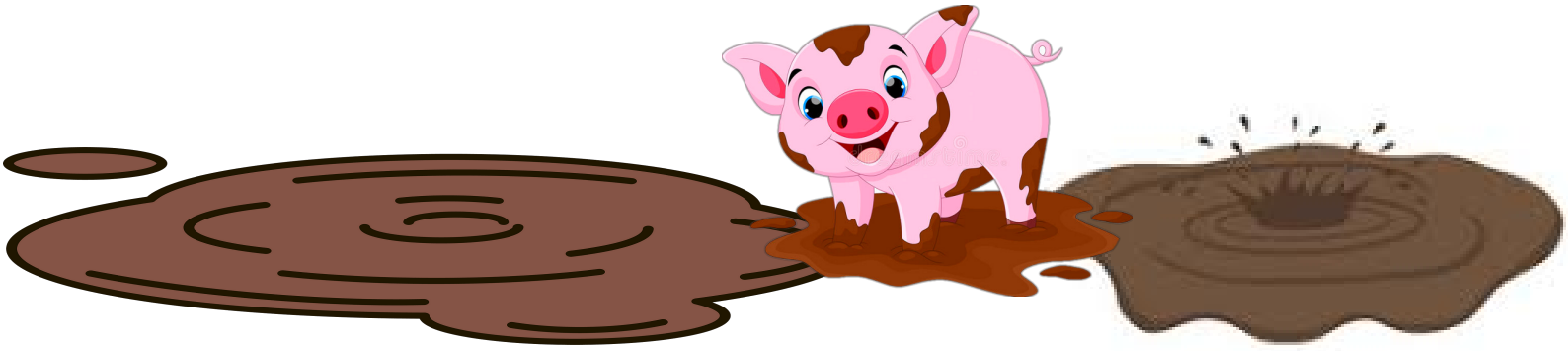
April/May 2022

PURDUE UNIVERSITY | Extension - Orange County

From the Office...

I hope this newsletter finds you well and your sinuses clearer than mine have been through these past 4 or 5 mood swings of the weather. As we come into planting season, please everyone be safe and take your time, the rush to the field can sometimes lead to silly accidents and injuries. In this edition of the newsletter, I've tried to compile some interesting info for you to read as you wait for things to dry out. One of the main things I want you to be aware of is the upcoming trailer safety PARP on April 25th. This one will be interesting and I promise you'll actually use the information you learn. Its a morning program after a wet week so come on out and I'll feed you breakfast.

Keep Growing,
Abby Heidenreich



In the Works

Here are a few of the things going on around Orange County:…..

Harvest of the Month - Every month, Abby teaches a Harvest of the Month lesson either in person or virtually at all the elementary schools in Orange County. You can view the videos she made that go with the lessons on the Purdue Extension - Orange County YouTube Channel!

Text Alerts: Abby has recently set up a system for text alerts to be sent out with seasonal reminders, important information and upcoming events. This is not spam, it's really Abby typing out the info and sending it! The idea is to do short alerts with info rather than long emails or facebook posts that don't get attention. If you'd like to sign up, you can text "EZLIVESTOCK" or "EZCROPTEXT" to (812) 393-2479.

Transition Planning: I'm working on putting together a program for farms that are hoping to pass down operations to next generations. I know of several in Orange County who would benefit from this type of thing so please start thinking about how you're going to approach keeping that farm in your family.

Farmers Market: Abby is planning to have an Extension Office booth at the Orleans Farmers Markets more regularly in the future. The plan is to feature different topics and hopefully have some Master Gardener volunteers there as well to answer gardening questions!

Local Foods Database: With our new website launch, we have a lot more freedom to create webpages for our needs. I would like to put together a listing of all local food options - including contact info for those who sell produce, eggs, freezer beef, meats and other ag products. A landing page that would guide people to local food options that they may not otherwise have known about. If you're interested in this, please let me know.

Check Out Our Website!
www.extension.purdue.edu/orange

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(812)723-7107
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If you can't tell by reading this page, *I want to hear from you!!* Let's have a conversation about Orange County Agriculture. Call me at 812-723-7107 or stop by the Extension Office at 205 E Main Street in Paoli.

Try Out A New Recipe

Taste of Home

Kidney Bean Casserole

★★★★☆

TOTAL TIME: Prep: 20 min. Bake: 20 min.

YIELD: 2 servings.

I don't recall its origin, but I've had this Kidney Bean Casserole recipe for many years. A Triscuit cracker crust makes it unique. —Karen Tjelmeland, Ely, Iowa

Ingredients

- 3/4 cup kidney beans, rinsed and drained
- 1/4 cup chopped onion
- 1/4 cup chopped green chilies, drained
- 1/4 teaspoon ground cumin
- 16 Triscuits or other crackers
- 3/4 cup shredded cheddar cheese
- 1/2 cup 2% milk
- 1/3 cup mayonnaise
- 2 tablespoons beaten egg
- Optional: sour cream and sliced ripe olives

Directions

1. Preheat oven to 350°. In a small bowl, combine the beans, onion, green chilies and cumin. Place eight crackers in an 8x4-in. loaf pan coated with cooking spray. Top with half of the bean mixture; layer with remaining crackers and bean mixture. Sprinkle with cheese.

2. In a small bowl, combine the milk, mayonnaise and egg; pour over cheese. Bake, uncovered, until a thermometer reads 160°, 20-25 minutes. If desired, serve with sour cream and olives.

Consider Forage Sorghum As A Corn Silage Alternative?

By: Keith Johnson

Corn is an excellent silage crop. However, if corn harvested as silage has lost yield potential and forage quality the last several years because of tar spot, maybe an alternative to consider is forage sorghum. Other considerations regarding forage sorghum are better drought tolerance and slightly less nitrogen fertilizer requirement than corn. Forage sorghum yield was slightly higher than corn when harvested as silage at the Feldun-Purdue Agricultural Center located near Bedford, Indiana, last year. One consideration regarding forage sorghum is the possible need to select a hybrid that has sugarcane aphid tolerance. The aphid has been noted at Feldun. A tolerant hybrid kept the sugarcane aphid from being on leaves for two weeks longer than a susceptible hybrid and the insect had no impact on the tolerant hybrid's yield.
The following article was an award winner at the 2022 American Forage and Grassland Conference's National Youth in Forage Essay competition. The conference was recently held at Wichita, Kansas.

Swapping Your Silage

Stephanie Newcomer
Northwood High School Sophomore

Across the Corn Belt of the United States, farmers are battling the newly found disease, tar spot. With no known totally effective preventative, it continues infecting the leaves and stalks of corn, leaving farmers desperate to find ways of saving the yield and quality of their corn, especially those producing corn silage for ruminant consumption. Many fungicides are being used as a preventative but can quickly dissipate, so what about changing the type of forage silage instead.

Tar spot is a fungal pathogen called *Phyllachora maydis*. In 2015, this pathogen was first confirmed in Indiana corn fields but quickly spread to other corn fields in surrounding states. Tar spot severity is determined by the weather. For example, tar spot enjoys temperatures ranging from sixty-three to seventy-two degrees Fahrenheit, with a humidity level at approximately seventy-five percent. In extreme conditions, tar spot can be detrimental to corn. It weakens the stalk quality of the corn which increases the chance of stalks falling, reducing the yield. One important effect of tar spot in corn silage is the increase of nondigestible fiber. This fiber is produced due to insufficient moisture level in the corn. It will not provide energy once consumed since it cannot be properly digested. This suboptimum moisture content can cause loose packing in storage, slow fermentation, and a higher than ideal pH. If there is improper packing or fermentation of corn silage, the likelihood of mold will increase and possibly cause disease to ruminants consuming it. This one fungal pathogen has a domino effect in the production of corn silage, and still affects the forage throughout its use. So, what is a potential replacement?

When comparing the components of corn silage and sorghum silage, one notices the only major difference is the energy content, with sorghum silage providing less energy; however, by adding an energy supplement such as molasses, the energy content can be increased, making sorghum silage a possible replacement. While there are many positive aspects of replacing corn silage with sorghum silage, there are still some concerns; for example, what are negative effects it could have regarding production of ruminants, especially dairy cows. An experiment conducted by M. Khosravi, Y. Rouzbehan, M. Rezaei, and J. Rezaei (10/10/2018), tested the effects of total replacement of corn silage with sorghum silage and displayed no undesirable effects on milk production or lack of nutrients for the cattle. Another concern of sorghum is the production of prussic acid, which occurs after environmental factors cause plant cells to rupture. Any animal consuming it will die within twenty minutes after consumption. While this is a valid concern, prussic acid is no longer a worry after fermentation of sorghum occurs, meaning that it is safe for sorghum silage use.

Since fungicides for tar spot can be unreliable, farmers can continue feeding quality silage by replacing corn silage with sorghum silage. It is a potentially safe alternative that delivers similar nutrients and is not a large concern as tar spot destruction.

Horned Oak Galls Can Make a Mess out of Pin and Related Oaks

By: Cliff Sadof

The horned oak gall making wasp, *Callirhytis cornigera* (Osten Sacken) causes pin and willow oaks to produce large numbers of round, spiked woody galls up to 2 inches in diameter around the stems of pin and willow oak trees. These galls will girdle limbs and can kill the portion of the branch that extends from the gall. Galls can't be removed without cutting twig tissue. On small trees gall makers can significantly alter the shape of trees when they attack the structurally significant branches like the central leader. Heavy infestations can kill oaks in urban plantings.

Female wasps emerge from woody galls in early spring (April) and lay eggs into the swelling leaf buds. Each egg hatches into a larva that produces a small blister gall along the vein on the undersides of leaves. In summer (June) adults fly from leaf galls and lay eggs into twigs. The resulting galls become visible the following spring as small bumpy areas on twigs. Over the summer each twig gall expands and increases in size. Galls continue to grow two years until adults emerge in early spring to lay eggs on to leaf buds. Large groups of individual galls will grow together over this time to create spiked galls along branches. These galls can eventually girdle twigs and kill branches.

Remove young expanding twig galls as soon as they are visible in the spring. Cutting off old, dried galls is not necessary. Applications of insecticides can kill leaf galls, but do not reduce the number of new stem galls produced. Research conducted to date has been promising, but slow going. Use of long-lasting products such as emamectin benzoate injections every two years in May have been shown to reduce the production of stem galls. But with a 33-month life cycle, it takes a long time to start seeing results. Don't expect miracles.

Figure 1. The horned oak gall maker can produce large galls with and without horns. In the older literature these galls were also called gouty oak galls.

Figure 2. Adult gall making wasps emerge from horns or holes in galls in the spring and lay eggs on young expanding oak leaves.

Figure 3. Eggs laid by the wasp produce galls on the midribs of leaves. Adults emerge from these galls in June to lay the eggs on twigs that produce galls and new adult wasps 33 months later.

Figure 4. Small galls on the right side of the photo taken in late July are galls produced from females who laid eggs on twigs in June of the previous year (13 months). Galls of this size will not produce adult wasps. It has been 25 months gall makers laid eggs in these medium size galls. Adults will emerge the following April (33 months) to lay eggs in expanding oak leaves. These 37-month old galls had wasps emerge 4 months earlier in April.

Reader's Digest—

In the U.S., Manure is 'Hot Commodity' Amid Commercial Fertilizer Shortage

By Reuters April 6, 2022

Not only are more U.S. farmers hunting manure supplies for this spring planting season, some cattle feeders that sell waste are sold out through the end of the year, according to industry consultant Allen Kampschnieder.
(File Photo)

For nearly two decades, Abe Sandquist has used every marketing tool he can think of to sell the back end of a cow. Poop, after all, needs to go somewhere. The Midwestern entrepreneur has worked hard to woo farmers on its benefits for their crops.

Now, facing a global shortage of commercial fertilizers made worse by Russia's invasion of Ukraine, more U.S. growers are knocking on his door. Sandquist says they're clamoring to get their hands on something Old MacDonald would swear by: old-fashioned animal manure."I wish we had more to sell," said Sandquist, founder of Natural Fertilizer Services Inc, a nutrient management firm based in the U.S. state of Iowa. "But there's not enough to meet the demand."

Some livestock and dairy farmers, including those who previously paid to have their animals' waste removed, have found a fertile side business selling it to grain growers. Equipment firms that make manure spreading equipment known as "honeywagons" are also benefiting.Not only are more U.S. farmers hunting manure supplies for this spring planting season, some cattle feeders that sell waste are sold out through the end of the year, according to industry consultant Allen Kampschnieder."Manure is absolutely a hot commodity," said Kampschnieder, who works for Nebraska-based Nutrient Advisors. "We've got waiting lists."Sky-high prices for industrial fertilizer are projected to reduce American farmers' corn and wheat plantings this spring, according to U.S. government data. That further threatens global food supplies as domestic wheat inventories are the lowest in 14 years, and the Russia-Ukraine war is disrupting grain shipments from those key suppliers.

While manure can replace some of the nutrient shortfall, it's no panacea, agriculture specialists say. There's not enough supply to swap out all the commercial fertilizer used in the United States. Transporting it is expensive. And prices for animal waste, too, are rising on strong demand.It's also highly regulated by state and federal authorities, in part due to concerns about impacts on water systems.

Manure can cause serious problems if it contaminates nearby streams, lakes and groundwater, said Chris Jones, a research engineer and water quality expert at the University of Iowa.Livestock farmers say it's a heavy lift to meet all the government rules and track how manure is applied.

RACE FOR WASTE

Regardless of the drawbacks, demand is booming.In Wisconsin, three dairy farmers told Reuters they turned down requests to buy their manure sent via text and Twitter messages.North Carolina-based Phinite, which makes manure-drying systems, says it's fielding solicitations from growers as far away as Minnesota, Illinois, Iowa and Indiana.Smithfield Foods, the world's largest pork producer, has noticed the shift at the U.S. hog farms that supply its slaughterhouses.

"We're definitely seeing farmers move toward manure with the increase in fertilizer prices," said Jim Monroe, a spokesperson for the company, which is owned by Hong Kong-listed WH Group Ltd .Industrial fertilizers such as nitrogen require a lot of energy to produce. Prices started to surge last year amid rising demand and lower supply as record natural gas and coal prices triggered output cuts by fertilizer manufacturers. Extreme weather and COVID-19 outbreaks also roiled global supply chains.

War in Ukraine has made the situation worse by reducing fertilizer exports from Russia and its ally Belarus due to Western sanctions and shipping snags. That threatens to shrink harvests around the world at a time of record food inflation. Combined, Russia and Belarus accounted for more than 40% of global exports of potash last year, one of three critical nutrients used to boost crop yields, according to Dutch lender Rabobank.As of March, commercial fertilizer prices reached a record high, with nitrogen fertilizer jumping four-fold since 2020 and phosphate and potash up three-fold, said London-based consultancy CRU Group.One person left bereft is Dale Cramer, who grows corn, soybeans and wheat on about 6,000 acres in Cambridge, Nebraska. Searching for alternatives, he has sniffed around feedlots for manure since last August with no luck."A lot of people have put their names in for the same thing," Cramer said.

HONEYWAGON SCRAMBLE

With demand for manure surging, prices have followed, delivering an unexpected windfall to livestock producers and cattle feedlots.Prices for good-quality solid manure in Nebraska alone have reached $11 to $14 per ton, up from a typical price of $5 to $8 per ton, consultant Kampschnieder said. A dry winter helped drive up prices by leaving manure with less water in it, making it more concentrated, and thus more valuable, he said.Iowa farmer Pat Reisinger is relieved he has dung from the pigs and dairy cows he raises to fertilize the corn, soybeans and hay he grows to feed those animals. He sold a little manure to one neighbor and is getting phone calls from others in need."If I sold any more, I'd have to turn around and buy commercial fertilizer, which makes no sense," Reisinger said.The boom has also has lifted machinery companies that make spreading equipment for solid manure as well as so-called honeywagons: wheeled tanks hitched to trucks and tractors for transporting and applying liquefied waste.

In Canada, Husky Farm Equipment Ltd is sold out of honeywagons. The company built its first contraption back in 1960 as a way to make collecting and spreading manure more efficient, according to President Walter Grose. Today Grose sells directly to farmers and machinery dealerships, and he can't keep up."We have people looking for equipment right away and we're sold out for six months," said Grose who sells honeywagons in several sizes. Bigger tanks come with a $70,000 average price tag.CNH Industrial, the American-Italian farm and construction equipment giant, said it has seen strong demand for its New Holland brand box spreaders - essentially, a steel box that attaches to a tractor to haul and spread solid manure.Kansas equipment dealership KanEquip Inc is sold out of New Holland spreaders, even though prices have jumped 10% from the normal list price of $30,000, said regional manager Bryndon Meinhardt. He said the dealership has ordered 10 more to meet demand.

NO POOP FOR YOU

Even in states where large livestock herds generate massive quantities of manure, there's not enough to replace commercial fertilizer completely. Iowa, the top U.S. producer of pork and corn, already applies all of its manure on land covering about 25% of its corn acres each year, said Dan Andersen, an associate professor at Iowa State University who specializes in manure management.

On average, Iowa uses about 14 billion gallons of manure annually, said Andersen, known as @DrManure on Twitter. He expects Iowa growers may suck out an extra billion gallons this year from storage in tanks on farms to substitute pricey commercial fertilizer.Part of the current supply problem is rooted in the evolution of the U.S. farm economy. As America's livestock sector has consolidated, there are geographical hubs where animals are raised for eggs, milk or meat, and where the most manure is produced. As a result, some places have too little, while others have too much and have wrestled with ways to dispose of it.Last October, Pennsylvania dairyman Brett Reinford thought he might be tight on manure storage space over the winter. So he made an offer to local farmers: You come and haul it away, you can have it for free. He got no takers.Fast forward six months and Reinford is now sitting on liquid gold. "We're keeping it all and I wish we had more," he said.

Manure could become even more precious later this year, as U.S. livestock herds and poultry flocks shrink.The number of hogs in the United States has dropped to its lowest level in about five years, as producers grapple with swine diseases and rising costs for feed and other inputs. Bird flu, meanwhile, has wiped out more than 22 million chickens and turkeys on commercial U.S. farms since February.But even hard-hit poultry farmers could have something to use: Their dead birds can be composted and applied as fertilizer, according to the Iowa Department of Agriculture and Land Stewardship.

(Reporting By P.J. Huffstutter and Tom Polansek in Chicago, and Bianca Flowers in Chicago and New York. Additional reporting by Leah Douglas in Washington, D.C.; Editing by Caroline Stauffer and Marla Dickerson)

Stem Girdling Roots
By John Bonkowski

Determining the cause of dieback and decline symptoms in landscape trees can be very difficult due to the many cultural, environmental, and biological factors that could be involved. The first place you should look for a culprit when dealing with this type of tree problem is the base of the trunk and the roots. Stem girdling roots (SGR) are one of the most common and preventable causes for long-term tree decline.

An SGR is as it sounds: a root that girdles the stem. This is important because it is the tree unintentionally killing itself as it grows, leading to long-term decline. Root and trunk diameter increase as they grow and if they are in contact with each other, they will create a layer of compression that begins to strangle the tree, disrupting the flow of water and nutrients moving from the roots and carbohydrates moving down from the leaves (Figure 1, 2). The rate of root and trunk growth is not exceptionally fast and the effects of the SGR takes time to become apparent, if it is apparent at all. Some trees to not exhibit the typical decline symptoms, but instead they may begin leaning in the landscape or fail and fall over during heavy winds due to the roots completely girdling the trunk, creating acute compression at one point, and leading to structural instability. These types of situations can cause trees to either have a one-side trunk flare, no trunk flare (especially if the SGR is below the soil line), or have a thickened area at the root-trunk interface (Figure 3, 4, 5).

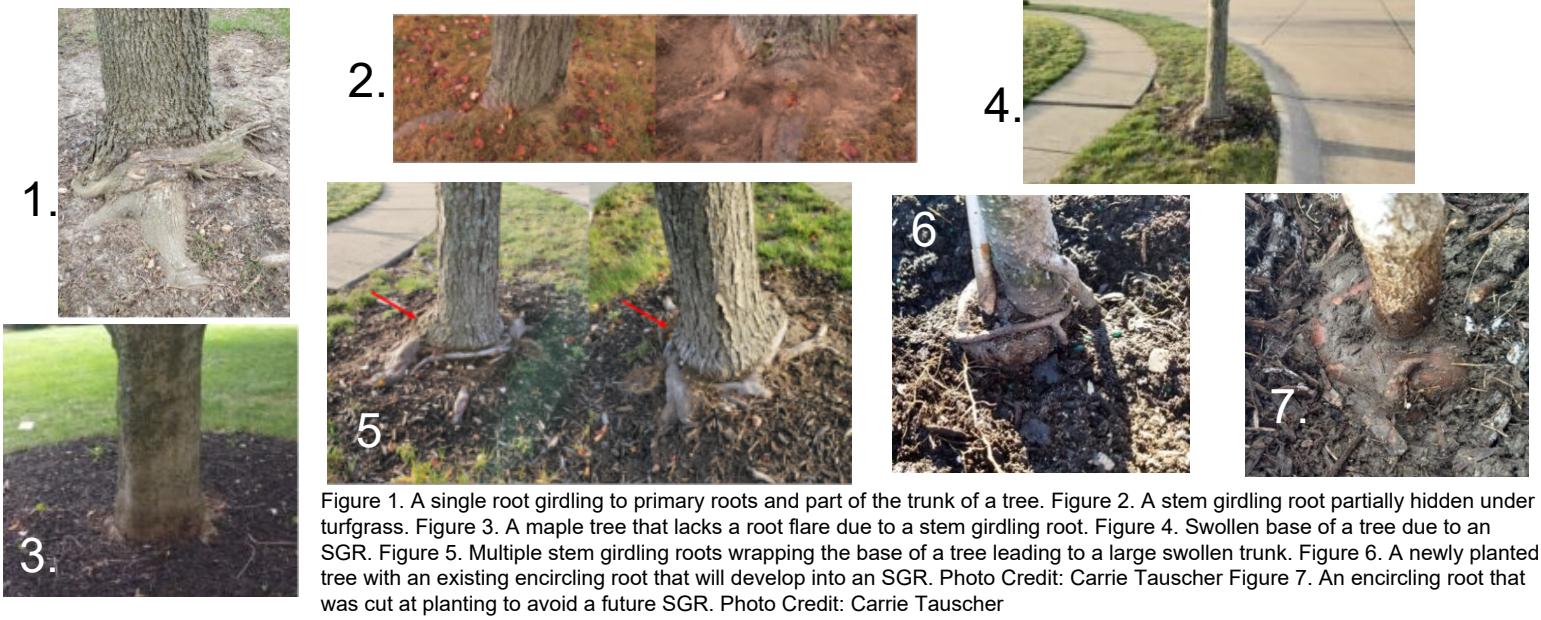


Figure 1. A single root girdling to primary roots and part of the trunk of a tree. Figure 2. A stem girdling root partially hidden under turfgrass. Figure 3. A maple tree that lacks a root flare due to a stem girdling root. Figure 4. Swollen base of a tree due to an SGR. Figure 5. Multiple stem girdling roots wrapping the base of a tree leading to a large swollen trunk. Figure 6. A newly planted tree with an existing encircling root that will develop into an SGR. Photo Credit: Carrie Tauscher Figure 7. An encircling root that was cut at planting to avoid a future SGR. Photo Credit: Carrie Tauscher

SGRs tend to develop due to external factors such as adverse site conditions or improper planting procedure. If the soil is severely compacted or the roots come into contact with an impermeable surface, the roots will grow in a direction in order to get around the impediment. If the roots are unable to grow around the compacted area, it may circle back towards the tree and begin to encircle the tree. These roots may eventually grow into the stem and become SGRs.
How do SGRs develop if your soil is not compacted or the tree isn't planted in an enclosed space with limited area? Planting a bare-root tree into a hole that is too small for the root system can lead to forcing roots into different directions or even circling the planting hole. If a tree is planted at the correct depth, you can cause SGRs to develop by applying too much mulch (i.e. volcano mulch). The tree can be tricked into thinking that the soil line became higher and put out adventitious roots into this "new soil" and potentially become encircling roots, although this is not always the case.

One of the most common problems that lead to SGRs are pot-bound nursery stock (Figure 6, 7). The longer a plant is grown in a container, the greater the chance there will be roots that hit the side-wall of the pot and begin to grow around the outer edge. If the tree was re-potted with some force, the roots can be pushed into different directions that might lead them SGRs as well. Air pruning containers can get around this issue since the roots stop growing as soon as they come into contact with air and are being used with greater frequency in the industry.
Removal of girdling roots, when identified, can remediate the issue if the SGR is not too severe (very large root proportional to age/size of tree OR very deep compression into stem). In many cases the roots that need to be removed are fairly large in diameter still play an important role of providing a conduit for secondary and tertiary roots to move water and nutrients into the body of the tree. If multiple SGRs are present on one tree, it may be necessary to remove the worst affecting root first and allow the other to remain for some time (one or two seasons) to acclimate to the loss of a major root before removing the other root. Where possible, it is a much easier and less damaging task in preventing SGRs from developing. This means ensuring you have good soil conditions (not compacted), adequate space for the planting hole, and screening your trees either prior to purchase or planting for encircling roots and SGRs. Please see the following link for recommendations concerning tree installation.
https://www.extension.purdue.edu/extmedia/FNR/FNR-433-W.pdf

Cattlemen... There's an App for That!

Erika Lyon, Ohio State University Extension, Jefferson & Harrison Counties & Dr. Brian Arnall, Oklahoma State University Extension

The number of apps available to producers has exploded in the last decade, making tasks such as calculating tank mixes, identifying weeds, record keeping and even calculating gestation/calving dates so much easier. Initially, iOS held a majority of the apps, but today, Android also has about an equal share of the app market. Here are some considerations when selecting apps that will work best for your livestock operation.

Apps can function anywhere from basic calculators (gestation times, tank mixing, prices and profitability, etc.) to identification and educational tools to recordkeeping tools. Be careful of apps that primarily serve as ads. Watch out for the online app reviews as well – check to see if the app company is a client of the company writing the article. You will have specific needs and interests. Have a checklist or shopping list with the features that you need – if any of those features are not included, trash it!

Be aware of your search terms – searching for wheat apps for example may pull up information on how to live a gluten-free lifestyle. For livestock, there are a lot of game apps out there – while fun to play, they likely will not help you with your operation. It's common sense but searches can be frustrating – think about what the most descriptive search terms might be. For example, use 'pasture plant ID' instead of 'weeds' when searching for weed identification apps.

Keep in mind that any app you use should be intuitive. For a vast majority of apps, use the three-minute rule – if you can't figure out what it offers and what it does within three minutes of opening the app, trash it. For GIS/ mapping apps, give five minutes as those are usually data-heavy and do tend to take longer to navigate. If it is taking you an hour to figure out how to use the basics of an app, it likely won't be of use to you.Customer reviews can be helpful in some situations – for example, if you find an app with customer comments that are being addressed, that usually indicates that the company is listening and fixing bugs or improving functionality of that app. An app that has a large proportion of negative reviews posted since the latest update will likely have significant bugs that need to be addressed.

Is it worth it to pay for an app? It depends. Some apps that charge are expensive, so make sure it has the features that you are looking for. An app that is pay-to-play should include what you need and do what it does well. Pay structures tend to vary from app to app. Some include a one-time payment, others are subscription-based. Some offer free versions with versions that come with additional features for a fee (including removal of ads). Others may charge per head. Look up the website of the company providing the app and do some research before making a purchase. Take advantage of free trials – many companies offer them. if you don't see a trial period offered, it can be worthwhile to contact the company to see if there is a way to test the app before making the purchase.

Always check the update history. Initially, there were a lot of apps on the market, especially by land-grants, but many have since been upended by updates in both iOS and Android systems. Apps that you pay for should have regular updates. And make sure you have enough space and memory on your phone to handle the app – otherwise you may experience frequent crashes. GIS-based apps for example tend to have higher memory usage and storage requirements than other app categories.

Ask 'Who owns the data?' Data collected in apps can be stored directly on your device, in the company's cloud, on a mainframe, or on all three. Read through service agreements. Most companies don't want the hassle and will separate themselves from the data. Some will use data for marketing research and to better sell you something. A service agreement should state whether data will be shared or sold.Don't use apps as a crux! Know the general math behind calculators and double check plant identifications with a good field guide. Plant photo identification apps have come a long way in the last decade and will usually narrow the search to get you into the correct genus, but identifications by this method are not always 100% accurate.

Lastly, many websites that don't take up space on your phone can be bookmarked to your home screen, functioning similar to downloadable apps. Universities often have a lot of great information in online databases that can be accessed quickly this way.For a list of apps relevant to livestock producers, check out https://go.osu.edu/beefcattleapps. Keep in mind this may not be a complete list of apps currently available as new ones emerge on the market frequently. We are not recommending any particular app – remember, everyone has a different situation, and making a checklist for your needs will ultimately dictate which app will work best for you.

Sidewall Compaction: Why is it important and how to avoid it at planting?

Dan Quinn, Ph.D., Assistant Professor of Agronomy,Extension Corn Specialist, Purdue University
Email: djquinn@purdue.edu Twitter: @PurdueCorn

As planting dates continue to get pushed earlier and spring weather conditions become more variable, the chance that corn is planted into less than ideal soil conditions increases. Sidewall compaction can occur when planting is performed under soil conditions that are too wet.

Why is Sidewall Compaction Important?
Sidewall compaction refers to soil compaction and soil smearing in and around the seed furrow which can result in restricted root growth, poor emergence, and lost yield potential. Once sidewall compaction occurs at planting, it cannot be cured. Sidewall compaction can haunt you throughout the entire growing season by limiting emergence, root growth, nutrient uptake, yield, and increasing the chance for lodging prior to harvest. Therefore, taking the necessary steps to prevent sidewall compaction during planting is important.

What Causes Sidewall Compaction?
Wet soils are easily compacted and planting corn into these conditions is the biggest contributor to sidewall compaction. Planter seed furrow openers can smear and compact the sides of a seed furrow when planting occurs too wet, especially if too much down pressure has been applied. When this occurs, the soil in the seed furrow does not properly break and fall around the seed for adequate seed-to-soil contact, and root growth becomes restricted. Sidewall compaction can also occur when corn is planted too shallow. When corn is planted too shallow and soils are too wet, compaction can also occur below the seed, thus making it difficult for corn roots to penetrate the soil.

How to Identify Sidewall Compaction?
In addition to early season scouting for disease, pests, and nutrient deficiencies, it is also important to scout fields for potential compaction issues. Sidewall compaction can result in non-uniform emergence, stunted plant growth, and nutrient deficiency symptoms despite adequate soil nutrient levels due to poor root growth. Proper diagnosis of sidewall compaction can be performed by digging corn plants in problem areas and examining the roots. A healthy corn root system should have adequate and uniform vertical and horizontal root growth all around. However, if the majority of the corn roots exhibit only vertical growth and poor horizontal growth, as indicated by Image 1, this can be an indicator that roots could not penetrate the sides of the seed furrow due to compaction. In addition, it is also important to examine the seed furrow following planting and look for smooth or shiny surfaces within the furrow which can indicate that smearing and compaction occurred. Furthermore, areas within the field with open seed furrows and poor seed-to-soil contact can also be indicators of sidewall compaction.

How to Prevent Sidewall Compaction?
Preventing sidewall compaction starts with planting into optimal soil moisture conditions and maybe waiting an extra day or two for the soil to dry further. However, this may be easier said than done when spring planting is delayed. Other considerations for preventing sidewall compaction include: adjusting downforce pressure on row-units to specific soil conditions, reduce closing wheel downforce, avoiding shallow planting and target a 2-inch seeding depth, and utilizing a spiked closing wheel to till in the sidewall and improve seed-to-soil contact.

A) Cross-view of corn roots looking across the row and B) cross-view of corn roots looking with the row. Roots are exhibiting poor and non-uniform growth due to sidewall compaction at planting.

Upcoming Events

April 16 - IBEP Bull Sale SEE FLYER
April 20 - Weed Wrangle SEE FLYER
April 25 - Cargo Safety PARP SEE FLYER
April 28 - Master Gardeners Meeting
May 3 - Cattlemen Board Meeting
May 5 - Barnyard Carnival
May 14 - Master Gardeners Plant Sale SEE FLYER

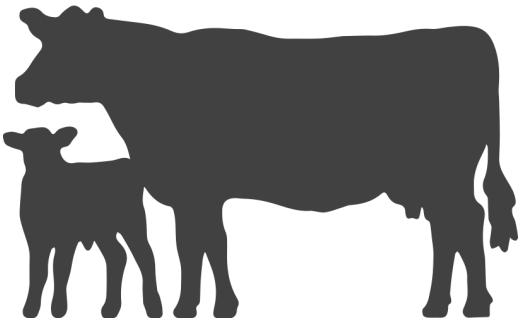
Master Gardener News

Upcoming Meetings:

April 28—6:30 PM at Paoli Library
May 26th - 6:30PM at Paoli Library

Cattlemen News Upcoming Meetings:

Board of Directors meet on the first Tuesday of each month at 7 PM at the Orange County Complex



Events & Flyers

Flyers and Info

2022 Orange County 4-H Fair

Saturday, May14th

- 6pm— Fair Queen & Junior Miss Contest, Little Miss & Mister, Mini Miss & Mister–Paoli High School Auditorium

Friday, June 17th & Saturday June 18th

- Rodeo

Saturday, June 18th

- 9am-Noon— 4-H Non-Perishable Project Check In, CC
- 1pm-3pm— 4-H Perishable Project Check In, CC

Monday, June 20th & Tuesday June 21st

- 6pm-8pm— Open Class Exhibits Entry, CC

Friday, June 24th

Animal Check-In

- 4-8pm— 4-H Poultry Check-In, DRURY
- 5-9pm— 4-H Rabbit Check-In, DRURY
- 6-9pm— 4-H Goats Weigh-In, BR
- 6-9pm— 4-H Sheep Weigh-In, BR
- 6-9pm—4-H Swine Weigh-In, BR

Saturday, June 25th

- 6am-9am— 4-H Swine Check-In/Weigh-In, BR
- 9am— 4-H Horse & Pony Show, OA
- 10am-12pm — 4-H Beef Weigh-In, BR
- 12-1pm—Dairy Weigh-In, BR
- 1pm— 4-H Poultry Show, DRURY
- 5-9pm— 4-H Exhibits Open, CC
- 5-9pm— Commercial Exhibits Open, 4-HB
- 5-10pm—Carnival
- 6pm— 4-H Rabbit Show, DRURY

Sunday, June 26th

- 8:30am— Cowboy Church, BA
- 9:30am—Breeding Gilts & OC BR Swine Show, BA
- 2pm— Goat Show, BA
- 2pm— Open Quilt Show, CC
- 5-9pm— 4-H Exhibits Open, CC
- 5-9pm— Commercial Exhibits Open, 4-HB
- 5-10pm— Carnival

KEY

4-HB = 4-H Building/Block Building
BA = Barn Arena
BR = Breezeway
CC = Community Center
DRURY = Billy Drury Pavilion
MID = Area between 4-HB and DRURY
TRK= Track
OA= Outdoor Arena
Red = Livestock Show

Monday, June 27th

- 8am— 4-H Livestock Auction Pictures, BR & BA
- 1pm— Kids Activity, BA
- 2pm— 4-H Public Speaking Contest, CC
- 4pm— Swine Showmanship
- 5pm— Market Swine, BA

*All swine going home MUST leave the fairgrounds following the conclusion of the Swine Show

- 5-9pm— 4-H Exhibits Open, CC
- 5-9pm— Commercial Exhibits Open, 4-HB
- 5-10pm-Carnival

Tuesday, June 28th

- 10am— Dog Obedience, Showmanship, Conformation, DRURY
- 1pm— Kids Activity, Shelter Area
- 5-9pm— 4-H Exhibits Open, CC
- 5-9pm— Commercial Exhibits Open, 4-HB
- 5-10pm— Carnival
- 5pm— 4-H Dairy Show, BA
- 6pm— 4-H Horse & Pony Gaming Show, OA
- 7pm— 4-H Beef Show & Showmanship, BA

Wednesday, June 29th

- 9:30am— Small Animal
- 10am—Dog Agility
- 11am– Cat Show
- 12pm— Free Pizza for 4-Hers, Shelter Area
- 5-9pm— 4-H Exhibits Open, CC
- 5-9pm— Commercial Exhibits Open, 4-HB
- 6pm— 4-H Sheep Show, BA

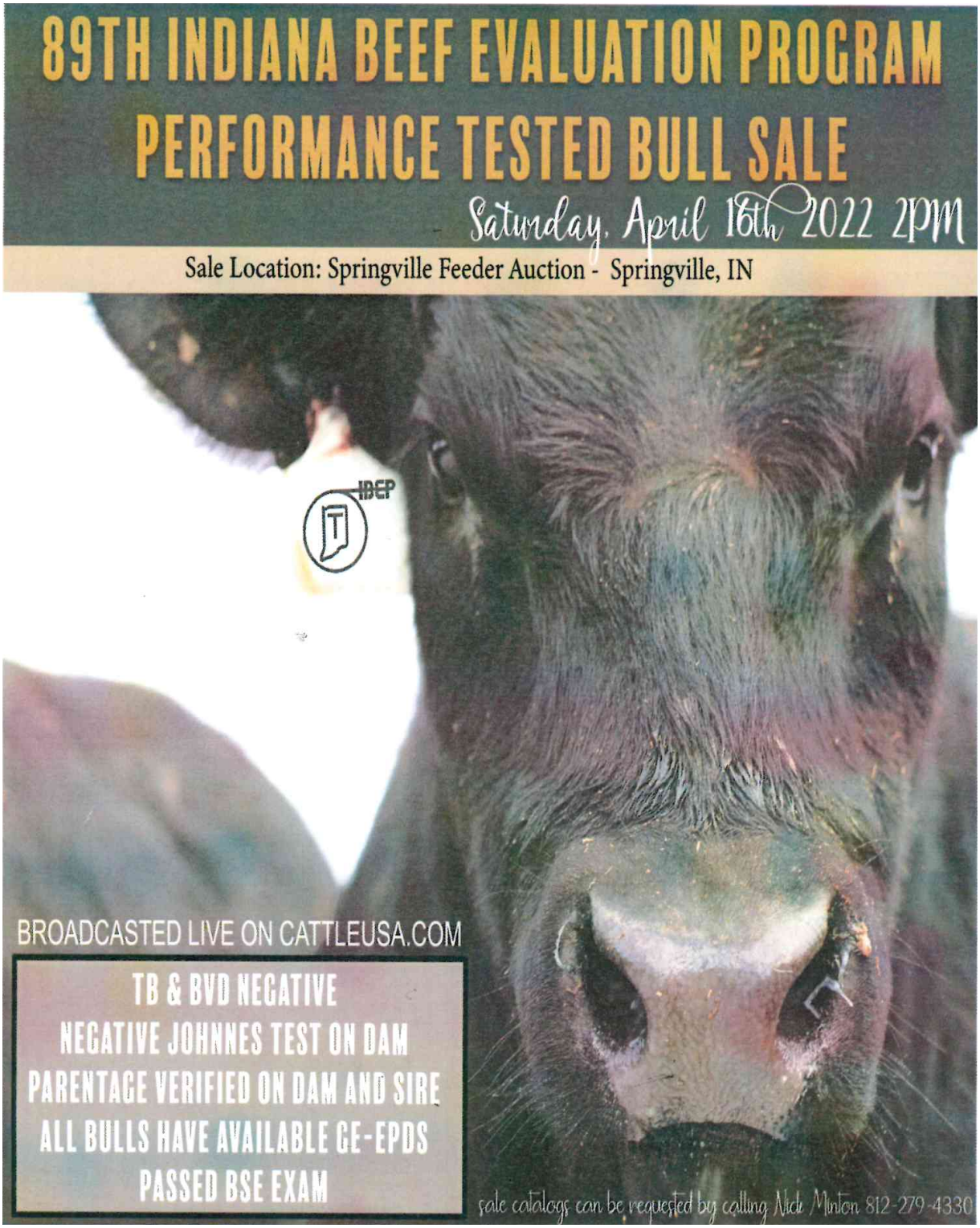
Thursday, June 30th

- 10am— Mud Volleyball
- 5-9pm— 4-H Exhibits Open, CC
- 5-9pm— Commercial Exhibits Open, 4-HB
- 5pm— Tractor Pedal Pull– Kids, TRK
- 5pm— 4-H County Born & Raised Beef Show, BA
- 6pm— 4-H Egg Judging, DRURY
- 7pm—Master Showmanship, BA
- 9-10pm— Release All Non-Auction Animals

Friday, July 1st

- 8am-12pm— Commercial Exhibits Released, 4-HB
- 9-11am— 4-H Non-Animal Projects & Open Class Exhibits Released, CC
- 10am—Ten Year & Senior 4-H Member Recognition, BA
- 10:30am— 4-H Livestock Auction, BA

Flyers and Info



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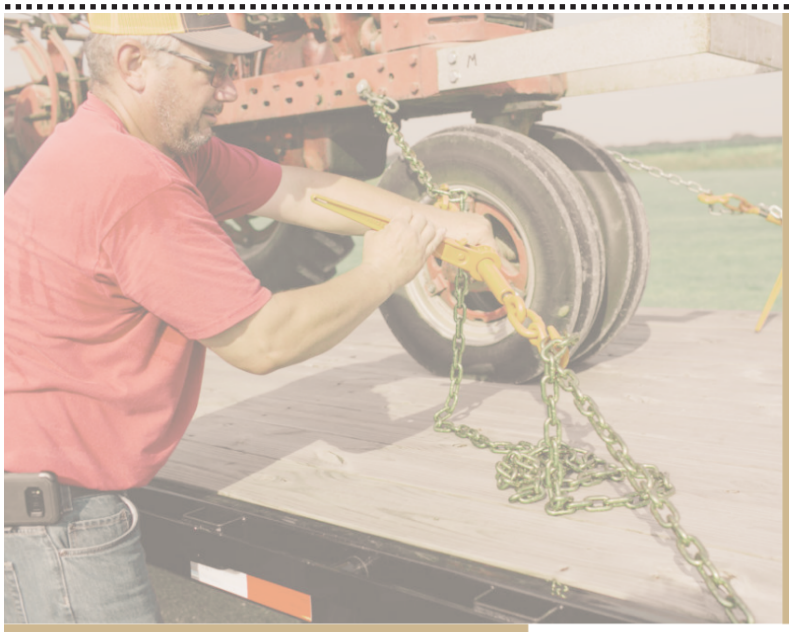

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Cargo Safety PARP

APRIL 25TH
9AM

ORANGE COUNTY COMMUNITY CENTER

BREAKFAST PROVIDED

Get the latest information about cargo safety from the experts. Learn about Working Load Limits, DOT Requirements and more! PARP Credits Available.

FEATURED SPEAKER:

Fred Whitford
Purdue University

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April/May 2022

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