**Noble County Oklahoma Cooperative Extension Service**
**Chad Webb**
Extension Educator Ag/4-H/CED
**Kylie Sherrill**
Extension Educator 4-H Youth Development
**Vacant**
Extension Educator 4-H/Family & Consumer Sciences
**Barbara Ebersole**
Extension Administrative Support Specialist

**Extension appointments are encouraged and preferred. We recommend wearing facemask and practicing social/physical distancing, as we meet the needs of Noble County and OCES. Thank you for understanding.**

NOBLE COUNTY EXTENSION



Chad Webb
Noble Co. OSU Extension
300 Courthouse Dr., #13
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580-336-4621

Chad Webb

## PRIVATE APPLICATOR CERTIFICATION UPDATE

**Private Applicator exams postmarked before or on June 1, 2021 ODAFF will accept, grade and processed. Those postmarked after June 1, 2021 will be refused.**

**We will stop selling Private Applicator (PA) Packets with exams on May 21, 2021. After that date, all PA packets will no longer contain the exam, answer sheet, envelope or license application form.**

**All Private Applicator exams will go through www.PSIExams.com. For specific questions, contact the Oklahoma Direct line at 1-855-579-4643. Feel Free to contact Chad Webb in the Noble Co. OSU Extension Office at 580-336-4621 or by email at chad.webb@okstate.edu.**



# Agriculture News and Update APRIL 2021

NOBLE COUNTY EXTENSION

## Time to Look for lice in Cattle

Earl H. Ward, NE Area Livestock Specialist

I spent much of my Sunday afternoon repairing my electric high-tensile fence because of my finishing steers' lice problem. Granted I could have saved myself the trouble by keeping the fence charger on, but they had not bothered it until recently. These steers cause me more headaches than Dennis the Menace did to Mr. Wilson, but they can't help but find something nice to scratch on. I am sure I am not the only one finding patches of hair rolled up on the fence this time of year.

There are two types of lice in cattle, a biting lice and sucking lice. The biting louse are actually feeding on the organic matter on the surface of the skin and not actually biting the animal. This feeding causes irritation and results in the animal needing to scratch and rub. Once the animal begins to rub and we see the missing hair, that is when we know we have a problem. Sucking lice are feeding directly on the animals and takes a blood meal from host animal with their piercing mouthparts. Cattle infected with sucking lice will have a "greasy" look to them.

Lice in cattle can be controlled with sprays and a high nutritional diet. Not all pour-on insecticides will control lice so be sure to read the label of your pour-on carefully. Since the lice eggs are not affected by insecticides, it is required to apply a second treatment within two to three weeks to eliminate the emerging nymphs. Because lice spread so quickly from animal to animal, if one animal needs treatment then all animals in the herd should be checked for lice.

If you begin finding balls of hair on your fences, patches of hair missing on the animal's neck, or see a greasy appearance to your cattle then now is the time to treat the animals. Eventually you will see a decrease in lice population during the summer because they cannot survive the hot summer temperatures, but for now the irritation and blood loss could be significant to your animal's performance. Prevention and treatment are cheaper than fixing fences and less frustrating!

For more information see your OSU Extension county educator or visit www.livestockbugs.okstate.edu.

**Dicamba Meetings – Required annually for all certified applicators (commercial and private applicators) applying Xtendimax, Engenia or FeXapan.**

*Attendees will receive their Dicamba certification along with 1 CEU for Private Applicators.*

Lunch sponsored by Helena Chemical, Blackwell, OK for both Noble Co. meetings.

**Noble County OSU Extension – Virtual (Zoom) meetings**
**REQUIRED: FACE MASK, SOCIAL/PHYSICAL DISTANCE.**
**LIMITED SEATING is AVAILABLE, call to reserve seating.**
*RESERVATION DEADLINE: April 6
*April 8, 2021,11:00 am to 12:30 pm Noble County Fairgrounds Concession Area
**RESERVATION DEADLINE: April 6
**April 15, 2021,11:00 am to 12:30 pm Noble County Fairgrounds Concession Area

**Kay County OSU Extension**
Blackwell Event Center, Blackwell Fairgrounds, Blackwell OK
**REQUIRED: FACE MASK, SOCIAL/PHYSICAL DISTANCE and RESERVATION** (by Thursday, April 1 to 580-362-3194 or by email to shannon.mallory@okstate.edu)
Lunch served at 11:30 am with program at 12:00 pm.

**Grant County OSU Extension - Virtual (Zoom) meeting**
April 15, 202111:00 am to 12:30 pm Grant County Expo Center, 412 S. 6th St., Pond Creek OK
RESERVATION DEADLINE: April 12, 2021at 580-395-2134 or by email to sarah.donahue@okstate.edu
Contact Grant County OSU Extension for details and requirements.

## Purchasing Spring Chicks

Barry Whitworth, DVM Area Food/Animal quality and Health Specialist for Eastern Oklahoma

Raising chickens in the backyard has become very popular in Oklahoma. Some people desire a better understanding of how their food is produced. Others like the rewarding experience of going out in the backyard and gathering eggs. For children and young people, poultry make a good 4H or FFA project. However, many backyard producers may not be aware of diseases that might threaten their chickens as well as their own health. As the time to purchase new chicks approaches, backyard poultry enthusiasts need to keep these thoughts in mind when buying chicks.

In a review of the common causes of death in backyard poultry in the United States, Dr. Cadmus and associates found that 41% of all dead birds submitted for necropsy were diagnosed with some form of cancer. Marek's disease was the most common cause of the cancers. Bacterial infections were the next most common cause of death. *Escherichia coli* was the bacterium found most often followed by *Mycoplasma* species. Viral organisms such infectious bronchitis virus, infectious laryngotracheitis virus, and avian pox virus were the most common viruses responsible for death in some birds. Parasites only accounted for a small number of deaths (2.6%), but they were a common secondary finding. The most common parasite to cause death was coccidia and was most often found in birds less than 4 months of age.

One-way producers can avoid diseases in their flocks is to purchase birds from a National Poultry Improvement Plan (NPIP) certified hatchery. The NPIP was initially started in the 1930s to eliminate *Salmonella pullorum* from chicks which was highly fatal. Today, NPIP hatcheries monitor and test for a variety of diseases. Purchasing chicks from a NPIP flock will not prevent every disease but it should provide confidence that the chicks are coming from a healthy flock.

In addition to purchasing chicks from a NPIP flock, chicks should be vaccinated for certain diseases early in life. As mentioned earlier, Marek's disease is one of the leading causes of death in backyard chickens. The disease can be easily prevented by vaccinating the chicks on day 1 or in ovum prior to hatching. Most hatcheries will provide this service for a small fee. Consult with a poultry specialist and/or a veterinarian for other diseases that can be prevented with vaccinations.

Although parasites in Dr. Cadmus review did not account for a high number of deaths, routine monitoring of parasites is a good habit. Coccidia, which was the most common parasite found to cause fatalities, damages the intestine which results in digestive problems. To combat this parasite, chicks should be placed on a coccidiostat which is usually administered in the water or feed. There are a few different coccidiostats available, so consult with a poultry specialist and/or veterinarian for the best option.

Of all disease prevention options available to backyard poultry producers, biosecurity is the best. Biosecurity is a series of management practices designed to prevent the introduction and spread of disease agents on a poultry operation. Backyard poultry producers can find information on biosecurity at http://healthybirds.aphis.usda.gov. Also, Oklahoma State University Cooperative Extension has an excellent fact sheet *Small Flock Biosecurity for Prevention of Avian Influenza* ANSI-8301 which can be obtained at the local OSU County Extension office or at https://extension.okstate.edu/fact-sheets/small-flock-biosecurity-for-prevention-of-avian-influenza.html.

Lastly, backyard poultry producers may not be aware of the dangers that poultry can have on human health. Since birds usually do not show any clinical signs of being ill, they shed organisms in their feces and other bodily fluids without producers realizing they are endangered. Several of these pathogens that infect poultry can also infect humans. Every year the Center for Disease Control and Prevention (CDC) investigates *Salmonella* infections in humans associated with backyard poultry. In 2020 there were 1,722 cases of *Salmonella* infections in people in 50 states. Three hundred thirty-three people were hospitalized with the disease. One person died from the bacterium. Twenty-four percent of the cases were in children under 5 years of age. In interviews, 66% of the sick people reported contact with chicks or ducklings. Oklahoma reported 15 cases of Salmonella infections and the lone death occurred in Oklahoma. It should be kept in mind that the CDC believes that for every 1 *Salmonella* case reported many cases go unreported.

The best way people can protect themselves from developing infections associated with backyard poultry is to practice good hand hygiene. Producers should wash their hands before and after having contact with

their birds. Children under 5 years of age need to be supervised when around poultry. This group needs to especially practice good hand hygiene.

Raising backyard chickens can be very rewarding. However, it can be very disheartening to have an illness such as Marek's disease or coccidiosis wiped out a flock. These diseases and others can be prevented by purchasing poultry from a NPIP flock, vaccinating for certain diseases, monitoring the health of birds routinely, and following a biosecurity protocol. Producers should not forget to protect themselves by practicing good hand hygiene. For more information about backyard poultry, producers should consult with their veterinarian or Oklahoma State University Cooperative Extension Ag Educator.

**References**

Cadmus KJ, Mete A, Harris M, Anderson D, Davison S, Sato Y, Helm J, Boger L, Odani J, Ficken MD, Pabilonia KL. Causes of mortality in backyard poultry in eight states in the United States. J Vet Diagn Invest. 2019 May;31(3):318-326.

Centers for Disease Control and Prevention. (2020). Outbreaks of Salmonella Infections Linked to Backyard Poultry. Atlanta, GA: US Department of Health and Human Services. Retrieved from: https://www.cdc.gov/salmonella/backyardpoultry-05-20/

## A Comprehensive Look at Grass Tetany

Brian C. Pugh, Dave Sparks, DVM and Earl H. Ward

The abundant production of lush, green spring forage is a sight that can make any producer smile. It signals the end of a long winter and the accompanying supplementation program. However, for those producers not prepared these "lush" pastures will be high in moisture and have diluted mineral contents, potentially leading to "grass staggers" also known as grass tetany.

### Soil and Forage Magnesium

It has long been noted that lush spring grasses have lower than desired levels of both Calcium (Ca) and Magnesium (Mg). These reduced levels in the forage are caused by either soil conditions or nutrient relationships within the plant itself. Although mostly associated with spring grasses, this condition can occur in fall and winter as well. Common grasses of caution are wheat, rye, oats, triticale, annual ryegrass, fescue, and even bromes (cheat). To fully understand the risks of grass tetany in our forages, we should first understand the conditions that cause Mg deficiency within the plant.

Low soil test Mg levels are of greatest concern and can directly restrict the growing forages Mg uptake from the soil. If this low Mg soil is also low in pH, applications of dolomite or dolomitic limestone (compounds of $MgCO_3$) can help alleviate the problem by both increasing pH and adding available Mg. Fairbourn and Batchelder (1980) found that direct applications of Mg fertilizer did not increase forage Mg in spring pastures. Therefore, one might conclude that raising pH of the soil is a more consistent way to reduce tetany potential when compared to direct Mg applications. If dolomitic lime is available in your area, it definitely would be a better option compared to common aglime when soil Mg levels are low.

To further compound the problem, when soil test also indicate an increased level of potassium (K), or worse when coupled with nitrogen (N) applications, even sufficient Mg soil levels may not be "useable" by the plant. This can be described by a ratio of K: (Ca + Mg), where K dictates the availability and uptake of the other two nutrients. One study found that as soil test K increased, Mg and Ca tissue concentration decreased accordingly (Peters et al., 2002). Therefore, anytime that K in the soil is high or manually applied on tetany prone pastures, Mg supplementation becomes the better option (see below). This same study also found that by increasing pH to an optimum level with lime, plant uptake of Mg and Ca increased while tissue K concentration remained the same.

Many have also noted that applications of manure or broiler litter seem to increase the incidence of tetany in early spring forages (McClain and Blevins, 2009). This is due to the application of both N and K from those manure sources, but is also apparent where applications of a complete commercial fertilizer such as 19-19-19 are used. The N stimulates a fast, nutrient diluting growth of the plant while the high K levels further inhibit Mg uptake. The take home message is to get a soil test and maintain pH in the optimum range, especially under high K or N fertility.

**Top Ten Grass Tetany Risk Indicators**

1. Cool-season grass species
2. Cool & cloudy followed by warmth
3. Grass less than 6"
4. Waterlogged soils
5. Low Mg Soil levels
6. N fertilization + high K levels
7. Low pH
8. Older cows (wet or dry)
9. Lactating Cows
10. No supplemental Mg available!

Other factors that have been proven to decrease Mg in forages are: cool spring weather followed by a warming trend, waterlogged soils and even low soil phosphorus levels. Many soils throughout eastern Oklahoma fit into these criteria in the early spring months when these cool season forages are at their fastest growth. Therefore, it is in the producers' best interest to use soil testing and an understanding of their forage base to effectively manage for low Mg forages.

### Physiology, Symptomology & Treatment

It is thought that grass tetany (hypomagnesaemia tetany) is caused by a deficiency of Mg in the blood; however not all animals with low Mg levels will develop grass tetany. Although all cattle are susceptible, not all are at equal risk. Older cows are at greater risk than young cows and weaned calves or yearlings are at even less risk. This difference between age groups is due to the reduced ability of older cows to pull magnesium from their bones. Cows nursing young calves, under four months of age, are at higher risk than cows nursing older calves or dry cows. Therefore, a conscience effort should be made to closely monitor those classes of animals that are at higher risk. The early signs of grass tetany are excitement and uncoordinated gait, or staggers. This stage is soon followed by convulsion, coma, and death. Cattle are commonly found dead with no illness being observed. When death is caused by grass tetany, however, there will be signs of thrashing near the dead animal.

If affected cattle are found and treatment started early in the course of the disease, injections of sterile magnesium sulfate administered subcutaneously may be beneficial. It is important to handle the cattle calmly and quietly because excitement caused by driving or roping can result in sudden death. In more advanced stages your veterinarian may choose to administer drugs to calm the cow and then administer a solution of calcium and magnesium intravenously. This treatment should only be given by trained persons

because if it is not administered correctly it may suddenly induce cardiac arrest. If animals recover from the acute phase they should be removed from the pasture and only fed hay and/or grain. Recovered animals have an increased chance of suffering the condition again later in the grazing period or in following years. It is a good idea to consider culling recovered animals when they have weaned their calf.

**Prevention Is the Key**

Prevention of grass tetany starts with forage grazing management. By simply deferring grazing until the forage becomes more mature, incidence of tetany will decrease. This is due to the fact that forages allowed to reach a 6 inch growth stage will have higher Mg levels than very immature forages. The incorporation of legumes into these cool season grasses is also a good option, since legumes are typically much higher than grass in both Mg and Ca. Finally, grazing the less susceptible members of the herd (heifers, dry cows and stockers) first will reduce the incidence of tetany on high risk pastures. Since legume establishment takes prior planning and proper soil fertility, and sometimes the entire cowherd has to be turned onto lush pastures, supplementation of Mg might be a better option for many operations.

Supplementation of magnesium oxide (MgO) is a great way to supply additional Mg. Mixing MgO with salt and feeding it ad libitum will increase the palatability of the MgO and increase the sodium level in the blood. It is recommended to be mixed at 75% salt and 25% MgO. There are several commercial minerals available that are "High Mag" minerals. These minerals are formulated to provide a given amount of Mg through an estimated amount of intake. The ability to modify the intake of Mg using these minerals are limited and there is a chance some animals are not consuming enough mineral to supply adequate amounts of Mg. Supplying Mg through the water supply may provide another avenue to administer Mg to your animals. MgO is insoluble in water and cannot be used for that purpose. Magnesium acetate, magnesium chloride, and magnesium sulfate (Epsom salts) are soluble and can be used in the water supply. Beef cattle do not have a problem with Mg toxicity. The maximum tolerable levels of Mg are estimated at 0.4% of dry matter intake. Higher limits can be fed but extremely high levels (>1%) can lower feed intake, weight gain, and cause scours.

In summary, grass tetany is a serious problem that affects many cattle producers across the state every year. Frequent soil testing and monitoring of pH, proper grazing management strategy and supplementing magnesium to the herd are all proven practices to reduce your risks of grass tetany. Following these guidelines will allow the use of a highly productive and nutritious cool season grass stand. Producers will find the benefits of these forages outweigh the risk and are easily realized through the reduction in wintering costs of the cowherd.

**References**


Fairbourn, M.L., and A.R. Batchelder. 1980. Factors influencing magnesium in high plains forage. J. Range Manage. 33: 435-438.

McClain, W. E., II, and D.G. Blevins. 2009. Poultry litter application caused low leaf calcium and magnesium, increasing the grass tetany potential of stockpiled tall fescue. Online. Forage and Grazinglands doi:10.1094/FG-2009-1022-01-RS.

Peters, J.B., K.A. Kelling, P.E. Speth, S.M. Offer. 2002. Forage cations as affected by soil pH and topdressed K. Madison, WI S04-peters141738-Poster. ASA.


## WEED ID

This tree is a relatively new invasive species in Oklahoma. It is often seen in fencerows and overgrown fields surrounding city suburbs of all sizes. It is often identifiable at this time of year by the profuse white

flowering and its' oval shape. This tree has oval glossy leaves that are dark green above and paler below. The parent of this species has been planted widely as an ornamental tree in residences for decades. It is produced solely through vegetative propagation in order to ensure consistency and because pollination within the same cultivar will not produce fertile seeds. In cases where the top of this species dies and root sprouts occur, this tree reverts to its' parental characteristics. Although the parent cannot self-pollinate and produce fruit, when two differing cultivars are planted within pollination range, the resulting seed are fertile and enclosed in a small pear-like fruit (hint). Birds readily eat these fruits after frost and thus spread the seed. Offspring of this species typically have a less densely oval shape and exhibit varying degrees of thorns. Some produce thorns on limb tips, while others produce many large thorns, up to 2.5" long that resemble a Honey Locust. The prolific root mass is so hardy that this rootstock is actually used for grafting domesticated fruiting pears. Little research has been conducted on suitable foliar herbicide control methods. A 2008 OSU trial utilizing soil applied Velpar L was effective on 10-20 foot tall trees and I am seeing good success with foliar applications of 1.5-2 pints of 2,4-D + 0.4-0.5 oz of metsulfuron methyl on trees less than shoulder height.

So what are we looking at? ***Pyrus calleryana.* – Callery Pear**

**A cross between any flowering pear species (Bradford x other)**

https://extension.okstate.edu/fact-sheets/the-invasive-callery-pear.html

## Ag Pesticide Applicator Updates

Josh Bushong, Area Extension Agronomy Specialist

A major part of producing crops is protecting the crop when needed with use of pesticides, namely herbicides, insecticides, and fungicides. Pesticides are either classified as "restricted use" or "general use" (non-restricted use). To be able to purchase or apply restricted use pesticides a person first must become a certified pesticide applicator. Certified applicators include private applicators, commercial applicators, non-commercial applicators, and service technicians.

There are about a couple dozen pesticide applicator categories offered from the Oklahoma Department of Agriculture, Food, and Forestry (ODAFF). Some of note include Ag Plant, Ag Animal, Seed Treatment, Right-of-Way, Fumigation, Aerial, and Private. Farmers who use pesticides on their own or rented farm should pursue a Private Applicator's License.

To become a certified applicator a person must pass the appropriate ODAFF exams and apply for a license. Other than Private Applicators, applicators must take and pass the core exam prior to taking any of the other category exams. All pesticide applicator exams are now exclusively offered through PSI Services LLC. Historically Private Applicators could complete a take-home exam. Due to the pandemic, private applicators once again have this option but only temporarily.

All pesticide applicator categories will expire on a five-year cycle, but not all categories expire on the same year. All Private and Ag Plant applicator's licenses will expire December 31st 2023, regardless of when the applicator became certified. The Seed Treatment and Fumigation categories just expired in 2020. For recertification applicators have two options, either pay to retest or acquire the appropriate number of Continuing Education Units (CEUs). Private applicators are now capable of acquiring CEUs.

Total CEUs required is specific for each category and are prorated based on when the applicator became certified. For Ag Plant and Private, applicators will need four CEUs per year certified. Applicators cannot acquire CEUs the year they became certified. No more than one-half of the total amount of CEUs needed can be obtained in any one year. If certified for the whole five-year cycle, applicators will need to get CEUs in at least three of the five years.

If an applicator passed the Private or Ag Plant exam the fall of 2018 when last cycle expired, they will need a total of 20 CEUs by December 31st, 2023. The total is calculated by multiplying the number of years certified by four. That does not mean they have to get four every year. CEUs obtained in 2018 or earlier will not apply to the current cycle. They can get a maximum of 10 in any one year. Since they can't get 10 in any one year again, they will need to spread the remaining 10 over two or more years. Hence why it takes a minimum of three years to properly acquire the 20 total CEUs needed.

As another example if an applicator passed the Private or Ag Plant exam in 2020, they would only need 12 total CEUs by December 31st, 2023. Total calculated by multiplying the three years (2021, 2022, 2023) by four. CEU's cannot be obtained in 2020 when certified. They can get a maximum of 10 in any one year. So, they would have to get CEUs in at least two of the three years available.

Pesticide applicators will need to take action this year if they want to avoid retesting. OSU Extension is currently developing some CEU opportunities for later this year. Check with your county Extension office to find out more. There are some other online trainings available. You can check out the OSU Pesticide Education webpage PestEd.okstate.edu to find out more about the new testing procedures, how to order applicator study manuals, online trainings available, how to check your CEU status, and many other ODAFF pesticide related links.

Last fall, the dicamba products Engenia by BASF and XtendiMax by Bayer were given five-year registrations from the Environmental Protection Agency (EPA). The EPA also extended the registration of Tavium by Syngenta, a premix dicamba and S-metolachlor. Certified Applicators will once again need to attend an annual training to be able to use these products in dicamba-tolerant soybeans and cotton. Because of COVID-19 concerns, training is being offered online this year. Applicators can visit the BASF, Bayer, or Syngenta webpages to access the training pertaining to which product the applicator plans to use. OSU Extension is in the progress of scheduling trainings. Keep in contact with your local Extension office to be informed when these trainings become available.

## Paycheck Protection Program (PPP)

Trent Milacek, Extension Area Ag Econ Specialist

On December 27, 2020, President Trump signed into law a $908 billion relief package. The legislation includes a very favorable update to the Paycheck Protection Program (PPP) for farmers and ranchers and also provides the U.S. Small Business Administration (SBA) with an additional $284 billion for PPP loans.

The following outlines general calculations for a first draw (meaning you did not receive a PPP loan in the first round) farmer. Please note that you need to work with your lender to insure you have the appropriate documents, and that there are slight variations for partnerships and other types of legal organization.

Previously, under SBA rules, farmers' participation in the PPP was based on 2019 net farm profits (or losses), reported on IRS form Schedule F, Profit or Loss from Farming. If a farmer showed a negative farm profit, they would not have been eligible for a PPP loan. The new legislation would help farmers and ranchers by allowing them to use 2019 OR 2020 as their base period. If the farmer does NOT have employees they can use their schedule F gross income (up to $100,000) when calculating their PPP loan, rather than their 2019 net income. Therefore, any farmer with positive sales on the 2019 or 2020 schedule F is eligible for the Paycheck Protection Program. Farmers with employees need to use their 2019 or 2020 payroll to calculate the maximum loan amount.

The PPP is a loan that can be used for salaries, wages, insurance premiums, mortgage interest (not mortgage principle), rent and utilities. The interest rate for a PPP loan is 1% with a payback period of 5 years. A PPP loan can be forgiven (not have to be paid back) if the following criteria is met:

- Employee and compensation levels are maintained
- The loan proceeds are spent on payroll costs and other eligible expenses; and
- At least 60% of the PPP amount are spent on payroll costs

To determine the amount of PPP funds are available to a producer WITHOUT EMPLOYEES just take line 9 of the schedule F and reducing that number to $100,000 if it is over $100,000. Then divide it by 12 and then multiply it by 2.5. For example, if a producer shows a gross farm income of $25,000 on their schedule F, the maximum loan amount would be $5,208. ($25,000/12 X 2.5). If the producer has an EIDL loan made between January 31, 2020 and ending on April 3, 2020 you can add the outstanding amount that you seek to refinance. Do not include the amount of any advance under an EIDL COVID-19 loan. PPP funds should be used in 8 weeks after receiving them.

For farmers with employees you need to compute your 2019 or 2020 payroll by adding the difference between your 2019 or 2020 Schedule F line 9 gross income amount, and the sum of Schedule F lines 15, 23, and 37 up to $100,000 on an annualized basis. If the amount is over $100,000 reduce to $100,000 if the amount is less than zero then set the number to zero. Next add 2019 or 2020 gross wages and tips paid to your employees from each quarter plus any pre-tax employee contributions for health insurance or other fringe benefits excluded from Taxable Medicare wage and tips. Next subtract any amounts paid to an employee over $100,000 on an annualized basis. Finally, add 2019 or 2020 employer contributions for employee group health, life, disability, vision and dental insurance, employer contributions for employee retirement, and state and local taxes assessed on employers for employee compensation. Then calculate the average monthly amount (divide the amount summed above by 12). Multiply that number by 2.5. Finally, if the producer has an EIDL loan made between January 31, 2020 and ending on April 3, 2020 you can add

the outstanding amount that you seek to refinance. Do not include the amount of any advance under an EIDL COVID-19 loan.

Producers wanting more information or to apply for a PPP loan should contact their lending institution for application details.

If you use PPP funds for unauthorized purposes, SBA will direct you to repay those amounts. If you knowingly use the funds for unauthorized purposes, you will be subject to additional liability such as charges for fraud. If one of your shareholders, members, or partners uses PPP funds for unauthorized purposes, SBA will have recourse against the shareholder, member, or partner for the unauthorized use.

## Extension Experience – Insights into Oklahoma Agriculture

The Northwest Area Extension Staff would like to announce the creation of our new podcast *Extension Experience*. The *Extension Experience* podcast is brought to you by Josh Bushong, Trent Milacek, and Dana Zook. Each week they provide perspective on Agriculture topics and offer insight from our experience working with Extension Educators and Producers across Oklahoma.

The *Extension Experience* podcast is available on Spotify, Google Podcasts, and Apple Podcast platforms. You can also access the episodes on spotlight, http://spotlight.okstate.edu/experience/.

We hope you consider listening to Extension Experience.

## Blue Green Algae

Barry Whitworth, DVM Area Food/Animal Quality and Health Specialist for Eastern Oklahoma

Blue-green algae is not really an algae but a bacterium which is referred to as cyanobacterium. The most common species found in the Midwest are *Microcystis*, *Oscillatoria*, and *Anabaena* (Morgan, 2011). The bacterium is found in most bodies of water. However, they become a problem during times of rapid growth which is fueled by high nitrogen and phosphorus content and warm sunny weather. The overgrowth of the bacterium lead to the death of the organism which then floats to the top and forms a "scum" on top of the water. These "scum" layers can be moved about the pond by wind movement. Sometimes this causes certain areas in the pond to be concentrated with the toxic levels of the dead bacterium. Rain or wind disturbance can break up the "scum" and reduce the chance of toxicity, but this is not always the case.

All livestock, pets, wild animals, and humans are susceptible to blue-green algae toxicity. The amount of water consumed needed to cause toxicity depends on the species of animal, concentration of the toxins in the water, and how much water is ingested. Ingestion of 1 quart of highly concentrated water is lethal to cattle (Meehan & Mostrum,2015).

Most producers do not recognize a problem with blue-green algae until they find dead livestock in the pond or in close proximity to a body of water. Most cattle that ingest contaminated water will die, but occasionally producers may find sick cattle. The clinical signs of blue-green algae toxicity will depend on the type of toxin ingested. The two types of toxins associated with blue-green algae are a neurotoxin (affect the nervous system) or a hepatotoxin (affect the liver). If seen early, cattle affected by the neurotoxin will show muscle tremors, reluctance to move, and breathing problems. This will lead to convulsions and death. If cattle consume water with liver toxin bacteria, they will have weakness, pale mucous membranes, gastroenteritis, nervous signs, and death. Animals that survive will lose weight and become poor doers. These survivors may also develop photosensitization. Animals with photosensitization are prone to sunburns on light colored skin areas.

Typically, diagnosis is based upon exposure to blue-green algae along with clinical signs or sudden death. If a producer suspects blue-green algae is the cause of death in his/her cattle, he/she should immediately collect a pint of water where large amounts of the algae exist. The reason for quickly obtaining a sample is the toxin could be dispersed by the wind. Then the producer should contact a veterinarian to conduct a necropsy. A necropsy will rule out other causes of death. A veterinarian will most likely take tissue samples for more testing and rumen contents may be taken to examine for presence of blue-green algae. The water sample will need to be submitted for analysis. More information for guidance about necropsy or water sampling may be found at the Oklahoma Animal Disease Diagnostic Laboratory at (405) 744-6623 or https://cvhs.okstate.edu/oaddl.

Since there is no known antidote, treatment is usually unrewarding. For this reason, producers need to focus on conditions that favor the development of blue-green algae. The algae blooms with sunshine and warm weather. Excessive blooms are associated with ponds located in areas that catch runoff water high in nutrients. Producers should be inspecting ponds anytime these conditions are present. They should be prepared to provide alternative water sources in times of crisis.

Blue-green algae toxicity is not a new problem for Oklahoma livestock producers but having problems with cyanobacterium early in the spring is new. When weather conditions are right for algae build up, producers need to be constantly observing their ponds for any signs of the blue "scum" on the water. If found, producers need to take action to reduce the problem. An excellent fact sheet is available from Oklahoma State University Extension Service on blue-green algae and how to best manage the problem. The fact sheet can be found at https://extension.okstate.edu/fact-sheets/toxic-blue-green-algal-blooms.html. If a producer has questions about blue-green algae, they should contact their local veterinarian or an Oklahoma State University County Extension Educator.

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## Equine Owners Should Monitor for EHV-1

OKLAHOMA CITY, Okla. — Equine Herpes Virus has been impacting events throughout the world and cases have been confirmed stateside. With upcoming equine events being hosted in Oklahoma, the State Veterinarian's office located within the Oklahoma Department of Agriculture, Food and Forestry wants to encourage horse owners to taken preventative action now.

"During this time, we ask horse owners and event managers to maintain a heightened level of awareness, implement biosecurity practices to minimize potential exposure and monitor for symptoms of EHV," said Dr. Rod Hall, State Veterinarian.

Symptoms of EHV-1 include fever, nasal discharge, incoordination, hind limb weakness, urine dribbling and a flaccid tail.

In addition to monitoring, we suggest administering routine vaccinations against EHV, West Nile Virus and Rabies, as this is the best time to be proactive in curbing these diseases.

If you have questions or concerns about EHV, protocol for hosting an equine event, or to report a potential case, reach out to one of the ODAFF veterinarian's below.

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