



Free Pesticide Disposals

Josh Bushong, West Area Extension Crops Specialist

The Oklahoma Department of Agriculture, Food, and Forestry (ODAFF) and Oklahoma Cooperative Extension Service are teaming up once again to offer the opportunity for applicators, farmers, or citizens to properly dispose of any unwanted pesticides. ODAFF funds this Unwanted Pesticide Disposal Program to provide a free service to prevent unlawful disposal of pesticides.

The first event will be in McAlester at the Southeast Expo Center on April 25, 2023. The second event will be in Kingfisher at the Kingfisher County Fairgrounds on April 27, 2023. Both events will be held between 8am and 1pm. Currently these are the only two events planned for 2023, but any future events will be posted at the OSU Pesticide Safety Education webpage, www.PestEd.okstate.edu.

Oklahoma commercial and non-commercial app The Oklahoma Department of Agriculture, Food, and Forestry (ODAFF) and Oklahoma Cooperative Extension Service are teaming up once again to offer the opportunity for applicators, farmers, or citizens to properly dispose of any unwanted pesticides. ODAFF funds this Unwanted Pesticide Disposal Program to provide a free service to prevent unlawful disposal of pesticides.



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Oklahoma commercial and non-commercial applicators and pesticide dealers may participate. Oklahoma farmers, ranchers, and homeowners can use this program as

well. There is no cost for the first 2,000 pounds of pesticides brought in by a participant. Anything more than 2,000 pounds will be charged to the participant.

Applicators, homeowners, farmers, and ranchers are not required to pre-register. Dealers are asked to voluntarily pre-register with the OSU Pesticide Safety Education Program. Dealers are asked to pre-register to allow the hazardous waste company to properly plan for larger quantities.

So, what are unwanted pesticides? When pesticides become unusable as originally intended for various reasons, they are considered unwanted. Unwanted pesticides can result from both good and bad management practices. Leftover pesticides that have a limited shelf life may undergo changes rendering them unusable. Pesticides also become unusable when they are no longer registered in the state of Oklahoma. Unwanted or waste pesticides can also result from lost labels on the container making them no longer identifiable.

Pesticide is a general term for any chemical or product that is used to destroy, prevent, or control a pest. Herbicide, insecticide, fungicide, defoliant, desiccant, miticide, rodenticide, and nematicide are all examples of pesticides. Products that participants are not allowed to bring include fertilizers, micronutrients, waste oil, or any other non-pesticide material.

Transportation of the unwanted pesticides to these events is the responsibility of the participants. Wearing appropriate personal protection equipment is always recommended when handling pesticides. Inspect all unwanted pesticides to see that they are securely packaged. Do not transport pesticides in areas occupied by passengers. Lining the storage area or trunk with plastic sheeting is a good practice to prevent spillage. Containers 5 gallons or smaller can be placed in a bucket or plastic storage container if they show signs of leakage.

The Unwanted Pesticide Disposal Program has been very successful. Since 2006, this program has collected about a million pounds of unwanted pesticides. The program is a service designed to remove unusable pesticides from storage and reduce the potential threat to public health and the environment and participants in the program will not be prosecuted for illegal management practices.

For more information visit your local OSU Extension office or visit the OSU Pesticide Education Safety Program webpage www.PestEd.okstate.edu.



Estimating Native Grass Production

Dana Zook, West Area Extension Livestock Specialist

In the past several weeks, OSU Extension has hosted forage clinics across Northwest Oklahoma. The goal of these clinics is to help producers make informed decisions about forage production in the upcoming growing season. Dr. Laura Goodman spoke at several of the clinics about native grass recovery and presented several decision tools that can help producers estimate production of native rangeland. These tools are available online and are a resource in our “virtual tool-box”. Given the ongoing drought, it is crucial to use all the tools available to us to evaluate forage production and make plans about stocking rate and herd size to preserve the health of our native rangelands.

This week I would like to introduce readers to one of these tools called the Rangeland Analysis Platform (RAP). The Rangeland Analysis Platform (RAP) is a free online app that uses satellite imagery in combination with other production data from Bureau of Land Management (BLM), National Parks Service (NPS), and the Natural Resource Conservation Service (NRCS) to map and estimate forage production across the United States.



The RAP also has a function called the Production Explorer. To evaluate forage production, producers can look at specific pieces of property. To do this, a shapefile of a property can be uploaded, or you can zoom in and draw the boundary of a property to evaluate forage production. Both current and past forage production data can be evaluated. Because this

application looks at actual forage production, it is best to use this tool halfway through summer for the current year’s production. However, I find it extremely valuable to look at past production to help estimate stocking rate. To provide an example, I disseminated 148 acres of native grass in northern Dewey County, just west of Seiling, OK. In 2022, yearly forage production was estimated at 2,083 lbs./acre. For this particular property, average annual long-term production since 2001 was 2,483 lbs./acre. As you see, the forage production numbers reflect the current ongoing drought with lower production in 2022 compared to the long-term average.

In my opinion, one of the most useful parts of the RAP is the Stocking Rate Evaluator. It takes the forage production a step further to look specifically at stocking rate for a property. By entering in the animal size, grazing days, average intake, harvest efficiency, and adjustment for slope, average stocking rate can be determined based on historical forage production. To evaluate the stocking density on our Dewey County property, I set the animal size at 1300 pounds, assumed 90 grazing days, and indicated 2.5% average daily intake. These values allowed me to determine that this property

could handle an average of 31 animals per year. This of course ranged from 17 animals in the poorest forage producing years to 43 animals in the best forage producing years. These values also assumed 25% expected harvest efficiency and 100% adjustment for slope. By using this mid-summer, a producer could determine the percentage of average forage production and evaluate stocking rates to better match the conditions for the current year.

I challenge producers to try out this helpful tool as we move into the growing season. With continued drought, the RAP can help evaluate growing conditions and stocking rate. It can help producers make stocking adjustments to preserve the health of rangelands and avoid overgrazing. The RAP can be found online at www.rangelands.app.



Pasture Management

Josh Bushong, West Area Extension Crops Specialist

Currently there are still tight hay supplies and many overgrazed pastures. Additional management will likely be warranted this year to help recover perennial warm-season pastures. On these farms, removing livestock and receiving much needed rainfall are going to have the largest impact. The two main management practices that can be done are taking care of soil fertility and weed control. Now is the time to be planning annual hay forages, perennial grass hay fields, and grazing pastures.

There will be a higher probability of seeing a return of input investments when dealing with an introduced forage grown for hay. Bermudagrass is a great example to seeing a response from increased fertility and use of pesticides. While tonnage can be increased with added fertility to native grass pastures, often it can be hard to justify economically since the total season production is usually less than introduced species.

When deciding on how much fertilizer to apply it is always recommended to base the application rates off a soil sample and a yield goal. A \$10 soil sample through the OSU Soil, Water, and Forage Analytical Laboratory collected every few years will almost always pay for itself. A yield goal will typically range between three to eight tons per acre in north central Oklahoma, depending on rainfall and soil type. Unfortunately, it is harder to determine yield goals under grazing.

In grazed pastures, forages are growing and being removed concurrently making it impossible to estimate forage production and yield goals. Less fertilization is expected in grazed pastures since some nutrients are returned to the soil. The general guideline is that grazing to produce 500 pounds of beef per acre will remove about 18 pounds of nitrogen, 9 pounds of phosphorus, and 1 pound of potassium. This 500 pounds of beef requires approximately a production of 4 tons of forage per acre.

In comparison, a hay pasture with a 4-ton yield goal will need 200 pounds of actual N per acre, while a grazed pasture that supports one cow for four months will only need 50 pounds of actual N per acre.

Research has shown no benefit to split applications of nitrogen (N) when total application rates are below 200 pounds of actual N per acre. If application rates are greater than 200 pounds of N, then split applications can be economical. If applying N to farms with coarse, sandy soil types it is recommended to limit application rates to 100 pounds of N as it is mobile in the soil and can be leached out of the system.

As for weed control, it is all about proper identification and application timing. There are many pasture herbicides on the market and the price differences can range widely. Knowing exactly which weeds are of significance in a particular pasture will determine which herbicide options are appropriate and at what application timing are recommended.

Many annual broadleaf weeds can be controlled with less expensive herbicides, such as products containing 2,4-D or dicamba, if applied when weeds are only a few inches in diameter or tall. Situations where more expensive herbicide products are warranted include; if there are brush or woody weeds present, winter weeds are abundant and summer weeds have yet to emerge, or if the target weed species are perennials.

Weed management is often more practical in haying operations. Heavy infestations of weeds in a grazing pasture is often a symptom of excessive grazing. Proper use of stocking rates and achieving adequate fertility in introduced pastures are the most economical weed management options for grazing pastures. While weeds can be unpleasant to the eye, many times weed infestations are below application thresholds. In addition, some weeds such as ragweed can often be used by cattle when it's small.



From OSU field trials, comparing doing nothing to only applying a herbicide, only fertilizing, or fertilizing with a herbicide application, we can generally predict forage production outcomes if inputs are removed. If broadleaf weeds are present, addition of fertilizer will increase total forage production, but mainly just from the weeds and not from the grass. If only a herbicide is applied, the total forage production was the same as doing nothing. Every pound of weeds removed only increased grass production by one pound (1:1 ratio). To increase total grass production both fertilizer and a herbicide will need to be applied. One field trial in Bermuda tripled total forage tonnage when

adequate nitrogen, phosphorus, and potassium was applied in addition to a timely herbicide treatment.

Contact your local extension office for more pasture management information, to assist in weed identification, to submit a soil sample, or to determine the best management practices for your operation.



Heifer Development Reminders

Dana Zook, West Area Extension Livestock Specialist

In my previous article, I discussed the impacts of longevity and how it can be increased for a more productive cow herd. This week I would like to continue that conversation but focus on potential herd replacements. These heifers are newcomers to the herd and (hopefully) the key to future production. Let's review a few tips for successful development and wrap up with some educational opportunities at area forage clinics this spring.

- 1.) Select early born heifers.** Most heifers born earlier are likely to be bigger just due to age. A little extra bodyweight will give them a better chance of early maturity and cyclicity.
- 2.) Develop heifers with longevity in mind.** Guidelines recommend developing heifers to be 55-65% of their mature weight by the first day of breeding season. This is a large range but how intensely you apply pressure to herd replacements is a personal choice. Will the heifers be developed on grass with minimal inputs or more intensely managed on a higher energy ration? Producers should be realistic and apply the development strategy that best matches their financial circumstances, production methods, and available resources.
- 3.) Select early bred heifers.** Define your breeding season. Most would suggest an intense breeding season of 30 days. Also breed your heifers one month prior to mature cows. This extra time allows you to cull open heifers early and allows bred heifers a bit of extra time to recover from the birth of the first calf. They will then be in better shape for the 2nd breeding season, hopefully increasing their chances to get bred for their second calf.
- 4.) Use Genetic Tools.** Gone is the day when the only thing producers could do for their heifers is breed them to a "heifer bull". Genomics and EPD's have expanded producers' ability to make breeding selections for their cow herd. For heifers, select herd sires or bulls that have above breed average expected progeny differences (EPD's) for heifer pregnancy and stayability.

5.) **Developing heifers takes time with no money!** Let's say a producer saved a heifer in the fall of 2022. If that heifer breeds in a timely manner, she will produce a calf that will be weaned and sold in the fall of 2024. That's two full years before any revenue can be obtained from that heifer! That's a big investment. Many of our extension economists also agree that it takes approximately six calves for a heifer to recoup her costs of development. This number will be impacted by the price of calves, but it shows that it's an important factor to consider. I hope this gives you a few points to consider as you develop heifers this spring! Contact your local county OSU Extension office for more information.



Farm Management at Your Fingertips

The e-Farm Management website gives producer resources to help inform them about farm financial management topics along with production, marketing, and risk management topics. This site includes videos, tools, and publications for farmers and ranchers to strengthen their farm management skills.

In the Master Cattlemen and Cow/Calf Boot Camp video, viewers learn about two livestock related programs offered through the local Extension office. The video describes requirements and how to participate in Master Cattlemen and Cow/Calf Boot camp programs. Lastly, the video provides ways to sign up for these programs and shows the cost of each.

To view this video and find additional information on cattle marketing, visit:
<https://extension.okstate.edu/programs/farm-management-and-finance/e-farm-management-training/livestock-marketing/index.html>.

More information on this and other farm management topics may be found: 1) by contacting your nearest Extension Educator 2) on the e-farm management website (<https://extension.okstate.edu/programs/farm-management-and-finance/e-farm-management-training/index.html>) or 3) on the OSU Ag Econ YouTube Channel (<https://www.youtube.com/user/OkStateAgEcon>).



When is the Best Age to Castrate Bull Calves?

Britt Hicks, Ph.D., Area Extension Livestock Specialist

Beef Quality Assurance Guidelines recommend that bull calves that are not herd sire prospects be castrated as early in life as possible (preferably, between birth and four months of age). Some cattlemen believe that delayed castration improves growth in nursing calves due to a “testosterone effect” in intact bull calves. However, bull calves do not have significantly high levels of testosterone until they reach about 8 to 9 months of age. In addition, several studies suggest that there is no lifetime performance advantage to waiting to castrate calves until weaning. In fact, most research show that late castration (at weaning) decreases feedlot arrival gains and increases morbidity (sickness).

In 2003, Kansas State University research determined the effect of castration age and growth implants (Synovex C) on weaning and preconditioning weights. Calves were early castrated at 90 days of age with no implant, early castrated and implanted, or late castrated at weaning (226 days of age). Steers that were early castrated and implanted had weaning weights similar to those of bull calves, and both of these groups weighed 15 lb. more than the early castrated non-implanted steers. However, 28 days after weaning the early castrated implanted steers weighed 20 lb. more than the early castrated non-implanted or late castrated steers. These results indicate that early castration paired with growth promoting implants may yield more total pounds than either early or late castration alone when using a backgrounding program.

In a 2006 Oklahoma State University study, 2- to 3-month-old bull calves were left intact or were castrated (surgically or banded) and all calves were implanted with Ralgro. At weaning (7 to 8 months), intact bulls were castrated (banded) and all calves were re-implanted with Ralgro. Weaning weights did not differ between intact bulls and castrated bulls. However, during a 50-day period following weaning bulls that were castrated at weaning gained 11.3% slower (0.12 lb./day less) than bulls that had been castrated at 2 to 3 months of age.

In 2011, University of Florida research investigated whether timing of castration in nursing calves affected calf performance and weaning weight. In this study, calves were either surgically castrated early (average age of 36 days) or late (average age of 131 days). Actual weaning weight (456 vs. 452 lb.) and adjusted 205-day weaning weight (512 vs. 504 lb.) were all similar between early and late castrate treatments, respectively. These researchers concluded that this data indicates that producers have some degree of flexibility in determining when to implement castration. The data also showed that castration at or near birth did not have a detrimental effect on calf performance or weaning weight.

In 2015, joint research between the University of Arkansas and West Texas A&M University (WTAMU) evaluated the effect of castration timing (near birth or at weaning) on lifetime growth performance and carcass quality of beef calves. In this study, calves were surgically castrated near birth or at weaning. All calves were weaned at day 214 of the study to undergo a 56-day weaning period. After this weaning phase, the calves were shipped 480 miles to the WTAMU Nance Ranch and grazed on native grass and sorghum-Sudan grass for a 111-day backgrounding period until entry into the adjacent WTAMU Research Feedlot. The calves were fed a common feedlot ration throughout

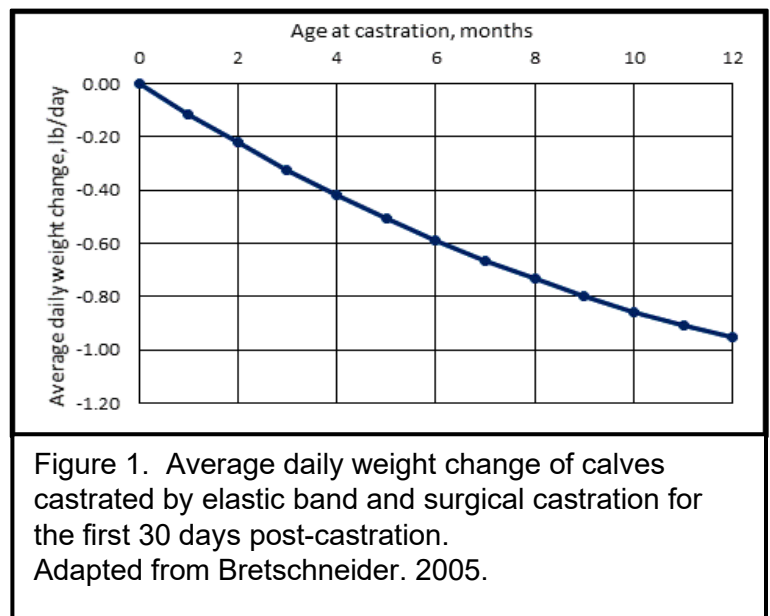
the finishing period (average length of 128 days) and harvested at a commercial processing plant.

These researchers reported that there was no difference in weaning weight between the bulls left intact or the non-implanted steers castrated near birth. However, during the 56-day weaning period, calves castrated near birth gained 10.3% faster than calves castrated at weaning (2.25 vs. 2.04 lb./day). Summer grazing and feedlot finishing performance and carcass measurements did not differ between treatments. These researchers concluded that the results of this study indicate that castration procedures should be performed as early in life as possible to minimize performance loss.

Research conducted at the University of California, Davis (2017) assessed the effect of age on healing and pain sensitivity after surgical castration of beef calves. In this study, beef calves were surgically castrated at 3 days of age (range of 0 to 8 days) or 73 days of age (range of 69 to 80 days). The results of this study showed that calves castrated soon after birth experienced more tissue swelling and showed more signs of pain, but their incisions healed sooner (39 vs. 61 days) and their weight gain 77 days after castration was greater (1.54 vs. 0.66 lb./day), when compared to animals castrated around 73 days of age.

Research from Nebraska (2005) has shown that as age of castration increases, weight loss resulting from the procedure increases (Figure 1). In addition, reviews of marketing data show that bull calves marketed through conventional channels have historically suffered a price discount of ~5% compared to steer calves (~\$6.00 to \$11.00/cwt discounts) since surgical castration of calves after arrival at a feedlot decreases daily gains and increases morbidity.

Collectively, these studies suggest that there is no lifetime performance advantage to waiting to castrate calves until weaning, but there is a high probability of receiving lower prices when marketing intact calves through conventional channels. When considering how age at castration affects animal welfare, the consensus is that the younger the calf is at time of castration, the less impact castration has on its welfare and performance.



Important information on Private Applicator CEUs for 2023

Megan Parker, Pesticide Program Administrator

Due to extenuating circumstances associated with the implementation of the continuing education program for private applicators, ODAFF has decided to make an exception to the maximum number of CEUs a private applicator can obtain in a single year.

This is a one-time exception from the maximum of 10 CEUs in one year for private applicators:

The maximum number of CEUs any private applicator will need is 16 for this cycle.

- If they need 16 CEUs and obtained at least one CEU in 2020, 2021, or 2022, they will be able to get the remaining 15 CEUs this year without penalty.
- If they need 12 CEUs and obtained at least one CEU in 2021 or 2022, they will be able to get the remaining 11 CEUs this year without penalty.
- If they need 8 or 4 CEUs, they may still get them this year.

Additionally, if a private applicator acquired more than 10 CEUs before 2023, they will all count towards their total.

The CEU exception for private applicators is only valid through December 31, 2023. Once this recertification cycle has ended, the CEU rules will revert to the 10 CEU maximum per year.

If applicators have any questions on how many CEUs they need or when they tested, they may email Debbie Mandrell at Debbie.Mandrell@ag.ok.gov or call (405) 522-5949.



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.

Extension Experience
INSIGHTS INTO OKLAHOMA AGRICULTURE

OSU | **EXTENSION**

**AN AGRICULTURE PODCAST PUBLISHED
WEEKLY ON APPLE PODCAST, GOOGLE PODCAST, AND SPOTIFY**

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