



## EXTENSION

### Correcting two myths about nitrates in forages Glenn Selk, Oklahoma State University Emeritus Extension Animal Scientist

Oklahoma summers often bring “high pressure domes” that cause 100 degree days and no rain. The resulting heat stress can cause nitrate accumulation in summer annual forage crops. Producers are very cautious about cutting or grazing the drought-stressed forages and for good reason. However, when the first drought-easing thunderstorm comes along, cattlemen are anxious to cut the forage or turn in the cattle on the field that has just received rain. (Myth number 1).

This practice can lead to a potentially dangerous situation. As the plant starts to grow and turn green once again, the nitrate uptake is accelerated. Plant enzymes (such as nitrate reductase) are still not present in great enough quantities or active enough to convert the nitrate to plant proteins. Therefore the plant nitrate concentrations become even greater in the first few days after the first rain. (Continued pg. 3)

### Watering the Yard and Garden Efficiently David Hillock, State Master Gardener Coordinator

During the summer, watering the landscape and garden can be the primary focus of our activities. Irrigation systems, whether a simple hose-end sprinkler or an elaborate in-ground system, help us accomplish this great task with a little more ease. Obviously some systems require a little more attention and effort than others. However, all should be closely monitored and managed so that they are working efficiently and providing adequate coverage for the plants’ needs.

A minimum of 1 inch of water per week is usually required to maintain optimum growth of most plants. However, that will vary depending on the types of plants grown, the soil type, and weather conditions. During the hottest and driest part of the summer, 2 or more inches per week may be necessary. But, how much water does your sprinkler(s) put out?

One way to find out how much water your system is discharging is to catch the water. Use straight-sided canisters such as tuna cans and place them randomly under the sprinkler pattern. About 6 cans work well. Turn the sprinkler(s) on and let them run for about 15 minutes. Turn off the water and measure the depth of water caught in each can using a simple ruler. Average all the measurements together (Continued Pg. 5)

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## Avoiding an Unweaned Discount at the Sale Barn

### Scott Clawson, Northeast Area Agriculture Economics Specialist

When the calf market gets tough, we need to avoid discounts at the sale barn. Some discounts we cannot control in the short run, such as breed makeup or muscle score, etc. However, some discounts hinge on our management choices. While there may be two 500-pound calves in front of us, their value can be drastically different. Differences in health, genetics, fill, and management all sway the value higher or lower. These two steers could have as much or more than \$.50/ pound difference in value or \$250 per head. As cattle are sold and the market reports are generated, they might be tagged with one of the definitions discussed below or not labeled at all. It is important to understand how cattle are labeled on the market reports so that we know what to expect price wise from our cattle.

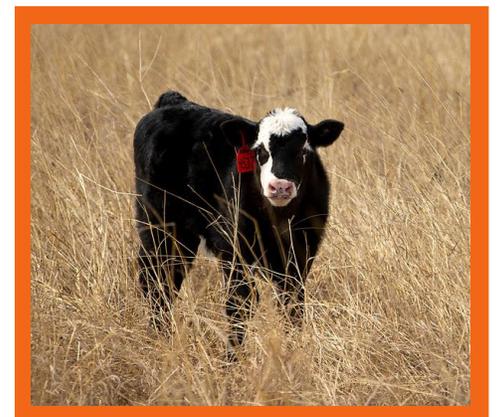
The definitions below are from the USDA AMS Livestock, Poultry and Grain Cattle Terms found at <https://www.ams.usda.gov/market-news/livestock-poultry-and-grain-cattle-terms>.

**Fancy** - Used to identify cattle on market reports that typically sell at a premium, cattle denoted with this comment possess superior genetics or other known factors that allow a higher price to be paid.

**Fleshy** - Typical fleshy feeder cattle are beginning to show moderate fat deposits in the cod, flanks, brisket, and around the tail head. The rib bones, hooks, and pins in the pelvic region are barely visible if distinguishable at all. The animal has a smooth appearance including, the curvature over the loin. Feeder cattle fleshier than typical may have fat cover more associated with

*slaughter cattle and show indications of being on a silage and/or grain ration. Fleshy cattle often sell at a discount, due to the expected weight loss upon change of environment.*

**Value added** - Used to identify cattle on market reports that typically sell at a premium, cattle denoted with this comment have a combination of several of following quantifiers: source and aged verified, all natural, (Continued Pg. 5)



## Myths – Nitrates in Forages (Cont.)

Producers should exercise caution and test forages before cutting or grazing shortly after a drought-easing shower. Some of the greatest concentrations of nitrate in forages will be recorded at this time. Usually by 7 – 10 days after a “good” rain, plant metabolism returns to normal and nitrate accumulations begin to decrease. Be sure to test the forage before cutting and storing a large quantity of potentially poisonous hay.

For many years, producers thought that the **time of day** of cutting would affect the nitrate concentration in the summer annuals that were harvested. (Myth number 2). This harvesting practice was based on the assumption that the plant continues soil nitrate uptake during nighttime hours, followed by accelerated conversion of the nitrate to protein during daylight hours.

To evaluate the significance of the change in nitrate concentration in forage sorghums during the day, Oklahoma State University Extension Educators collected samples at two hour intervals from 8 AM to 6 PM. Five cooperators’ fields (“farm”) were divided into quadrants. Three random samples, consisting of ten stems each, were taken from each quadrant at the specified interval. The samples were analyzed at the Oklahoma State University Soil, Water, and Forage Analytical Laboratory to determine the level of nitrates, in parts per million (ppm).

As expected, differences between “farms” were substantial and significant. The mean concentration of nitrate for individual farms varied from only 412 ppm to 8935 ppm. The mean nitrate concentrations across all farms were 3857, 3768, 4962, 4140, 4560, and 4077 ppm for samples at 8 AM, 10 AM, noon, 2 PM, 4 PM, and 6 PM, respectively. Remember, most laboratories consider nitrate concentrations at, or above 10,000 ppm potentially lethal. **There was much more variation between farms than between harvest times. Time of day of harvest did NOT impact nitrate concentration or proportion of dangerous samples of forage sorghum hay.** Do not be led into a false sense of security by thinking that forages cut in the afternoon or evening are safer. Source: Levalley and co-workers. [2008 OSU Animal Science Research Report](#).

To learn more about nitrate toxicity download and read [OSU Fact Sheet PSS-2903 “Nitrate Toxicity in Livestock”](#)

### UPCOMING EVENTS and DATES

**August 6<sup>th</sup>** – Quality Beef Programs (RSVP needed) 11:30a.m.-2:30p.m.

BQA training

OQBN Protocol and Vaccination training

Lunch Provided to those that RSVP

Limit 50 participants due to CDC guidelines

Contact Kay County OSU Extension to RSVP

Southern Plains Livestock Auction, Blackwell, OK

**August - November 2020** –Master Gardener Volunteer Training

More Details TBA

\$100/per participant

Once a Week Gardening Training Course

Pioneer Technology Center, Ponca City, OK



# GARDEN TIPS FOR JULY!

## *David Hillock, State Master Gardener Coordinator*

### Vegetable Garden

- Make fall vegetable garden plantings in late July. Fact Sheet [HLA-6009](#) gives planting recommendations.

### Lawn

- Brown patch disease of cool-season grasses can be a problem. ([HLA-6420](#))
- Meet water requirements of turfgrasses. ([HLA-6420](#))
- Fertilization of warm-season grasses can continue if water is present for growth. ([HLA-6420](#))
- Vegetative establishment of warm-season grasses should be completed by the end of July to ensure the least risk of winter kill. ([HLA-6419](#))
- Mowing heights for cool-season turfgrasses should be at 3 inches during hot, dry summer months. Gradually raise mowing height of bermudagrass lawns from 1½ to 2 inches.
- Sharpen or replace mower blades as needed. Shredded leaf blades are an invitation to disease and allow more stress on the grass.

### Tree and Shrub

- Control bermudagrass around trees and shrubs with products containing sethoxydim, fusillade or glyphosate herbicides. Follow directions closely to avoid harming desirable plants.

### Fruits

- Continue insect combat and control in the orchard, garden, and landscape. ([EPP-7306](#), [EPP-7313](#), [HLA-7319](#))
- Check pesticide labels for “stop” spraying recommendations prior to harvest.
- Harvest fruit from the orchard early in the morning and refrigerate as soon as possible.

### Flowers

- Divide and replant crowded Hybrid iris (Bearded Iris) after flowering until August.

### General Landscape

- Water plants deeply and early in the morning. Most plants need approximately 1 to 2½ inches of water per week.
- Providing birdbaths, shelter and food will help turn your landscape into a backyard wildlife habitat.
- Insect identification is important so you don't get rid of the “Good Guys.” ([HLA-7307](#))
- The hotter and drier it gets, the larger the spider mite populations!
- Expect some leaf fall, a normal reaction to drought. Water young plantings well.

## Watering (Cont.)

and this will tell you how much the system is discharging and how long to run the sprinkler system. For example, you wish to place 1 inch of water when you irrigate. The average amount of water that was measured when running the system for 15 minutes was .25 inches. Therefore, you will need to run your system for one hour in order to irrigate 1 inch.

Some plants require constantly moist soils to maintain optimum growth and performance while others are quite drought tolerant and might even prefer drier soils. One way to make sure all the plants in the landscape are getting what they need is to group plants together based on their watering needs. Be careful not to plant together two plants that have completely different water needs or one of them will eventually suffer and die.

## Unweaned Calf Discount (Cont.)

*non-hormone treated, a known vaccination program, being weaned more than 30 days, or superior genetics.*

**Weaned** - Term used to describe feeders that have been weaned for an extended period (typically 30+ days). Feeders that are described as weaned typically bring a significant premium over those that are not weaned or that have been weaned for just a short time.

One additional term that has become a staple recently is “unweaned”. Cattle labeled unweaned are regularly selling at a discount to cattle that are not labeled, which is to be expected. Looking back at October and November in 2019, the discount between Med./Lg. Frame #1 steers that were labeled “unweaned” vs not labeled was in the \$30-40/head range. This is hard to take as a steadfast rule as some weeks there were limited observations, and this is a fairly new identifier to look at. Still, it fits with what we know about calf demand. Additionally, the social media accounts of several livestock auctions were asserting that demand for bawling calves was softer and to expect discounts.

Pursuing the weaned and value-added channels are viable options for the fall calf marketing season. Specifically, these two areas of value are the result of relatively short run management decisions. In other words, we have control of these practices. There are many Vac45 programs across the state. The Oklahoma Quality Beef Network cattle have regularly received an average premium of over \$10/cwt. As we move to market calves into a softer market than we would prefer, what are we willing to do to improve calf value? Castrate, wean, and complete a Vac45 program? Whether it is tv, radio, billboards, or the internet, we are constantly being marketed to. It is time for us to stop just selling cattle and start marketing them.

## Shannon’s Kay County Corner

**Kay County OSU Extension on 100.7 KPNC and 99.3 KLOR Friday Mornings at 7:40a.m.**

We have been lucky enough to join KPNC and KLOR on Friday mornings around 7:40a.m. Kay County Educators will be talking about all types of events and timely information with the Beverly Cantrell and Sean in the morning. Give us a listen, and let us know what you want us to talk about for upcoming shows.

**Kay County OSU Extension YouTube Channel is up and Running**

If you have not had a chance to check out our videos on YouTube, please look. Right now, there are videos on native pasture flowers, barbed wire fence tips, and fruit tree diseases. We plan to put more subjects up throughout the year, and are always up for more suggestions!

Kay County OSU Extension YouTube Channel Link:

<https://www.youtube.com/channel/UC8PF4BmW9J4fslUsidEvEFw/featured>

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