



# DELAWARE COUNTY AGRICULTURE NEWSLETTER

Oklahoma  
Cooperative  
Extension Service

Issue # Winter 2017-2018

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## New Dicamba Regulations for 2018

**Brian C. Pugh, NE Area Agronomy Specialist**

Crop producers who have recently adopted the use of a dicamba resistant trait in soybeans or cotton are now required to attend an EPA mandated certification training. In an effort to minimize drift from recently labeled Dicamba products onto sensitive neighboring crops, EPA reached an agreement with Monsanto, BASF and DuPont. This agreement involved label changes and the mandatory applicator training program.

Researchers developed the Xtend dicamba resistant trait for use in soybeans (RoundUp Ready 2 Xtend) and cotton (XtendFlex), both primary crops in the US agricultural sector. Researchers also developed newer formulations of Dicamba herbicide (XtendiMax, Engenia and FeXapan) with lower vapor pressures, reducing the potential volatilization to mere percentage points of older formulations. The use of the Xtend trait in crops prevents the yield robbing injury associated with Dicamba exposure and furthermore allows Xtend Dicamba herbicides to be applied directly over the top of Xtend Soybeans and XtendFlex Cotton for increased control of the growing populations of glyphosate resistant weeds seen across the Midwest and Delta region.

Implementation of this new trait has been widespread with an estimated 80% of cotton growers and likely 50% of soybean growers in Oklahoma adopting the technology in the first year, according to Dr. Todd Baughman, OSU Weed Scientist. While this has opened up new doors for many producers, the issue lies with the growers who are still using conventional, dicamba susceptible soybeans or cotton. For these growers, the risk of injury is still as real as in the past and some would argue higher since many of their neighbors now spray Dicamba.

In light of potential crop injury issues, EPA has asked state Departments of Agriculture to implement an applicator training to mitigate potential off-target movement. The Oklahoma Department of Ag, Food & Forestry has asked the Oklahoma Cooperative Extension Service to host the trainings across the state in early 2018.

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The training and certification is required by anyone who is in the act of applying any of the three Xtend herbicides to crops, whether grower, commercial applicator or hourly employee. These products are now labeled as Restricted Use Pesticides and as such require a private or commercial applicator license. It does not apply to any other formulations of Dicamba such as those commonly used in pasture, turf or right-of-way applications. The training module will educate applicators on best management practices. Certification is at the minimum valid for the calendar year of 2018.

For more information regarding the applicator trainings in your area, please contact your local OSU County Extension Office.

## GARDEN TIPS FOR FEBRUARY!

**David Hillock**

### Trees & Shrubs

- Fertilize trees, including fruit and nut trees and shrubs, annually. ([HLA-6412](#))
- Most bare-rooted trees and shrubs should be planted in February or March. ([HLA-6414](#))
- Finish pruning shade trees, summer flowering shrubs and hedges. Spring blooming shrubs such as forsythia may be pruned immediately after flowering. Do not top trees or prune just for the sake of pruning. ([HLA-6409](#))
- Look for arborvitae aphids on many evergreen shrubs during the warmer days of early spring.
- Gall-producing insects on oaks, pecans, hackberries, etc. need to be sprayed prior to bud break of foliage.
- Dormant oil can still be applied to control mites, galls, overwintering aphids, etc. ([EPP-7306](#))

### Fruit & Nuts

- Spray peaches and nectarines with a fungicide for prevention of peach leaf curl before bud swell. ([EPP-7319](#))
- Mid-February is a good time to begin pruning and fertilizing trees and small fruits.
- Collect and store graftwood for grafting pecans later this spring.
- Begin planting blackberries, raspberries, strawberries, grapes, asparagus and other perennial garden crops later this month.
- Choose fruit varieties that have a proven track record for Oklahoma's conditions. Fact Sheet [HLA-6222](#) has a recommended list.

### Flowers

- Force spring flowering branches like forsythia, quince, peach, apple, and weigela for early bloom indoors.
- Forced spring bulbs should begin to bloom indoors. Many need 10 to 12 weeks of cold, dark conditions prior to blooming.
- Feed tulips in early February.
- Wait to prune roses in March.

### Turf

- A product containing glyphosate plus a broadleaf herbicide can be used on dormant bermuda in January or February when temperatures are above 50 degrees F for winter weed control.

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### Vegetables

- Cool-season vegetable transplants can still be started for late spring garden planting.
- By February 15 many cool-season vegetables like cabbage, carrots, lettuce, peas and potatoes can be planted. ([HLA-6004](#))

### General

- Base any plant fertilization on a soil test. For directions, contact your County Extension Educator.
- Provide feed and unfrozen water for your feathered friends.
- Clean up birdhouses before spring tenants arrive during the middle of this month.
- Avoid salting sidewalks for damage can occur to plant material. Use alternative commercial products, sand or kitty litter for traction.
- Join *Oklahoma Gardening* on your OETA station for the start of its season beginning in February. Saturdays at 11:00 a.m. and Sundays at 3:00 p.m.

## Poultry Nutrition

**Earl H. Ward, NE Area Livestock Specialist**

A balanced nutritious diet is essential to all living things. Just like many animals, the nutrients requirements of poultry vary drastically depending on genetics, environmental conditions, growth, productivity, prevention of deficiency symptoms, and feed efficiency. Poultry require a balanced diet that consist of at least 38 different dietary nutrients.

The first nutrient that must always be address is water. Just like any animal, a bird's water requirement changes depending on many conditions and circumstances. Depriving a bird for 12 hours or more of water has had adverse effects on growing or egg producing birds. Depriving birds of water for 36 hours or more will result in an increase in mortality. Therefore, it is recommended to provide this wet nutrient cool, clean, and available at all times.

Birds are different than any of our other farm animals in the fact that they will adjust their feed intake depending on the energy density of the ration. Therefore they will eat until they satisfy their energy requirement. This means that the remaining nutrients must be adjusted accordingly based off of the available dietary energy (metabolizable energy).

For birds in an uncontrolled environment, there is a seasonal effect on the animal's energy uptake, which also effects the animal's feed intake. During winter conditions, a hen may consume up to 340 kilocalories of metabolizable energy per day to keep warm, but during warmer conditions may only consume up to 260 kilocalories a day. This means that during the warmer weather, or any other time that the energy intake is influenced the other nutrients in the diet must be adjusted according to avoid any deficiency or toxicity. As the feed intake decreases, the percentage of crude protein must increase to supply the required amount of protein to keep the animal in a productive stage. Growing birds will

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require a higher protein diet than mature birds will due to the lower amount of feed consumed, but also because they are trying to add protein to their skeleton. The animal's genetics will also influence the protein level in the ration. Birds that are bigger meat-type birds will require more protein than lighter egg-producing birds.

Minerals always play an important role in a balanced diet. The two largest macro-minerals we need to consider are phosphorus and calcium. A lot of the phosphorus that is contained in feed ingredients is bound with phytate, which makes the phosphorus unavailable to poultry. Therefore, it is critical to formulate poultry rations based off of available phosphorus and not total phosphorus. The appropriate levels of calcium not only depends on the amount of calcium in the diet but also its ratio to the amount of available phosphorus. For growing birds the ratio should be right at 2:1 calcium to phosphorus. The calcium requirement is much higher for laying hens and older or more productive hens require a higher level of calcium.

Balancing rations has its complexity for every animal and the understanding of a healthy poultry diet is too complex to be able to cover in this article. Luckily, for the largest majority of poultry producers, there are commercial complete feeds that are already formulated and balanced for each stage of production for the bird. This balanced diet will ensure that your birds are happy, healthy, and productive.

Resources:

Nutrition for Backyard Chicken Flocks. Alabama Cooperative Extension Factsheet ANR – 1317. <http://www.aces.edu/pubs/docs/A/ANR-1317/ANR-1317.pdf>. Accessed 1/30/2018.

Nutrient Requirements of Poultry. Klasing, Kirk C. <https://www.merckvetmanual.com/poultry/nutrition-and-management-poultry/nutritional-requirements-of-poultry>. Accessed 1/30/2018.

## Calendar of events:

**February 27, 2018:** Craig County Crop Conference. The meeting will start at 9am at the Craig County Fairgrounds.

**February 28 thru March 3:** Delaware County Spring Livestock Show.

**March 6, 2018:** Oklahoma Cattleman's Association District Meeting. 6:30pm at the Craig County Fairgrounds. RSVP at [www.okcattlemen.org](http://www.okcattlemen.org) or call 405-235-4391.

**April 10, 2018:** Delaware County OSU Poultry Waste Management Education I-9.

9am at the Delaware County Fairgrounds.

RSVP at 918-253-4332

**April 11, 2018:** Delaware County OSU Poultry Waste Management Education CE/Field Day.

Please contact the Delaware County OSU Extension office for more information. 918-253-4332.



# Short Wheat Pasture - Haul the Feed or Haul to Town?

***Dana Zook, Area Livestock Specialist***

To most Oklahomans, late summer may be considered the driest time of the year. In actuality, December, January, and February are the driest reported months of the year in since the Mesonet began in 1994. This year, the research proves true as most areas in Northwest Oklahoma are rolling over 100 days of less than 0.25 inches of rainfall. With below normal precipitation in the outlook for the coming weeks, producers with cattle on wheat pasture are at a cross-roads; haul the feed or hitch the trailer and haul them to town?

Before hitting default and hauling feed, producers should take a moment to consider several things to ensure success. Producers should first inventory available feedstuffs. Hay samples should be collected and sent off for analysis. An analysis is essential to determining the nutrient deficiencies in the hay and identifying which energy or protein feed source will work best for the feeding situation. Calculate cost of gain with estimated feed costs.

A strategy to stretch wheat pasture in low forage situations is to provide a feed supplement at 1% of body weight on a daily basis. Oklahoma State University has done a number of different studies that examine the effects of different supplement in low forage situations. In one situation, calves grazing wheat pastures with less than 300 pounds of forage per acre were supplemented with one of three supplements; whole corn, dry rolled corn, or a 50/50 blend of wheat middlings and soybean hulls. These supplements were fed six days per week to steers stocked initially at 3.5 acres per head or 1,050 pounds forage. By the end of the study, pounds of forage increased to 1,500 pounds per steer. Overall gain was 2.2 pounds per day after the 84 day trial and performance did not differ between treatments.

Feed costs are not the only components in the cost of gain calculation. Also consider labor, feed delivery, fuel and death loss. Cost of gain assessments can then be paired with the value of gain to estimate if feeding will be a profitable venture. The value of gain is the difference in the value of the cattle at time of purchase and the value at sale time divided by the difference in weight. For a better picture of the situation, let's look at an example.

First, consider that average rent for wheat pasture was \$0.40 per pound of gain. If producers are considering pulling completely off wheat into a dry lot of some sort, \$0.40 could be utilized to account for yardage costs. By utilizing the value of calves sold in the current market and estimating future cost using [beefbasis.com](http://beefbasis.com), an estimated value of gain can be calculated. For instance, on January 26th, the price for 670 pound calves was \$158.78/cwt. March futures were priced at \$145.60/cwt. March basis values for 750 pound calves were \$5.24 which bring the total value of the March contracts to \$150.84. The difference in the total value of those calves (\$1,131.30-\$1063.83) divided by the difference in weight (750 lbs. - 670 lbs.) brings the value of gain to \$0.84. Subtracting pasture rent (\$0.40) to the total value of gain (\$0.84) leaves \$0.44 to cover costs for feed, delivery, labor, and fuel. In this situation, stretching wheat pasture by feeding will be profitable only if costs per pound of gain are maintained below \$0.44.

Keep in mind, this example does not include costs of labor or equipment which are essential parts of the calculation. Also realize that value of gain will change on a daily basis as the market changes and calculations should be redone periodically to ensure accuracy. I challenge producers to do these calculations with their own numbers to ensure profitability in any feeding situation.

Do not hesitate to call the local County OSU Cooperative Extension office if you have any questions regarding short wheat pasture, supplements, or value of gain.

# Bermudagrass Grazing Fertility Effect

**Bruce Peverley, Nowata and Tulsa County Ag Educator**

The following tables examine the expected effects of different levels of fertility on dollar return from the expected performance of 1200lb spring calving cow/calf pairs grazing Bermuda pasture from May 1 to October 30 (180 days). Income was derived from calf gain (lbs.) during the 180 day period (396 lbs.) multiplied by a \$1/lb. value of gain. Cost of this performance was forage cost only. Forage cost in this example was land lease cost plus the cost of fertility.

Levels of Fertility	0N	50N	110N
# of Acres Required/Pair	5	2.7	2
Fertility Cost/Acre, \$	\$0.00	\$38.20	\$58.00
Fertility Cost/Pair, \$	\$0.00	\$103.14	\$116.00
Land Lease Cost (\$20/acre)	\$100.00	\$54.00	\$40.00
Forage Cost (fertility/lease cost/pair)	\$100.00	\$157.14	\$156.00
Cost/Pair/Day	\$0.560	\$0.873	\$0.867

Levels of Fertility	0N	50N	110N
# of Acres Required/Pair	5	2.7	2
# Pairs/40 Acres	8	15	21
Total Calf Gains While Nursing, lbs*	3168	5940	8316
Total Value of Calf Gains, \$**	\$3,168.00	\$5,940.00	\$8,316.00
Total Forage Costs, \$***	\$800.00	\$2,357.00	\$3,276.00
Total Returns on 40 Acres, \$	\$2,368.00	\$3,583.00	\$5,040.00
Total Returns/Cow, \$	\$296.00	\$238.86	\$240.00
Total Returns/Acre, \$	\$59.20	\$89.58	\$126.00
*2.2 lb. ADG x 180 days (396 lbs) x Number of Cows			
**Pounds of Calf Gain x \$1/lb.			
***Forage Cost (least fertility/ x Number of Pairs/40 Acres			

The breakdown of the data in the two tables comparing 3 different levels of fertility on Bermuda from May 1<sup>st</sup> to October 30<sup>th</sup> by spring calving cow-calf pairs makes two strong points.

1. The largest \$ return per cow was where no fertility was utilized (due to lower cost).
2. A greater \$ return/acre occurred where fertilizer was utilized (higher expense) but by improving stocking rates more lbs. of beef was produced resulting in a greater \$ return.

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Keep in mind this example was developed with current land lease costs, fertility cost and performance standards. At the time these tables were prepared (late January 2018) the data show a positive return to the management practice of utilizing fertility with Bermuda pasture.

Due to variation in pasture lease, expected cattle performance and fertilizer prices and levels called for by a soil test. Run your own numbers to be sure your decision will be profitable. If you would like assistance, contact your local county OSU Extension Agricultural Educator.

## Control Peach and Nectarine Leaf Curl Now!

**David Hillock**

most evident, it is too late to spray anything. Leaf Curl is the culprit and is one of the most commonly encountered diseases in unsprayed orchards and home yards during cold, wet springs. Diseased leaves eventually wither and fall from the trees. Although new leaves emerge from dormant buds, their growth requirements reduce yield and may weaken the trees.

To prevent leaf curl disease, spray peaches and nectarines with a fungicide before bud swell ([EPP-7319](#) Home Tree Fruit Production and Pest Management). Apply when the trees are dormant and temperatures are above 40 degrees F, usually mid-February through March depending on weather and location in the state. Bordeaux mixtures, copper flowable fungicides, chlorothalonil, and lime-sulfur sprays are commonly used for control of leaf curl.

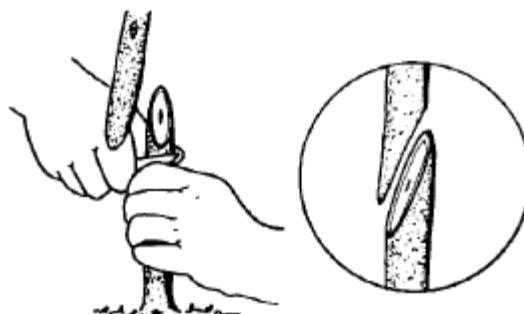
It is common to get calls in early summer by homeowners wanting to know what is wrong with their peach or nectarine tree. Infected leaves pucker, become deformed, and turn yellow or reddish-brown. Unfortunately, by that time, when symptoms are

## Pecan Graftwood Sources

**Becky Carroll**

The updated 2018 Pecan Graftwood Source List is available on the pecan webpage located at <http://okpecans.okstate.edu/PDFs/graftwood-source>.

For information on variety selection or grafting techniques, check out the webpage <http://okpecans.okstate.edu/orchard-establishment-management> for fact sheets or <http://okpecans.okstate.edu/pecan-video-resources> for videos showing different grafting techniques.



## Winter Irrigation

***Dustin Harris, Justin Quetone Moss, Joshua Campbell, and Samantha Snyder***

As the state has remained especially dry throughout January, it is important to consider the irrigation needs of your landscape. Although the majority of your vegetation may be dormant, your landscape may be in need of some supplemental water. It's often overtly apparent that evergreen plants and cool-season grasses still require water during the winter, but allowing the desiccation of the soil can also be detrimental to your dormant, perennial plants. Warm-season grasses, flowering bulbs, and deciduous trees also continue to utilize small amounts of water throughout the winter, but, more importantly, the soil moisture serves as a buffer against rapid changes in the soil temperature.

While considering if your landscape may need some supplemental irrigation this month, now is also a great time to consider applying mulch to your ornamentals to enhance your water use efficiency. The general recommendation for mulch applications is to apply it to a 3-inch depth. As you may realize, adequate use of mulch not only reduces irrigation needs, but it also aids in reducing weed pressure.

## Digital Dermatitis

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

All cattle producers at some time will deal with a lame bull, cow, or calf. Bovine lameness is associated with lost production, reproductive inefficiency, premature culling, and increase cost due to treatment. Some producers assume that all lame cattle have foot rot and treat these animals with an antibiotic. This assumption has merit based on the most common infectious cause of lameness is foot rot. However, in a retrospective study conducted at Auburn University Large Animal Teaching Hospital (AULATH), noninfectious causes were the most common diagnosis of lameness in cattle and in this study digital dermatitis (DD) was the most common infectious cause of lameness. With more emphasis placed on judicious use of antibiotics, producers should be certain of the condition that they are treating. Administering an antibiotic because an animal is limping without investigating the cause is not considered appropriate therapy. A disease such as digital dermatitis does not respond to injectable antibiotics. Digital dermatitis requires a topical treatment for the best results.

Digital dermatitis was first described in confined dairy cattle in Italy in 1974. The first case of the disease in the United States was in dairy cattle in New York in 1980. Since then, it has become the leading cause of lameness in dairy cattle in the world. The disease has been increasingly diagnosed in feedlot cattle and in cow/calf operations.

The cause of DD is not fully understood. The environment, immune system, and multiple bacteria all play a part in this disease. Spirochete bacteria of the genus *Treponema* are commonly found with the disease. Other bacteria such as *Porphyromonas*, *Fusobacterium*, *Dichelobacter*, and others are also associated with the disease. Wet manure contaminated environments tend to favor the development of the disease. Young cattle seem to more likely to get the disease which may be indicative of immune suppression.

Digital dermatitis must be differentiated from foot rot or infection of the deeper structures of the foot. With foot rot, the foot will have symmetrical swelling and skin split between the toes along with a foul odor. If the problem is an

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infected joint, it will usually have asymmetrical swelling and no foul odor. Digital dermatitis tends to be in the hind legs. Not all the animals will be lame with this disease. However, it is common to see animals with DD shift their weight to the least affected leg and rest toe of the infected leg on the ground. With DD, initially a circular red raised mass (strawberry like) will be found on the skin between the toes on the back side of the foot. This mass may form papilliform projections that make it appear like a wart. As the lesion progresses to ulcerative mass, it will erode the skin on the back side of the foot.

As stated earlier in this article, injectable or oral antibiotics do not seem to improve DD. The lesions should be cleaned and dried. A topical antibiotic should be applied. Tetracycline is the most common antibiotic used. A bandage may be applied on the initial treatment. The animal should be placed in a clean dry environment after treatment. The lesion will need to be treated more than once in most cases. Lesions treated for only a few days may improve but usually come back. Although time consuming, aggressive everyday topical treatment will probably result in a better opportunity for healing. One last note on treatment, topical application of tetracycline is an extralabel drug use, so producers need the approval of a veterinarian.

Since no vaccine for DD is available, prevention depends on maintaining a clean environment. Cattle feet should be kept as dry as possible. Cattle should not stand in mud or manure. This leads to bacteria invading the tissues. Facilities should be evaluated for any hard surfaces that may injure the foot and lead to infections. Foot baths are not the best option for treatment but may be used to prevent DD. Unfortunately, foot baths are not practical in beef cattle operations but may be of use in dairies. Lastly, do not buy this problem. When purchasing cattle, examine the feet for any signs of this disease. Also, quarantine purchased animals for at least 30 days before introducing them to the herd. This may allow for DD or other diseases to appear before infecting the whole herd.

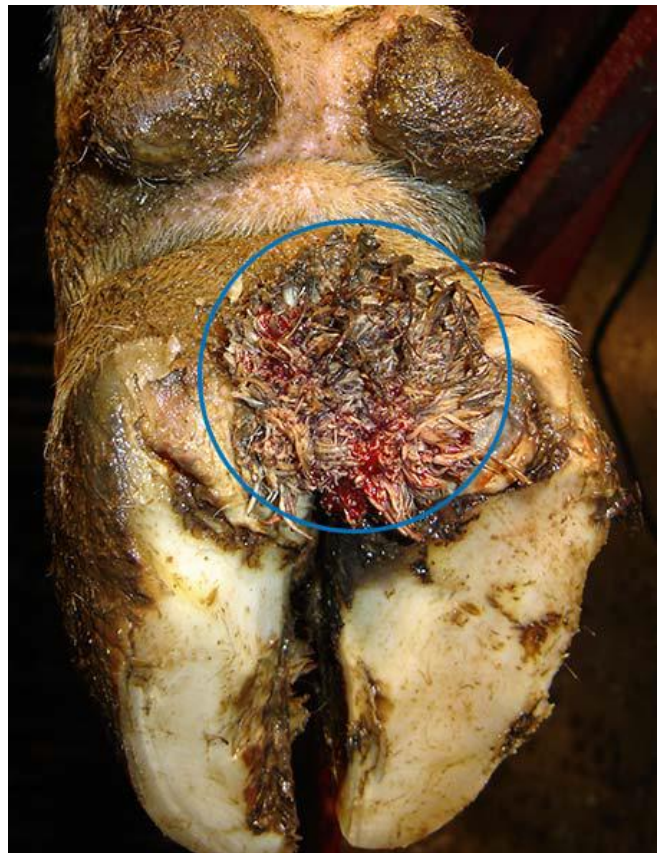
The dairy industry has been dealing with DD for over 40 years, but now beef producers need to be on the lookout for this disease. If a producer would like more information on Digital Dermatitis, he/she should contact your local veterinarian or local County Extension Educator.

### Reference

Newcomer BW, Chamorro MF, "Distribution of Lameness in Beef Cattle: A Retrospective Analysis of 745 Cases." *The Canadian Veterinary Journal*. 2016; 57(4): 401-406.

Wilson-Welder JH, Alf DP, Nally JE, "Digital Dermatitis in Cattle: Current Bacterial and Immunological Findings. *Animal (Base)*. 2015; 5(4): 1114-35.

Plummer PJ, Shearer JK, "Deciphering Digital Dermatitis." *Bovine Veterinarian*. 2(7):6-12.





Delaware County Cooperative Extension  
 Oklahoma State University  
 38267 US HWY 59  
 PO Box 1020  
 Jay OK 74346

**Augustus Holland**  
 AG/4-H Extension Educator  
[gus.holland@okstate.edu](mailto:gus.holland@okstate.edu)

**Teresa Martin**  
 Extension Administrative Support Specialist  
[teresa.martin@okstate.edu](mailto:teresa.martin@okstate.edu)

**Lora Hicks**  
 Extension Program Assistant  
[lora.hicks@okstate.edu](mailto:lora.hicks@okstate.edu)

**Amy O'Bryan**  
 FCS/4-H Extension Educator  
 County Extension Director  
[amy.obryan@okstate.edu](mailto:amy.obryan@okstate.edu)



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