



Cotton Comments

OSU Southwest Oklahoma Research and Extension Center
Altus, OK



April 25, 2019

Volume 9 No. 2

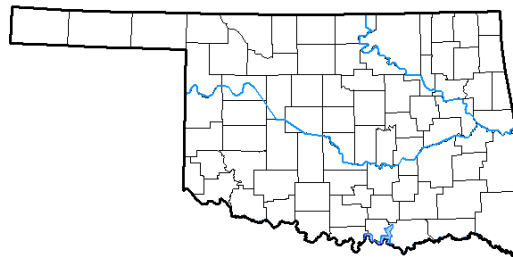
2019 Current Situation

Going into 2019 Cotton season the moisture levels across the state is in exceptionally good condition.

U.S. Drought Monitor Oklahoma

April 23, 2019

(Released Thursday, Apr. 25, 2019)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	100.00	0.00	0.00	0.00	0.00	0.00
Last Week 04-16-2019	100.00	0.00	0.00	0.00	0.00	0.00
3 Months Ago 01-22-2019	100.00	0.00	0.00	0.00	0.00	0.00
Start of Calendar Year 01-01-2019	94.85	5.15	0.00	0.00	0.00	0.00
Start of Water Year 09-25-2018	72.93	27.07	9.11	4.16	0.00	0.00
One Year Ago 04-24-2018	42.23	57.77	47.44	42.07	34.84	19.50

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

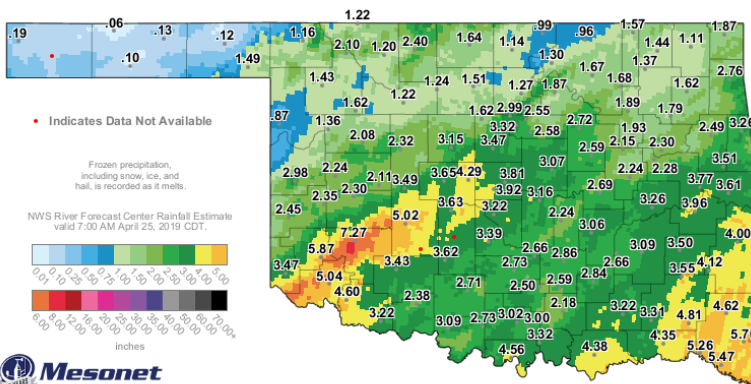
Author:

David Miskus
NOAA/NWS/NCEP/CPC



<http://droughtmonitor.unl.edu/>

The past 14 day rainfall accumulation.



14-Day Rainfall Accumulation (inches)

8:00 AM April 25, 2019 CDT

Created 8:05:57 AM April 25, 2019 CDT. © Copyright 2019

Early Season Planning (In cooperation with Dr. Todd Baughman Program Support Leader & Weed Scientist Oklahoma State University)

Important considerations are listed below:

- 1) To error on the side of safety ALL Palmer pigweeds should be considered glyphosate resistant.
- 2) Reading the respective herbicide label is important and is the Federal law for that product's usage.
- 3) The best Palmer pigweed management program is to never let them emerge.
- 4) In order to accomplish #3, effective residual herbicides must be deployed and activated (rainfall or tillage) in a timely manner. This would include starting clean at planting either by tillage or a preplant burndown, perhaps using a high rate of paraquat if desired. Tank mixed in the paraquat could be a yellow herbicide such as pendimethalin (Prowl).
- 5) Options immediately after planting (preemergence) could include products such as Caparol, Cotoran, Dual, Warrant, diuron, etc. Read and follow specific label requirements for rates on various soil types.
- 6) Overlapping of residual herbicides is critical. Later early post-emergence applications of Dual, Warrant, Outlook, Staple LX etc. can be made to extend residual weed control later in the season, and these can be tank mixed with glyphosate products to increase the weed control spectrum. Do not rely on glyphosate to control Palmer amaranth pigweeds, as these weeds may be resistant to that herbicide. Each of these products have specific label requirements/restrictions with respect to crop size. Of the above listed products, only Staple LX can control small emerged weeds. Dual, Warrant, and Outlook do not control or have activity on emerged weeds. We are depending on these products to provide future residual control after they are activated by rainfall or sprinkler irrigation.
- 7) Liberty herbicide can be used post-emergence over-the-top in LibertyLink trait containing varieties. This can be used to target very small Palmer amaranth (<3 inches using the 29 oz/acre rate) and other small weeds such as morningglories. In our area, sometimes we are not as successful as we prefer with this tactic due to moisture stress and weed size (cannot be stressed enough to have success with Liberty it must be applied to <3" pigweed). The caveat is that Liberty is a contact herbicide and must be properly applied with high carrier volumes, and all growing points on the weed have to be killed, so coverage is critical. Following the first application with a second application 10-14 days later may be beneficial on difficult to control weeds. Consult the label for specific application directions.

Several residual products that can be applied over-the-top can be tank mixed with Liberty, which is important, as Liberty herbicide provides no residual control.

- 8) Depending upon the technology planted (whether XtendFlex – dicamba tolerant or Enlist – 2,4-D choline tolerant) producers have options for over-the-top post-emergence control of many weeds, including Palmer amaranth.
- 9) For XtendFlex cotton varieties, a properly labeled dicamba product can be used. These products are XtendiMax, Engenia, and FeXapan. XtendFlex varieties are genetically engineered to be tolerant to glyphosate, glufosinate (Liberty) and the labeled dicamba products. The labels for these products are unlike any others we have seen in the past. All applicators must complete an approved training course prior to application as well. It is imperative that producers read, understand and follow these labels. XtendFlex varieties are not tolerant to 2,4-D and will be killed or badly damaged by misapplication or drift of these phenoxy type herbicides. For a complete list of tank-mix partners, additives, and approved spray nozzles that are currently allowed, visit the respective websites for the latest information.
 - a. XtendiMax: xtendimaxapplicationrequirements.com
 - b. Engenia: engeniataankmix.com
 - c. FeXapan: fexapanapplicationrequirements.dupont.com
- 10) For the Enlist traited varieties, a 2,4-D choline product sold as Enlist One or a premix of 2,4-D choline and glyphosate sold as Enlist Duo is available. Enlist varieties are tolerant to glyphosate, glufosinate (Liberty) and the labeled 2,4-D choline product. The Enlist Duo label is also very different from any labels we have previously seen. It is also complicated and producers should read, understand and follow the label. These varieties will be killed or badly damaged by misapplication or drift of dicamba containing products. For a complete list of tank-mix partners, additives, and approved spray nozzles that are currently allowed go to: enlisttankmix.com
- 11) For a publication which covers cotton technologies and herbicides, [click here](#).
- 12) For other residual herbicide products not discussed in this newsletter, it is imperative that the rotational crop restrictions must be fully considered and understood.

Spray or Nurse Tank Cleanout

With choices of technology sprayer cleanout is not only critical but in some technology required by label. For cotton varieties that do not contain the Enlist trait, typical phenoxy herbicide symptomology can be characterized by “strapping of leaves.” Based on field research conducted by Dr. Wayne Keeling at the Texas AgriLife Research and Extension Center at Lubbock, the severity of yield decrease is related to the actual dose and the crop stage. Severe damage incurred when the crop begins to fruit is more likely to reduce yield than when the crop is younger with less severe damage. Doses of

sufficient level to continue "strapping" of newer leaves for weeks after application can significantly reduce yield.

Producers should be aware, especially in light of the "tank and hose cleaning ability" of some of the newer herbicides, that phenoxy residue in sprayers used in non-Enlist cotton varieties can be a real problem. Our suggestion for our growers is that tanks, hoses, and sprayers which are used for applying phenoxy type herbicides be dedicated SOLELY to that purpose. If producers are unable to purchase separate tanks, hoses and/or sprayers, then it is imperative that several issues be addressed. Do not leave herbicides in tanks for an extended period of time including over-night. Chemical induction tanks installed on nurse tanks can also get contaminated and cause problems. It is best to use "chemical resistant" hoses. Replace hoses when changing out tanks. The last thing a non-Enlist cotton field needs is for a phenoxy material (even at low concentrations) to get "pulled from the tank or hoses" and get sprayed on cotton – especially those fields with high yield potential (i.e. subsurface drip or high capacity pivots). If multiple herbicides are used in the sprayer, then producers should purchase various tank cleaning agents from their dealers and follow the directions religiously. If a tank/sprayer is to be used on cotton, it is suggest that the tank be flushed out with clean water and the appropriate tank cleaner be mixed at the appropriate concentration. The producer should then spray the cleaning solution through the booms and nozzles. Leave the booms in a horizontal position and let the cleaning solution sit in the tank at least overnight. This might help reduce some anxiety over phenoxy damage in non-Enlist later. It doesn't take very many lost bales of production to pay for an additional tank and/or hoses.

For tank cleanout for dicamba products, see the respective labels. For more information, contact company representatives.

For an excellent University of Missouri publication on cleaning sprayers, go to this link:

[Click here for University of Missouri publication On Cleaning Sprayers](#)

This publication has good information concerning herbicides, recommended cleaning solutions and sensitive crops.

Glyphosate

Many locations within Oklahoma now have reports of glyphosate resistant Palmer amaranth. Because of this, DO NOT rely solely on glyphosate or any single herbicide as your only weed control option in-season. **It is recommended that producers try to incorporate at least two additional different modes of action besides glyphosate. If you already have confirmed resistance on your farm, then that should probably change to three modes of action besides glyphosate and this generally includes multiple overlapping residual herbicide applications beginning before planting and extending through bloom.**

Page 18 of the Roundup Power Max label (in the section for Roundup Ready Flex cotton) provides a list of herbicide products that can be tank mixed and applied post emergence over-the-top (OT), and a list that can be tank mixed and applied using post-directed or hooded sprayers in Roundup Ready Flex cotton varieties. Caution should be taken to not allow larger weed size to cause yield losses from early season competition. **In order to provide optimal control and help prevent weed resistance, do not apply rates below label recommendations.**

Staple Herbicide-Glyphosate Herbicide Tank Mix and Staple Alone

Significant label restrictions for rotational crops are noted when Staple (pyrithiobac) applications are made. These crops include but are not limited to wheat, corn grown for grain or silage, grain sorghum, peanuts, and soybeans. These restrictions do not apply for fields in continuous cotton production.

According to the label, in Oklahoma, Staple LX herbicide at 1.3 – 3.2 oz/acre can be added to the first OT application of glyphosate at 24-32 oz/acre (of 4 lb a.i./gallon glyphosate product) to enhance control of several annual weed species including hemp sesbania, morningglory (entireleaf, ivyleaf, pitted, scarlet/red), cutleaf evening primrose, prickly sida and Palmer amaranth (pigweed). For other glyphosate formulations, rates should be adjusted proportionally to the active ingredient content of the formulation.

For higher residual control, a single application of ONLY Staple LX can enhance morningglory control at rates of 2.6 to 3.8 fl oz/acre of product. The label states “Apply Staple LX at 2.6 to 3.8 fl oz product/A for control of the weeds listed in ‘Weeds Controlled’ section. Use the higher rate for arid growing conditions or where weed infestations are severe. Weed size, spray volume, adjuvant and environmental conditions (temperature) at application are very important for effective control

Dual Magnum (S-Metolachlor) Herbicide

Dual Magnum is approved for use postemergence in cotton. This product has a rotational restriction of 4.5 months for wheat, barley, oats, and rye. For alfalfa this time is 4 months. Refer to the label for specifics. Dual Magnum should be tank mixed with the a supported labeled postemergence product to provide residual control of pigweed, annual grasses and yellow nutsedge at 1 to 1.33 pt/acre. An approved drift reduction adjuvant must be included when Dual Magnum is applied with Engenia, Fexapan, and Xtendimax in Roundup Ready Xtend Cotton. For Dual Magnum, a 100 day PHI for postemergence OT or 80 day PHI for post-directed applications is required. It is suggested that ammonium sulfate, spray adjuvants, surfactants, fertilizer additives, or other pesticides NOT be included in the spray mix as phytotoxicity/crop injury may occur with the Dual Magnum formulation. The label states that “postemergence OT applications of this tank mixture may cause temporary injury in the form of necrotic spotting to exposed cotton leaves which will not affect normal plant development. Best results are obtained when the Dual Magnum is incorporated 24 hours after application using 0.5 to 1 inch of irrigation water.

Warrant Herbicide

Warrant herbicide (acetochlor) is another option for residual control of small-seeded broadleaves and annual grasses (according to the label - pigweed species, carpetweed, purslane, prairie cupgrass, red sprangletop, witchgrass). Since Warrant only provides residual control (has no postemergence activity) an additional herbicide is required to control weeds already emerged. This tank-mix should be made to 2-4 inch weeds and before the weed height and/or density becomes competitive with the crop. Although applications may be made once cotton has fully emerged until first bloom, the optimum application timing is when cotton is in the 2-3 leaf stage. It may be applied again when cotton is in the 5-6 leaf stage if directed to the soil. Rates range from 1.25 to 2.0 quarts per acre depending on soil type (consult label). Wheat can be planted 4 months after application, and the following season, most other agronomic crops we produce can be planted. See the Warrant label for more information.

Outlook Herbicide

Outlook herbicide (dimethenamid-P) from BASF is a fairly recently labeled product, so its fit in our area is still under evaluation. Outlook may be applied in a single post-emergence application, at rates up to 21 oz/acre from the first true leaf stage through mid-bloom. For full season control in soils with less than 3% organic matter, the rate is soil texture dependent and ranges from 12 to 14 oz/acre for coarse textured soils up to 14 to 18 oz/acre in medium and fine textured soils. This product has no activity on emerged weeds, so another tank-mix product should be used to control existing emerged weeds. For effective residual activity, rainfall or sprinkler irrigation, or shallow incorporation after application is required to activate the product. Its use may result in temporary leaf burn, spotting and/or stunting but reduced yield is not expected. Some cotton varieties may be more sensitive than others to this herbicide. Do not apply on soils classified as "sand" which have less than 3% organic matter. From a crop rotation perspective, the label states that cereal crops may be planted 4 months or more following application, and all other non-labeled crops may be planted 11 months or more following treatment.

Prowl H2O Herbicide

Prowl H2O herbicide may be applied as a broadcast over-the-top postemergence application in cotton for small-seeded broadleaf and annual grass control. Prowl H2O will not control weeds already emerged at the time of application, therefore the use of a postemergence herbicide treatment is required to control emerged weeds. Prowl H2O may be applied over-the-top of cotton between the 4th and 8th leaf stages of growth. Adequate rainfall or overhead irrigation is required after application for herbicide activation. Wheat may be planted 4 months after an application of Prowl H2O, except under the following conditions: If less than 12 inches of rainfall or overhead irrigation

was received between application and rotational crop planting, wheat should not be planted before 12 months after a spring application of Prowl H2O.

Thrips Update



Thrips will be one of the first pests to scout for in cotton during the growing season. ***Each field needs to be scouted on a scheduled weekly basis to be sure no pests are present.***

Thrips generally are not considered a serious pest of cotton, except in years when favorable growing conditions permit early planting.

Heavy thrips infestations will occur if plants have emerged before wheat or other small grains mature. Mature thrips often move into stands of succulent cotton seedlings, causing curled and misshapen leaves. Thrips infestations vary from field to field and from year to year and should be dealt with accordingly. Thrips are small, approximately one-sixteenth inch in length. The color varies according to species. It may be similar to the color of wheat straw, yellow or light brown.



The adults have two pairs of long, narrow, fringed wings which enable them to fly from one crop to another. The life cycle contains several stages: egg, larva, pupa, and adult. Larvae and adults will over winter in debris and trash near the field. In the spring, the adult females lay eggs by inserting them into the plant tissue. The creamy white eggs hatch into small larvae which begin to feed on the plant. After a short time, they burrow into the soil and

transform into a non-feeding stage called the pupae. They emerge as adults and continue to feed on the plant. Thrips damage cotton by using their rasping-sucking mouthparts to feed on the plant epidermis. Ruptured cells release plant fluids which are sucked up by the insects. Injury first appears as dark brown spots which assume a silvery appearance several days later. Feeding occurs on the lower side of the leaf and may injure the terminal bud so that new leaves fail to develop and growth is retarded. Leaves will be crinkled and cupped.

Weekly scouting is the only way to monitor a treatment's performance. Expect damaging populations of thrips to materialize first in fields where no seed treatment insecticide was used. Windy conditions will impact your ability to accurately assess thrips numbers. In-field detection becomes nearly impossible as the wind picks up. Take a composite sample pulling at least 30 plants across the field placing them in a plastic bag or bucket. Waiting to examine plants until you return to your vehicle will take a little longer, but will be a lot more accurate.

Besides looking on the undersides of cotyledons and true leaves, be sure to examine the terminal bud. Both adults and immature thrips feed and lounge around there and are easily overlooked unless you carefully inspect this region. Also don't forget to count and record the numbers of dislodged thrips running around on the inside of the baggie. Crop demographics play a large role in thrips pressure. Wheat is widely known as an early season habitat for thrips. However, alfalfa is another thrips nursery that can produce large numbers. With each cutting thrips migrate from the field in search of a food source. Cotton fields in close proximity to alfalfa meadows may experience huge influx of thrips overnight that might even rival the exodus from adjacent wheat fields. Also, with the amount of spring rainfall we have encountered in some areas, other alternate hosts have provided considerable habitat for thrips populations to buildup. Finding adult thrips in protected fields is normal and is expected as long as the thrips migration continues. Remember that thrips blown in from adjacent areas may not feed immediately and feeding is required for the insect to pick up a lethal dose of a systemic insecticide. Historically, Temik (aldicarb) has been a product of choice, however, with the loss of this product in 2011, we have come to rely more on seed treatments such as Gaucho (imidacloprid) or Cruiser (thiamethoxam) for early control. Other seed treatment products containing these products are also being sold. For a table showing these products and expected length of control, [click here](#).

[Click here for Cotton Insecticide/Nematicide Seed Treatments document](#)

Various foliar products are available and have also been recently evaluated in Texas. Orthene/acephate is the standard foliar thrips control product, and when used properly can provide good thrips control. At the 3 oz/ac rate, acephate will generally provide about 5 days control.

Bidrin (dicrotophos) has long been used for aphid and stinkbug control, and in the past used more frequently for thrips. At 3.2 oz/acre it performs comparably to acephate, but based on limited data appears to provide slightly less residual control.

Dimethoate is often used for thrips control on the High Plains and is usually priced competitively with acephate. At the 2 pt/ac rate it provides good knockdown, but based on limited data, it appears to provide slightly less residual control.

Things to consider when using foliar applications for thrips control:

1. Timing is critical. Controlling thrips during the first 2 weeks post crop emergence appears to be the most important period; especially under cool conditions. You need to be "Johnny on the spot" with these applications when thrips are numerous; even a few days delay can be detrimental.
2. Avoid automatic treatments. Automatically adding a foliar thrips material in a Roundup application may not be necessary or may be poorly timed. Often either the weeds aren't present when the thrips are or vice versa.
3. **Scout for thrips. Go out and visually assess if thrips are present. Pull up plants and thoroughly search for them or beat the plants inside a plastic cup.**

4. Don't spray based on damage. The damage you see today happened 3 to 5 days earlier and the field may have already suffered yield loss. Spraying based on damage is essentially a revenge treatment.
5. Spray based on thresholds. Use an accepted action threshold to help you determine whether or not you should treat.

Thresholds for foliar thrips sprays ¹	
<u>Cotton stage</u>	<u>Threshold</u>
Cotyledon to 1 true leaf	0.5-1 thrips/plant
2 true leaves	2 thrips/plant
3 true leaves	3 thrips/plant
4 true leaves	4 thrips/plant
5-6 true leaves	Rarely justified

¹Dr. David Kerns (Texas A&M AgriLife Extension) April 6, 2011 Focus on South Plains Agriculture Newsletter.

It is easy to spot when the insecticide performance begins to fade by keeping track of the plant's physical condition related to thrips numbers. As protection fizzles, visual leaf damage should increase along with a rise in thrips numbers. **Cool temperatures will result in lack of vigorous early cotton growth, and will in turn increase susceptibility to thrips damage.** Quick action will prevent maturity delays associated with infestations that reach or exceed three thrips per plant. Over-the-top sprays can be used in fields planted to glyphosate-tolerant (Roundup Ready Flex and GlyTol) varieties. This strategy of tank mixing an insecticide with glyphosate is cost effective. Acephate (Orthene) has been a standard foliar thrips treatment for many years. For the application rate, refer to the specific label for your product of choice, as several products containing acephate are now available. **JG**

[Click here for a table with Foliar Application Options for Thrips Control in Cotton.](#)

2019 Dicamba Training

Applicators planning to use specific dicamba herbicides labelled for the Roundup Ready Xtend Crop System™ for soybeans and cotton must complete U.S. Department of Agriculture-approved dicamba training before spraying these products this year.

“Whether you're a certified applicator or driving the application equipment you have to be trained,” said Todd Baughman, Oklahoma State University Cooperative Extension summer crop weed specialist. “Even if you went through training last year, you're still

required to go through the Oklahoma Department of Agriculture, Food and Forestry approved training this year.”

Only the ODAFF, Extension and the three major manufacturers – Monsanto, DuPont and BASF – are authorized to provide the training. To be certified please contact your local extension office.

Oklahoma Boll Weevil Eradication Organization

Brenda Osborne, Director of the Oklahoma Boll Weevil Organization, based at Altus, provided the information below. Eradication of the boll weevil across most of the U.S. Cotton Belt, and in the state has been very successful and is a major contributing factor to the continued profitability of cotton production. It has been a long, difficult, and expensive task to rid our state and most of the Cotton Belt of this invasive species that for such a long time negatively impacted our production. Since 1998 the producers of Oklahoma has spent **\$37,218,599** to eradicate and provide a maintenance program.

There is still a difficult fight with this insect pest in south Texas, and we all need to do our part in keeping this pest from resurfacing in our state.

Cotton acres for past five years

<u>Year</u>	<u>Acres¹</u>
2014	237,523
2015	216,678
2016	299,302
2017	568,434
2018	756,397

¹ Oklahoma Boll Weevil Eradication Organization

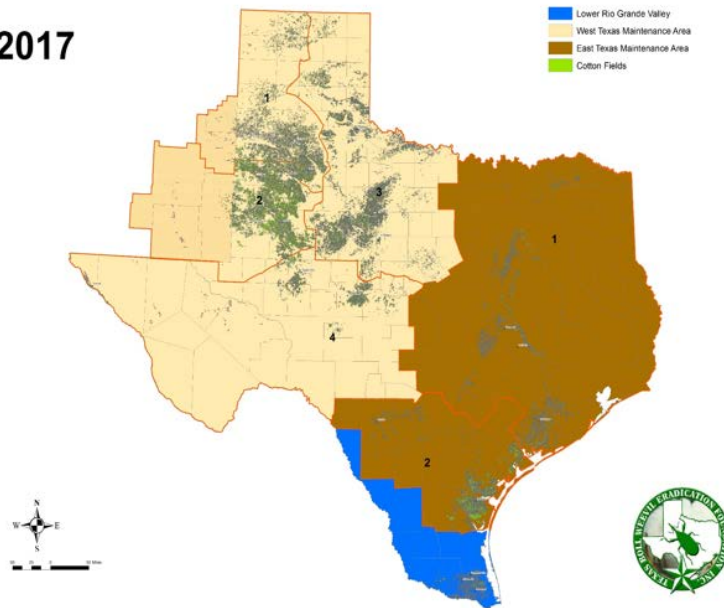
OBWEO is preparing for the upcoming 2019 cotton season. It is our responsibility to ensure the continued success of this program. With all the talk of a significant increase in cotton acres, there are some important issues with respect to OBWEO that you need to be aware of. If you have been growing cotton for the past 3-5 years, we know where those fields are located. However, if you are a new producer or have not grown cotton in several years, we need you to provide the legal descriptions of these new cotton fields.

There is a Boll Weevil Assessment for harvested cotton acres. The current assessment is \$2.50 per harvested acre. This assessment is reviewed annually. The trapping density this year is one trap per 640 acres. In areas where planted cotton acreage density is high, not all fields will actually have a trap near it. In other areas that are more isolated, each field will need a trap.

Cotton harvesting equipment entering Oklahoma from two eradication areas in Texas has to be certified as boll weevil free prior to movement into our state. Please contact t

equipment departure from these two areas. This will allow TBWEF to inspect the equipment. A USDA-APHIS phytosanitary certificate is issued and is required before equipment can be transported from these areas. These ONLY include the Lower Rio Grande Valley Eradication Zone (blue area on the map below) or the East Texas Maintenance Area (brown area on the map below). This is critical to meet USDA-APHIS requirements and prevent the re-infestation of boll weevils into eradicated areas. It is illegal to move non-certified cotton harvesting equipment from these areas into the state of Oklahoma.

2017



Texas Boll Weevil Eradication Foundation: 325-672-2800
After Hours and Weekends: 325-668-7361

Contact John Lamb at the Frederick office at 580-335-7760 or cell 580-305-1930 for the following counties: Tillman, Cotton, Comanche, Atoka, Bryan, and Stephens.

Contact Brenda Osborne at the Altus office at 580-477-4287 or cell 580-471-79632 for all other counties.

Oklahoma Cotton Denim Ball April 27, 2019



*Dueling Pianos • Dinner
Silent Auction • Live Auction*

APRIL 27TH

*Reception - 5:30pm
Dinner - 6:30pm*

TICKETS \$25 PER PLATE




**SWOSU PIONEER CELLULAR
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WEATHERFORD, OK**



*All proceeds go to benefit CAC.
Due to CAC regulations, checks are preferred.*



FOR MORE INFORMATION OR TO DONATE ITEMS FOR THE LIVE OR SILENT AUCTION PLEASE CONTACT RILEY AT (580) 305-2411



The Cotton Comments Newsletter is maintained by Jerry Goodson, Extension Assistant. If you would like to receive this newsletter via email, send a request to:

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