



# Cotton Comments

OSU Southwest Oklahoma Research and Extension Center  
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## 2015 Crop Size and Quality Update

According to the most recent USDA-NASS 2015 crop report, 215,000 acres were planted with 205,000 acres expected to be harvested. Due to record May rainfall in many areas, substantial soil moisture was prevalent in many counties. A dry spell in August and September was the main limiting factor impacting the crop. USDA-NASS projects Oklahoma cotton production to total 370,000 thousand bales, 37 percent higher production than 2014. Yield is expected to average 866 pounds per acre, compared with 615 pounds last year. If this projection is met, the 2015 crop would be the second largest since 2000.

The USDA-AMS Classing Office at Abilene is reporting that color and leaf grades, staple, micronaire, strength, uniformity, and bark contamination have all been good to excellent for many producers. This is based on classing results for about 340,000 bales of Oklahoma ginned cotton classed through February 26. A total of 51% have been color grades 11, 21 or 31, with 26% with color grade 11 or 21 – the best possible. Leaf grades have averaged 3.1 with 27% exhibiting leaf grade 1 or 2 – the best quality possible. Bark contamination is present in about 13% of the bales classed thus far. Staple (fiber length expressed in 32nds inch) has averaged 36.0. This is good considering the moisture stress encountered in some areas in August and September. A total of 43% of the crop has a 37 or longer staple, with an additional 25% classed as a 36. Micronaire (a measure of maturity) averaged 4.2 units, with 92% in the range of 3.5-4.9. Currently the strength average is 31.3 g/tex, with 88% classed as 30 g/tex or higher. Oklahoma-ginned bales classed at Abilene have the highest average staple, uniformity and strength averages, and this again is a result of wise variety selection.

## 2015 Project Report

Summaries for several projects pertaining to variety performance, weed control, entomology and plant pathology, harvest aids, etc. can be found in the 2015 project report. This can be downloaded at: <http://cotton.okstate.edu/cttn-ext-annl-rprts> and <http://www.ntokcotton.org/>.

## 2016 Seed and Technology Cost

Cost should not necessarily be the primary reason for selecting a variety, but it is important. The value of a high yielding cotton variety with biotech traits to ease management requirements across a large number of acres is a serious consideration. According to USDA-AMS Cotton Varieties Planted - 2015 Crop, the Abilene Classing Office indicated that producers planted over 98% of the acreage to glyphosate tolerant varieties (Roundup Ready Flex or GlyTol), and over 96% to Bollgard II, Widestrike Bt, or TwinLink technologies.

The ***Plains Cotton Growers 2016 Seed Cost Comparison Worksheet*** can certainly be useful for planning purposes. Shawn Wade has updated the Microsoft Excel spreadsheet which can be used within your Web browser, or downloaded and saved to your computer. About 100 varieties of many types can be found in the spreadsheet. The user can select up to 10 varieties to simultaneously compare total seed and technology fee costs based on a specific seeding rate. The row spacing and seed per row-ft can be entered by the user. This then calculates a seed drop on a per acre basis. Then, based on published pricing for the various seed varieties and technology fees, the cost per acre is automatically calculated. It should be noted that the pricing used in the spreadsheet does not include premium seed treatments or any incentive program that might be provided by the various companies. The Seed Cost Comparison Worksheet is available here: <http://plainscotton.org>

## Variety Selection

Selecting productive cotton varieties is not an easy task, especially in Oklahoma where weather can literally “make or break” a crop. Producers need to do their homework by comparing several characteristics among many different varieties, and then keying these characteristics to typical growing conditions. We can’t control our growing environment from year to year, but we can select the varieties we plant based on desired attributes. It is very important to select and plant varieties that fit specific fields on your operation. Don't plant the farm to a single variety, and it is strongly suggested to try relatively small acreages of new ones before extensive planting.

## Variety Testing Publications

If disease issues are not concerning, then scrutinize all possible university trial data that are available to see how a specific variety has performed across a series of environments, and if possible, across years. It is best to consider multi-year and multi-

site performance averages when they are available. However, due to the rate of varietal release, many new varieties are sold which have not undergone multi-year university testing, or perhaps no university testing at all. Our 2015 variety testing program results are available here: <http://cotton.okstate.edu/variety-tests>

Producers in north Texas who have an interest in Dr. Gaylon Morgan's 2015 Texas A&M AgriLife Extension testing results can find them here: <http://varietytesting.tamu.edu/cotton/index.htm>

When it comes to variety selection in our area, several factors are important to consider.

### **Maturity (Earliness)**

Scrutinizing the relative maturity rankings provided by seed companies will be beneficial. Don't expect a mid-full season cotton variety to perform well in a short season environment where an early or early-mid might generally work best. Many longer season cotton varieties are better adapted to areas with longer growing seasons, although significant gains in yield may sometimes be obtained in years with warm September and October temperatures. Longer season varieties will typically do much better when planted earlier and then provided an excellent finish. For later plantings, early-mid maturity varieties may be better, and for late plantings or replant situations, early maturity varieties may be better. Relative maturity for most varieties gets compressed when moisture stress occurs. In other words, under drought stress, maturity of longer season varieties will not be expressed to the degree that would generally be noted when under high water and fertility regimes.

### **Pounds**

Yield potential is probably the single most important agronomic characteristic, because pounds do drive profitability and provides for the safety net of higher actual production history (APH) in case of catastrophic loss of acres. The benefit this can provide from the crop insurance perspective is important in our high risk area. Yield stability across environments is going to be important, and basically what we want to find is a variety that has the ability to provide high yield across varying water inputs.

## **Fiber Quality**

Producers should also consider lint quality. We have made a lot of progress in terms of fiber quality over the last several years. We have seen significant improvements in overall fiber quality packages associated with our modern varieties. Staple is generally good to excellent for most new varieties. A lot of things can affect crop micronaire. These factors can include overall environment, planting date, variety, early season fruit loss with later compensation, excessive late season irrigation or rainfall, seedling disease, early season set-backs due to hail damage, blowing sand, thrips, etc. Fiber strength has also significantly improved and many newer varieties tend to be at least 30 g/tex. Length uniformity can be affected by staple, maturity, and harvest method (picker harvested typically higher than stripper harvested). Higher maturity fiber generally results in better uniformity. Leaf grade can be affected by density of leaf hairs on specific varieties in some years. Generally, cool, wet fall conditions can lead to lower quality leaf grades for varieties which tend to be hairy. In drier harvesting environments these differences tend to diminish. Color grades are basically a function of weathering or exposure of the fiber on the plant to wet conditions. The highest quality that a cotton boll can have is on the day that it opens. After that, if conditions favor microbial growth (warm, wet conditions) or if an early freeze affects immature cotton, then color grade quality will likely be reduced. Bark contamination is generally also driven by significant late season rainfall followed by a freeze. In some years this can't be easily managed if stripper harvested. Conversely, picker harvesting can significantly reduce or eliminate bark contamination.

## **Storm Resistance**

Storm resistance is still a concern for growers in our area. Even though many producers have adopted less storm resistant cotton varieties over the last several years, and generally done well with those, the overall management system the producer adopts can be important. Under significant moisture stress on dryland, some newer varieties may provide an unacceptable level of storm resistance, especially if the field is "left to the freeze." Producers planning to execute a sound harvest aid program as soon as the crop is mature can probably grow some fields of less storm resistant cotton. However, having large acreages of varieties with low storm resistance might be a prescription for disaster if the right environmental conditions align at harvest. Do not plan to leave looser open-boll cottons in the field until a freeze conditions the plants for harvest. Unacceptable pre-harvest lint loss is likely to result. Higher storm resistance varieties are better adapted to our harvesting conditions and they are more likely to survive damaging weather prior to harvest without considerable seedcotton loss. Inquire about the storm resistance of any variety on your potential planting list. If you do

choose a variety with low storm resistance, plan and budget ahead for a good harvest aid program that will let you achieve an early harvest. Good storm resistance data are now being provided by most companies and we evaluated all variety trials for this attribute in 2015.

### **Disease and Nematode Resistance/Tolerance**

Producers should likely not plant the farming operation to one cotton variety. A question should be "do I have plant diseases or Root knot nematodes in this specific field?" Although we have not been able to identify substantial acreage with this pest in Oklahoma, varietal tolerance or resistance will be critical for managing this. One thing to consider is whether you know which disease is present. If you have a problem with a wilt disease and don't know what it is, then you need to have the problem identified. If known Verticillium wilt pressure is present, then take a look at Dr. Terry Wheeler's and Dr. Jason Woodward's data from several locations investigating variety performance under constraints from this particular disease. The same should be considered for Fusarium wilt/Root-knot nematode issues. Many times varieties which do well under Verticillium wilt pressure may not be the same ones which rise to the top with Fusarium or Root-knot nematode pressure. **Bacterial blight is an occasional problem in the region. There are several varieties out there that can provide high levels of resistance/immunity.** To determine the disease reaction of many currently available varieties, visit the Texas A&M AgriLife Research and Extension Center Website here: <http://lubbock.tamu.edu/>

### **Biotech Trait Types**

Producers need to ask themselves several questions. Do I want a herbicide-tolerant variety, if so, which system? While the current list of transgenic herbicide options has recently increased with the availability of triple-stacked herbicide tolerant varieties (glyphosate, glufosinate and dicamba) from Monsanto, the list of in-season herbicide options for 2016 has not. **Unless we hear something soon from EPA, Monsanto, and BASF concerning labeling of new dicamba products, in-season use of dicamba will not be allowed on the XtendFlex varieties in 2016. Therefore those varieties may end up being managed as "Roundup Ready Flex and Liberty Link stacked."** The agronomic capabilities of glyphosate tolerant cotton varieties continue to improve and the weed control system it enables is very effective if properly executed. The Liberty Link system has thus far been more widely adopted in other regions, perhaps due to our tough early season environment in some years. In 2016, there are several varieties with GlyTol/Liberty Link "stacked" technologies, and more "stacked" with Bayer's proprietary TwinLink Bt trait. **Also new for 2016 is the Enlist cotton**

**technology. This trait package from Dow AgroSciences includes a triple combination of herbicide tolerance for glyphosate, glufosinate, and 2,4-D. Widestrike 3 is also included in the package.** We are anxiously awaiting the labeling of Enlist Duo (a premix of glyphosate and Dow's 2,4-D choline formulation) by EPA for its use in Enlist cotton. This specific formulation will be the only 2,4-D formulation labeled for use in Enlist crops (corn, soybeans, cotton). **Although the trait technology is deregulated, there will be a very limited launch of Enlist cotton in 2016, and that will be in the PhytoGen 490 W3FE variety.** This variety is from the PhytoGen 499 WRF background.

As for Bt caterpillar insect protection, the Bollgard II (Cry1A + Cry2AB) and Widestrike (Cry1A + Cry1F) technologies have provided outstanding caterpillar pest control in our area. TwinLink (Cry1Ab and Cry2Ae) also provides similar results. In 2014, we had an opportunity to evaluate PhytoGen 495 W3RF, containing Widestrike III triple-stacked Bt technology (Cry1A + Cry1F + VIP 3A) targeted to control various lepidopterous pests. The WideStrike III technology is the first "triple stacked Bt product" in the market. Widestrike 3 Bt was effective in controlling low populations of lepidopterous pests encountered at the site in 2014. The triple-stacked Widestrike 3 product should provide an additional layer of Bt protection to reduce the potential for insect resistance development. Based on our local technology pricing, these traits have been widely planted on Oklahoma cotton acres. Because of the lack of disruption of beneficial arthropods by insecticides used to target bollworms, etc., aphids will likely not be flared which is of considerable value.

### **2015 Texas A&M AgriLife Extension Profitability Spreadsheet**

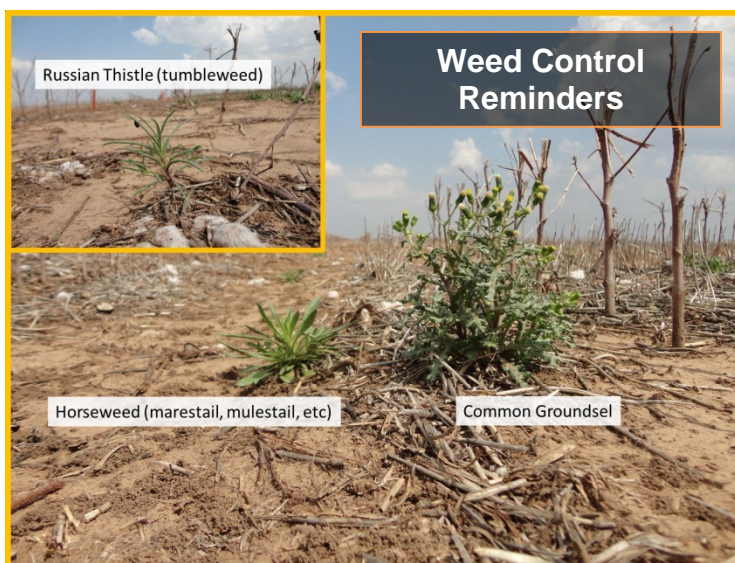
An Excel spreadsheet has been developed by Extension agricultural economist Dr. Jackie Smith at the Lubbock Center. See: <http://agrilife.org/southplainsprofit/>

The spreadsheet allows the users to select various crops and input their operation's data. This spreadsheet covers a multitude of summer crops including alfalfa, corn, corn silage, cotton, grain sorghum, sorghum silage, peanuts, sesame, sunflowers, etc. The user can enter prices, input costs, etc and calculate potential returns.

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## Spring Weed Control Update

Burning down weeds ahead of planting is an essential step towards a healthy, vigorous stand of cotton. Several studies have shown that weed competition early in the cotton plant's life can significantly reduce yields. Starting clean is essential. Spring weed control ahead of cotton in Oklahoma often involves several weed species. Some of the more difficult species to control are horseweed (marestail), Russian thistle and common groundsel.



Since horseweed treatments generally take care of the rest of the challenging weeds we face I tend to focus on it. With respect to horseweed, dicamba and 2,4-D are usually key ingredients in the recipe for success as long as the application time (date) allows for the proper cotton plant back restrictions to be observed (the dicamba label states that for 0.25 lb a.i./acre, 21 days must pass after receiving one inch of rainfall or sprinkler irrigation following applications; for 1 lb a.i./acre of 2,4-D, planting may occur 30 days after application). Many growers have recently been questioning these plant-back restrictions due to the availability of dicamba and/or 2,4-D choline tolerant varieties. Numerous seed companies will be offering XtendFlex (dicamba tolerant) varieties (identifiable by the "XF" or "BGIXF" designation) in 2016. In addition, PhytoGen will have a limited supply of Enlist (2,4-D tolerant) cotton (one in particular designated by an "FE" or "W3FE") for planting in 2016. Unfortunately at this juncture neither system has an approved herbicide available for in-season use. However, due to seed availability a common question continues to arise at meetings and during phone conversations. "Since my seed has tolerance to dicamba or 2,4-D, do I have to follow the plant-back restrictions previously observed?" The answer is YES. "Why?" they ask. Here is the answer: the current plant-back restrictions that we observe are not connected in any way to variety selection. As always, the herbicide product being used has a current (and legally binding) label. This label dictates the rules of its use. There currently is no product on the market that carries a label allowing for any deviation from current plant-back restrictions. Until we receive approvals for the new ultra-low volatility formulations of dicamba and 2,4-D choline, nothing has changed...we are bound by the labels of the products available. Therefore, as we get closer ( $\leq 30$  days) to planting our herbicide choices will likely need to change. Starting and staying clean will completely depend on the effectiveness of your at-plant burndown operation. Due to glyphosate resistance (GR) growers need to be considering different burndown chemistry closer to or at planting. Subsequent newsletters will address this situation in further detail.

## Concerns with rotating from wheat to cotton



With grain prices where they are many have been talking about increasing cotton acreage this year. While cotton can offer a good return on one's investment, there are some additional considerations. One of those considerations is herbicide residue.

Several wheat herbicides have the potential to carry over to cotton from either in-season or off-season use. Most definitely wheat growers looking to plant a late cotton crop following wheat harvest are probably the most at risk. However, over the past few years many no-till wheat growers have also been dealing with glyphosate resistant pigweed in their wheat fields during the summer. Most of these fields have been heavily dependent on glyphosate only programs for summertime weed control. As indicated in the 2015 picture above, GR pigweed left uncontrolled can quickly spread and negatively affect just about any subsequent cropping decision. In many cases growers experiencing these escapes have turned to the sulfonylurea herbicides (Finesse, Ally or Cimarron Plus) for effective control. While these herbicides do make great tank-mix partners for weed control in a continuous wheat system, they may present some problems if rotating to cotton. Product labels for all three of these require a minimum 25 inches of rainfall and 14 months to pass after application before cotton may be planted. In addition, these specific requirements are based on soil a soil pH level of 7.9 or less. If your soil pH is above 7.9 the labels strictly recommend that these products should not be used at all. These labels clearly state that soils with higher pH levels (greater than 7.9) can result in carryover of up to 34 months. Therefore, if you don't know your soil pH and your habits fit this use pattern it is highly recommended that soil test be done to determine your soil pH as it applies to this situation.



Growers that wish to maintain more rotational flexibility may want to consider alternative herbicide programs for summertime control of GR weeds on those fields that may rotate to cotton in the future.

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### **Upcoming Cotton Growers Meetings**

March 8, 2016 - 3<sup>rd</sup> Annual Oklahoma Irrigation Conference – Woodward, OK. Woodward County Event Center & Fairgrounds. For more information and online registration, click here:

<http://oces.okstate.edu/woodward/oklahoma-irrigation-conference>

March 22, 2016 – Canadian/Grady County Cotton & Soybean Meeting  
Contact Kyle Worthington at 405-262-0155 for further details.

March 23, 2016 Carnegie Cotton Meeting  
Contact Jeannie Hileman 580-654-1142 for further details.

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