



Cotton Comments

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EPA Approves Section 18 Exemption for Topguard (Flutriafol) for Cotton Root Rot Control in Oklahoma Cotton in 2014

In February, a Section 18 exemption was requested of EPA for the fungicide flutriafol (brand name Topguard) to control Cotton Root Rot (CRR) in Oklahoma cotton production for the 2014 year. This disease is caused by the soil borne fungus *Phymatotrichopsis omnivora*. This request was granted by EPA last week, and expires on June 30, 2014. Topguard fungicide works by forming a protective barrier around the cotton root at the point of disease infection. Precipitation in the form of rainfall or irrigation is required to move the product into the infection zone. The amount of water required will vary with soil type, soil moisture, and rainfall or irrigation intensity. Two application methods are noted on the Section 18 label. To make a T-Band application, apply Topguard fungicide in a concentrated 3-4 inch wide band at planting perpendicular to row direction after furrow opening and seed placement but prior to furrow closure with press wheel. An additional method that can be used is the modified in-furrow application. To use this method, apply using a splitter/Y shaped application mechanism that directs the product on the sides of seed furrow and not in direct contact with the seed.

This disease is present in several cotton producing counties in the state including Comanche, Cotton, Kiowa, and Tillman. Based on 2013 cotton plantings in these counties, this would potentially affect a maximum of about 50,000 acres. It should be noted that not all fields in those counties have disease pressure. This pathogen can be found very deep in soils and is known to infect over 2,000 broadleaf plants, but does not affect grasses. Each year cotton plants begin dying in July or August which continues until the end of the growing season. Once infected, cotton is rapidly killed by this disease. This initially occurs in patches, and typically, eventually the patches coalesce into larger areas. These dead areas provide a minimal amount of harvestable crop and the dead, decaying stalks become entangled and disrupt the flow of seed cotton in harvesting equipment, especially stripper-type machines. This reduces the speed of harvest. This additional time required to harvest increases labor and fuel costs and at the end of the day, more expenses for producers. Later harvesting can result in both lower yield and lower quality due to field exposure to rainfall, and potentially ice and/or sleet events. Many of today's contemporary varieties, are susceptible to pre-harvest losses to some degree, if the harvesting is delayed much past the optimum.

Many cotton producers in these above-listed counties incorporate wheat/cotton rotations into their farm management scenarios. However, due to CRR presence in many fields, producers will generally not rotate to cotton or other susceptible (broadleaf) crops, but choose to instead remain in monoculture wheat production. This results in a less than ideal situation with respect to wheat production, because continuous wheat planting increases soil borne diseases and weed pressure in a monoculture situation. Under monoculture wheat production, disease and weed pressure can reduce yields and result in lower quality, and can potentially degrade soil health. Yield increases in wheat can potentially be substantial due to reduced wheat disease pressure and weed competition since these cycles can be broken with a cotton rotation.

Researchers in Texas have been investigating various CRR control methods for over one hundred years. They have noted that yield losses to individual growers vary greatly. Unfortunately from a dryland crop production perspective, the fungus appears to have increased severity in years of abundant rainfall. Flutriafol fungicide has been evaluated in Texas as a chemical control option. Dr. Tom Isakeit and various personnel with Texas A&M AgriLife Extension first identified this fungicide as a possible candidate for CRR control during a 2008 field experiment. Since then they have conducted field experiments at different locations, to evaluate rates and different application methods. This work culminated in recent Texas Section 18 request approvals by EPA. Although several methods of application were effective, they noted that an in-furrow or T-band application of 1 (0.13 lb active ingredient/acre) to 2 pints (0.26 lb a.i.)/acre of Topguard at planting will reduce the incidence of root rot and increase the lint yield by more than 20% under conditions that are most favorable for disease.

In 2013 two Oklahoma flutriafol projects were conducted by Southwest Research and Extension Center personnel, in collaboration with Mr. Rick Minzenmayer with Texas A&M AgriLife Extension Service, San Angelo. One was planted near Snyder in Kiowa County (irrigated) and the other near Hamms in Tillman County (dryland). At the Tillman County dryland site, the T-band treatment resulted in slightly higher stand counts at 14 and 28 days after planting (DAP) when compared to the modified in-furrow method. The dryland site uniformly emerged and expressed minimal disease incidence and later failed due to exceptional drought conditions.

Substantial but spatially variable CRR pressure was encountered at the Kiowa County irrigated site. Results indicate that 0.13 and 0.26 lb/acre flutriafol rates had lower percentage diseased plants than the untreated. The 0.26 lb/acre rate resulted in a lower percentage of diseased plants than the 0.13 lb rate. When compared to the modified in-furrow treatment, the T-band application method resulted in a higher number of healthy plants at both 14 and 28 DAP, but this did not result in higher yield. Lint yields were 1226, 1566, and 1715 lb/acre for the untreated check, and flutriafol rate main effect means of 0.13 and 0.26 lb a.i./acre, respectively. When compared to the untreated check, yields were increased by 340 and 489 lb/acre for the 0.13 and the 0.26 lb a.i./acre rates, respectively. This represents 28 and 40 percent yield increases for flutriafol rates of 0.13 and 0.26 lb a.i./acre, respectively, when compared to the untreated check. Results from this project indicate that flutriafol was effective at

reducing the negative impact of CRR at this site. The 2013 work was presented at the National Cotton Council's annual Beltwide Cotton Conferences in New Orleans in early January, 2014. A proceedings article and presentation were generated.

Click here for

[The Beltwide Cotton Conference proceedings article generated based on Oklahoma 2013 research results.](#)

Application Directions

Rate: 16-32 fluid oz/acre

Overhead or Sprinkler Irrigation Fields:

- The T-Band application method is preferred under these cropping practices.
- Modified In-Furrow can be used. Effort should be made to avoid applying product in direct contact with seed.

Dryland Fields:

- The Modified In-Furrow application technique may provide more consistent control under low rainfall conditions.
- Application using a T-Band method requires rainfall to move the product into the disease infection zone below the soil surface.

Furrow and Drip Irrigated Fields:

- Apply in T-Band or Modified In-Furrow.
- When using the Modified In-Furrow application method sufficient irrigation must be applied to thoroughly wet the TOPGUARD Fungicide treated zone after cotton has emerged.
- For T-Band applications, the top of the bed must be thoroughly wetted after the cotton has emerged.

NOTICE for All Applications Methods and Field Conditions: Heavy rainfall or irrigation within 3 days after planting may delay emergence.

AS ALWAYS, READ AND FOLLOW ALL LABEL DIRECTIONS. Click here for a copy of the 2014

[Topguard Oklahoma Section 18 Exemption For Use on Cotton to Control Cotton Root Rot](#)

Upcoming Meetings and Field days

May 2 – Tillman County Field Tour and Tipton Valley Research Center Dedication.

Click here for a copy of the agenda

[2014 Field Tour and Tipton Valley Research Center Dedication Agenda](#)

For a copy of the news release, click here:

[2014 Field Tour and Tipton Valley Research Center Dedication Press Release](#)

May 14 - The Texas A&M AgriLife Research and Extension Center at Vernon has announced the Rolling Plains Spring Field Day / Hardeman County Wheat Field Tour at the Chillicothe Research Station. For a copy of the agenda provided by Dr. Paul DeLaune, click here:

[May 14, 2014 Chillicothe Field Day Agenda](#)

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