



Cotton Newsletter, April 2011, Volume 2 , Number 1

This is the first edition of the Cotton Newsletter for 2011. The purpose of our newsletter is to present relevant information and news items for New Mexico growers and other stakeholders in the cotton industry within the State.

Cotton fields have already been prepared in many parts of the State and some growers have already planted especially in the southeastern part of New Mexico. Meanwhile, cotton prices still remain strong on the exchange market. The current high lint price is expected to result in more cotton acreages in New Mexico. We welcome comments, information, questions and any other contributions from growers and others interested in cotton production in NM.

In case you want to share any information, please get in touch with John Idowu (email: jidowu@nmsu.edu; phone: 575-646-2571). If you are interested in previous editions of the Cotton Bulletin, please feel free to download at <http://aces.nmsu.edu/ces/ifcpm/cotton-production.html>

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Cotton Management—Agronomic Considerations

Some of us might be a little rusty at remembering the nuances of cotton production but with a projected increase in acreage of 38 to 43%, it might not hurt to review some basic agronomy associated with cotton production. Salinity, water and nutrient status are important parameters that come to mind. Soil testing can readily help with the evaluation of the nutrient status and salinity.

Salinity and water management

Most of us haven't seen rain since August or September of 2010 which means that there hasn't been any natural leaching of salts from the soil surface. All irrigation water has some amount of salt which will accumulate in the surface soil if there is no rain to help leach them out. While this may be bad for such crops as chile, cotton is tolerant of saline conditions. However, young seedlings are most sensitive to salinity, which makes first irrigation very important for reducing soil salt levels. Mature plants can tolerate salinity levels greater than 5.1 mmhos/cm as determined from a saturated paste. Cotton is also drought tolerant. Cotton does better, of course, with well timed applications of water for optimum yield, but it is tolerant to periods of low water availability. However, lint quality can suffer without adequate water. Key times to have water available are for establishment, first square, first boll, and last effective flower.

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Planting Density

Also remember to shoot for between 40,000 and 45,000 plants per acre or roughly 3-4 living plants per foot of row. Planting at this density will ensure optimal cotton fiber yield. Before you plant it is important to know the germination percentage of the seeds that you want to use. The germination percentage will give information of how much of pure live seed that are in a bag of seed. For example, if the germination rate is 100%, it means that all the seeds in a bag are viable, and will grow when planted in the soil. If the germination rate is 50%, it means that only half of the seeds in a bag will grow when planted, while the other half will not grow. If you are seeding at a rate of 15 lbs per acre, at 100% germination rate, you will only need 15 lbs of seeds, while with a 50% germination rate; you will need to plant 30 lbs per acre.

Fertilization

Don't just put half your nitrogen fertilizer out at planting! Pre-plant soil nitrate test levels can reduce your fertilizer bill at the beginning of the season. A soil with <5 ppm nitrate would need 30 – 50 lb N/acre at pre-plant but a soil with between 10 and 15 ppm nitrate would only need about 20 lb N/acre or no application if good water management practices exist or there is sufficient organic matter to carry it to the next stage of growth. The rest of the nitrogen should go on between first flower and peak bloom. The most intensive use of N by cotton is the growth period prior to peak bloom. Feeding the plant during this phase is critical for optimum yield. Between 40 and 60 lb of N per acre are needed per bale of expected yield. A 4 bale per acre yield goal would need a season total of up to 240 lb N/acre from all nitrogen sources. While that might seem like a lot, remember to give credit for all sources of nitrogen that comes available to the plant. These sources include soil organic matter (30 lb/acre per percent organic matter), and irrigation water (have your irrigation water tested for nitrate-N and credit 2.7 lb N for every acre-foot of water per ppm nitrate).

Soil testing is especially helpful if fields have had dairy manure applied. Dairy manure averages 36 lb total-N per dry ton, 25 lb of P₂O₅ per dry ton and 50 lb K₂O per dry ton. Most fields with a history of dairy manure application do not need phosphorus and usually have a significant amount of soil nitrate nitrogen in the top and second foot of soil that could carry the plant to maturity. Nitrate levels at these depths should be accounted for in fields that have had manure, to prevent excessive vegetative growth. Over application of soil nutrients will stimulate cotton plants to stay longer in a vegetative state, thereby affecting boll formation and maturity. Soils should be tested for phosphorus using the Olsen procedure as it is best suited to high pH soils. Ammonium acetate extractable potassium should be near 230 ppm to be considered sufficient for plant use during the season. Pulling leaf samples at first flower from the youngest most fully developed leaf on the plant and submitting them for nutrient analysis will help you fine tune your fertilizer program with respect to all nutrients.

Finally, hire yourself a qualified consultant. Several individuals in the state have certification in agronomy with either the American Society of Agronomy's Certified Crop Adviser program or the National Alliance of Independent Crop Consultants. They are worth their expense as they keep your best interests in mind for profitable farming.

Article written by Robert Flynn, Extension Agronomist and Soil Specialist, NMSU at Artesia, NM.

New Mexico Bt Cotton Refuge Requirements Depend on County

Planting Non-Bt cotton refuges have been required of growers in an effort to maintain the effectiveness of the Bt technology. The eastern US was exempted from a refuge requirement because the target pest, which is cotton bollworm, has multiple hosts sufficient to prevent a resistance to the Bt genes. Areas that historically have had pink bollworm populations were still required to plant refuges since pink bollworm only has one host, cotton. Pictures of stages of the pink bollworm and their damage to the bloom are presented in figure 1 (a-c).

Some areas having active pink bollworm eradication programs have received specific exemptions based on their eradication status. Currently, three counties in New Mexico have received a section 24c exemption from planting non-Bt refuge; these counties are Dona Ana, Luna and Sierra. However growers in the rest of New Mexico are still required to plant a refuge of non-Bt cotton.

This means that growers in Dona Ana, Luna and Sierra counties may plant 100% Bt cotton varieties. However, growers who choose to grow Bollgard varieties without a refuge must sign a waiver. Widestrike varieties do not require a waiver.

Growers in the rest of New Mexico are required to have a 5% or 20% refuge of non-Bt cotton. A 5% refuge cannot be treated with any insecticides labeled for control of cotton bollworm, tobacco budworm or pink bollworm after squaring. A 20% refuge may be treated with any labeled insecticide except foliar B.t. products.

The 20% refuge may be planted as a separate field, as a block within a field, or at the perimeter of a field. The 20% refuge must be within 1 mile of the Bt cotton.

The 5% refuge may be in the Bt field or at a separate location but should be at least 150 feet wide and within ½ mile of the Bt cotton. Fields greater than ½ mile wide must have a refuge in more than one location to comply with the requirement of a refuge within ½ mile of all Bt cotton. Growers may also integrate the refuge throughout the field by planting one row of non-Bt cotton for every 6-10 Bt cotton rows.



Figure 1. Pictures of adult and larva of the pink bollworm and the damage to rosetted bloom
Article written by Jane Pierce, Associate Professor & Entomologist, NMSU at Artesia, NM.

Glandless Cotton Trial for the Second Year

Cotton Incorporated (CI) has funded a trial evaluating the glandless cotton in New Mexico for the second year. The purpose of this project is to study the performance of an Acala glandless variety in NM in terms of growth, yield, insect pressure and fiber quality. The glandless cotton seeds commands a high premium because it can be fed to aquatic animals and humans. Currently, a demand for the glandless cotton seeds may be emerging from the shrimp feed industry. However, glandless variety of cotton is more challenging to grow because it has been shown in the past to be more susceptible to piercing, chewing and sucking insects compared to the conventional glanded varieties. For the 2011 project, we plan to monitor closely the pest pressure in the glandless cotton fields and compare this to the traditional upland or transgenic varieties.

Cotton Prices

Cotton Monthly Prices A Index*

Month	Price (cents/pound of lint)
May 2010	90.07
June 2010	93.04
July 2010	85.73
August 2010	90.35
September 2010	104.73
October 2010	126.55
November 2010	155.4
December 2010	168.2
January 2011	178.9
February 2011	213.1

*Source: National Cotton Council of America

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