



The University of Georgia

## Cooperative Extension Service

College of Agricultural and Environmental Sciences



# Georgia Cotton

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**CROP SITUATION. (*Brown*)** We've had an up-and-down start – cold, wet weather, delayed planting, and then drought and high temperatures followed by above average rainfall in June. Weed control, sidedress fertilization, and early PGR applications presented a challenge, but the crop has come around and shows considerable promise. In other words, as of the 4<sup>th</sup> of July, our crop looked quite good...but it is a long way to the gin. The June 30 USDA Crop Report estimated the 2005 Georgia cotton crop at 1.2 million acres.

**FRUIT LOSS. (*Brown*)** Fruit shed is unavoidable. Research indicates final fruit retention in Georgia averages about 55 percent. In other words, at the end of the season 45 percent of possible fruiting sites have no fruit. This is true even in high yield environments and suggests that sometime in the season we'll see a lot of squares, blooms, or bolls abort.

In terms of priority of retention, bolls in excess of 10 days old are the fruit “most likely to succeed.” Conversely, bolls less than 10 days old and small squares are fruit types most likely to be aborted.

Numerous factors cause shed. Environmental stresses linked with fruit abscission include temperature and moisture extremes as well as prolonged overcast weather. Production practices can also induce plant stress and cause fruit loss. Improper fertilization (too high or too low) and excessive irrigation contribute to shed as does aggressive cultivation, which damages roots and stresses plants. Likewise, tardy or sloppy glyphosate applications in RR cotton sporadically result in retention problems.

In early to mid-June, we saw considerable pinhead square loss in fields near Tifton and at Sun Belt Expo. Our diagnosis was that square shed was probably linked to a period of hot, dry

weather followed by an extended time of wet weather. Plant bugs were an associated problem (but not thought to be the main problem) at one site.

Insect-related shed is most often associated with wounds – obvious feeding injury such as holes, punctures, etching, etc. from worms, bugs, or weevils. Visible injury to fruit, either external or internal, usually distinguishes insect damage from other causes. Careful examination -- sometimes with magnification -- may be needed to positively diagnose insects as the causal agent.

It is common late in the year, especially after a good crop of bolls is set, to lose considerable upper canopy fruit. However, compensation for earlier losses can occur in the top of the plant or on more distant positions on fruiting or vegetative branches.

Shed happens. Determining the cause is often a real challenge.

**BOLL FEEDING BUGS (*Roberts*)** As cotton begins to set bolls, scouts should begin monitoring for boll feeding bugs and their damage. Although a complex of bugs may feed on developing bolls (tarnished plant bugs, clouded plant bugs, leaf-footed bugs), stink bugs are the most prevalent boll feeding bugs encountered in Georgia. Southern green and brown stink bugs are typically the most common stink bugs observed, but green stink bugs and several *Euschistus spp.* such as *E. quadrator* and *E. tristigmus* which are both brown in color may also be found at economic levels in some fields. Two methods are recommended for scouting boll feeding bugs, 1) internal boll damage and 2) using a drop cloth. We would suggest scouts use a combination of both methods.

To determine internal boll damage scouts should randomly pull bolls which are about the diameter of a quarter. Bolls of this size are approximately 10-12 days of age and can be easily squashed between your forefinger and thumb. It is important that scouts pull bolls of the correct size. After busting the boll, remove the lint and examine the inner surface of the boll wall for damage. Bolls are considered damaged if stained lint is present and/or warty or callous growths are observed on the inner surface of the boll wall. Warts or callous growths appear within 48 hours from when the boll was damaged. Treatment is suggested when 20 percent of bolls exhibit signs of internal damage. Scouts must also be observant for boll feeding bugs while walking fields to determine which specie(s) are actually damaging the developing bolls. During early bloom when bolls have not sized to the diameter of a quarter, scouts should monitor the largest bolls available. We are commonly told that squashing bolls is too time consuming. Yes this does take some time but myself and summer workers can easily check 5 bolls per minute for internal boll damage.

A drop cloth may also be used to sample boll feeding bugs. When using a drop cloth be sure to carefully place the cloth on the ground so as not to disturb plants. Stink bugs are elusive and will leave plants if disturbed. Shake plants vigorously so as to dislodge bugs which may be within bracts feeding on bolls. Treatment is suggested when stink bugs reach 1 per 6 row feet.

Stink bugs can be effectively controlled with insecticides. However, insecticide selection is important. If brown stink bugs are the predominant species, an organophosphate insecticide

should be used to achieve good control. Pyrethroids only provide fair control of brown stink bugs. Efficacy of pyrethroids on brown stink bugs appears to be rate dependent, higher rates provide better control of brown stink bugs. Both pyrethroids and organophosphates provide good control of southern green and green stink bugs. Pyrethroids will also provide good control of any corn earworms which may be present whereas organophosphates will not provide any control of corn earworms.

**HERBICIDE OPTIONS FOR LAYBY IN ROUNDUP READY COTTON. (*Culpepper*)** Cotton growers are fortunate with the numerous herbicide options available for cotton layby. Research clearly shows that either MSMA or Roundup (many brands) should be applied to most of our acres in Georgia. However, it is important to realize that both Roundup and MSMA should be applied as tank mix partners and, most often, not as stand alone treatments. Roundup or MSMA tank mix partners broaden postemergence weed control, provide several weeks of residual weed control if activated by rainfall or irrigation, and provide some level of resistance management.

Options to include as tank mixes with Roundup or MSMA are numerous and may include the following: 1) Aim; 2) Caparol; 3) diuron (Direx, others); 4) Dual Magnum; 5) Envoke; 6) Harvade; 7) pendimethalin (Prowl, Pendimax, Prowl H20); or 8) Valor

**ANTAGONISM:** As many are aware, some products when mixed with Roundup can actually reduce weed control (usually grasses) by the Roundup. Aim, Dual Magnum, Envoke, Harvade, and Valor have not reduced weed control by Roundup in any of our research trials. However, research has clearly shown that Caparol or diuron products mixed with Roundup can reduce weed control; however, this usually only occurs when weeds (again usually grasses) are large and/or when conditions are dry.

**PLANT GROWTH REGULATORS (*Jost*)** Much of the cotton in the state has already received one or even two applications of plant growth regulators this year. However, there is considerable cotton on the eastern side of the state in which growth was delayed or fields were too wet to get into at the optimal time. Questions have arisen as to what rate of mepiquat chloride should be applied if DP555BR has been squaring a couple weeks.

Again, the “best” time to make the first mepiquat application is at first-square. At that point rate is much less of an issue, 8 oz/A will generally do the trick. After that point it can get a little tricky. What we know about 555 is that it is a slow starter but once it starts blooming it can get away from you.

In irrigated fields, if 555 has been squaring for several weeks or even approaching bloom it will probably take 16 oz to get good vegetative growth control. Dryland fields that are just now drying out and growing extremely fast 16 oz/A are probably required there also. In drought prone fields or slower growing cotton the rate should be cut to 8 oz/A.

The other issue with growth regulators revolves around the number of different products (generics, Mepex Ginout, and Pentia). No matter the product the rates should be the same. The

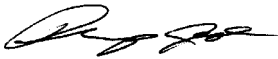
Pentia label indicates that there is 9.6% active ingredient while all others have 4.2%. This difference is due to the salt in Pentia (mepiquat pentaborate) weighing more than the salt (mepiquat chloride) in the other products. Once they are in the tank and the salt dissolves, 8 oz equals 8 oz no matter the product.

If you have not put boron out yet it can be tank-mixed with a growth regulator.

**MIDVILLE FIELD DAY (Jost)** The annual field day at the Southeast Research and Education Center in Midville will be held again this year. This will be primarily a cotton and soybean field day. Topics will include replant decisions, variety trials, nematode management, pest management, plant growth regulators, weed management, and defoliant. The field day will be held August 25, 2005 beginning at 9:00 a.m.

*Your local County Extension Agent is a source of more information on these subjects.*

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