



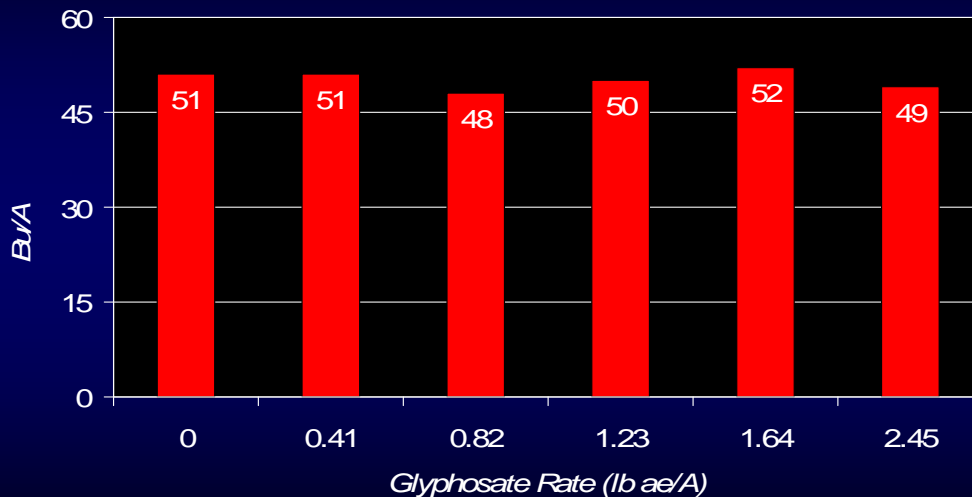
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### How Late Can Glyphosate Be Applied to RR Soybeans? Eric Prostko, UGA Extension Agronomist

Over the past few days, I have received several questions about late applications of glyphosate on RR soybeans. According to the current Roundup WeatherMax label, glyphosate can only be applied postemergence from cracking through flowering (R2 stage). Thus, it would be illegal to apply glyphosate after this stage of growth and I am not recommending that GA growers do this. With that said, what would happen to a soybean plant if glyphosate was applied after the R2 stage of growth? According to new research conducted by a good friend of mine from LSU, glyphosate applied at later stages of growth will not reduce soybean yields (Figure 1). Although late-season applications of glyphosate should not cause yield reductions, I question how effective these applications will be at this time of the year in terms of weed control (*i.e. crop and weeds are usually too big to get good control*). Another point to consider would be that late-season applications of glyphosate that provide marginal weed control will only exacerbate our resistant weed problems.

### Figure 1. Soybean Yield As Influenced by Glyphosate Applied at R4 + R6 Stage



Source: Miller et al., 2008. Weed Technology 22:359-362

THSD 0.05 = NS

## Soybean Insects

Phillip Roberts, UGA Extension Entomologist

**Soybean Insects:** The three most common foliage feeding caterpillars of soybean in Georgia are the soybean looper (SBL), green cloverworm (GCW), and velvetbean caterpillar (VBC). To date, foliage feeders have only been reported at low levels, most larvae observed have been GCW. A few SBL have been observed and Rome Etheridge reported VBC in Seminole County. Dimilin 2 ozs/acre applied at R3 will provide good control of GCW and VBC. Most vegetative growth has occurred by the R3 stage and Dimilin has a long residual which often keeps VBC below threshold levels for the remainder of the season. We typically observe VBC build to high numbers during late August and September. Dimilin 2 ozs/acre provides limited suppression of SBL. Soybeans should be scouted at least weekly, more frequently if populations of pests are present at noticeable levels. The decision to treat foliage feeders can be determined by estimating defoliation (see images below). From bloom to mid pod fill, treatment is suggested at 15 percent defoliation. After full pod-fill, treatment is suggested at 25 percent defoliation.

*Prior to Full Bloom*  
**30%**



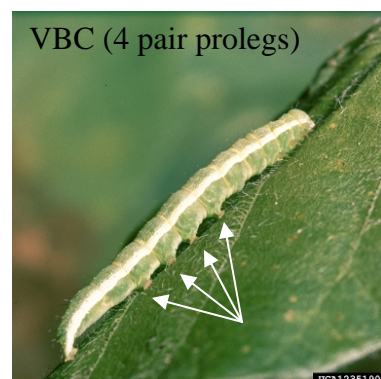
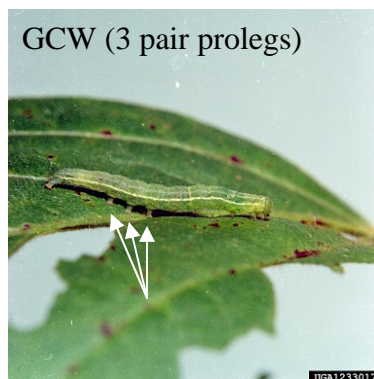
*Full Bloom-Mid Pod Fill*  
**15%**



*After Full Pod Fill*  
**25%**



In addition to estimating defoliation, it is extremely important to correctly identify and quantify larvae which are causing defoliation. If SBL are present at significant levels, be sure to use an insecticide recommended for SBL. Pyrethroids will not control SBL. Identification of primary foliage feeding caterpillars is straight forward. SBL has 2 pair of abdominal prolegs, GCW has 3 pair of abdominal prolegs, and VBC has 4 pair of abdominal prolegs (see images below). GCW and VBC larvae are also very active when prodded. Thresholds using drop cloths or sweep nets may also be found in the Georgia Pest Management Handbook.



Photos by Clemson Univ. – USDA Coop. Ext. Slide Series, ipmimages.org

Stink bugs and corn earworms (CEW) are the primary pod feeding insects observed in Georgia soybeans each year. A drop cloth is an efficient sampling tool for stink bugs. Prior to mid pod fill stink bugs should be controlled when numbers exceed 0.33 per foot of row or 2 per 6 feet of row. After mid pod fill, stink bugs should be controlled when numbers exceed 1 per foot or row or 6 per 6 feet of row. A sweep net may also be used to sample stink bugs. CEW is typically not as common of a pod feeding pest when compared with stink bugs; however CEW is capable of causing significant damage. Fields which are blooming and have an open canopy (middles not closed) are more attractive to CEW than fields where canopies are closed. Be observant for holes in pods and for CEW larvae when using a drop cloth. Pod feeding caterpillars such as corn earworm and fall armyworm should be controlled at any time after bloom when an average of 2 per row foot are found.



Green Stink Bug



Corn Earworm (soybean podworm)

Photos by Clemson Univ. – USDA Coop. Ext. Slide Series, ipmimages.org

### **Foliar Fertilization of Soybean** **Glen Harris – UGA Extension Agronomist**

Foliar fertilization, spraying relatively small amounts of nutrients in low spray volumes, is usually seen as a way to supplement a good soil-applied fertilizer program. For certain nutrients and certain crops, foliar fertilization can also be used to correct nutrient deficiencies. The effectiveness of foliar fertilization depends on a number of factors including 1) crop species, 2) nutrient, and 3) rate and 4) timing of application to name a few.

In the case of soybean, foliar fertilization of nitrogen (N), phosphorous (P) and potassium(K) are rarely recommended. One reason is that soybean need such large amounts of these nutrients. In the case of N, much like with peanuts, if a nodulation or N-fixation failure is discovered, it needs to be discovered early (hopefully around 30 days after emergence) and then corrected with an application of 50 lb N/a applied to the soil. In the case of P, this primary element just does not foliar feed or translocate well in the plant. In the case of K,

soybeans need such large amounts of K that the need should be supplied at planting with the a soil-applied K rate as recommended by soil testing. There are some reports that foliar K can increase soybean yield. However, these results are usually rare and the yield increases are not very significant. In other words, if soybeans are properly inoculated and have a good soil pH, and the recommended amount of P and K are applied to soil at planting, the need for foliar fertilization of these fertilizer elements should be minimal. One additional comment on N and K, is that if an inoculation problem or K deficiency is detected early enough (30-60 days after emergence), and the grower has the ability to apply fertilizer nutrients through his irrigation (center pivot) system, then this might be a way to supply 50 lb N or K and ‘rescue’ the crop. Since even a half inch of irrigation water per acre is approximately 13,500 gallons of water per acre, this is considered a soil-applied and not a foliar application.

Unlike N, P and K, foliar feeding soybeans with certain micronutrients can be viewed as effective, especially if a deficiency is confirmed by tissue sampling before the major seed set. Manganese is the micronutrient most likely to be detected as deficient in Georgia, especially on Flatwood soils or any Coastal Plain soil that has a high pH (above 6.3) and low soil test Mn (below 5 lb/a). Refer to the soil test Mn ratings on page 47 of the Soil Test Handbook for Georgia for guidance on the recommended combination of soil pH and soil test Mn levels to avoid Mn deficiency. Boron is another micronutrient that is recommended to be foliar fed on soybean. UGA Extension recommends applying 0.25 to 0.5 lb B/a tank mixed with 2 oz/a Dimilin at early podding (R2-R3) to increase yields, control insects and increase potential profitability (refer to page 17 of the 2008 Soybean Production Guide). Other micronutrients such as zinc, iron and copper are rarely recommended on soybean since deficiencies rarely occur.