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## Effect of Glyphosate on Fruit Retention, Yield, and Fiber Quality of Glyphosate Resistant Cotton

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Glyphosate-resistant cotton allows growers greater flexibility in timing herbicide applications, as well as a broader spectrum of weed control, than that offered by other herbicide systems. Despite overwhelming adoption of glyphosate-resistant cotton, concern for reproductive tolerance to glyphosate in glyphosate-resistant cotton has been raised. Field and greenhouse studies were conducted to investigate the effect of labeled and off-label glyphosate treatments on fruiting patterns, abnormal boll abscission, and yield of glyphosate-resistant cotton. Two separate field studies were conducted in 2000 and 2001 in Greene County, and Clayton, NC. In Greene County, NC, fruit reductions of first position sympodial bolls on node 1 through 10 were evident in 2000 and 2001 at the cutout and mid-bloom stages, respectively, when glyphosate was applied postemergence after the 4-leaf stage. These same treatments reduced seed cotton by 160 kg ha<sup>-1</sup> compared with plants treated within label guidelines. In Clayton, NC (2000), and in a controlled environment greenhouse, reductions in total, first position, and sympodial bolls located on nodes 1 through 10 occurred when glyphosate was applied at the 4-leaf stage postemergence and at the 8-leaf stage postemergence-directed compared with the non-treated control. Abnormal boll abscission, when a deceased boll remains attached to plant, was increased with off-labeled glyphosate treatments in Greene County, NC. Overall, differences in fruit retention due to glyphosate applications were not evident in all locations, environments, or years.