

**STEMPHYLIUM LEAFSPOT:  
A NEW FOLIAR DISEASE IN GEORGIA**  
**R.E. Baird<sup>1</sup>, D.R. Sumner<sup>2</sup>, and G.H. Harris<sup>2</sup>**  
**Plant Pathology<sup>1</sup>, Crop and Soil Sciences<sup>2</sup>,**  
**University of Georgia, Tifton**  
**N.S. Newberry<sup>3</sup>, T.L. Lawson<sup>4</sup>, and P.D. Wigley<sup>5</sup>**  
**County Extension Directors; Macon<sup>3</sup>, Sumter<sup>4</sup>,**  
**and Calhoun Counties<sup>5</sup>**

**Abstract**

An unusual foliar disease infected cotton in Georgia during 1995, apparently caused by a unique combination of weather conditions, nutrient stress and causal organism. The causal organism was identified as *Stemphylium botryosum*. Small lesions measuring between 1 and 2 cm were observed on the abaxial surface of both mature and younger leaves. The lesions were zonate to circular in shape and often coalesced. The disease was originally discovered in a field near Arlington, located in the southwest corner of the state, in early August. In this field, approximately 90% of the plants (cv. Sure-Grow 1001) prematurely defoliated around the 4th week of bloom or initial boll set period. By early September, the disease was reported in an additional 19 counties located northeast across the Coastal Plain. The disease affected most commonly grown varieties and occurred at growth stages of initial boll set and later. Soil samples taken from most infected fields showed low levels of potassium, probably related to excess rainfall and leaching in 1994 and/or poor fertilization especially on marginal land. Petiole sample results also indicated poor potassium nutrition. Most petioles contained less than 1 % K, and some were as low as 0.2 %, a level at which defoliation can occur even without the presence of a leafspot disease. Leaf tissue analysis was not a good indicator of inadequate potassium nutrition. Researchers previously reported infection levels of the cotton foliar pathogens *Alternaria*, *Cercospora*, and *Stemphylium* were greater during growing seasons with severe drought and high temperatures resulting from poor potassium uptake by the plants. In 1995 in Georgia, severe drought and high temperatures (30-37° C) occurred just prior to boll set contributing to the inadequate potassium nutrition. In an attempt to control to control *S. botryosom*, a fungicide trial was conducted in Macon County in a field with <1% foliar infections. Several fungicides were found to significantly lower infections rates, but yields were not improved. Proper potassium fertilization and petiole testing are recommended to avoid risk of this disease in the future.