

**Report to the Georgia Agricultural Commodity Commission for Peanuts-2016  
Adaptation of New Fungicides and Application Strategies for Control  
of Early and Late Leaf Spot of Peanut**

**Investigators: A. K. Culbreath, T. B. Brenneman, R. Kemerait, K. Stevenson**

Recent promising results with in-furrow applications of Velum Total nematocide/fungicide for nematode and thrips control, prompted us to study the effects of Velum Total on early season leaf spot epidemics in multiple experiments in 2014-2016. In-furrow applications of Velum Total provided noticeable suppression of leaf spot for > 90 days after planting.

Multiple trials were conducted in 2015 and 2016 to compare the new BASF product Priaxor to Headline for leaf spot control. When applied at the same time and left for extended intervals before subsequent applications, Even the lowest labeled rate (4 fl oz/A) of Priaxor was superior to 9.0 fl oz /A of Headline for leaf spot control. Similarly, when applied at similar times integrated into a similar fungicide regime, Priaxor or superior to Headline. Based on 2015 and 2016 results, direct substitution of Priaxor for Headline should be better for leaf spot control that Headline along. In both 2015 and 2016, the strobilurin fungicides Headline, Abound, and Flynt alone did not perform as well. However, in 2015 and 2016, the fungicide "Elatus", which includes azoxystrobin, performed well for leaf spot control under heavy late-season pressure in fields where full rates of Abound alone provided little control. Although resistance to the strobilurin fungicides has not been demonstrated for the leaf spot pathogens, it is very much suspected. The mixture of fungicides with two different modes of action, such as those used in Priaxor or Elatus may help prolong the efficacy of a fungicide even when resistant populations of leaf spot fungi develop to one of the fungicides in the mixture. The use of strobilurin fungicides as "stand alone" treatments should be especially discourages on more susceptible cultivars such as Georgia-13M or TUFRunner 511.

Trials were also conducted to evaluate the relative resistance/tolerance of available cultivars to late leaf spot. In 2016, the cultivars Georgia-13M and TUFRunner 511 had considerably worse leaf spot than Georgia-06G. New cultivars Georgia-14N and TIFNV HiOL both showed considerable resistance to late leaf spot, in addition to their resistance to TSWV and root-knot nematodes. In the thesis research of Mr. Brian Jordan, across several planting dates in 2015 and 2016, final leaf spot severity in Georgia-12Y was slightly less than that of Georgia-06G, and yields were higher for Georgia-12Y. Both cultivars had heavier leaf spot with later planting dates. In 2016, earliest planting dates (before May 1) completely avoided leaf spot epidemics. The combination of reduced leaf spot with early planting and apparent tolerance in Georgia-12Y show promise for reducing fungicide applications needed for this cultivar as well as potential for use in organic production situations when fungicide use is much more limited. Georgia-14N and TIFNV HiOL show promise for reducing fungicide requirements for leaf spot control, especially if they can be combined with earlier planting dates.