

Report to the Georgia Agricultural Commodity Commission for Peanuts-2008

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

Dry conditions in the earlier part of the 2008 season, leaf spot was not a widespread concern until Hurricane Faye breathed life back into the peanut crop and leaf spot epidemics. In our plots at Tifton, late leaf spot progressed rapidly during the last part of the season. Across tests conducted from 2001-2008 the experimental sterol inhibiting fungicide prothioconazole (Proline) has shown excellent control of leaf spot diseases compared to Folicur. In 2006-2008, combinations of this fungicide with tebuconazole (as Provost) were superior to Folicur for leaf spot control. However, in 2007 and 2008, examination of the components of the Provost mixture indicated that the tebuconazole component was not providing much of the leaf spot control. Across tests in 2007 and 2008, higher rates of Proline (prothioconazole) alone were superior to Bravo for leaf spot control. In-furrow applications of Proline have shown great promise for suppression of CBR, and questions had arisen about possible suppression of spotted wilt with this treatment. In tests conducted in 2005 – 2008, we found no indication that in-furrow applications of prothioconazole suppressed tomato spotted wilt.

We examined several generic formulations of tebuconazole, and found little difference in the efficacy of most of the formulations tested. Addition of low rates of Topsin or Bravo (1.0 pt/A) helped improve leaf spot control with Folicur, At least two companies marketing generic tebuconazole are evaluating pre-mix combinations of tebuconazole + chlorothalonil. The Makhteshim formulation that would provide approximately the equivalent of 7.2 oz of Orius and 1.0 pt of Equus provided leaf spot control similar to that of the 1.5 pt of Bravo standard. Combinations of generic 3.6 F formulations of tebuconazole at 7.2 oz + 1.0 pt of a 720 formulation of chlorothalonil appear to provide leaf spot control and white mold control at a competitive price. We have not been able to test all the new tebuconazole products, however.

The new fungicide Evito (fluoastrobilin) held up adequately under heavy pressure from late leaf spot, although it was not as good for leaf spot control as Abound or the experimental fungicide LEM 17 for leaf spot control when applied on the same schedule. The three fungicides were similar for yield in a field with minimal pressure for soilborne diseases.

The experimental fungicide LEM17 (penthiopyrad) has performed well in our experiments across 2005 - 2008. It has a different mode of action than sterol inhibitors (such as Folicur) and strobilurins (such as Abound or Headline). If labeled, it has potential to help control leaf spot and white mold, and should complement available fungicides for both disease control and pathogen resistance management.

Figure 1. Effect of medium maturity cultivars and number of applications of Provost fungicide on Peanut leaf spot, 2007-2008. Bars represent final Florida 1-10 scale leaf spot ratings.

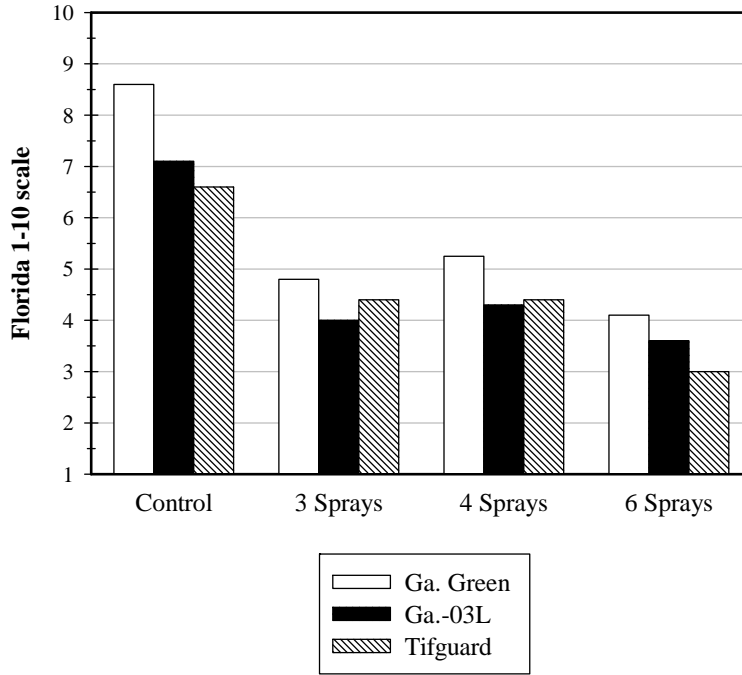
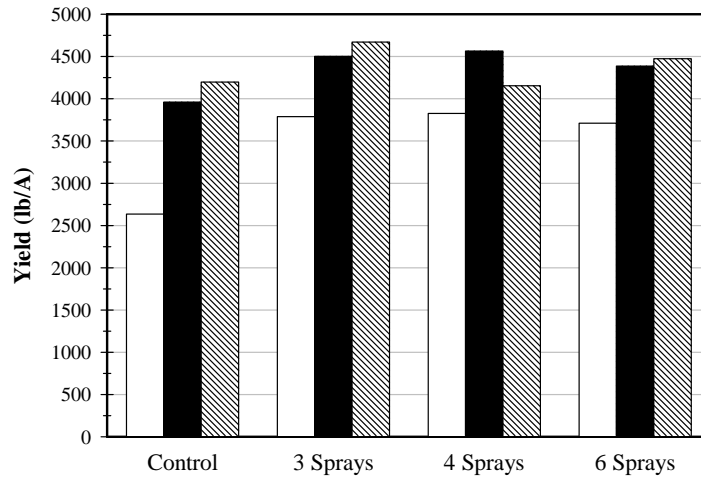


Figure 2. Effect of medium maturity cultivars and number of applications of Provost fungicide on Peanut pod yield (lb/A), 2007-2008.



Experiments were conducted in 2007 and 2008 in which Georgia Green, Georgia-03L, and Tifguard cultivars were combined with fungicide treatments of 3, 4, and 5 applications as well as a nontreated control. First application was of Headline (9 oz) followed by Provost + Bravo in the reduced treatments or Provost alone in the 6 application treatment. Across 2007 and 2008, Georgia-03L and Tifguard had lower leaf spot ratings than Georgia Green (Figure 1), and had higher yields. In addition, neither of those cultivars responded as greatly to fungicide inputs as did Georgia Green (Figure 2). Both show potential for reducing fungicide requirements for leaf spot control as well as control of tomato spotted wilt. Tifguard also has resistance to peanut root-knot nematode. Root knot nematodes were not a factor in this experiment.