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## Grower Application of AU-Pnut Fungicide Spray Advisory on Peanut in South Texas

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### SUMMARY

Early and late leaf spot disease pressure was epidemic in the test. The grower applied six sprays by advisory plus one extra spray at the third application early in the season for a total of seven sprays. Rainfall and favorable meteorological conditions throughout the growing season resulted in more advised sprays and the epidemic leaf spot infection. Five sprays were applied as part of a normal comparison program. The grower by following the AU-Pnut advisory achieved significantly better foliar disease control and numerically higher yield and dollar value per acre over the comparison five-spray program. The grower wisely used different fungicides in the advisory disease control program. In this particular years testing, the AU-Pnut advisory resulted in more timely fungicide applications in a year favorable for foliar disease.

### INTRODUCTION

At present there is no peanut fungicide advisory program in use in Texas, although advisories are used effectively in other peanut production areas of the country. Growers in south Texas do not normally apply seven fungicide sprays on a calendar schedule as is common on some other regions. Fungicide use in south Texas may vary from two to five sprays in a normal season. Periods of high humidity with leaf wetness caused by dew, rainfall or irrigation under favorable temperatures can result in foliar disease infection of leaf spot and rust. Conversely, hot, dry weather with minimal leaf wetness and lower humidity does not favor foliar infections. Under favorable periods of infection weather, using an advisory will result in timely use of fungicides. Fungicide spray advisories will not be issued under poor infection weather periods. Timing of fungicide sprays is critical and especially when fewer sprays are applied, as is the case in south Texas. Use of an advisory on an "as needed" basis can result in savings for producers in fungicide and application costs. For example, based on one south Texas producer's production costs, using Folicur 3.6F plus ground application cost per acre would be \$20.00/ acre x 200 acres = \$4000.00. Fungicide application by airplane would be greater. Use of the AU-Pnut fungicide advisory program may offer producers, consultants and farm managers with a useful tool in determining when to apply costly fungicides. Basic use of this program is not cost inhibitive. It involves use of a rain gauge and maintaining a record of field rainfall and irrigation date amounts and recording dates of sprays applied.

### MATERIALS AND METHODS

The test was conducted in an Atascosa County, south Texas grower field. Test plots were arranged in a randomized complete block with four replications including unsprayed, five spray comparison and the growers AU-Pnut advisory plots. Test plots were two rows, each 20 feet long spaced 36-inches apart. Grower treatments were applied with a tractor mounted sprayer except for the initial spray, which was applied by airplane. Comparison five-spray treatments were applied with a small plot CO<sub>2</sub> pressurized sprayer. The grower applied seven fungicide sprays. Bravo 720 (1.5 pt.) was applied by airplane 34 days after planting and again at 118 days after planting applied

broadcast. Stratego (7.0 fl. oz./A) was applied at 46 and 75 days after planting. Headline (6.0 fl. oz./A) was applied at 54 days after planting. Folicur (7.2 and 7.0 fl. oz./A respectively) were applied at 89 and 105 days after planting. The five spray comparison fungicides were: Bravo 720 (1.5 pt./A) by airplane 34 days after planting and Echo 720 (1.5 pt./A broadcast) at 116 days after planting. Folicur (7.2 fl. oz.) was applied at 54, 75, and 97 days after planting. The grower for land preparation, fertility and weed control followed standard grower practices. Circle pivot irrigation provided supplemental water during the growing season when needed. Assessment of leaf spot disease was made visually using the Florida leaf spot scale where 1= no disease, 10= plants dead, completely defoliated from leaf spot. Soilborne disease from southern blight or Rhizoctonia was not a problem at this field location. Plots were dug at 154 days after planting, inverted, dried in the field and combined with a small plot thresher. Plot samples were then force air dried to 10% moisture, cleaned of debris and weighed to determine yield per acre. Pod samples of a known weight were then removed from plot samples to determine grade and economic value. Disease ratings, yield, grade and economic value were analyzed statistically.

## **RESULTS AND DISCUSSION**

Early and late leaf spot in equal observed quantities were epidemic at the test location with untreated plots averaging a 9.1 rating out of a possible 10 for severity. Using the AU-Pnut advisory and observing weather conditions, the grower applied a total of seven fungicide applications. As a result, leaf spot pressure while evident (4.8 rating) was less than the five spray plots (7.4 rating). Yield and dollar value per acre was also numerically higher than those of the five-spray program. No significance was noted from the analyzed data for grade or dollar per ton values from any of the programs including the untreated peanuts. While the AU-Pnut advisory program can and has saved a fungicide spray or two in a normal year, this may not be the case in a year with more rainfall and leaf wetness from the rain, dew or irrigation under favorable temperatures. In this instance, sprays will be advised because they are needed as timed applications. Continuation of this research is needed in Texas to test these programs in order to provide data that can be used to make sound decisions. Data from the study is presented in Table 1.

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Table 1. Fungicide Advisory Data from Atascosa County, Texas, 2003.

Treatment/Program/Application Type	Timing <sup>2</sup> DAP	Leaf spot <sup>3</sup> 22 Sep	Target sites <sup>4</sup> 6 Oct	Yield lb/A	Grade	\$/Acre <sup>5</sup>
Untreated Control.....	-----	8.6 a <sup>1</sup>	7.8 c	2591 b	77 a	468.99 b
4 SPRAY COMPARE						
Echo 720 1.5 pt. (Band).....	48	4.8 d	4.5 d	3925 a	77 a	713.00 a
Folicur 3.6F 7.2 fl. oz. (Broadcast)	70,90					
Echo 720 1.5 pt. (Broadcast)	105					
AU-Pnut 3 SPRAY/GROWER						
Bravo WS 1.5 pt. (Band).....	54	6.5 b	10.0 b	3607 a	77 a	658.38 a
Folicur 3.6 F 7.2 fl. oz. (Band)	90,111					
4 SPRAY GROWER						
Bravo WS 1.5 pt. (Band).....	54	5.8 c	12.0 a	3635 a	78 a	663.53 a
Folicur 3.6 F 7.2 fl. oz.(Band)	83,92,109					

<sup>1</sup> Means in a column followed by the same letter indicates Duncan's Multiple Range groupings of treatments, which do not differ significantly ( $P \leq 0.05$ ).

<sup>2</sup> Timing = Days after planting (DAP)

<sup>3</sup> Leaf spot disease rating based on Florida leaf spot assessment scale (1 = no disease, 10 = plants dead, completely defoliated from leaf spot).

<sup>4</sup> Soilborne disease target sites based on the number of Southern blight infection sites less than or equal to 1.0 ft. of damaged pods/stems in 40.0 ft. of row.

<sup>5</sup> Dollar per Acre values based on loan rate values for peanut grading values.