

Report to Georgia Peanut Commission for 2016 GPC Grant Entitled: Impact of Soil-borne Fungicide Selection on Peanut in Irwin County, GA

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Project Goals

The objective of this trial was to compare a premium, medium and lower cost soil-borne fungicide program. Farmers concerned with low peanut prices are looking to reduce inputs through selection of lower priced soil-borne fungicides that in a good rotation may save production cost. Economic data will be generated to compare cost of treatment versus yield achieved. The trial will also be rated for white mold. The goal is to plan, conduct, complete and share information from this on-farm large plot peanut fungicide trial.

Results

The end result was to compare Fontelis, Convoy and Muscle (combination of Tebuconazole and Chlorothalonil) side by side in a replicated trial. The peanut field utilized was last planted in peanut in 2013 and had an excellent rotation and good management. The field was planted in a twin row configuration. The trial was sprayed with each fungicide on a two week interval per UGA Extension recommendations. The three replications of each treatment were rated for white mold the day after inverting. When ready the plots was then picked and weighed. A sample of each treatment from the first replication was pulled and sent to be graded.

Impact

Data collected showed that white mold ratings varied between the treatments (this was easy to see visually), however it was not statistically significant. Both yields and grade also varied but was not statistically significant. The soil-borne disease pressure could not be minimized solely by good production like deep turning and good rotation. The use of these soil-borne fungicide treatments aided in improving yield and grade while lessening the severity of white mold incidence. Information from this project was developed into the poster shown below and will be used at county and/or local production meetings, professional meetings as well as other applicable educational functions).

Impact of Soil-borne Fungicide Selection on Peanut in Irwin County, GA

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ABSTRACT

Peanut farmers are concerned with efficient production and ultimately profitability. With the exception of the cost of seed, disease control cost is one of the most expensive inputs for peanut farmers. One of the major diseases of peanut is white mold caused by the soil-borne fungus *Sclerotium rolfsii*. Farming practices such as deep turning, crop rotation, and fungicide selection play a role in reducing disease pressure. Options are plentiful and prices are varied when planning for soil-borne disease control. The focus of this trial was to compare three commonly used soil-borne fungicide programs typically done in a four block spray program. The site for the trial had an excellent rotation with peanuts being grown last in 2013. The field was deep turned prior to planting. The field was planted in a twin-row configuration. The first program was three Fontelis (penthiopyrad) applications at 1 pint per acre with a fourth application of tebuconazole and chlorothalonil. The second program was four Convoy (flutolanil) applications at 1 pint per acre with chlorothalonil at 1 pint. The third program was four applications of Muscle ADV (tebuconazole and chlorothalonil) at 2 pints per acre. All production and management decisions were consistent across the trial and conducted in a timely fashion. With some disease variables reduced through rotation and tillage, the impact of these soil-borne fungicide options were evaluated for their effectiveness.

2016 IRWIN COUNTY EXTENSION PEANUT SOIL-BORNE FUNGICIDE TRIAL									
Treatment	App. 3 Date: 7/12	App. 4 Date: 7/25	App. 5 Date: 8/8	App. 6 Date: 8/22	White Mold Hits per 200 feet of row	Grade	Actual Yield/ Acre	Total Soil-borne Fungicide Treatment Cost	Gross Value Per acre
1	Fontelis	Fontelis	Fontelis	Muscle ADV	34.0a	75	5416.3a	\$73.66	\$917.33a
2	Convoy/ Bravo	Convoy/ Bravo	Convoy/ Bravo	Convoy/ Bravo	38.0a	73	5412.0a	\$59.96	\$905.61a
3	Muscle ADV	Muscle ADV	Muscle ADV	Muscle ADV	57.3a	70	4925.0a	\$24.64	\$827.75a
LSD P=.10					34.41		451.97		79.53

METHODS


- This trial focused on spray applications 3-6 which is referred to as the 4 block soil-borne fungicide program.
- Applications 1, 2 and 7 were identical and primarily focused on leafspot control.
- Product and rates: Fontelis 1 pint/acre, Convoy 1 pint/acre, Bravo 1 pint/acre, Muscle 2 pints/acre
- Yields were taken from the middle six row beds.
- The trial contained 3 replications of each treatment and was planted April 29th, inverted on Sept 22nd, rated for white mold Sept. 23rd, and harvested on Sept 27th.
- Each plot was individually weighed and the samples from the first replication was graded.
- Farmer costs for fungicides used were based on prices from a local agricultural dealer and used to compute actual costs per acre.



Trial Rating, Harvest, Weighing, and Grade Report

SITUATION/CONCERNS

- Evaluate three soil-borne fungicide programs
- Comparing cost effectiveness of these soil-borne fungicide programs
- Determine the yield differences and compare the incidence of white mold



White mold
Trial showed visible difference in white mold hits

IMPACT/RESULTS

- Grade differences were observed between the three soil-borne fungicide treatments.
- White mold hits varied between treatments but was not statistically significant.
- Although yields and value differed numerically, differences were not statistically significant.
- Good rotation and deep turning were not sufficient to offset disease pressure.