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APPLIED RESEARCH ON FIELD CROP DISEASE & NEMATODE MANAGEMENT 2020

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POLICY FOR ACCEPTANCE OF PESTICIDES FOR TESTING

Research on synthesis and exploration of agricultural chemicals and biotechnology for use in pest control continues to provide new materials for field evaluation. Compounds are being made available by private companies and universities for local research in a variety of ways; ranging from a sample with a code number to a thoroughly-tested material, with secure patents, technical data sheets, and comprehensive résumés of results of laboratory and field trials. Unfortunately, it is not possible for a scientist to include all materials and use patterns in a field research demonstration program. Therefore, materials are selected according to (i) overall need for a product in a particular crop or problem area, and (ii) overall promise of the material to improve crop management at the local level.

Before a material can be accepted for testing, the following descriptive information is required: (i) a list of the spectrum of biological activity, (ii) data on phytotoxicity and suggested rates of application, (iii) methods of application, (iv) available formulations, (v) mammalian toxicity (LD_{50}), (vi) possible health hazards, and (vii) potential hazards to the environment. Additional information that would be desirable includes: (i) identity of the active ingredient(s) and inert materials, (ii) physical properties (solubility, MP, VP, stability, etc.), (iii) residue information, (iv) residual soil life, (v) EPA residue tolerance (if any) and registration status, (vi) patent status, and (vii) unit cost in commercial markets.

Upon completion of field applications, it is the responsibility of the sponsor to dispose of all unused test materials. Because of limited space in controlled pesticide storage facilities and expenses associated with shipping and disposal, all sponsors are encouraged to ship not more than 1.5 times the anticipated quantity needed to complete a test.

The use of brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by Virginia Tech nor discrimination against similar products or services not mentioned. Individuals who use agricultural chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. **Not all pesticides in this publication were applied according to their labels, and some of the tested chemicals are not yet registered for use in field crops in Virginia.** Be sure to obtain information about usage regulations and examine a current product label before applying any chemical. For assistance, contact your county Extension agent.

SUMMARY OF 2020 GROWING SEASON

Table 1. Comparison of rainfall, peanut heat units (DD_{56}) and cotton degree-days (DD_{60}) in 2020 to an average of historical records at the Tidewater AREC.

	Rainfall (in.)								
Month	2013	2014	2015	2016	2017	2018	2019	**2020**	Normal[1]
May	3.60	2.76	0.55	3.92	4.72	4.11	3.00	3.50	3.52
Jun	8.10	3.95	7.48	5.82	2.78	4.05	5.55	3.80	4.31
Jul	3.50	4.99	4.62	3.85	2.36	8.00	7.21	2.10	4.95
Aug	6.40	2.14	2.62	2.19	7.33	6.10	7.52	8.50	5.16
Sep	2.00	7.04	5.33	7.65	3.70	4.44	1.55	10.20	5.55
Oct	4.50	2.30	3.56	5.11	2.32	3.50	3.98	1.30	3.65
Total	28.10	23.18	24.16	28.54	23.21	30.23	28.81	29.40	27.13

[1]Normal is mean of previous 23 yrs (1995-2019). Data for 1995-2012 were according to records from a NOAA station (44-4044) located at Tidewater AREC, Holland Rd., Suffolk, VA; data for 2013 through present were recorded from a Spectrum Watchdog weather station located at the Tidewater Research Farm, Hare Rd., Suffolk, VA. Observation period for data includes 1 May through 31 Oct.

	Peanut Heat Units (DD_{56})								
Month	2013	2014	2015	2016	2017	2018	2019	**2020**	Avg.[2]
May	355	437	463	324	386	520	531	301	384
Jun	580	598	686	577	681	625	581	572	583
Jul	707	659	724	766	790	654	731	797	696
Aug	589	609	635	735	628	687	639	698	642
Sep	390	513	522	550	461	459	530	436	455
Oct	255	266	230	277	309	230	298	255	228
Total	2876	3082	3260	3229	3255	3390	3310	3059	2988

[2]Avg. is mean of previous 23 yrs (1995-2019). Data for 1995-2012 were according to records from a NOAA station (44-4044) located at Tidewater AREC, Holland Rd., Suffolk, VA; data for 2013 through present were recorded from a Spectrum Watchdog weather station located at the Tidewater Research Farm, Hare Rd., Suffolk, VA. Observation period for data includes 1 May through 31 Oct.

	Cotton Degree Days (DD_{60})								
Month	2013	2014	2015	2016	2017	2018	2019	**2020**	Avg.[3]
May	260	331	359	226	286	404	418	211	284
Jun	463	484	567	459	570	505	464	454	466
Jul	583	535	600	643	674	531	608	679	563
Aug	469	485	512	611	505	564	515	574	513
Sep	295	397	409	430	351	504	417	331	344
Oct	169	185	153	205	229	202	204	169	159
Total	2239	2417	2600	2574	2615	2710	2626	2418	2328

[3]Avg. is mean of previous 23 yrs (1995-2019). Data for 1995-2012 were according to records from a NOAA station (44-4044) located at Tidewater AREC, Holland Rd., Suffolk, VA; data for 2013 through present were recorded from a Spectrum Watchdog weather station located at the Tidewater Research Farm, Hare Rd., Suffolk, VA. Observation period for data includes 1 May through 31 Oct.

TEST ID: WHTSCAB120

PURPOSE: To evaluate the combined effects of fungicide treatment and genetic resistance on FHB and DON in wheat

LOCATION: Tidewater AREC, 6321 Holland Rd., Suffolk, VA

CROP INFORMATION:

Field	61B
Crop history	2019 corn, 2018 sorghum, 2017 wheat/sorghum
Planting date	31 Oct 2019
Variety	Shirley, Hilliard, Liberty 5658, Agrimaxx 463
Seeding rate	30 seed/ft
Plot length	9’
Number of rows	7
Row spacing	6.67”
Alleys (length between blocks)	9’
Harvest date	10 Jun

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

INOCULUM: Fusarium graminearum conidia (~50,000/ml) applied 24 hours following the Feekes 10.5.1 fungicide treatment with Lee Spider Sprayer; 1 L inoculum to 11 L H_2O

TREATMENT APPLICATION:

Equipment	Backpack sprayer
Pressure (psi)	38 psi
Nozzle type	Twinjet 8002VS
Volume (gal/A)	19.88
Surfactant	NIS 0.125 %v/v

TREATMENTS:

Trt #	Variety	Fungicide and formulation	Rate, fl oz/A	App. timing	App. date
1	Shirley	Untreated Inoculum	-- 	-- Feekes 10.5.1 + 1d	 17 Apr
2	Shirley	Prosaro 421 SC Inoculum	6.5 	Feekes 10.5.1 Feekes 10.5.1 + 1d	16 Apr 17 Apr
3	Shirley	Miravis Ace Inoculum	13.7 	Feekes 10.5.1 Feekes 10.5.1 + 1d	16 Apr 17 Apr
4	Shirley	Miravis Ace Inoculum	13.7 	Feekes 10.3 Feekes 10.5.1 + 1d	11 Apr 17 Apr
5	Shirley	Miravis Ace Inoculum Tebuconazole 3.6 F	13.7 4	Feekes 10.5.1 Feekes 10.5.1 + 1d Feekes 10.5.1 + 4-6d	16 Apr 17 Apr 21 Apr
6	Shirley	Untreated (no inoc)	--	--	
7	Hilliard	Untreated Inoculum	-- 	-- Feekes 10.5.1 + 1d	 17 Apr
8	Hilliard	Prosaro 421 SC Inoculum	6.5 	Feekes 10.5.1 Feekes 10.5.1 + 1d	16 Apr 17 Apr
9	Hilliard	Miravis Ace Inoculum	13.7 	Feekes 10.5.1 Feekes 10.5.1 + 1d	16 Apr 17 Apr
10	Hilliard	Miravis Ace Inoculum	13.7 	Feekes 10.3 Feekes 10.5.1 + 1d	11 Apr 17 Apr

11	Hilliard	Miravis Ace Inoculum Tebuconazole 3.6 F	13.7 4	Feekes 10.5.1 Feekes 10.5.1 + 1d Feekes 10.5.1 + 4-6d	16 Apr 17 Apr 21 Apr
12	Hilliard	Untreated (no inoc)	--	--	
13	Liberty 5658	Untreated Inoculum	--	-- Feekes 10.5.1 + 1d	 17 Apr
14	Liberty 5658	Prosaro 421 SC Inoculum	6.5	Feekes 10.5.1 Feekes 10.5.1 + 1d	16 Apr 17 Apr
15	Liberty 5658	Miravis Ace Inoculum	13.7	Feekes 10.5.1 Feekes 10.5.1 + 1d	16 Apr 17 Apr
16	Liberty 5658	Miravis Ace Inoculum	13.7	Feekes 10.3 Feekes 10.5.1 + 1d	11 Apr 17 Apr
17	Liberty 5658	Miravis Ace Inoculum Tebuconazole 3.6 F	13.7 4	Feekes 10.5.1 Feekes 10.5.1 + 1d Feekes 10.5.1 + 4-6d	16 Apr 17 Apr 21 Apr
18	Liberty 5658	Untreated (no inoc)	--	--	
19	Agrimaxx 463	Untreated Inoculum	--	-- Feekes 10.5.1 + 1d	 17 Apr
20	Agrimaxx 463	Prosaro 421 SC Inoculum	6.5	Feekes 10.5.1 Feekes 10.5.1 + 1d	16 Apr 17 Apr
21	Agrimaxx 463	Miravis Ace Inoculum	13.7	Feekes 10.5.1 Feekes 10.5.1 + 1d	16 Apr 17 Apr
22	Agrimaxx 463	Miravis Ace Inoculum	13.7	Feekes 10.3 Feekes 10.5.1 + 1d	11 Apr 17 Apr
23	Agrimaxx 463	Miravis Ace Inoculum Tebuconazole 3.6 F	13.7 4	Feekes 10.5.1 Feekes 10.5.1 + 1d Feekes 10.5.1 + 4-6d	16 Apr 17 Apr 21 Apr
24	Agrimaxx 463	Untreated (no inoc)	--	--	

SOIL TYPE: Rains fine sandy loam

SOIL FERTILITY REPORT (Oct 2019):

pH	**P (lb/A)**	**K (lb/A)**	**Ca (lb/A)**	**Mg (lb/A)**	**Zn (ppm)**	**Mn (ppm)**	**Cu (ppm)**	**Fe (ppm)**	**B (ppm)**
5.3	178	377	1335	168	1.4	7.2	0.2	29.5	0.2

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	**Type and target**	**Product and formulation**	**Rate/A**
1-30-20	Fertility	9-18-31	322 lbs
2-4-20	Fertility	24-0-0-3	60 units
3-14-20	Fertility	24-0-0-3	60 units
2-4-20	Herbicide	Quelex	0.75 fl oz

Table 1. Effect of fungicide treatment and variety on disease incidence in wheat (WHTSCAB120, Suffolk, VA 2020).

Variety, treatment, rate/A and application timing (Feekes)[z]		% leaf rust[y] 8 May		Scab 12 May	
		Flag	Flag-1	% severity[x]	% incidence[w]
1. Shirley	Untreated	0.3 de	5.0 c-f	0.0	0.0 d
2. Shirley	Prosaro 421 SC 6.5 fl oz (F10.5.1)	0.3 de	5.0 c-f	0.3	0.5 d
3. Shirley	Miravis Ace 13.7 fl oz (F10.5.1)	0.0 e	2.8 g	0.3	2.3 a-d
4. Shirley	Miravis Ace 13.7 fl oz (F10.3)	0.0 e	4.0 e-g	0.0	0.0 d
5. Shirley	Miravis Ace 13.7 fl oz (F10.5.1) Tebuconazole 3.6 F 4.0 fl oz (F10.5.1 + 4-6d)	0.3 de	4.0 e-g	0.0	0.0 d
6. Shirley	Untreated (no inoculum)	0.5 c-e	5.0 c-f	0.0	0.0 d
7. Hilliard	Untreated	1.5 cd	6.3 c-e	0.3	4.0 a-c
8. Hilliard	Prosaro 421 SC 6.5 fl oz (F10.5.1)	0.8 c-e	5.0 c-f	0.3	2.8 a-d
9. Hilliard	Miravis Ace 13.7 fl oz (F10.5.1)	0.5 c-e	4.0 e-g	0.0	0.0 d
10. Hilliard	Miravis Ace 13.7 fl oz (F10.3)	1.8 bc	5.3 d-g	0.0	0.0 d
11. Hilliard	Miravis Ace 13.7 fl oz (F10.5.1) Tebuconazole 3.6 F 4.0 fl oz (F10.5.1 + 4-6d)	0.5 c-e	4.0 e-g	0.0	0.8 cd
12. Hilliard	Untreated (no inoculum)	0.5 c-e	3.0 fg	0.3	1.5 a-d
13. Liberty 5658	Untreated	3.8 ab	10.3 a-c	0.5	4.8 ab
14. Liberty 5658	Prosaro 421 SC 6.5 fl oz (F10.5.1)	3.8 ab	7.5 b-e	0.0	0.8 cd
15. Liberty 5658	Miravis Ace 13.7 fl oz (F10.5.1)	5.0 a	13.8 a	0.3	3.3 a-d
16. Liberty 5658	Miravis Ace 13.7 fl oz (F10.3)	3.0 ab	8.8 b-d	0.0	1.5 a-d
17. Liberty 5658	Miravis Ace 13.7 fl oz (F10.5.1) Tebuconazole 3.6 F 4.0 fl oz (F10.5.1 + 4-6d)	5.0 a	13.8 a	0.0	3.8 a-c
18. Liberty 5658	Untreated (no inoculum)	5.0 a	11.3 ab	0.0	0.0 d
19. Agrimaxx 463	Untreated	0.0 e	0.3 h	0.0	1.3 b-d
20. Agrimaxx 463	Prosaro 421 SC 6.5 fl oz (F10.5.1)	0.0 e	0.0 h	0.5	5.8 a
21. Agrimaxx 463	Miravis Ace 13.7 fl oz (F10.5.1)	0.0 e	0.0 h	0.3	3.0 a-d
22. Agrimaxx 463	Miravis Ace 13.7 fl oz (F10.3)	0.0 e	0.0 h	0.0	0.8 cd
23. Agrimaxx 463	Miravis Ace 13.7 fl oz (F10.5.1) Tebuconazole 3.6 F 4.0 fl oz (F10.5.1 + 4-6d)	0.0 e	0.3 h	0.0	0.0 d
24. Agrimaxx 463	Untreated (no inoculum)	0.0 e	0.0 h	0.0	0.0 d
P(F)		**<0.0001**	**<0.0001**	0.52	**0.01**
LSD		1.62	3.46	N.S.	3.98

[z] Fungicide sprays were applied at Feekes 10.3 on 11 Apr, Feekes 10.5.1 (flowering) on 16 Apr, and Feekes 10.5.1 + 4-6d on 21 Apr. Fusarium inoculum (trts 1-5) was applied hours after F10.5 treatment application (17 Apr). All fungicide treatments were applied with Induce 0.125% v/v.

[y] Percent of leaf area with signs and symptoms of *Puccinia recondita* f. sp. *Tritici*. Plots were also evaluated for powdery mildew and Stagnospora nodorum blotch; little to none was detected.

[x] Percent of grain heads with signs and symptoms of Fusarium head blight.

[w] Percent of spikelets with signs and symptoms of Fusarium head blight.

Means in a column or group followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment and variety on yield and mycotoxin levels in wheat (WHTSCAB120, Suffolk, VA 2020).

Variety, treatment, rate/A and application timing (Feekes)[z]		Yield[y] (bu/A)	Test weight (lb/bu)	% FDK[x]	DON ppm
1. Shirley	Untreated	52.0	54.5 ef	3.0	0.9 bc
2. Shirley	Prosaro 421 SC 6.5 fl oz (F10.5.1)	52.7	54.2 e-g	2.3	0.8 b-d
3. Shirley	Miravis Ace 13.7 fl oz (F10.5.1)	62.7	52.7 g	0.8	0.2 f-i
4. Shirley	Miravis Ace 13.7 fl oz (F10.3)	51.8	55.4 c-e	1.3	0.5 d-h
5. Shirley	Miravis Ace 13.7 fl oz (F10.5.1) Tebuconazole 3.6 F 4.0 fl oz (F10.5.1 + 4-6d)	55.5	56.5 a-c	1.5	0.3 e-i
6. Shirley	Untreated (no inoculum)	47.8	54.1 e-g	2.0	0.5 c-h
7. Hilliard	Untreated	50.7	57.1 ab	1.3	0.9 b
8. Hilliard	Prosaro 421 SC 6.5 fl oz (F10.5.1)	60.0	57.1 ab	2.5	0.6 b-f
9. Hilliard	Miravis Ace 13.7 fl oz (F10.5.1)	59.8	56.8 a-c	0.8	0.3 e-i
10. Hilliard	Miravis Ace 13.7 fl oz (F10.3)	57.4	57.6 a	1.8	0.6 b-f
11. Hilliard	Miravis Ace 13.7 fl oz (F10.5.1) Tebuconazole 3.6 F 4.0 fl oz (F10.5.1 + 4-6d)	49.4	57.5 a	1.3	0.6 b-f
12. Hilliard	Untreated (no inoculum)	58.2	57.1 a	1.5	0.5 d-h
13. Liberty 5658	Untreated	56.6	56.3 a-d	2.3	1.4 a
14. Liberty 5658	Prosaro 421 SC 6.5 fl oz (F10.5.1)	68.6	57.1 ab	1.5	0.5 b-g
15. Liberty 5658	Miravis Ace 13.7 fl oz (F10.5.1)	57.1	57.5 a	1.5	0.6 b-e
16. Liberty 5658	Miravis Ace 13.7 fl oz (F10.3)	61.6	57.2 a	1.5	0.9 b
17. Liberty 5658	Miravis Ace 13.7 fl oz (F10.5.1) Tebuconazole 3.6 F 4.0 fl oz (F10.5.1 + 4-6d)	57.8	57.6 a	0.8	0.7 b-d
18. Liberty 5658	Untreated (no inoculum)	62.9	56.9 a-c	1.5	0.5 c-h
19. Agrimaxx 463	Untreated	60.1	53.6 fg	1.3	0.1 hi
20. Agrimaxx 463	Prosaro 421 SC 6.5 fl oz (F10.5.1)	57.8	54.9 d-f	1.3	0.0 i
21. Agrimaxx 463	Miravis Ace 13.7 fl oz (F10.5.1)	59.8	54.8 d-f	1.0	0.2 g-i
22. Agrimaxx 463	Miravis Ace 13.7 fl oz (F10.3)	46.6	55.5 b-e	1.3	0.1 i
23. Agrimaxx 463	Miravis Ace 13.7 fl oz (F10.5.1) Tebuconazole 3.6 F 4.0 fl oz (F10.5.1 + 4-6d)	56.1	54.8 d-f	0.3	0.1 i
24. Agrimaxx 463	Untreated (no inoculum)	52.6	54.9 d-f	1.3	0.1 i
P(F)		0.92	**<0.0001**	0.50	**<0.0001**
LSD		N.S.	1.59	N.S.	0.37

[z] Fungicide sprays were applied at Feekes 10.3 on 11 Apr, Feekes 10.5.1 (flowering) on 16 Apr, and Feekes 10.5.1 + 4-6d on 21 Apr. Fusarium inoculum (trts 1-5) was applied hours after F10.5 treatment application (17 Apr). All fungicide treatments were applied with Induce 0.125% v/v.

[y] Yields are weight of wheat with 13.5% moisture. One bushel equals 60 lbs. Wheat was harvested on 10 Jun.

[x] Percent Fusarium damaged kernels. FDK rating scale: 0 = no damage, 100=100% Fusarium damaged kernels in scabby wheat; FDK scale by Engle, De Wolf & Lipps, Ohio State.

Means in a column or group followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

TEST ID: WHTSCAB220

PURPOSE: To evaluate fungicide treatment and application timing for control of FHB and impact on yield in wheat

LOCATION: Tidewater Research Farm, Hare Rd., Suffolk, VA

CROP INFORMATION:

Field	9B
Crop history	2019 wheat/soy, 2018 corn, 2017 wheat/soy
Planting date	22 Nov 2019
Variety	Shirley
Seeding rate	30 seed/ft
Plot length/width	30'x 5' (treat & harvest), 30' x 12' total
Number of rows	8
Row spacing	7.5"
Alleys (length between blocks)	9'
Harvest date	22 Jun

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

INOCULUM: Fusarium graminearum conidia (~50,000/ml) applied 24 hours following the Feekes 10.5.1 fungicide treatment with Lee Spider Sprayer; 1 L inoculum to 11 L H_2O

TREATMENT APPLICATION:

Equipment	Lee Spider sprayer
Pressure (psi)	38 psi
Nozzle type	Twinjet 8002VS
Volume (gal/A)	19.88
Surfactant	NIS 0.125% v/v

TREATMENTS:

Trt #	Fungicide and formulation	Rate, fl oz/A	App. timing	App. date
1	Untreated Inoculum	-- 	-- Feekes 10.5.1 + 1d	 29 Apr
2	Prosaro 421 SC Inoculum	6.5 	Feekes 10.5.1 Feekes 10.5.1 + 1d	28 Apr 29 Apr
3	Caramba 0.75 SL Inoculum	13.5 	Feekes 10.5.1 Feekes 10.5.1 + 1d	28 Apr 29 Apr
4	Miravis Ace SE Inoculum	13.7 	Feekes 10.3 Feekes 10.5.1 + 1d	21 Apr 29 Apr
5	Miravis Ace SE Inoculum	13.7 	Feekes 10.5.1 Feekes 10.5.1 + 1d	28 Apr 29 Apr
6	Miravis Ace SE Inoculum	13.7 	Feekes 10.5.1 + 4-6d Feekes 10.5.1 + 1d	4 May 29 Apr
7	Miravis Ace SE Inoculum Prosaro 421 SC	13.7 6.5	Feekes 10.5.1 Feekes 10.5.1 + 1d Feekes 10.5.1 + 4-6d	28 Apr 29 Apr 4 May
8	Miravis Ace SE Inoculum Caramba 0.75 SL	13.7 13.5	Feekes 10.5.1 Feekes 10.5.1 + 1d Feekes 10.5.1 + 4-6d	28 Apr 29 Apr 4 May
9	Miravis Ace SE Inoculum Tebuconazole 3.6 F	13.7 4	Feekes 10.5.1 Feekes 10.5.1 + 1d Feekes 10.5.1 + 4-6d	28 Apr 29 Apr 4 May

10	Prosaro 421 SC Inoculum	6.5	Feekes 10.3 Feekes 10.5.1 + 1d	21 Apr 29 Apr
11	Prosaro 421 SC Inoculum	6.5	Feekes 10.5.1 + 4-6d Feekes 10.5.1 + 1d	4 May 29 Apr
12	Caramba 0.75 SL Inoculum	13.5	Feekes 10.3 Feekes 10.5.1 + 1d	21 Apr 29 Apr
13	Caramba 0.75 SL Inoculum	13.5	Feekes 10.5.1 + 4-6d Feekes 10.5.1 + 1d	4 May 29 Apr

SOIL TYPE: Suffolk loamy sand

SOIL FERTILITY REPORT (Oct 2019):

pH	**P (lb/A)**	**K (lb/A)**	**Ca (lb/A)**	**Mg (lb/A)**	**Zn (ppm)**	**Mn (ppm)**	**Cu (ppm)**	**Fe (ppm)**	**B (ppm)**
5.7	102	50	642	92	0.6	4.6	0.4	19.3	0.1

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	**Type and target**	**Product and formulation**	**Rate/A**
1-30-20	Fertility	9-18-31	322 lbs
2-4-20	Fertility	24-0-0-3	60 units
3-14-20	Fertility	24-0-0-3	60 units
2-4-20	Herbicide	Quelex	0.75 fl oz

Table 1. Effect of fungicide treatment on disease incidence in wheat (WHTSCAB220, Suffolk, VA 2020).

Treatment, rate/A and application timing (Feekes)[z]	% foliar disease 20 May				
	Leaf blotch[y]	Leaf rust[x]		Stripe rust[w]	
	Flag-1	Flag	Flag-1	Flag	Flag-1
1. Untreated	18.8 a	0.0	5.0	2.0	11.3
2. Prosaro 421 SC 6.5 fl oz (F10.5.1)	5.0 b-d	0.0	5.0	0.3	2.5
3. Caramba 0.75 SL 13.5 fl oz (F10.5.1)	1.0 ef	1.3	10.3	0.0	0.0
4. Miravis ACE SE 13.7 fl oz (F10.3)	0.8 f	0.0	4.0	0.0	0.0
5. Miravis ACE SE 13.7 fl oz (F10.5.1)	3.0 c-f	0.0	10.0	0.5	1.3
6. Miravis ACE SE 13.7 fl oz (F10.5.1 + 4-6d)	2.0 d-f	0.3	6.3	0.3	1.5
7. Miravis ACE SE 13.7 fl oz (F10.5.1) Prosaro 421 SC 6.5 fl oz (F10.5.1 + 4-6d)	4.3 b-e	0.0	7.5	0.3	1.3
8. Miravis ACE SE 13.7 fl oz (F10.5.1) Caramba 0.75 SL 13.5 fl oz (F10.5.1 + 4-6d)	3.0 c-f	0.3	5.3	1.3	5.0
9. Miravis ACE SE 13.7 fl oz (F10.5.1) Tebuconazole 3.6 F 4 fl oz (F10.5.1 + 4-6d)	2.0 d-f	1.3	10.0	0.0	0.0
10. Prosaro 421 SC 6.5 fl oz (F10.3)	7.8 b	0.0	6.3	1.3	2.5
11. Prosaro 421 SC 6.5 fl oz (F10.5.1 + 4-6d)	7.8 b	0.0	10.0	0.0	0.3
12. Caramba 0.75 SL 13.5 fl oz (F10.3)	3.0 c-f	0.0	7.5	0.0	0.3
13. Caramba 0.75 SL 13.5 fl oz (F10.5.1 + 4-6d)	6.3 bc	0.3	6.3	0.0	0.3
P(F)	**<0.0001**	0.71	0.34	0.08	0.11
LSD	4.68	N.S.	N.S.	N.S.	N.S.

[z] Fungicide sprays were applied at Feekes 3 on 21 Apr, Feekes 10.5.1 (flowering) on 28 Apr, and Feekes 10.5.1 + 4-6d on 4 May. Fusarium graminearum conidia (~50,000/ml) applied on 29 Apr to all plots 24 hours following the Feekes 10.5.1 fungicide treatment. All fungicide treatments applied with Induce 0.125% v/v.

[y] Percent of leaf area with signs and symptoms of Stagnospora nodorum blotch. Plots were also evaluated for symptoms of powdery mildew; none were observed.

[x] Percent of leaf area with signs and symptoms of *Puccinia recondite* f. sp. *tritici*.

[w] Percent of leaf area with signs and symptoms of *Puccinia striiformis* f. sp. *tritici*.

Means in a column or group followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment on disease severity and yield in wheat (WHTSCAB220, Suffolk, VA 2020).

Treatment, rate/A and application timing (Feekes)[z]	Scab 17 May % severity[y]	Scab 17 May % incidence[x]	Yield[w] (bu/A)	Test weight (lb/bu)	% FDK[v]
1. Untreated	0.2	2.4	90.5	54.5 b	3.0
2. Prosaro 421 SC 6.5 fl oz (F10.5.1)	0.1	0.7	98.5	54.7 b	2.0
3. Caramba 0.75 SL 13.5 fl oz (F10.5.1)	0.1	1.7	84.7	54.5 b	2.0
4. Miravis ACE SE 13.7 fl oz (F10.3)	0.0	0.0	100.8	56.0 a	1.5
5. Miravis ACE SE 13.7 fl oz (F10.5.1)	0.0	0.4	99.3	56.5 a	1.8
6. Miravis ACE SE 13.7 fl oz (F10.5.1 + 4-6d)	0.2	2.2	87.8	56.1 a	2.3
7. Miravis ACE SE 13.7 fl oz (F10.5.1) Prosaro 421 SC 6.5 fl oz (F10.5.1 + 4-6d)	0.1	1.8	94.1	54.9 b	1.8
8. Miravis ACE SE 13.7 fl oz (F10.5.1) Caramba 0.75 SL 13.5 fl oz (F10.5.1 + 4-6d)	0.0	0.5	105.7	56.2 a	1.8
9. Miravis ACE SE 13.7 fl oz (F10.5.1) Tebuconazole 3.6 F 4 fl oz (F10.5.1 + 4-6d)	0.1	1.3	92.4	55.9 a	1.5
10. Prosaro 421 SC 6.5 fl oz (F10.3)	0.0	0.4	93.2	54.7 b	1.8
11. Prosaro 421 SC 6.5 fl oz (F10.5.1 + 4-6d)	0.1	0.9	86.0	54.6 b	1.8
12. Caramba 0.75 SL 13.5 fl oz (F10.3)	0.0	0.3	86.2	54.4 b	2.5
13. Caramba 0.75 SL 13.5 fl oz (F10.5.1 + 4-6d)	0.1	0.7	91.5	54.8 b	1.8
P(F)	0.26	0.29	0.32	**<0.0001**	0.70
LSD	N.S.	N.S.	N.S.	0.88	N.S.

[z] Fungicide sprays were applied at Feekes 3 on 21 Apr, Feekes 10.5.1 (flowering) on 28 Apr, and Feekes 10.5.1 + 4-6d on 4 May. Fusarium graminearum conidia (~50,000/ml) applied on 29 Apr to all plots 24 hours following the Feekes 10.5.1 fungicide treatment. All fungicide treatments applied with Induce 0.125% v/v.

[y] Percent of grain heads with signs and symptoms of Fusarium head blight.

[x] Percent of spikelets with signs and symptoms of Fusarium head blight.

[w] Yields are weight of wheat with 13.5% moisture. One bushel equals 60 lbs. Wheat was harvested on 22 Jun.

[v] Percent Fusarium damaged kernels. FDK rating scale: 0 = no damage, 100 = 100% Fusarium damaged kernels in scabby wheat; FDK scale by Engle, De Wolf & Lipps, Ohio State.

Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

TEST ID: WHTFOLFUN120

PURPOSE: To compare fungicide treatments for foliar disease control and impact on yield in wheat

LOCATION: Tidewater AREC Duke Farm, Holland Rd., Suffolk, VA

CROP INFORMATION:

Field	45A
Crop history	2019 soy/corn, 2018 wheat/soy, 2017 soy/sorghum
Planting date	8 Dec 2019
Variety	DynaGrow 9811
Seeding rate	30 seed/ft
Plot length	30’
Number of rows	8
Row spacing	7.5”
Alleys (length between blocks)	8’
Harvest date	24 Jun

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

Equipment	Lee Spider sprayer
Pressure (psi)	38 psi
Nozzle type	Twinjet 8002VS
Volume (gal/A)	19.88
Surfactant	NIS 0.25% v/v

TREATMENTS:

Trt #	Fungicide and formulation	Rate, fl oz/A	App. timing	App. date
1	Untreated	--	--	
2	TopGuard	7	Feekes 9	16 Apr
3	TopGuard EQ	5	Feekes 9	16 Apr
4	TopGuard	5	Feekes 3-6	4 Mar
5	Tilt 3.6 EC	4	Feekes 3-6	4 Mar
6	TopGuard EQ	3	Feekes 3-6	4 Mar
7	TopGuard Miravis ACE	5 13.7	Feekes 3-6 Feekes 10.5.1	4 Mar 4 May
8	Tilt 3.6 EC Miravis ACE	4 13.7	Feekes 3-6 Feekes 10.5.1	4 Mar 4 May
9	TopGuard EQ Miravis ACE	3 13.7	Feekes 3-6 Feekes 10.5.1	4 Mar 4 May
10	Miravis ACE	13.7	Feekes 10.5.1	4 May

SOIL TYPE: Lynchburg fine sandy loam

SOIL FERTILITY REPORT (Jan 2020):

pH	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)
6.0	50	165	621	96	0.4	2.8	0.3	32.4	0.1

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
1-30-20	Fertility	9-18-31	322 lbs
2-4-20	Fertility	24-0-0-3	60 units
3-14-20	Fertility	24-0-0-3	60 units
2-4-20	Herbicide	Quelex	0.75 fl oz

Table 1. Effect of fungicide treatment on disease incidence in wheat (WHTFOLFUN120, Suffolk, VA 2020).

Treatment, rate/A and application timing (Feekes)[z]	% leaf blotch[y]		Scab	
	20 May	1 Jun		
	Flag-1	Flag	% severity[x]	% incidence[w]
1. Untreated	4.0 ab	3.0 a	0.2	1.4
2. TopGuard 7 fl oz (F9)	5.0 a	3.0 a	0.4	3.6
3. TopGuard EQ 5 fl oz (F9)	1.8 c	2.0 a	0.6	4.9
4. TopGuard 5 fl oz (F3-6)	3.0 a-c	1.0 a	0.2	3.1
5. Tilt 3.6 EC 4 fl oz (F3-6)	1.8 c	1.0 a	0.3	4.0
6. TopGuard EQ 3 fl oz (F3-6)	2.0 bc	2.0 a	0.5	5.4
7. TopGuard 5 fl oz (F3-6) Miravis ACE 13.7 fl oz (F10.5.1)	0.0 d	0.0 b	0.7	2.5
8. Tilt 3.6 EC 4 fl oz (F3-6) Miravis ACE 13.7 fl oz (F10.5.1)	0.0 d	0.0 b	0.3	3.2
9. TopGuard EQ 3 fl oz (F3-6) Miravis ACE 13.7 fl oz (F10.5.1)	0.0 d	0.0 b	0.1	1.6
10. Miravis ACE 13.7 fl oz (F10.5.1)	0.0 d	0.0 b	0.2	2.7
P(F)	**<0.0001**	**<0.0001**	0.59	0.38
LSD	2.19	2.06	N.S.	N.S.

[z] Fungicide sprays were applied at Feekes 3-6 on 4 Mar, Feekes 9 on 16 Apr, and Feekes 10.5.1 on 4 May. All fungicide treatments applied with Induce 0.25% v/v.

[y] Percent of leaf area with signs and symptoms of Stagnospora nodorum blotch. Plots were also evaluated for symptoms of powdery mildew and rust; none were observed.

[x] Percent of grain heads with signs and symptoms of Fusarium head blight.

[w] Percent of spikelets with signs and symptoms of Fusarium head blight.

Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment on disease severity and yield in wheat (WHTFOLFUN120, Suffolk, VA 2020).

Treatment, rate/A and application timing (Feekes)[z]	Yield[y] (bu/A)	Test weight (lb/bu)	% FDK[x]
1. Untreated	65.2	54.1 bc	4.3 a
2. TopGuard 7 fl oz (F9)	77.3	54.4 bc	3.3 ab
3. TopGuard EQ 5 fl oz (F9)	73.7	54.5 b	4.5 a
4. TopGuard 5 fl oz (F3-6)	69.8	53.7 c	2.3 b
5. Tilt 3.6 EC 5 fl oz (F3-6)	69.3	54.0 bc	3.0 ab
6. TopGuard EQ 3 fl oz (F3-6)	69.0	53.8 bc	4.3 a
7. TopGuard 5 fl oz (F3-6) Miravis ACE 13.7 fl oz (F10.5.1)	65.0	55.3 a	1.5 b
8. Tilt 3.6 EC 4 fl oz (F3-6) Miravis ACE 13.7 fl oz (F10.5.1)	73.1	55.3 a	1.8 b
9. TopGuard EQ 3 fl oz (F3-6) Miravis ACE 13.7 fl oz (F10.5.1)	73.8	55.5 a	2.8 ab
10. Miravis ACE 13.7 fl oz (F10.5.1)	68.8	55.5 a	2.0 b
P(F)	0.32	**<0.0001**	**0.009**
LSD	N.S.	0.71	1.78

[z] Fungicide sprays were applied at Feekes 3-6 on 4 Mar, Feekes 9 on 16 Apr, and Feekes 10.5.1 on 4 May. All fungicide treatments applied with Induce 0.25% v/v.

[y] Yields are weight of wheat with 13.5% moisture. One bushel equals 60 lbs. Wheat was harvested on 24 Jun.

[x] Percent Fusarium damaged kernels. FDK rating scale: 0 = no damage, 100 = 100% Fusarium damaged kernels in scabby wheat; FDK scale by Engle, De Wolf & Lipps, Ohio State.

Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).

TEST ID: WHTFOLFUN220

PURPOSE: To compare fungicide treatments for foliar disease control and impact on yield in wheat

LOCATION: Tidewater Research Farm, Hare Rd., Suffolk, VA

CROP INFORMATION:

Field	28
Crop history	2019 peanut, 2018 wheat/soy, 2017 peanut
Planting date	21 Nov 2019
Variety	Shirley
Seeding rate	30 seed/ft
Plot length/width	30'x 5' (treat & harvest), 30' x 12' total
Number of rows	8
Row spacing	7.5"
Alleys (length between blocks)	8'
Harvest date	24 Jun

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

INOCULUM: Fusarium graminearum conidia (~50,000/ml) applied 24 hours (29 Apr) following the Feekes 10.5.1 fungicide treatment with Lee Spider Sprayer; 1 L inoculum to 11 L H_2O

TREATMENT APPLICATION:

Equipment	Lee Spider sprayer
Pressure (psi)	38 psi
Nozzle type	Twinjet 8002VS
Volume (gal/A)	19.88
Surfactant	NIS 0.25 %v/v

TREATMENTS:

Trt #	Fungicide and formulation	Rate, fl oz/A	App. timing	App. date
1	Untreated	--	--	
2	Folicur 3.6 F	4	Feekes 9	11 Apr
3	Tilt 3.6 EC	4	Feekes 9	11 Apr
4	Aproach Prima 2.34 SC	6.8	Feekes 9	11 Apr
5	Priaxor 4.17 SC	4	Feekes 9	11 Apr
6	Quilt Xcel 2.2 SE	10.5	Feekes 9	11 Apr
7	Stratego YLD	4	Feekes 9	11 Apr
8	Priaxor 4.17 SC + Tilt 3.6 EC	4 4	Feekes 9	11 Apr
9	Caramba 0.75 SL	13.5	Feekes 10.5.1	28 Apr
10	Folicur 3.6 F	4	Feekes 10.5.1	28 Apr
11	Proline 480 SC	5.7	Feekes 10.5.1	28 Apr
12	Prosaro 421 SC	6.5	Feekes 10.5.1	28 Apr
13	Tilt 3.6 EC	4	Feekes 10.5.1	28 Apr
14	Miravis ACE SE	13.7	Feekes 10.5.1	28 Apr

SOIL TYPE: Kenansville loamy sand

SOIL FERTILITY REPORT (Oct 2019):

pH	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)
5.9	27	190	800	77	0.3	4.8	0.2	10.7	0.2

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
1-30-20	Fertility	9-18-31	322 lbs
2-4-20	Fertility	24-0-0-3	60 units
3-14-20	Fertility	24-0-0-3	60 units
2-4-20	Herbicide	Quelex	0.75 fl oz

Table 1. Effect of fungicide treatment on disease incidence in wheat (WHTFOLFUN220, Suffolk, VA 2020).

Treatment, rate/A and application timing (Feekes)[z]	% leaf blotch[y]				
	5 May	14 May	20 May	26 May	
	Flag-2	Flag-1	Flag-1	Flag	Flag-1
1. Untreated	3.0 a-c	5.0 bc	12.5 b	1.8	11.3 bc
2. Folicur 3.6 F 4 fl oz (F9)	5.0 ab	6.5 bc	6.3 cd	1.5	12.5 a-c
3. Tilt 3.6 EC 4 fl oz (F9)	0.5 d	1.0 d	4.0 de	0.5	8.8 bc
4. Aproach Prima 2.34 SC 6.8 fl oz (F9)	2.0 b-d	4.3 cd	10.0 bc	0.8	16.3 ab
5. Priaxor 4.17 SC 4 fl oz (F9)	7.5 a	11.3 ab	22.5 a	2.0	21.3 a
6. Quilt Xcel 2.2 SE 10.5 fl oz (F9)	2.0 b-d	1.0 d	3.0 d-f	0.5	12.5 a-c
7. Stratego YLD 4 fl oz (F9)	1.5 cd	6.8 b-d	8.8 bc	2.0	13.8 a-c
8. Priaxor 4.17 SC 4 fl oz + Tilt 3.6 EC 4 fl oz (F9)	3.0 a-c	4.0 cd	3.0 d-f	1.8	8.8 b-d
9. Caramba 0.75 SL 13.5 fl oz (F10.5.1)	1.8 b-d	4.3 cd	0.8 f	0.0	3.8 d-f
10. Folicur 3.6 F 4 fl oz (F10.5.1)	4.0 ab	4.3 cd	5.0 cd	0.3	7.5 c-e
11. Proline 480 SC 5.7 fl oz (F10.5.1)	4.0 ab	13.8 a	15.0 b	1.5	15.0 a-c
12. Prosaro 421 SC 6.5 fl oz (F10.5.1)	5.5 ab	5.8 cd	5.3 cd	0.3	11.3 bc
13. Tilt 3.6 EC 4 fl oz (F10.5.1)	2.0 b-d	2.0 cd	1.8 ef	0.0	3.0 ef
14. Miravis ACE SE 13.7 fl oz (F10.5.1)	5.0 ab	6.5 bc	3.0 d-f	0.0	0.8 f
P(F)	**0.02**	**0.003**	**<0.0001**	0.054	**<0.0001**
LSD	3.77	6.38	5.50	N.S.	7.76

[z] Fungicide sprays were applied at Feekes 9 on 11 Apr and Feekes 10.5.1 (flowering) on 28 Apr. Fusarium graminearum conidia (~50,000/ml) applied 24 hours (29 Apr) to all plots following the Feekes 10.5.1 fungicide treatment (29 Apr). All fungicide treatments were applied with Induce 0.25% v/v.

[y] Percent of leaf area with signs and symptoms of Stagnospora nodorum blotch. Plots were also evaluated for symptoms of powdery mildew; none were observed.

Means in a column or group followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment on disease severity in wheat (WHTFOLFUN220, Suffolk, VA 2020).

Treatment, rate/A and application timing (Feekes)[z]	% foliar disease						
	Leaf rust[y]			Stripe rust[x]			
	14 May	26 May		14 May	20 May	26 May	
	Flag-1	Flag	Flag-1	Flag	Flag	Flag	Flag-1
1. Untreated	3.0	0.8	6.3	5.3	3.8	5.5 a	11.3 a
2. Folicur 3.6 F 4 fl oz (F9)	6.5	0.0	5.0	0.0	0.0	0.3 b	0.3 b
3. Tilt 3.6 EC 4 fl oz (F9)	4.0	0.3	6.3	0.0	0.0	0.0 b	0.0 b
4. Aproach Prima 2.34 SC 6.8 fl oz (F9)	4.0	0.0	5.0	0.0	0.0	0.0 b	0.0 b
5. Priaxor 4.17 SC 4 fl oz (F9)	4.0	0.5	8.8	1.3	0.0	0.0 b	0.0 b
6. Quilt Xcel 2.2 SE 10.5 fl oz (F9)	1.0	0.3	4.0	0.0	0.0	0.0 b	0.0 b
7. Stratego YLD 4 fl oz (F9)	5.0	1.5	6.3	0.0	0.3	0.0 b	0.0 b
8. Priaxor 4.17 SC 4 fl oz + Tilt 3.6 EC 4 fl oz (F9)	3.0	1.8	7.5	0.0	0.0	0.0 b	0.0 b
9. Caramba 0.75 SL 13.5 fl oz (F10.5.1)	2.8	0.0	6.3	0.0	0.0	0.0 b	0.0 b
10. Folicur 3.6 F 4 fl oz (F10.5.1)	2.8	0.3	6.3	0.0	0.0	0.0 b	0.0 b
11. Proline 480 SC 5.7 fl oz (F10.5.1)	4.0	0.0	5.0	0.0	0.0	0.0 b	0.0 b
12. Prosaro 421 SC 6.5 fl oz (F10.5.1)	2.8	0.0	5.0	0.0	0.0	0.0 b	0.0 b
13. Tilt 3.6 EC 4 fl oz (F10.5.1)	7.5	0.0	5.0	0.0	0.0	0.0 b	0.0 b
14. Miravis ACE SE 13.7 fl oz (F10.5.1)	2.0	1.3	7.5	0.0	0.0	0.0 b	0.0 b
P(F)	0.25	0.13	0.74	0.15	0.47	**0.01**	**<0.0001**
LSD	N.S.	N.S.	N.S.	N.S.	N.S.	3.69	5.02

[z] Fungicide sprays were applied at Feekes 9 on 11 Apr and Feekes 10.5.1 (flowering) on 28 Apr. Fusarium graminearum conidia (~50,000/ml) applied to all plots 24 hours following the Feekes 10.5.1 fungicide treatment (29 Apr). All fungicide treatments were applied with Induce 0.25% v/v.

[y] Percent of leaf area with signs and symptoms of *Puccinia recondite* f. sp. *tritici*.

[x] Percent of leaf area with signs and symptoms of *Puccinia striiformis* f. sp. *tritici*.

Means in a column or group followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 3. Effect of fungicide treatment on disease severity and yield in wheat (WHTFOLFUN220, Suffolk, VA 2020).

Treatment, rate/A and application timing (Feekes)[z]	Scab 21 May % severity[y]	Scab 21 May % incidence[x]	Yield[w] (bu/A)	Test weight (lb/bu)	% FDK[v]
1. Untreated	0.1	0.8 bc	89.2	52.6 d	3.3
2. Folicur 3.6 F 4 fl oz (F9)	0.1	0.3 c	94.7	52.8 d	2.0
3. Tilt 3.6 EC 4 fl oz (F9)	0.1	0.9 bc	96.1	53.4 b-d	2.8
4. Aproach Prima 2.34 SC 6.8 fl oz (F9)	0.1	1.4 a-c	105.2	53.3 b-d	2.3
5. Priaxor 4.17 SC 4 fl oz (F9)	0.0	0.3 c	103.0	53.4 b-d	2.5
6. Quilt Xcel 2.2 SE 10.5 fl oz (F9)	0.1	0.6 bc	101.0	53.3 b-d	2.0
7. Stratego YLD 4 fl oz (F9)	0.1	0.3 c	85.2	52.9 cd	2.5
8. Priaxor 4.17 SC 4 fl oz + Tilt 3.6 EC 4 fl oz (F9)	0.1	1.1 bc	104.8	52.9 cd	2.0
9. Caramba 0.75 SL 13.5 fl oz (F10.5.1)	0.1	1.4 a-c	101.7	53.6 b-d	2.3
10. Folicur 3.6 F 4 fl oz (F10.5.1)	0.0	0.0 c	101.1	53.4 b-d	2.8
11. Proline 480 SC 5.7 fl oz (F10.5.1)	0.3	3.6 a	105.9	53.1 b-d	2.5
12. Prosaro 421 SC 6.5 fl oz (F10.5.1)	0.1	1.1 a-c	102.2	54.2 ab	2.8
13. Tilt 3.6 EC 4 fl oz (F10.5.1)	0.2	2.6 ab	106.3	55.0 a	2.0
14. Miravis ACE SE 13.7 fl oz (F10.5.1)	0.0	0.0 c	99.7	54.1 a-c	2.3
P(F)	0.14	**0.04**	0.17	**0.03**	0.78
LSD	N.S.	2.03	N.S.	1.22	N.S.

[z] Fungicide sprays were applied at Feekes 9 on 11 Apr and Feekes 10.5.1 (flowering) on 28 Apr. Fusarium graminearum conidia (~50,000/ml) applied to all plots 24 hours following the Feekes 10.5.1 fungicide treatment (29 Apr). All fungicide treatments were applied with Induce 0.25% v/v.

[y] Percent of grain heads with signs and symptoms of Fusarium head blight.

[x] Percent of spikelets with signs and symptoms of Fusarium head blight.

[w] Yields are weight of wheat with 13.5% moisture. One bushel equals 60 lbs. Wheat was harvested on 24 Jun.

[v] Percent Fusarium damaged kernels. FDK rating scale: 0 = no damage, 100 = 100% Fusarium damaged kernels in scabby wheat; FDK scale by Engle, De Wolf & Lipps, Ohio State.

Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

TEST ID: WHTFOLFUN320

PURPOSE: To compare fungicide treatments for foliar disease control and impact on yield in wheat

LOCATION: Tidewater Research Farm, Hare Rd., Suffolk, VA

CROP INFORMATION:

Field	28
Crop history	2019 peanut, 2018 wheat/soy, 2017 peanut
Planting date	8 Dec 2019
Variety	DynaGrow 1198
Seeding rate	30 seed/ft
Plot length/width	30'x 5' (treat & harvest), 30' x 12' total
Number of rows	8
Row spacing	7.5"
Alleys (length between blocks)	8'
Harvest date	24 Jun

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

Equipment	Lee Spider sprayer
Pressure (psi)	38 psi
Nozzle type	Twinjet 8002VS
Volume (gal/A)	19.88
Surfactant	NIS 0.25% v/v

TREATMENTS:

Trt #	Fungicide and formulation	Rate, fl oz/A	App. timing	App. date
1	Untreated	--	--	
2	Folicur 3.6 F	4	Feekes 9	11 Apr
3	Tilt 3.6 EC	4	Feekes 9	11 Apr
4	Aproach Prima 2.34 SC	6.8	Feekes 9	11 Apr
5	Priaxor 4.17 SC	4	Feekes 9	11 Apr
6	Quilt Xcel 2.2 SE	10.5	Feekes 9	11 Apr
7	Stratego YLD	4	Feekes 9	11 Apr
8	Priaxor 4.17 SC + Tilt 3.6 EC	4 4	Feekes 9	11 Apr
9	Caramba 0.75 SL	13.5	Feekes 10.5.1	21 Apr
10	Folicur 3.6 F	4	Feekes 10.5.1	21 Apr
11	Proline 480 SC	5.7	Feekes 10.5.1	21 Apr
12	Prosaro 421 SC	6.5	Feekes 10.5.1	21 Apr
13	Tilt 3.6 EC	4	Feekes 10.5.1	21 Apr
14	Miravis ACE SE	13.7	Feekes 10.5.1	21 Apr

SOIL TYPE: Kenansville loamy sand

SOIL FERTILITY REPORT (Oct 2019):

pH	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)
5.9	27	190	800	77	0.3	4.8	0.2	10.7	0.2

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
1-30-20	Fertility	9-18-31	322 lbs
2-4-20	Fertility	24-0-0-3	60 units
3-14-20	Fertility	24-0-0-3	60 units
2-4-20	Herbicide	Quelex	0.75 fl oz

Table 1. Effect of fungicide treatment on disease severity in wheat (WHTFOLFUN320, Suffolk, VA 2020).

Treatment, rate/A and application timing (Feekes)[z]	% foliar disease					
	Leaf blotch[y]					Leaf rust[x]
	4 May	4 May	14 May	20 May		14 May
	Flag-1	Flag-2	Flag-1	Flag	Flag-1	Flag 1
1. Untreated	0.8 ab	7.5	8.8 a	1.8	11.5 a	1.8
2. Folicur 3.6 F 4 fl oz (F9)	0.3 bc	6.3	3.0 cd	0.0	6.3 ab	2.0
3. Tilt 3.6 EC 4 fl oz (F9)	0.0 c	4.0	2.0 d	0.0	5.0 a-c	2.0
4. Aproach Prima 2.34 SC 6.8 fl oz (F9)	0.8 ab	4.0	2.8 d	0.3	11.3 a	2.8
5. Priaxor 4.17 SC 4 fl oz (F9)	0.5 a-c	4.3	5.0 a-d	0.8	12.5 a	4.0
6. Quilt Xcel 2.2 SE 10.5 fl oz (F9)	0.3 bc	4.0	3.0 cd	0.0	6.3 ab	3.8
7. Stratego YLD 4 fl oz (F9)	1.5 ab	6.3	7.5 ab	1.8	10.0 a	1.5
8. Priaxor 4.17 SC 4 fl oz + Tilt 3.6 EC 4 fl oz (F9)	0.0 c	4.0	2.0 d	0.0	3.0 b-c	1.8
9. Caramba 0.75 SL 13.5 fl oz (F10.5.1)	0.0 c	2.0	2.0 d	0.0	1.0 c	3.0
10. Folicur 3.6 F 4 fl oz (F10.5.1)	0.3 bc	4.0	3.0 cd	0.3	5.0 a-c	5.0
11. Proline 480 SC 5.7 fl oz (F10.5.1)	0.3 bc	4.0	4.0 b-d	0.3	6.3 ab	2.0
12. Prosaro 421 SC 6.5 fl oz (F10.5.1)	0.3 bc	4.0	6.3 a-c	0.3	7.5 ab	3.0
13. Tilt 3.6 EC 4 fl oz (F10.5.1)	1.8 a	6.5	6.5 a-c	1.3	7.8 ab	3.8
14. Miravis ACE SE 13.7 fl oz (F10.5.1)	0.0 c	3.0	4.3 b-d	0.3	6.8 a-c	4.0
P(F)	**0.049**	0.34	**0.02**	0.06	**0.04**	0.60
LSD	1.32	N.S.	3.72	N.S.	7.21	N.S.

[z] Fungicide sprays were applied at Feekes 9 on 11 Apr and Feekes 10.5.1 (flowering) on 28 Apr. All fungicide treatments were applied with Induce 0.25% v/v.

[y] Percent of leaf area with signs and symptoms of Stagnospora nodorum blotch. Plots were also evaluated for symptoms of powdery mildew; none were observed.

[x] Percent of leaf area with signs and symptoms of *Puccinia recondite* f. sp. *tritici*.

Means in a column or group followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment on disease severity and yield in wheat (WHTFOLFUN320, Suffolk, VA 2020).

Treatment, rate/A and application timing (Feekes)[z]	Scab 15 May % severity[y]	Scab 15 May % incidence[x]	Yield[w] (bu/A)	Test weight (lb/bu)	% FDK[v]
1. Untreated	0.1	0.9	88.6	53.6	3.5 a
2. Folicur 3.6 F 4 fl oz (F9)	0.5	4.3	88.7	52.7	3.5 ab
3. Tilt 3.6 EC 4 fl oz (F9)	0.8	2.2	91.7	54.4	2.8 a-e
4. Aproach Prima 2.34 SC 6.8 fl oz (F9)	0.8	2.5	88.0	54.0	1.5 c-e
5. Priaxor 4.17 SC 4 fl oz (F9)	0.3	2.9	106.0	54.2	3.3 a-c
6. Quilt Xcel 2.2 SE 10.5 fl oz (F9)	0.3	3.5	88.8	53.3	3.3 a-c
7. Stratego YLD 4 fl oz (F9)	0.3	2.6	89.8	54.2	2.0 b-e
8. Priaxor 4.17 SC 4 fl oz + Tilt 3.6 EC 4 fl oz (F9)	0.1	1.5	96.9	54.4	1.0 e
9. Caramba 0.75 SL 13.5 fl oz (F10.5.1)	0.3	3.8	93.2	53.5	3.0 a-d
10. Folicur 3.6 F 4 fl oz (F10.5.1)	1.2	4.2	99.0	53.9	4.0 a
11. Proline 480 SC 5.7 fl oz (F10.5.1)	0.8	2.8	97.3	54.8	2.8 a-e
12. Prosaro 421 SC 6.5 fl oz (F10.5.1)	0.1	1.4	95.0	53.6	3.3 a-c
13. Tilt 3.6 EC 4 fl oz (F10.5.1)	0.5	5.1	94.3	53.7	1.3 de
14. Miravis ACE SE 13.7 fl oz (F10.5.1)	1.4	3.4	101.5	55.2	2.3 a-e
P(F)	0.71	0.58	0.28	0.10	**0.03**
LSD	N.S.	N.S.	N.S.	N.S.	1.8

[z] Fungicide sprays were applied at Feekes 9 on 11 Apr and Feekes 10.5.1 (flowering) on 28 Apr. All fungicide treatments were applied with Induce 0.25% v/v.

[y] Percent of grain heads with signs and symptoms of Fusarium head blight.

[x] Percent of spikelets with signs and symptoms of Fusarium head blight.

[w] Yields are weight of wheat with 13.5% moisture. One bushel equals 60 lbs. Wheat was harvested on 24 Jun.

[v] Percent Fusarium damaged kernels. FDK rating scale: 0 = no damage, 100 = 100% Fusarium damaged kernels in scabby wheat; FDK scale by Engle, De Wolf & Lipps, Ohio State.

Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

TEST ID: BARSCAB120

PURPOSE: To evaluate the combined effects of fungicide treatment and genetic resistance on FHB in malt barley

LOCATION: Tidewater AREC, 6321 Holland Rd., Suffolk, VA

CROP INFORMATION:

Field	61B
Crop history	2019 corn, 2018 sorghum, 2017 wheat/sorghum
Planting date	31 Oct 2019
Variety	Flavia, Violetta, VA16M-81, VA16M-84
Plot length/width	9’
Number of rows	7
Row spacing	6.67”
Alleys (length between blocks)	9’
Harvest date	4 Jun

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

INOCULUM: Fusarium graminearum conidia (~50,000/ml) applied 24 hours following the Feekes 10.5 fungicide treatment with Lee Spider Sprayer; 1 L inoculum to 11 L H_2O

TREATMENT APPLICATION:

Equipment	Backpack sprayer
Pressure (psi)	38 psi
Nozzle type	Twinjet 8002VS
Volume (gal/A)	19.88
Surfactant	NIS 0.125 % v/v

TREATMENTS:

Trt #	Variety	Fungicide and formulation	Rate, fl oz/A	App. timing	App. date
1	Flavia	Untreated Inoculum	-- 	-- Feekes 10.5 + 1d	 17 Apr
2	Flavia	Prosaro 421 SC Inoculum	6.5 	Feekes 10.5 Feekes 10.5 + 1d	16 Apr 17 Apr
3	Flavia	Miravis Ace Inoculum	13.7 	Feekes 10.5 Feekes 10.5 + 1d	16 Apr 17 Apr
4	Flavia	Miravis Ace Inoculum	13.7 	Feekes 10.3 Feekes 10.5 + 1d	11 Apr 17 Apr
5	Flavia	Miravis Ace Inoculum Tebuconazole 3.6 F	13.7 4	Feekes 10.5 Feekes 10.5 + 1d Feekes 10.5 + 4-6d	16 Apr 17 Apr 21 Apr
6	Flavia	Miravis Ace Inoculum	13.7 	Feekes 10.5 + 4-6d Feekes 10.5 + 1d	21 Apr 17 Apr
7	Violetta	Untreated Inoculum	-- 	-- Feekes 10.5 + 1d	 17 Apr
8	Violetta	Prosaro 421 SC Inoculum	6.5 	Feekes 10.5 Feekes 10.5 + 1d	16 Apr 17 Apr
9	Violetta	Miravis Ace Inoculum	13.7 	Feekes 10.5 Feekes 10.5 + 1d	16 Apr 17 Apr
10	Violetta	Miravis Ace Inoculum	13.7 	Feekes 10.3 Feekes 10.5 + 1d	11 Apr 17 Apr
11	Violetta	Miravis Ace Inoculum Tebuconazole 3.6 F	13.7 4	Feekes 10.5 Feekes 10.5 + 1d Feekes 10.5 + 4-6d	16 Apr 17 Apr 21 Apr
12	Violetta	Miravis Ace Inoculum	13.7 	Feekes 10.5 + 4-6d Feekes 10.5 + 1d	21 Apr 17 Apr

13	VA16M-81	Untreated Inoculum	-- 	-- Feekes 10.5 + 1d	 17 Apr
14	VA16M-81	Prosaro 421 SC Inoculum	6.5 	Feekes 10.5 Feekes 10.5 + 1d	16 Apr 17 Apr
15	VA16M-81	Miravis Ace Inoculum	13.7 	Feekes 10.5 Feekes 10.5 + 1d	16 Apr 17 Apr
16	VA16M-81	Miravis Ace Inoculum	13.7 	Feekes 10.3 Feekes 10.5 + 1d	11 Apr 17 Apr
17	VA16M-81	Miravis Ace Inoculum Tebuconazole 3.6 F	13.7 4	Feekes 10.5 Feekes 10.5 + 1d Feekes 10.5 + 4-6d	16 Apr 17 Apr 21 Apr
18	VA16M-81	Miravis Ace Inoculum	13.7 	Feekes 10.5 + 4-6d Feekes 10.5 + 1d	21 Apr 17 Apr
19	VA16M-84	Untreated Inoculum	-- 	-- Feekes 10.5 + 1d	 17 Apr
20	VA16M-84	Prosaro 421 SC Inoculum	6.5 	Feekes 10.5 Feekes 10.5 + 1d	16 Apr 17 Apr
21	VA16M-84	Miravis Ace Inoculum	13.7 	Feekes 10.5 Feekes 10.5 + 1d	16 Apr 17 Apr
22	VA16M-84	Miravis Ace Inoculum	13.7 	Feekes 10.3 Feekes 10.5 + 1d	11 Apr 17 Apr
23	VA16M-84	Miravis Ace Inoculum Tebuconazole 3.6 F	13.7 4	Feekes 10.5 Feekes 10.5 + 1d Feekes 10.5 + 4-6d	16 Apr 17 Apr 21 Apr
24	VA16M-84	Miravis Ace Inoculum	13.7 	Feekes 10.5 + 4-6d Feekes 10.5 + 1d	21 Apr 17 Apr

SOIL TYPE: Rains fine sandy loam

SOIL FERTILITY REPORT (Oct 2019):

pH	**P (lb/A)**	**K (lb/A)**	**Ca (lb/A)**	**Mg (lb/A)**	**Zn (ppm)**	**Mn (ppm)**	**Cu (ppm)**	**Fe (ppm)**	**B (ppm)**
5.3	178	377	1335	168	1.4	7.2	0.2	29.5	0.2

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	**Type and target**	**Product and formulation**	**Rate/A**
1-30-20	Fertility	9-18-31	322 lbs
2-4-20	Fertility	24-0-0-3	60 units
3-14-20	Fertility	24-0-0-3	60 units
2-4-20	Herbicide	Quelex	0.75 fl oz

Table 1. Effect of fungicide treatment and variety on disease incidence in malt barley (BARSCAB120, Suffolk, VA 2020).

Variety	Treatment, rate/A and application timing (Feekes)[z]	% leaf blotch[y] 8 May		Scab 11 May	
		Flag	Flag-1	% severity[x]	% incidence[w]
1. Flavia	Untreated	0.0	0.5 b-d	0.3 ef	4.8 e-i
2. Flavia	Prosaro 421 SC 6.5 fl oz (F10.5)	0.0	0.3 cd	0.5 c-f	6.8 d-h
3. Flavia	Miravis Ace 13.7 fl oz (F10.5)	0.0	0.0 d	0.3 ef	4.0 g-i
4. Flavia	Miravis Ace 13.7 fl oz (F10.3)	0.0	0.0 d	0.0 f	3.8 f-i
5. Flavia	Miravis Ace 13.7 fl oz (F10.5) Tebuconazole 3.6 F 4.0 fl oz (F10.5 + 4-6d)	0.0	1.3 b-d	0.0 f	2.0 hi
6. Flavia	Miravis Ace 13.7 fl oz (F10.5 + 4-6d)	0.0	1.3 b-d	0.0 f	1.8 i
7. Violetta	Untreated	0.0	0.5 b-d	0.8 b-e	10.5 c-f
8. Violetta	Prosaro 421 SC 6.5 fl oz (F10.5)	0.0	0.5 b-d	3.0 a	27.5 a
9. Violetta	Miravis Ace 13.7 fl oz (F10.5)	0.0	0.0 d	2.3 a	19.5 a-c
10. Violetta	Miravis Ace 13.7 fl oz (F10.3)	0.0	0.3 cd	2.5 a	24.3 ab
11. Violetta	Miravis Ace 13.7 fl oz (F10.5) Tebuconazole 3.6 F 4.0 fl oz (F10.5 + 4-6d)	0.0	0.0 d	2.0 ab	22.0 a-c
12. Violetta	Miravis Ace 13.7 fl oz (F10.5 + 4-6d)	0.0	0.0 d	1.5 a-c	13.8 b-f
13. VA168M-81	Untreated	0.0	3.0 a-c	1.3 a-c	15.8 a-d
14. VA168M-81	Prosaro 421 SC 6.5 fl oz (F10.5)	0.0	2.5 a-d	0.8 b-e	9.8 c-g
15. VA168M-81	Miravis Ace 13.7 fl oz (F10.5)	0.0	1.8 a-d	1.5 a-c	17.0 a-e
16. VA168M-81	Miravis Ace 13.7 fl oz (F10.3)		0.3 cd	0.3 ef	6.5 d-h
17. VA168M-81	Miravis Ace 13.7 fl oz (F10.5) Tebuconazole 3.6 F 4.0 fl oz (F10.5 + 4-6d)	0.0	0.5 b-d	1.0 a-d	11.8 b-f
18. VA168M-81	Miravis Ace 13.7 fl oz (F10.5 + 4-6d)	0.0	2.8 a-c	0.8 c-f	7.5 d-i
19. VA168M-84	Untreated	0.3	6.3 a	0.8 b-e	7.0 d-h
20. VA168M-84	Prosaro 421 SC 6.5 fl oz (F10.5)	0.3	1.3 b-d	0.8 b-e	11.8 b-f
21. VA168M-84	Miravis Ace 13.7 fl oz (F10.5)	0.3	4.0 ab	0.5 d-f	5.5 f-i
22. VA168M-84	Miravis Ace 13.7 fl oz (F10.3)	0.3	1.3 b-d	0.8 b-e	7.5 d-i
23. VA168M-84	Miravis Ace 13.7 fl oz (F10.5) Tebuconazole 3.6 F 4.0 fl oz (F10.5 + 4-6d)	0.3	3.0 ab	0.5 c-f	7.0 d-h
24. VA168M-84	Miravis Ace 13.7 fl oz (F10.5 + 4-6d)	0.3	4.0 a	0.3 ef	5.5 d-i
P(F)		0.75	**0.002**	**<0.0001**	**<0.0001**
LSD		N.S.	3.06	1.14	9.51

[z] Fungicide sprays were applied at Feekes 10.3 on 11 Apr, Feekes 10.5 (flowering) on 16 Apr, and Feekes 10.5 + 4-6d on 21 Apr. Fusarium inoculum (trts 1-5) was applied hours after F10.5 treatment application (17 Apr). All fungicide treatments were applied with Induce 0.125% v/v.

[y] Percent of leaf area with signs and symptoms of Stagnospora nodorum blotch. Plots were also evaluated for powdery mildew and leaf rust; little to none was detected.

[x] Percent of grain heads with signs and symptoms of Fusarium head blight.

[w] Percent of spikelets with signs and symptoms of Fusarium head blight.

Means in a column or group followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment and variety on yield and mycotoxin levels in malt barley (BARSCAB120, Suffolk, VA 2020).

Variety	Treatment, rate/A and application timing (Feekes)[z]	Yield[y] (bu/A)	Test weight (lb/bu)	DON ppm
1. Flavia	Untreated	86.2	51.1	0.62 a
2. Flavia	Prosaro 421 SC 6.5 fl oz (F10.5)	83.4	50.5	0.42 a-d
3. Flavia	Miravis Ace 13.7 fl oz (F10.5)	59.3	51.7	0.28 cd
4. Flavia	Miravis Ace 13.7 fl oz (F10.3)	50.3	50.6	0.25 d
5. Flavia	Miravis Ace 13.7 fl oz (F10.5) Tebuconazole 3.6 F 4.0 fl oz (F10.5 + 4-6d)	76.4	50.9	0.25 d
6. Flavia	Miravis Ace 13.7 fl oz (F10.5 + 4-6d)	74.3	51.1	0.44 a-d
7. Violetta	Untreated	58.3	51.7	0.20 d
8. Violetta	Prosaro 421 SC 6.5 fl oz (F10.5)	81.5	51.5	0.21 d
9. Violetta	Miravis Ace 13.7 fl oz (F10.5)	70.3	52.4	0.25 d
10. Violetta	Miravis Ace 13.7 fl oz (F10.3)	69.2	52.3	0.29 b-d
11. Violetta	Miravis Ace 13.7 fl oz (F10.5) Tebuconazole 3.6 F 4.0 fl oz (F10.5 + 4-6d)	62.3	53.4	0.21 d
12. Violetta	Miravis Ace 13.7 fl oz (F10.5 + 4-6d)	65.1	51.4	0.20 d
13. VA168M-81	Untreated	79.7	51.8	0.51 a-c
14. VA168M-81	Prosaro 421 SC 6.5 fl oz (F10.5)	78.4	51.7	0.53 ab
15. VA168M-81	Miravis Ace 13.7 fl oz (F10.5)	67.6	53.1	0.29 b-d
16. VA168M-81	Miravis Ace 13.7 fl oz (F10.3)	98.5	52.3	0.58 a
17. VA168M-81	Miravis Ace 13.7 fl oz (F10.5) Tebuconazole 3.6 F 4.0 fl oz (F10.5 + 4-6d)	64.5	45.8	0.29 b-d
18. VA168M-81	Miravis Ace 13.7 fl oz (F10.5 + 4-6d)	64.4	52.6	0.39 a-d
19. VA168M-84	Untreated	82.0	53.6	0.62 a
20. VA168M-84	Prosaro 421 SC 6.5 fl oz (F10.5)	57.3	53.9	0.27 cd
21. VA168M-84	Miravis Ace 13.7 fl oz (F10.5)	71.9	54.1	0.33 b-d
22. VA168M-84	Miravis Ace 13.7 fl oz (F10.3)	52.7	54.0	0.29 b-d
23. VA168M-84	Miravis Ace 13.7 fl oz (F10.5) Tebuconazole 3.6 F 4.0 fl oz (F10.5 + 4-6d)	58.1	53.2	0.22 d
24. VA168M-84	Miravis Ace 13.7 fl oz (F10.5 + 4-6d)	60.5	53.0	0.22 d
P(F)		0.35	0.11	**0.001**
LSD		N.S.	N.S.	3.89

[z] Fungicide sprays were applied at Feekes 10.3 on 11 Apr, Feekes 10.5 (flowering) on 16 Apr, and Feekes 10.5 + 4-6d on 21 Apr. Fusarium inoculum (trts 1-5) was applied hours after F10.5 treatment application (17 Apr). All fungicide treatments were applied with Induce 0.125% v/v.

[y] Yields are weight of barley with 13.5% moisture. One bushel equals 48 lbs. Barley was harvested on 4 Jun.
Means in a column or group followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).

TEST ID: BARSCAB220

PURPOSE: To evaluate foliar treatment and application timing for FHB control in malt barley and impact on yield

LOCATION: Tidewater Research Farm, Hare Rd., Suffolk, VA

CROP INFORMATION:

Field	9B
Crop history	2019 wheat/soy, 2018 corn, 2017 wheat/soy
Planting date	22 Nov 2019
Variety	Thoroughbred
Seeding rate	30 seed/ft
Plot length/width	30'x 5' (treat & harvest), 30' x 12' total
Number of rows	8
Row spacing	7.5"
Alleys (length between blocks)	9'
Harvest date	9 Jun

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

INOCULUM: Fusarium graminearum conidia (~50,000/ml) applied 24 hours following the Feekes 10.5 fungicide treatment with Lee Spider Sprayer; 1 L inoculum to 11 L H_2O

TREATMENT APPLICATION:

Equipment	Lee Spider sprayer
Pressure (psi)	38 psi
Nozzle type	Twinjet 8002VS
Volume (gal/A)	19.88
Surfactant	NIS 0.125% v/v

TREATMENTS:

Trt #	Fungicide and formulation	Rate, fl oz/A	App. timing	App. date
1	Untreated Inoculum	-- 	-- Feekes 10.5 + 1d	 22 Apr
2	Prosaro 421 SC Inoculum	6.5 	Feekes 10.5 Feekes 10.5 + 1d	21 Apr 22 Apr
3	Caramba 0.75 SL Inoculum	13.5 	Feekes 10.5 Feekes 10.5 + 1d	21 Apr 22 Apr
4	Miravis Ace SE Inoculum	13.7 	Feekes 10.3 Feekes 10.5 + 1d	16 Apr 22 Apr
5	Miravis Ace SE Inoculum	13.7 	Feekes 10.5 Feekes 10.5 + 1d	21 Apr 22 Apr
6	Miravis Ace SE Inoculum	13.7 	Feekes 10.5 + 4-6d Feekes 10.5 + 1d	28 Apr 22 Apr
7	Miravis Ace SE Inoculum Prosaro 421 SC	13.7 6.5	Feekes 10.5 Feekes 10.5 + 1d Feekes 10.5 + 4-6d	21 Ap 22 Apr 28 Apr
8	Miravis Ace SE Inoculum Caramba 0.75 SL	13.7 13.5	Feekes 10.5 Feekes 10.5 + 1d Feekes 10.5 + 4-6d	21 Apr 22 Apr 28 Apr
9	Miravis Ace SE Inoculum Tebuconazole 3.6 F	13.7 4	Feekes 10.5 Feekes 10.5 + 1d Feekes 10.5 + 4-6d	21 Apr 22 Apr 28 Apr
10	Prosaro 421 SC Inoculum	6.5 	Feekes 10.3 Feekes 10.5 + 1d	16 Apr 22 Apr
11	Prosaro 421 SC Inoculum	6.5 	Feekes 10.5 + 4-6d Feekes 10.5 + 1d	28 Apr 22 Apr

12	Caramba 0.75 SL Inoculum	13.5	Feekes 10.3 Feekes 10.5 + 1d	16 Apr 22 Apr
13	Caramba 0.75 SL Inoculum	13.5	Feekes 10.5 + 4-6d Feekes 10.5 + 1d	28 Apr 22 Apr

SOIL TYPE: Suffolk loamy sand

SOIL FERTILITY REPORT (Oct 2019):

pH	**P (lb/A)**	**K (lb/A)**	**Ca (lb/A)**	**Mg (lb/A)**	**Zn (ppm)**	**Mn (ppm)**	**Cu (ppm)**	**Fe (ppm)**	**B (ppm)**
5.7	102	50	642	92	0.6	4.6	0.4	19.3	0.1

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	**Type and target**	**Product and formulation**	**Rate/A**
1-30-20	Fertility	9-18-31	322 lbs
2-4-20	Fertility	24-0-0-3	60 units
3-14-20	Fertility	24-0-0-3	60 units
2-4-20	Herbicide	Quelex	0.75 fl oz

Table 1. Effect of fungicide treatment on disease incidence and yield in malt barley (BARSCAB220, Suffolk, VA 2020).

Treatment, rate/A and application timing (Feekes)[z]	Scab 13 May		% leaf blotch[w] 14 May		Yield[v] (bu/A)	Test weight (lb/bu)
	% severity[y]	% incidence[x]	Flag	Flag-1		
1. Untreated	0.5	6.5	5.0 ab	18.8	65.8	48.6
2. Prosaro 421 SC 6.5 fl oz (F10.5)	0.6	8.1	5.3 a-c	16.3	72.4	49.5
3. Caramba 0.75 SL 13.5 fl oz (F10.5)	0.4	6.0	7.8 a	20.0	82.8	49.7
4. Miravis ACE SE 13.7 fl oz (F10.3)	0.6	8.4	0.5 d	6.5	79.7	49.8
5. Miravis ACE SE 13.7 fl oz (F10.5)	0.3	4.5	2.0 b-d	10.0	84.4	50.1
6. Miravis ACE SE 13.7 fl oz (F10.5 + 4-6d)	0.5	6.7	1.8 cd	7.5	88.4	50.5
7. Miravis ACE SE 13.7 fl oz (F10.5) Prosaro 421 SC 6.5 fl oz (F10.5 + 4-6d)	0.6	7.8	3.0 a-d	13.8	87.6	50.3
8. Miravis ACE SE 13.7 fl oz (F10.5) Caramba 0.75 SL 13.5 fl oz (F10.5 + 4-6d)	0.7	7.6	3.0 a-d	10.0	83.1	51.2
9. Miravis ACE SE 13.7 fl oz (F10.5) Tebuconazole 3.6 F 4 fl oz (F10.5 + 4-6d)	0.5	4.7	2.0 b-d	11.3	95.3	50.7
10. Prosaro 421 SC 6.5 fl oz (F10.3)	0.3	4.3	4.0 a-c	13.8	82.5	49.6
11. Prosaro 421 SC 6.5 fl oz (F10.5 + 4-6d)	0.4	4.4	4.0 a-c	15.0	70.	49.5
12. Caramba 0.75 SL 13.5 fl oz (F10.3)	0.3	4.8	6.5 ab	16.3	70.5	48.4
13. Caramba 0.75 SL 13.5 fl oz (F10.5 + 4-6d)	0.6	7.3	6.3 a	15.0	57.8	49.2
P(F)	0.93	0.92	**0.03**	0.12	0.10	0.26
LSD	N.S.	N.S.	5.06	N.S.	N.S.	N.S.

[z] Fungicide sprays were applied at Feekes 3 on 16 Apr, Feekes 10.5 (flowering) on 21 Apr, and Feekes 10.5 + 4-6d on 28 Apr. Fusarium graminearum conidia (~50,000/ml) applied on 22 Apr to all plots 24 hours following the Feekes 10.5 fungicide treatment. All fungicide treatments applied with Induce 0.125% v/v.

[y] Percent of grain heads with signs and symptoms of Fusarium head blight.

[x] Percent of spikelets with signs and symptoms of Fusarium head blight.

[w] Percent of leaf area with signs and symptoms of Stagnospora nodorum blotch. Plots were also evaluated for symptoms of powdery mildew and rust; none were observed.

[v] Yields are weight of barley with 13.5% moisture. One bushel equals 48 lbs. Barley was harvested on 9 Jun.
Means in a column or group followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

TEST ID: CORNNEMA220

PURPOSE: To compare nematicide seed treatments and in-furrow nematicides for impact on plant health and yield in corn

LOCATION: Tidewater AREC, 6321 Holland Rd., Suffolk, VA

CROP INFORMATION:

Field	55
Crop history	2019 soybean, 2018 corn, 2017 soybean
Planting date	12 May
Seeding rate	2 seed/row ft
Plot length/width	30’ x 6’
Number of rows	2 rows
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	23 Sep

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

	IF liquid	IF granular
Equipment	CO_2 sprayer	Noble Box
Pressure (psi)	- -	- -
Nozzle type	.075 microtube	- -
Volume (gal/A)	5 gal/A	lb/A (trt rate)

TREATMENTS:

Trt #	Seed treatment	Seed treatment rate a.i.*	In furrow treatment	In furrow rate/A
1	Base seed treatment		--	--
2	BioST Nematicide	7 fl oz/cwt	--	--
3	Trunemco	0.31 fl oz/cwt	--	--
4	Aveo	0.1 fl oz/cwt	--	--
5	VoTIVO	0.8 fl oz/cwt	--	--
6	Base seed treatment		Counter WG	5 lb
7	Base seed treatment		Luna Privilege	6.5 fl oz
*Base seed treatment = Maxium Quatro 1 fl oz + BioST VPH 1 fl oz + Nipsit 2.5 fl oz/cwt; Seed treated by personnel at Albaugh LLC.				

SOIL TYPE: Nansemond fine sandy loam

SOIL FERTILITY REPORT (Jan 2020):

pH	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)
6.5	108	170	1025	153	0.9	3.8	0.6	45.7	0.2

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None
Nematicides	None except treatments

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
5/13/20	Herbicide	Bicep II MAGNUM	2 pt
5/13/20	Herbicide	Simazine 4L	1 pt
5/13/20	Herbicide	Roundup WeatherMAX	1 qt

Table 1. Effect of nematicide seed treatment and in-furrow nematicides on plant emergence and plant health in corn (CORNNEMA220, Suffolk, VA 2020).

Seed treatment and rate[z]	In-furrow treatment and rate/A[z]	Plants/ft.[y]		Vigor, 1-10[x]
		21 May	9 Jun	18 Jun
1. Base seed treatment	- -	1.3	1.3	9.6 a
2. BioST Nematicide 6 fl oz/cwt	- -	1.3	1.3	9.8 a
3. Trunemco 0.31 fl oz/cwt	- -	1.2	1.3	9.5 a
4. Aveo 0.1 fl oz/cwt	- -	1.3	1.3	9.4 a
5. VoTIVO 0.8 fl oz/cwt	- -	1.3	1.3	9.5 a
6. Base seed treatment	Counter WG 5 lb	1.2	1.2	8.0 b
7. Base seed treatment	Luna Privilege 6.5 fl oz	1.2	1.3	9.4 a
P(F)		0.16	0.53	**0.002**
LSD		N.S.	N.S.	0.77

[z] Base seed treatment = Maxium Quatro 1 fl oz + BioST VPH 1 fl oz + Nipsit 2.5 fl oz/cwt. Seed treated by personnel at Albaugh LLC. In-furrow treatments applied at planting (12 May).
[y] Determined from counts in two, 30-ft rows per plot.
[x] Vigor index rating scale: 10 = 100% vigor, 1 = no vigor.
Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (P=0.05).

Table 2. Effect of nematicide seed treatment and in-furrow nematicides on yield in corn (CORNNEMA220, Suffolk, VA 2020).

Seed treatment and rate[z]	In-furrow treatment and rate/A[z]	Yield[y] (bu/A)	Test weight (lb/bu)
1. Base seed treatment	- -	189.4	52.7
2. BioST Nematicide 6 fl oz/cwt	- -	191.3	52.6
3. Trunemco 0.31 fl oz/cwt	- -	180.1	52.6
4. Aveo 0.1 fl oz/cwt	- -	187.0	51.8
5. VoTIVO 0.8 fl oz/cwt	- -	189.0	52.4
6. Base seed treatment	Counter WG 5 lb	172.7	51.6
7. Base seed treatment	Luna Privilege 6.5 fl oz	189.6	51.8
P(F)		0.76	0.42
LSD		N.S.	N.S.

[z] Base seed treatment = Maxium Quatro 1 fl oz + BioST VPH 1 fl oz + Nipsit 2.5 fl oz/cwt. Seed treated by personnel at Albaugh LLC. In-furrow treatments applied at planting (12 May).

[y] Yields are weight of corn with moisture content of 15.5%. Corn was harvested on 23 Sep. One bushel = 56 lbs of grain.

TEST ID: CORNFOLFUN120

PURPOSE: To evaluate fungicides and spray timing for control of foliar disease in corn and impact on yield at two locations, site 1

LOCATION: Tidewater AREC Duke Farm, Holland Rd., Suffolk, VA

CROP INFORMATION:

Field	45
Crop history	2019 soybean/wheat, 2018 corn, 2017 soybean/wheat
Planting date	6 May
Variety	DKC62-05
Seeding rate	2 seed/row ft
Plot length/width	30’ x 12’
Number of rows	4
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	5 Oct

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

Equipment	Lee Spider Sprayer
Pressure (psi)	38 psi
Nozzle type	Twinjet 8002VS
Volume (gal/A)	19.88
Surfactant	NIS 0.25% v/v

TREATMENTS:

Trt #	Fungicide and formulation	Rate, fl oz/A	App. timing	App. date
1	Untreated control			
2	Tilt 3.6 EC	4	V5	23 Jun
3	Tilt 3.6 EC	4	VT/R1	20 Jul
4	Affiance	10	V5	23 Jun
5	Affiance	10	VT/R1	20 Jul
6	Headline AMP	10	V5	23 Jun
7	Headline AMP	10	VT/R1	20 Jul
8	Miravis Neo 2.5 SE	13.7	V5	23 Jun
9	Miravis Neo 2.5 SE	13.7	VT/R1	20 Jul
10	Veltyma	7	V5	23 Jun
11	Veltyma	7	VT/R1	20 Jul
12	Lucento 4.17 SC	5	V5	23 Jun
13	Lucento 4.17 SC	5	VT/R1	20 Jul
14	Topguard EQ 4.29 SC	7	V5	23 Jun
15	Topguard EQ 4.29 SC	6	V7	8 Jul
16	Topguard EQ 4.29 SC	5	VT/R1	20 Jul
17	USF0411 SC	8	V5	23 Jun
18	USF0411 SC	8	VT/R1	20 Jul
19	Stratego YLD	4	V5	23 Jun
20	Stratego YLD	4	VT/R1	20 Jul

SOIL TYPE: Dragston fine sandy loam

SOIL FERTILITY REPORT (Jan 2020):

pH	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)
6.0	50	165	621	96	0.4	28	0.3	32.4	0.1

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	Standard

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
3/26/20	Herbicide	Roundup WeatherMAX	1 qt
3/26/20	Herbicide	Liberty 280SL	1 qt
3/26/20	Herbicide	2,4-D	1 pt
5/13/20	Herbicide	Bicep II MAGNUM	2 pt
5/13/20	Herbicide	Simazine 4L	1 pt
5/13/20	Herbicide	Roundup WeatherMAX	1 qt
6/4/20	Herbicide	Halex GT	4 pt
6/4/20	Herbicide	Atrazine	1.5 pt

Table 1. Effect of fungicide treatment and application timing on foliar disease in corn (CORNFOLFUN120, Suffolk, VA 2020).

Treatment, rate/A and timing[z]	% foliar disease[y]			Plant health (1-10)[x] 14 Aug
	14 Aug	Gray leaf spot 4 Sep	Curvularia leaf spot 4 Sep	
1. Untreated	1.0	7.5	18.8	9.3
2. Tilt 3.6 EC 4 fl oz (V5)	1.0	10.0	17.5	9.3
3. Tilt 3.6 EC 4 fl oz (VT/R1)	1.0	5.3	10.0	9.0
4. Affiance 10 fl oz (V5)	1.0	7.8	17.5	9.0
5. Affiance 10 fl oz (VT/R1)	1.0	2.0	12.5	9.5
6. Headline AMP 10 fl oz (V5)	1.0	6.3	17.5	9.3
7. Headline AMP 10 fl oz (VT/R1)	1.0	5.5	13.8	9.3
8. Miravis Neo 2.5 SE 13.7 fl oz (V5)	1.0	6.5	15.3	9.8
9. Miravis Neo 2.5 SE 13.7 fl oz (VT/R1)	1.0	6.8	10.0	9.3
10. Veltyma 7 fl oz (V5)	1.0	6.5	15.3	9.3
11. Veltyma 7 fl oz (VT/R1)	1.0	4.3	8.0	9.3
12. Lucento 4.17 SC 5 fl oz (V5)	1.0	8.8	17.5	9.5
13. Lucento 4.17 SC 5 fl oz (VT/R1)	1.0	1.0	4.3	9.3
14. Topguard EQ 4.29 SC 7 fl oz (V5)	1.0	7.8	17.5	9.0
15. Topguard EQ 4.29 SC 6 fl oz (V7)	1.0	2.0	12.5	9.3
16. Topguard EQ 4.29 SC 5 fl oz (VT/R1)	1.0	3.0	8.8	9.8
17. USF0411 SC 8 fl oz (V5)	1.0	6.5	15.3	9.3
18. USF0411 8 fl oz (VT/R1)	1.0	6.5	11.3	9.5
19. Stratego YLD 4 fl oz (V5)	1.0	5.3	15.0	9.0
20. Stratego YLD 4 fl oz (VT/R1)	1.0	2.0	13.8	9.5
P(F)	1.0	0.09	0.13	0.93
LSD	--	N.S.	N.S.	N.S.

[z] Foliar fungicides were applied at V5 (5 leaf collars) on 23 Jun; V7 (7 leaf collars) on 8 Jul; and VT/R1 (tasseling/silking) on 20 Jul. Fungicides were applied with Induce 0.25% v/v.

[y] Percent leaf area with symptoms of foliar disease. 14 Aug rating included overall presence of foliar disease symptoms.

[x] Plant health rating scale: 1 = dead plant, 10 = healthy plant.

Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment and timing on stay green, plant strength, and yield in corn (CORNFOLFUN120, Suffolk, VA 2020).

Treatment, rate/A and timing[z]	% green[y] 15 Sep	No. plants lodged[x] 15 Sep	No. plants/30 push test[w] 15 Sep	Yield (bu/A)[v]	Test weight (lb/bu)
1. Untreated	6.3 e	5.5	1.3	113.1	54.0
2. Tilt 3.6 EC 4 fl oz (V5)	11.3 b-e	4.3	0.0	88.1	53.4
3. Tilt 3.6 EC 4 fl oz (VT/R1)	21.3 ab	2.8	0.3	110.6	53.4
4. Affiance 10 fl oz (V5)	12.5 b-e	5.0	0.3	98.6	53.5
5. Affiance 10 fl oz (VT/R1)	16.3 b-e	8.3	0.3	122.0	54.4
6. Headline AMP 10 fl oz (V5)	16.3 b-e	3.0	0.5	108.1	52.7
7. Headline AMP 10 fl oz (VT/R1)	11.3 b-e	4.0	0.8	125.1	53.8
8. Miravis Neo 2.5 SE 13.7 fl oz (V5)	8.8 de	7.8	1.8	119.3	53.3
9. Miravis Neo 2.5 SE 13.7 fl oz (VT/R1)	18.8 b-d	3.0	1.3	118.8	52.7
10. Veltyma 7 fl oz (V5)	16.3 b-e	4.8	0.8	118.5	53.1
11. Veltyma 7 fl oz (VT/R1)	18.8 b-d	2.8	0.5	119.6	52.6
12. Lucento 4.17 SC 5 fl oz (V5)	11.3 b-e	9.8	0.0	115.7	52.7
13. Lucento 4.17 SC 5 fl oz (VT/R1)	20.0 a-c	2.8	0.3	115.2	53.0
14. Topguard EQ 4.29 SC 7 fl oz (V5)	10.0 c-e	4.0	0.8	113.7	52.8
15. Topguard EQ 4.29 SC 6 fl oz (V7)	17.5 b-d	3.8	0.8	112.8	53.9
16. Topguard EQ 4.29 SC 5 fl oz (VT/R1)	30.0 a	11.3	0.5	127.5	52.7
17. USF0411 SC 8 fl oz (V5)	12.5 b-e	7.8	1.0	117.2	53.2
18. USF0411 8 fl oz (VT/R1)	17.8 b-d	8.5	0.8	115.2	50.9
19. Stratego YLD 4 fl oz (V5)	10.0 c-e	7.5	1.3	115.8	54.1
20. Stratego YLD 4 fl oz (VT/R1)	13.8 b-e	2.3	0.5	114.7	52.7
P(F)	**0.02**	0.79	0.32	0.72	0.33
LSD	10.79	N.S.	N.S.	N.S.	N.S.

[z] Foliar fungicides were applied at V5 (5 leaf collars) on 23 Jun; V7 (7 leaf collars) on 8 Jul; and VT/R1 (tasseling/silking) on 20 Jul. Fungicides were applied with Induce 0.25% v/v.

[y] Percent green leaf area prior to harvest.

[x] Mean number of plants lodged in two 30-ft rows.

[w] Plants observed for push test; data are mean number of stalks per 30 plants/plot that snapped or remained lodged when pushed over.

[v] Yields are weight of corn with moisture content of 15.5%. Corn was hand harvested on 5 Oct. One bushel = 56 lbs of grain. Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

TEST ID: CORNFOLFUN220

PURPOSE: To evaluate fungicides and spray timing for control of foliar disease in corn and impact on yield at two locations, site 2

LOCATION: Tidewater AREC, 6321 Holland Rd., Suffolk, VA

CROP INFORMATION:

Field	46B
Crop history	2019 cotton, 2018 peanut, 2017 sorghum
Planting date	6 May
Variety	DKC62-05
Seeding rate	2 seed/row ft
Plot length/width	30’ x 12’
Number of rows	4
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	24 Sep

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

Equipment	Lee Spider Sprayer
Pressure (psi)	38 psi
Nozzle type	Twinjet 8002VS
Volume (gal/A)	19.88
Surfactant	NIS 0.25% v/v

TREATMENTS:

Trt #	Fungicide and formulation	Rate, fl oz/A	App. timing	App. date
1	Untreated control			
2	Tilt 3.6 EC	4	V5	23 Jun
3	Tilt 3.6 EC	4	VT/R1	20 Jul
4	Affiance	10	V5	23 Jun
5	Affiance	10	VT/R1	20 Jul
6	Headline AMP	10	V5	23 Jun
7	Headline AMP	10	VT/R1	20 Jul
8	Miravis Neo 2.5 SE	13.7	V5	23 Jun
9	Miravis Neo 2.5 SE	13.7	VT/R1	20 Jul
10	Veltyma	7	V5	23 Jun
11	Veltyma	7	VT/R1	20 Jul
12	Lucento 4.17 SC	5	V5	23 Jun
13	Lucento 4.17 SC	5	VT/R1	20 Jul
14	Topguard EQ 4.29 SC	7	V5	23 Jun
15	Topguard EQ 4.29 SC	6	V7	8 Jul
16	Topguard EQ 4.29 SC	5	VT/R1	20 Jul
17	USF0411 SC	8	V5	23 Jun
18	USF0411 SC	8	VT/R1	20 Jul
19	Stratego YLD	4	V5	23 Jun
20	Stratego YLD	4	VT/R1	20 Jul

SOIL TYPE: Nansemond fine sandy loam

Soil fertility report (Jan 2020):

pH	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)
6.0	50	165	621	96	0.4	28	0.3	32.4	0.1

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	Standard

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
3/26/20	Herbicide	Roundup WeatherMAX	1 qt
3/26/20	Herbicide	Liberty 280SL	1 qt
3/26/20	Herbicide	2,4-D	1 pt
5/13/20	Herbicide	Bicep II MAGNUM	2 pt
5/13/20	Herbicide	Simazine 4L	1 pt
5/13/20	Herbicide	Roundup WeatherMAX	1 qt
6/4/20	Herbicide	Halex GT	4 pt
6/4/20	Herbicide	Atrazine	1.5 pt

Table 1. Effect of fungicide treatment and application timing on foliar disease in corn (CORNFOLFUN220, Suffolk, VA 2020).

Treatment, rate/A and timing[z]	% foliar disease[y]			Plant health (1-10)[x]
	17 Aug	Gray leaf spot 5 Sep	Curvularia leaf spot 5 Sep	17 Aug
1. Untreated	1.0	22.5 a	25.0 a	8.0
2. Tilt 3.6 EC 4 fl oz (V5)	1.0	18.8 ab	18.8 a-d	8.3
3. Tilt 3.6 EC 4 fl oz (VT/R1)	1.0	10.3 b-e	16.3 a-d	7.8
4. Affiance 10 fl oz (V5)	1.0	20.0 a	17.5 a-d	8.8
5. Affiance 10 fl oz (VT/R1)	1.0	9.3 c-f	11.5 c-e	7.3
6. Headline AMP 10 fl oz (V5)	1.0	13.8 a-d	17.5 a-d	8.5
7. Headline AMP 10 fl oz (VT/R1)	1.0	7.8 c-f	15.0 b-d	8.0
8. Miravis Neo 2.5 SE 13.7 fl oz (V5)	1.0	13.8 a-d	15.0 b-d	8.5
9. Miravis Neo 2.5 SE 13.7 fl oz (VT/R1)	1.0	1.0 f	4.3 e	8.3
10. Veltyma 7 fl oz (V5)	1.0	15.0 a-c	16.7 a-d	8.3
11. Veltyma 7 fl oz (VT/R1)	1.0	1.0 f	5.3 e	8.5
12. Lucento 4.17 SC 5 fl oz (V5)	1.0	5.3 d-f	16.7 a-d	8.3
13. Lucento 4.17 SC 5 fl oz (VT/R1)	1.0	4.0 ef	11.3 c-e	8.0
14. Topguard EQ 4.29 SC 7 fl oz (V5)	1.0	5.0 e-f	12.5 c-e	7.3
15. Topguard EQ 4.29 SC 6 fl oz (V7)	1.0	21.7 a	13.3 c-e	6.5
16. Topguard EQ 4.29 SC 5 fl oz (VT/R1)	1.0	4.3 ef	16.3 a-d	8.5
17. USF0411 SC 8 fl oz (V5)	1.0	5.0 d-f	20.0 a-c	8.0
18. USF0411 8 fl oz (VT/R1)	1.0	10.3 b-e	10.0 de	8.3
19. Stratego YLD 4 fl oz (V5)	1.0	16.3 a-c	20.0 a-c	8.3
20. Stratego YLD 4 fl oz (VT/R1)	1.0	10.0 b-e	22.5 ab	7.8
P(F)	1.0	**0.0001**	**0.002**	0.51
LSD	--	8.84	9.06	N.S.

[z] Foliar fungicides were applied at V5 (5 leaf collars) on 23 Jun; V7 (7 leaf collars) on 8 Jul; and VT/R1 (tasseling/silking) on 20 Jul. Fungicides were applied with Induce 0.25% v/v.

[y] Percent leaf area with symptoms of foliar disease. 17 Aug rating included overall presence of foliar disease symptoms.

[x] Plant health rating scale: 1 = dead plant, 10 = healthy plant.

Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment and timing on stay green, plant strength, and yield in corn (CORNFOLFUN220, Suffolk, VA 2020).

Treatment, rate/A and timing[z]	% green[y] 15 Sep	No. plants lodged[x] 16 Sep	No. plants/30 push test[w] 16 Sep	Yield (bu/A)[v]	Test weight (lb/bu)
1. Untreated	1.0 c	3.8	1.3 bc	163.3	53.9
2. Tilt 3.6 EC 4 fl oz (V5)	1.0 c	3.5	1.0 bc	141.7	54.0
3. Tilt 3.6 EC 4 fl oz (VT/R1)	2.0 bc	3.0	0.0 c	136.5	53.0
4. Affiance 10 fl oz (V5)	2.0 bc	0.8	0.5 bc	153.9	53.3
5. Affiance 10 fl oz (VT/R1)	4.0 a	2.3	1.3 bc	103.1	53.2
6. Headline AMP 10 fl oz (V5)	1.0 c	7.3	1.0 bc	138.9	54.0
7. Headline AMP 10 fl oz (VT/R1)	1.0 c	2.5	1.8 bc	138.4	53.5
8. Miravis Neo 2.5 SE 13.7 fl oz (V5)	1.0 c	2.3	2.3 ab	150.8	53.6
9. Miravis Neo 2.5 SE 13.7 fl oz (VT/R1)	3.0 ab	5.0	0.5 bc	154.4	53.5
10. Veltyma 7 fl oz (V5)	1.0 c	2.0	0.5 bc	148.9	54.4
11. Veltyma 7 fl oz (VT/R1)	4.0 a	1.3	1.8 bc	144.2	53.3
12. Lucento 4.17 SC 5 fl oz (V5)	2.0 bc	2.0	2.3 ab	122.8	52.5
13. Lucento 4.17 SC 5 fl oz (VT/R1)	3.0 ab	1.3	0.5 bc	140.6	52.1
14. Topguard EQ 4.29 SC 7 fl oz (V5)	1.0 c	0.8	1.5 bc	114.1	53.1
15. Topguard EQ 4.29 SC 6 fl oz (V7)	1.0 c	1.3	4.3 a	91.6	54.0
16. Topguard EQ 4.29 SC 5 fl oz (VT/R1)	4.0 a	1.8	0.3 bc	192.2	53.7
17. USF0411 SC 8 fl oz (V5)	1.0 c	2.8	1.3 bc	103.1	53.7
18. USF0411 8 fl oz (VT/R1)	1.0 c	2.0	1.5 bc	147.4	54.9
19. Stratego YLD 4 fl oz (V5)	1.0 c	2.3	0.5 bc	121.0	54.1
20. Stratego YLD 4 fl oz (VT/R1)	3.0 ab	2.8	0.3 bc	151.3	53.0
P(F)	**0.001**	0.64	0.05	0.72	0.34
LSD	1.93	N.S.	2.08	N.S.	N.S.

[z] Foliar fungicides were applied at V5 (5 leaf collars) on 23 Jun; V7 (7 leaf collars) on 8 Jul; and VT/R1 (tasseling/silking) on 20 Jul. Fungicides were applied with Induce 0.25% v/v.

[y] Percent green leaf area prior to harvest.

[x] Mean number of plants lodged in two 30-ft rows.

[w] Plants observed for push test; data are mean number of stalks per 30 plants/plot that snapped or remained lodged when pushed over.

[v] Yields are weight of corn with moisture content of 15.5%. Corn was harvested on 24 Sep. One bushel = 56 lbs of grain.

Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

TEST ID: PTSSR120

PURPOSE: To evaluate fungicide treatments for control of southern stem rot in peanut and impact on yield

LOCATION: Tidewater AREC, 6321 Holland Rd., Suffolk, VA

CROP INFORMATION:

Field	46A
Crop history	2019 corn, 2018 cotton, 2017 peanut
Planting date	15 May
Variety	Sullivan
Seeding rate	ca. 4 seed/row ft (143 lb/A)
Plot length/width	35’ x 12’
Number of rows	4
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	9 Nov

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

	Foliar spray
Equipment	Tractor plot sprayer
Pressure (psi)	38 psi
Nozzle type	8002 TwinJet
Volume (gal/A)	19.88 gal/A

APPLICATION SCHEDULE:

A	R3
B	A + 14d
C	A + 28d
D	A + 42d
E	A + 56d

TREATMENTS:

Trt #	Product and formulation	Rate/A	Appl. timing	Appl. date
1	Bravo Weather Stik	24 fl oz	ABCDE	17 Jul, 30 Jul, 13 Aug, 27 Aug, 16 Sep
2	Bravo Weather Stik Elatus 45WG	24 fl oz 9.5 oz wt	ACE BD	17 Jul, 13 Aug, 16 Sep 30 Jul, 27 Aug
3	Bravo Weather Stik Convoy SC	24 fl oz 16 fl oz	ACE BD	17 Jul, 13 Aug, 16 Sep 30 Jul, 27 Aug
4	Bravo Weather Stik Excalia SC	24 fl oz 2 fl oz	ABCDE BD	17 Jul, 13 Aug, 16 Sep 30 Jul, 27 Aug
5	Bravo Weather Stik Excalia SC	24 fl oz 3 fl oz	ABCDE BD	17 Jul, 13 Aug, 16 Sep 30 Jul, 27 Aug
6	Bravo Weather Stik Excalia SC	24 fl oz 4 fl oz	ABCDE BD	17 Jul, 13 Aug, 16 Sep 30 Jul, 27 Aug

SOIL TYPE: Nansemond fine sandy loam

SOIL FERTILITY REPORT (Jan 2020):

pH	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)
6.1	95	164	858	77	0.7	3.1	0.4	40.5	0.1

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Admire Pro IF, standard
Fungicides	Proline IF
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
5/15/20	Insecticide	Admire Pro 4.6 SC	8.5 fl oz
5/15/20	Fungicide	Proline 480 SC	5.7 fl oz
5/17/20	Herbicide	Strongarm	0.45 fl oz
5/17/20	Herbicide	Dual II MAGNUM	1.5 pt
5/17/20	Herbicide	Prowl H2O	1.0 pt
5/17/20	Fertility	Boron	1.0 qt
6/4/20	Insecticide	Orthene 75 S	12 oz
6/25/20	Herbicide	Basagran	1.5 pt
6/25/20	Herbicide	Fusilade DX	1 pt
7/7/20	Herbicide	Storm	1.5 pt
7/7/20	Herbicide	Basagran	1 pt
7/13/20	Fertility	Manganese	2 qt
7/13/20	Insecticide	Danitol 2.4 EC	8 fl oz
7/16/20	Fertility	Landplaster	1500 lb
7/24/20	Insecticide	Danitol 2.4 EC	8 fl oz
8/6/20	Herbicide	Tide 2 EC (Clethodim)	16 fl oz

Table 1. Effect of fungicide treatment on soilborne disease in peanut (PTSSR120, Suffolk, VA 2020).

Treatment, rate/A and application date[z]	Southern stem rot[y]	Sclerotinia blight[y]				
	13 Sep	28 Aug	13 Sep	27 Sep	17 Oct	AUDPC[x]
1. Bravo Weather Stik 24 fl oz (7/17, 7/30, 8/13, 8/27, 9/16)	0.0	2.8	9.0	16.5	31.0	747.5
2. Bravo Weather Stik 24 fl oz (7/17, 8/13, 9/16) Elatus WG 9.5 oz wt (7/30, 8/27)	0.0	0.8	4.5	12.5	20.8	493.5
3. Bravo Weather Stik 24 fl oz (7/17, 8/13, 9/16) Convoy SC 16 fl oz (7/30, 8/27)	0.0	2.0	9.0	19.5	28.0	762.5
4. Bravo Weather Stik 24 fl oz (7/17, 8/13, 9/16) Excalia SC 2 fl oz (7/30, 8/27)	0.0	1.5	7.0	15.0	25.8	629.5
5. Bravo Weather Stik 24 fl oz (7/17, 8/13, 9/16) Excalia SC 3 fl oz (7/30, 8/27)	0.0	0.3	6.3	17.5	27.5	668.3
6. Bravo Weather Stik 24 fl oz (7/17, 8/13, 9/16) Excalia SC 4 fl oz (7/30, 8/27)	0.3	1.0	3.8	15.3	27.5	598.5
P(F)	0.45	0.55	0.30	0.63	0.27	0.47
LSD	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.

[z] Treatments were applied on a calendar-based schedule beginning at R3 (17 Jul) and followed by two- or four-week intervals between sprays when prescribed. Seed was planted 15 May.

[y] Counts of infection centers in the two center rows of each plot or a total of 70 ft row. An infection center was a point with symptoms and/or signs of a disease and included 6 in. on either side of that point. No incidences of stem rot were found on observations on 28 Aug, 14 Sep, 27 Sep, and 17 Oct.

[x] AUDPC = area under the disease progress curve.

Table 2. Effect of fungicide treatment on disease incidence and yield in peanut (PTSSR120, Suffolk, VA 2020).

Treatment, rate/A and application date[z]	% leaf spot[y] 9 Oct	Yield[x] (lb/A)
1. Bravo Weather Stik 24 fl oz (7/17, 7/30, 8/13, 8/27, 9/16)	1.0 b	2142
2. Bravo Weather Stik 24 fl oz (7/17, 8/13, 9/16) Elatus WG 9.5 oz wt (7/30, 8/27)	1.0 b	3011
3. Bravo Weather Stik 24 fl oz (7/17, 8/13, 9/16) Convoy SC 16 fl oz (7/30, 8/27)	5.3 a	2399
4. Bravo Weather Stik 24 fl oz (7/17, 8/13, 9/16) Excalia SC 2 fl oz (7/30, 8/27)	1.0 b	2552
5. Bravo Weather Stik 24 fl oz (7/17, 8/13, 9/16) Excalia SC 3 fl oz (7/30, 8/27)	1.0 b	2370
6. Bravo Weather Stik 24 fl oz (7/17, 8/13, 9/16) Excalia SC 4 fl oz (7/30, 8/27)	2.0 b	2611
P(F)	**0.03**	0.43
LSD	2.74	N.S.

[z] Treatments were applied on a calendar-based schedule beginning at R3 (17 Jul) and followed by two- or four-week intervals between sprays when prescribed. Seed was planted 15 May.

[y] Percent of leaves in two treatment rows with symptoms of leaf spot.

[x] Yields are weight of peanuts with moisture content adjusted to 7%. Peanuts were dug 20 Oct and harvested 9 Nov. Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (P=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

TEST ID: PTSCL120

PURPOSE: To evaluate fungicide treatments for control of Sclerotinia blight in peanut and impact on yield

LOCATION: Tidewater AREC, 6321 Holland Rd., Suffolk, VA

CROP INFORMATION:

Field	46A
Crop history	2019 corn, 2018 cotton, 2017 peanut
Planting date	15 May
Variety	Sullivan
Seeding rate	ca. 4 seed/row ft (143 lb/A)
Plot length/width	35’ x 12’
Number of rows	4
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	9 Nov

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

	Foliar spray
Equipment	Tractor plot sprayer
Pressure (psi)	38 psi
Nozzle type	8002 TwinJet
Volume (gal/A)	19.88 gal/A

APPLICATION SCHEDULE:

A	Advisory Spray
B	A + 21d
C	A + 28d
D	A + 42d
E	A + 56d
F	A + 63d

TREATMENTS:

Trt #	Product and formulation	Rate/A	Appl. timing	Appl. date
1	Untreated			
2	Omega 500 F	16 fl oz	ABD	27 Jul, 18 Aug, 14 Sep
3	Omega 500 F	24 fl oz	ACE	27 Jul, 27 Aug, 24 Sep
4	Excalia SC	2 fl oz	ABD	27 Jul, 18 Aug, 14 Sep
5	Excalia SC	4 fl oz	ACE	27 Jul, 27 Aug, 24 Sep
6	Omega 500 F Excalia SC	24 fl oz 4 fl oz	AD BF	27 Jul, 14 Sep 18 Aug, 5 Oct
7	Pyraziflumid 20 SC	4.66 fl oz	ABD	27 Jul, 18 Aug, 14 Sep
8	Pyraziflumid 20 SC	9.33 fl oz	ABD	27 Jul, 18 Aug, 14 Sep

SOIL TYPE: Nansemond fine sandy loam

SOIL FERTILITY REPORT (Jan 2020):

pH	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)
6.1	95	164	858	77	0.7	3.1	0.4	40.5	0.1

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Admire Pro IF standard
Fungicides	Proline IF
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
5/15/20	Insecticide	Admire Pro 4.6 SC	8.5 fl oz
5/15/20	Fungicide	Proline 480 SC	5.7 fl oz
5/17/20	Herbicide	Strongarm	0.45 fl oz
5/17/20	Herbicide	Dual II MAGNUM	1.5 pt
5/17/20	Herbicide	Prowl H2O	1.0 pt
5/17/20	Fertility	Boron	1.0 qt
6/4/20	Insecticide	Orthene 75S	12 oz
6/25/20	Herbicide	Basagran	1.5 pt
6/25/20	Herbicide	Fusilade DX	1 pt
7/7/20	Herbicide	Storm	1.5 pt
7/7/20	Herbicide	Basagran	1 pt
7/13/20	Fungicide	Bravo Weather Stik	1.5 pt
7/13/20	Fertility	Manganese	2 qt
7/13/20	Insecticide	Danitol 2.4 EC	8 fl oz
7/16/20	Fertility	Landplaster	1500 lb
7/24/20	Insecticide	Danitol 2.4 EC	8 fl oz
8/6/20	Herbicide	Tide 2 EC (Clethodim)	16 fl oz
8/10/20	Fungicide	Bravo Weather Stik	1.5 pt
8/24/20	Fungicide	Bravo Weather Stik	1.5 pt

Table 1. Effect of fungicide treatment on soilborne disease incidence in peanut (PTSCL120, Suffolk, VA 2020).

Treatment, rate/A and application date[z]	Sclerotinia blight[y]				
	28 Aug	**13 Sep**	**27 Sep**	**17 Oct**	**AUDPC[x]**
1. Untreated	1.8	10.8 a	21.3 a	29.3 a	829.0 a
2. Omega 500 F 16 fl oz (7/27, 8/18, 9/14)	0.3	1.5 bc	2.5 cd	7.5 b	142.0 c
3. Omega 500 F 24 fl oz (7/27, 8/27, 9/24)	0.5	2.0 bc	4.3 cd	8.0 b	186.3 bc
4. Excalia SC 2 fl oz (7/27, 8/18, 9/14)	0.0	4.8 bc	11.0 bc	25.3 a	510.8 ab
5. Excalia SC 4 fl oz (7/27, 8/27, 9/24)	1.0	5.5 ab	15.5 ab	24.8 a	601.5 a
6. Omega 500 F 24 fl oz (7/27, 9/14) Excalia SC 4 fl oz (8/18, (5 Oct))	0.0	1.8 bc	4.0 cd	7.5 b	169.3 c
7. Pyraziflumid 20 SC 4.66 fl oz (7/27, 8/18, 9/14)	0.0	0.5 bc	1.0 d	4.3 b	67.0 c
8. Pyraziflumid 20 SC 9.33 fl oz (7/27, 8/18, 9/14)	0.0	0.0 c	0.3 d	0.5 b	9.3 c
P(F)	0.13	**0.009**	**0.001**	**<0.0001**	**0.0002**
LSD	N.S.	5.42	9.33	8.99	328.52

[z] First fungicide application for Sclerotinia blight was applied according to the Virginia Sclerotinia Blight Advisory (27 Jul).
[y] Counts of infection centers in the two center rows of each plot or a total of 70 ft row. An infection center was a point with symptoms and/or signs of a disease and included 6 in. on either side of that point.
[x] AUDPC = area under the disease progress curve.
Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).

Table 2. Effect of fungicide treatment on disease incidence and yield in peanut (PTSCL120, Suffolk, VA 2020).

Treatment, rate/A and application date[z]	% leaf spot[y] 9 Oct	Yield[x] (lb/A)
1. Untreated	3.0	2286 c
2. Omega 500 F 16 fl oz (7/27, 8/18, 9/14)	1.0	3536 b
3. Omega 500 F 24 fl oz (7/27, 8/27, 9/24)	1.0	3522 b
4. Excalia SC 2 fl oz (7/27, 8/18, 9/14)	2.0	2466 c
5. Excalia SC 4 fl oz (7/27, 8/27, 9/24)	1.0	3172 bc
6. Omega 500 F 24 fl oz (7/27, 9/14) Excalia SC 4 fl oz (8/18, (5 Oct))	1.0	3776 ab
7. Pyraziflumid 20 SC 4.66 fl oz (7/27, 8/18, 9/14)	1.0	4097 ab
8. Pyraziflumid 20 SC 9.33 fl oz (7/27, 8/18, 9/14)	1.0	4713 a
P(F)	0.09	**0.001**
LSD	N.S.	954.6

[z] First fungicide application for Sclerotinia blight was applied according to the Virginia Sclerotinia Blight Advisory (27 Jul).
[y] Percent leaves with symptoms of late leaf spot.
[x] Yields are weight of peanuts with moisture content adjusted to 7%. Peanuts were dug 20 Oct and harvested 9 Nov.
Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

TEST ID: PTLFSPOT120

PURPOSE: To evaluate fungicide treatments for control of peanut leaf spot and Sclerotinia blight, and impact on yield

LOCATION: Tidewater Research Farm, Hare Rd., Suffolk, VA

CROP INFORMATION:

Field	34B
Crop history	2019 corn, 2018 cotton, 2017 peanut
Planting date	16 May
Variety	Sullivan
Seeding rate	ca. 4 seed/row ft (143 lb/A)
Plot length/width	35’ x 12’
Number of rows	4
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	4 Nov

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

	Foliar spray
Equipment	Tractor plot sprayer
Pressure (psi)	38 psi
Nozzle type	8002 TwinJet
Volume (gal/A)	19.88 gal/A
Surfactant	NIS 0.125% v/v

APPLICATION SCHEDULE:

A	35 DAP
B	49 DAP
C	56 DAP
D	63 DAP
E	77 DAP
F	84 DAP
G	91 DAP
H	112 DAP
I	119 DAP
J	126 DAP

TREATMENTS:

Trt #	Product and formulation	Rate/A	Appl. timing	Appl. date
1	Untreated control			
2	Provysol SC Bravo Weather Stik 6 SC	5 fl oz 24 fl oz	ACGH E	22 Jun, 10 Jul, 13 Aug, 8 Sep 31 Jul
3	Provost Silver 3.52 SC Bravo Weather Stik 6 SC	12.8 fl oz 24 fl oz	ACGH E	22 Jun, 10 Jul, 13 Aug, 8 Sep 31 Jul
4	Inspire EC Bravo Weather Stik 6 SC	7 fl oz 24 fl oz	ACGH E	22 Jun, 10 Jul, 13 Aug, 8 Sep 31 Jul
5	Alto 100 SL Bravo Weather Stik 6 SC	5.5 fl oz 24 fl oz	ACGH E	22 Jun, 10 Jul, 13 Aug, 8 Sep 31 Jul
6	Bravo Top SC Bravo Weather Stik 6 SC	34 fl oz 24 fl oz	ACGH E	22 Jun, 10 Jul, 13 Aug, 8 Sep 31 Jul
7	Alto 100 SL + Bravo Weather Stik 6 SC Bravo Weather Stik 6 SC	5.5 fl oz 24 fl oz 24 fl oz	 ACGH E	 22 Jun, 10 Jul, 13 Aug, 8 Sep 31 Jul
8	Miravis 1.67 SC Bravo Weather Stik 6 SC	3.42 fl oz 24 fl oz	ACGH E	22 Jun, 10 Jul, 13 Aug, 8 Sep 31 Jul
9	Aprovia EC Bravo Weather Stik 6 SC	10.5 fl oz 24 fl oz	ACGH E	22 Jun, 10 Jul, 13 Aug, 8 Sep 31 Jul
10	Elatus 45 WG Bravo Weather Stik 6 SC	7.3 oz wt 24 fl oz	ACGH E	22 Jun, 10 Jul, 13 Aug, 8 Sep 31 Jul
11	A19649 (H) SC Bravo Weather Stik 6 SC	2.75 fl oz 24 fl oz	ACGH E	22 Jun, 10 Jul, 13 Aug, 8 Sep 31 Jul
12	Alto 100 SL + Bravo Weather Stik 6 SC Bravo Weather Stik 6 SC A19649 (H) SC + Elatus 45 WG Bravo Weather Stik 6 SC	5.5 fl oz 16 fl oz 24 fl oz 3.42 fl oz 9.5 oz wt 24 fl oz	 A B DG I	 22 Jun 1 Jul 17 Jul, 13 Aug 14 Sep
13	Elatus 45 WG Elatus 45 WG + A19649 (H) SC Bravo Weather Stik 6 SC	7.3 oz wt 7.3 oz wt 3.42 fl oz 24 fl oz	A CF HJ	22 Jun 10 Jul, 6 Aug 8 Sep, 21 Sep

SOIL TYPE: Kenansville loamy fine sand

SOIL FERTILITY REPORT (Jan 2020):

pH	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)
6.4	72	86	574	68	0.6	3.3	0.2	16.0	0.1

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Admire Pro IF standard
Fungicides	Proline IF
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
5/16/20	Insecticide	Admire Pro 4.6 SC	8.5 fl oz
5/16/20	Fungicide	Proline 480 SC	5.7 fl oz
5/17/20	Herbicide	Strongarm	0.45 fl oz
5/17/20	Herbicide	Dual II MAGNUM	1.5 pt
5/17/20	Herbicide	Prowl H2O	1.0 pt
5/17/20	Fertility	Boron	1.0 qt
6/4/20	Insecticide	Orthene 75 S	12 oz
6/25/20	Herbicide	Basagran	1.5 pt
6/25/20	Herbicide	Fusilade DX	1 pt
7/7/20	Herbicide	Storm	1.5 pt
7/7/20	Herbicide	Basagran	1 pt
7/13/20	Fertility	Manganese	2 qt
7/13/20	Insecticide	Danitol 2.4 EC	8 fl oz
7/16/20	Fertility	Landplaster	1500 lb
7/24/20	Insecticide	Danitol 2.4 EC	8 fl oz
8/6/20	Herbicide	Tide 2 EC (Clethodim)	16 fl oz
8/18/20	Fungicide	Convoy	29 fl oz

Table 1. Effect of fungicide treatment on disease incidence in peanut (PTLFSPOT120, Suffolk, VA 2020).

Treatment, rate/A and application date[z]	Leaf spot (1-10)[y]				% leaf spot[w]
	26 Aug	13 Sep	28 Sep	AUDPC[x]	9 Oct
1. Untreated control	2.0	3.8 a	6.5 a	128.6 a	93.8 a
2. Provysol SC 5 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	1.8	1.5 cd	4.3 bc	72.4 b-d	57.5 c-e
3. Provost Silver 3.52 SC 12.8 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	1.5	2.5 b	4.0 bc	84.8 bc	45.0 e
4. Inspire EC 7 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	2.0	2.5 b	4.5 b	93.0 b	77.5 a-c
5. Alto 100 SL 5.5 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	1.8	2.3 bc	3.8 bc	81.0 bc	55.0 de
6. Bravo Top SC 34 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	1.5	1.3 d	4.8 b	69.8 cd	70.0 b-d
7. Alto 100 SL 5.5 fl oz + Bravo Weather Stik 6 SC 24 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	1.8	1.3 d	2.5 de	55.1 de	40.0 e
8. Miravis 1.67 SC 3.42 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	1.8	1.0 d	1.5 ef	43.5 e	3.0 f
9. Aprovia EC 10.5 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	1.8	1.3 d	4.3 bc	68.3 cd	67.5 b-d
10. Elatus 45 WG 7.3 oz wt (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	1.5	1.8 b-d	4.5 b	76.1 b-d	78.8 ab
11. A19649 (H) SC 2.75 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	1.8	1.0 d	1.0 f	39.8 e	3.3 f
12. Alto 100 SL 5.5 fl oz + Bravo Weather Stik 6 SC 16 fl oz (6/22) Bravo Weather Stik 6 SC 24 fl oz (7/1) A19649 (H) SC 3.42 fl oz + Elatus 45 WG 9.5 oz wt (7/17, 8/13) Bravo Weather Stik 6 SC 24 fl oz (9/14)	1.5	1.0 d	1.3 f	39.4 e	40.0 e
13. Elatus 45 WG 7.3 oz wt (6/22) Elatus 45 WG 7.3 oz wt + A19649 (H) SC 3.42 fl oz (7/10, 8/6) Bravo Weather Stik 6 SC 24 fl oz (9/8, 9/21)	1.8	1.0 d	3.3 cd	56.6 de	37.5 e
P(F)	0.96	**<0.0001**	**<0.0001**	**<0.0001**	**<0.0001**
LSD	N.S.	0.97	1.24	21.95	20.10

[z] First fungicide for leaf spot program was applied at 35 DAP (22 Jun) and followed by applications as prescribed. All foliar treatments applied with Induce 0.125% v.v.

[y] Florida leaf spot scale: 1 = no disease, 10 = dead plants, Chiteka et al. (1988). Untreated control plots were observed for leaf spot on 7 Aug, little to no lesions observed.

[x] AUDPC = area under the disease progress curve.

[w] Percent of leaves in two treatment rows with symptoms of leaf spot.

Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of treatment on soilborne disease and yield in peanut (PTLFSPOT120, Suffolk, VA 2020).

Treatment, rate/A and application date[z]	Sclerotinia blight[y]				Yield (lb/A)[w]
	13 Sep	28 Sep	15 Oct	AUDPC[x]	
1. Untreated control	8.5 c-f	41.3 a	46.0 a	1114.8 a	1338 cd
2. Provysol SC 5 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	16.8 a	37.5 ab	46.0 a	1116.6 a	729 d
3. Provost Silver 3.52 SC 12.8 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	12.8 a-d	38.3 a	45.5 a	1094.4 a	1559 c
4. Inspire EC 7 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	14.8 ab	39.8 a	46.0 a	1137.6 a	1060 cd
5. Alto 100 SL 5.5 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	9.8 b-e	39.3 a	46.0 a	1092.1 a	1253 cd
6. Bravo Top SC 34 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	14.0 a-c	38.8 a	46.0 a	1116.0 a	910 cd
7. Alto 100 SL 5.5 fl oz + Bravo Weather Stik 6 SC 24 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	14.3 a-c	39.5 a	45.8 a	1127.8 a	908 cd
8. Miravis 1.67 SC 3.42 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	3.0 fg	14.0 e	39.5 cd	582.3 d	2678 ab
9. Aprovia EC 10.5 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	7.0 d-g	28.8 bc	42.0 b	869.5 b	2278 b
10. Elatus 45 WG 7.3 oz wt (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	5.3 e-g	25.0 cd	41.3 bc	790.0 bc	2607 ab
11. A19649 (H) SC 2.75 fl oz (6/22, 7/10, 8/13, 9/8) Bravo Weather Stik 6 SC 24 fl oz (7/31)	3.3 fg	19.5 de	40.0 b-d	676.4 cd	2361 b
12. Alto 100 SL 5.5 fl oz + Bravo Weather Stik 6 SC 16 fl oz (6/22) Bravo Weather Stik 6 SC 24 fl oz (7/1) A19649 (H) SC 3.42 fl oz + Elatus 45 WG 9.5 oz wt (7/17, 8/13) Bravo Weather Stik 6 SC 24 fl oz (9/14)	2.3 g	15.8 e	39.0 d	600.4 d	3165 a
13. Elatus 45 WG 7.3 oz wt (6/22) Elatus 45 WG 7.3 oz wt + A19649 (H) SC 3.42 fl oz (7/10, 8/6) Bravo Weather Stik 6 SC 24 fl oz (9/8, 9/21)	2.8 fg	19.3 de	40.3 b-d	670.8 cd	2697 ab
P(F)	**<0.0001**	**<0.0001**	**<0.0001**	**<0.0001**	**<0.0001**
LSD	5.78	8.80	2.22	169.34	683.0

[z] First fungicide for leaf spot program was applied at 35 DAP (22 Jun) and followed by applications as prescribed. All foliar treatments applied with Induce 0.125% v.v.

[y] Counts of infection centers in the two center rows of each plot or a total of 70 ft row. An infection center was a point with symptoms and/or signs of a disease and included 6 in. on either side of that point.

[x] AUDPC = area under the disease progress curve.

[w] Yields are weight of peanuts with moisture content adjusted to 7%. Peanuts were dug 19 Oct and harvested 4 Nov. Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).

TEST ID: PTLFSPOT220

PURPOSE: To compare fungicide treatments for control of peanut leaf spot and impact on yield

LOCATION: Tidewater Research Farm, Hare Rd., Suffolk, VA

CROP INFORMATION:

Field	29
Crop history	2019 wheat/soy, 2018 wheat/soy, 2017 peanut
Planting date	16 May
Variety	Sullivan
Seeding rate	ca. 4 seed/row ft (143 lb/A)
Plot length/width	35’ x 12’
Number of rows	4
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	5 Nov

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

	Foliar spray
Equipment	Tractor plot sprayer
Pressure (psi)	38 psi
Nozzle type	8002 TwinJet
Volume (gal/A)	19.88 gal/A
Surfactant	NIS 0.125% v/v

APPLICATION SCHEDULE:

A	6” band at planting
B	45 DAP
C	60 DAP
D	75 DAP
E	90 DAP
F	105 DAP
G	120 DAP

TREATMENTS:

Trt #	Product and formulation	Rate/A	Appl. timing	Appl. date
1	Untreated control			
2	Lucento 4.17 SC Provost Silver 3.52 SC	5.5 fl oz 13 fl oz	CE DF	15 Jul. 12 Aug 30 Jul, 28 Aug
3	Miravis 1.67 SC Provost Silver 3.52 SC	3.4 fl oz 13 fl oz	CE DF	15 Jul, 12 Aug 30 Jul, 28 Aug
4	Provysol 3.34 SC Provost Silver 3.52 SC	7 fl oz 13 fl oz	CE DF	15 Jul, 12 Aug 30 Jul, 28 Aug
5	Priaxor 4.17 SC Provost Silver 3.52 SC	4 fl oz 13 fl oz	CE DF	15 Jul, 12 Aug 30 Jul, 28 Aug
6	Provost Silver 3.52 SC Lucento 4.17 SC	13 fl oz 5.5 fl oz	CE DF	15 Jul, 12 Aug 30 Jul, 28 Aug
7	Provost Silver 3.52 SC Miravis 1.67 SC	13 fl oz 3.4 fl oz	CE DF	15 Jul, 12 Aug 30 Jul, 28 Aug
8	Lucento 4.17 SC Provost Silver 3.52 SC Bravo Weather Stik 6 SC	5.5 fl oz 13 fl oz 24 fl oz	CE DF G	15 Jul, 12 Aug 30 Jul, 28 Aug 5 Oct
9	Lucento 4.17 SC Provost Silver 3.52 SC Topguard EQ 4.29 SC	5.5 fl oz 13 fl oz 5 fl oz	CE DF G	15 Jul, 12 Aug 30 Jul, 28 Aug 5 Oct
10	Topguard EQ 4.29 SC Lucento 4.17 SC Provost Silver 3.52 SC	5 fl oz 5.5 fl oz 13 fl oz	B CE DF	30 Jun 15 Jul, 12 Aug 30 Jul, 28 Aug
11	Topguard EQ 4.29 SC Provost Silver 3.52 SC Lucento 4.17 SC	5 fl oz 13 fl oz 5.5 fl oz	B CE DF	30 Jun 15 Jul, 12 Aug 30 Jul, 28 Aug
12	Topguard 1.04 SC Lucento 4.17 SC Provost Silver 3.52 SC	14 fl oz 5.5 fl oz 13 fl oz	A CE DF	16 May 15 Jul, 12 Aug 30 Jul, 28 Aug
13	Topguard EQ 4.29 SC Lucento 4.17 SC Provost Silver 3.52 SC	8 fl oz 5.5 fl oz 13 fl oz	A CE DF	16 May 15 Jul, 12 Aug 30 Jul, 28 Aug
14	Topguard 1.04 SC	14 fl oz	A	16 May
15	Topguard EQ 4.29 SC	8 fl oz	A	16 May

SOIL TYPE: Goldsboro fine sandy loam

SOIL FERTILITY REPORT (Jan 2020):

pH	**P (lb/A)**	**K (lb/A)**	**Ca (lb/A)**	**Mg (lb/A)**	**Zn (ppm)**	**Mn (ppm)**	**Cu (ppm)**	**Fe (ppm)**	**B (ppm)**
5.9	31	79	345	43	0.4	2.5	0.3	14.3	0.1

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Admire Pro IF standard
Fungicides	Proline IF
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
5/16/20	Insecticide	Admire Pro 4.6 SC	8.5 fl oz
5/16/20	Fungicide	Proline 480 SC	5.7 fl oz
5/17/20	Herbicide	Strongarm	0.45 fl oz
5/17/20	Herbicide	Dual II MAGNUM	1.5 pt
5/17/20	Herbicide	Prowl H2O	1 pt
5/17/20	Fertility	Boron	1 qt
6/4/20	Insecticide	Orthene 75 S	12 oz
6/8/20	Herbicide	Pursuit	4 fl oz
6/25/20	Herbicide	Basagran	1.5 pt
6/25/20	Herbicide	Fusilade DX	1 pt
7/7/20	Herbicide	Storm	1.5 pt
7/7/20	Herbicide	Basagran	1 pt
7/13/20	Fertility	Manganese	2 qt
7/13/20	Insecticide	Danitol 2.4 EC	8 fl oz
7/16/20	Fertility	Landplaster	1500 lb
7/24/20	Insecticide	Danitol 2.4 EC	8 fl oz
8/6/20	Herbicide	Tide 2 EC (Clethodim)	16 fl oz

Table 1. Effect of fungicide treatment on disease incidence in peanut (PTLFSPOT220, Suffolk, VA 2020).

Treatment, rate/A and application date[z]	Leaf spot (1-10 scale)[y]				% leaf spot[w]
	24 Aug	11 Sep	30 Sep	AUDPC[x]	9 Oct
1. Untreated control	4.0 a	6.5 a	9.0 a	241.8 a	100.0 a
2. Lucento 4.17 SC 5.5 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	2.3 cd	2.3 fg	5.3 cd	111.8 fg	90.0 b
3. Miravis 1.67 SC 3.4 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	2.0 d	2.0 g	3.5 e	88.3 g	57.5 cd
4. Provysol 3.34 SC 7 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	2.3 cd	3.0 d-g	5.5 bc	128.0 d-f	85.0 b
5. Priaxor 4.17 SC 4 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	2.3 cd	3.5 de	4.3 de	125.4 d-f	75.0 bc
6. Provost Silver 3.52 SC 13 fl oz (7/15, 8/12) Lucento 4.17 SC 5.5 fl oz (7/30, 8/28)	2.5 b-d	4.8 bc	6.5 b	172.1 c	100.0 a
7. Provost Silver 3.52 SC 13 fl oz (7/15, 8/12) Miravis 1.67 SC 3.4 fl oz (7/30, 8/28)	2.0 d	2.5 e-g	2.3 f	85.6 g	23.0 e
8. Lucento 4.17 SC 5.5 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28) Bravo Weather Stik 6 SC 24 fl oz (5 Oct)	2.8 bc	2.5 e-g	5.0 cd	118.5 ef	90.0 b
9. Lucento 4.17 SC 5.5 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28) Topguard EQ 4.29 SC 5 fl oz (5 Oct)	2.8 bc	3.5 de	4.8 cd	134.6 d-f	85.0 b
10. Topguard EQ 4.29 SC 5 fl oz (6/30) Lucento 4.17 SC 5.5 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	2.3 cd	3.8 cd	4.3 de	130.0 d-f	87.5 ab
11. Topguard EQ 4.29 SC 5 fl oz (6/30) Provost Silver 3.52 SC 13 fl oz (7/15, 8/12) Lucento 4.17 SC 5.5 fl oz (7/30, 8/28)	2.0 d	4.0 cd	6.5 b	153.8 cd	100.0 a
12. Topguard 1.04 SC 14 fl oz (5/16) Lucento 4.17 SC 5.5 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	2.0 d	3.3 d-f	4.5 c-e	120.9 ef	45.0 de
13. Topguard EQ 4.29 SC 8 fl oz (5/16) Lucento 4.17 SC 5.5 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	2.3 cd	4.0 cd	5.3 cd	144.1 c-e	87.5 ab
14. Topguard 1.04 SC 14 fl oz (5/16)	3.0 b	5.3 b	8.3 a	202.5 b	100.0 a
15. Topguard EQ 4.29 SC 8 fl oz (5/16)	2.8 bc	5.5 ab	8.3 a	204.9 b	100.0 a
P(F)	**<0.0001**	**<0.0001**	**<0.0001**	**<0.0001**	**<0.0001**
LSD	0.58	1.22	1.02	29.88	8.61

[z] 6-inch band at planting treatments applied 16 May; first foliar treatment for leaf spot program was applied at 45 days after planting (30 Jun) and followed by applications on two-week timings as prescribed. All foliar applications were applied with Induce 0.125% v/v.

[y] Florida leaf spot scale: 1 = no disease, 10 = dead plants, Chiteka et al. (1988). Untreated control plots were observed for leaf spot on 7 Aug, little to no lesions observed.

[x] AUDPC = area under the disease progress curve.

[w] Percent of leaves in two treatment rows with symptoms of leaf spot.

Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment on soilborne disease and yield in peanut (PTLFSPOT220, Suffolk, VA 2020).

Treatment, rate/A and application timing/date[z]	Sclerotinia blight[y]		Yield[x] (lb/A)
	30 Sep	16 Oct	
1. Untreated control	0.5	11.5	1642 f
2. Lucento 4.17 SC 5.5 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	1.5	18.8	3999 d
3. Miravis 1.67 SC 3.4 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	0.5	11.8	4996 ab
4. Provysol 3.34 SC 7 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	2.3	16.3	4081 d
5. Priaxor 4.17 SC 4 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	0.8	9.3	4387 b-d
6. Provost Silver 3.52 SC 13 fl oz (7/15, 8/12) Lucento 4.17 SC 5.5 fl oz (7/30, 8/28)	0.8	13.5	4489 b-d
7. Provost Silver 3.52 SC 13 fl oz (7/15, 8/12) Miravis 1.67 SC 3.4 fl oz (7/30, 8/28)	0.3	10.5	5568 a
8. Lucento 4.17 SC 5.5 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28) Bravo Weather Stik 6 SC 24 fl oz (5 Oct)	1.3	12.0	4100 cd
9. Lucento 4.17 SC 5.5 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28) Topguard EQ 4.29 SC 5 fl oz (5 Oct)	1.3	17.0	4704 b-d
10. Topguard EQ 4.29 SC 5 fl oz (6/30) Lucento 4.17 SC 5.5 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	1.3	9.8	4600 b-d
11. Topguard EQ 4.29 SC 5 fl oz (6/30) Provost Silver 3.52 SC 13 fl oz (7/15, 8/12) Lucento 4.17 SC 5.5 fl oz (7/30, 8/28)	2.3	14.8	4120 cd
12. Topguard 1.04 SC 14 fl oz (5/16) Lucento 4.17 SC 5.5 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	1.3	10.3	4724 b-d
13. Topguard EQ 4.29 SC 8 fl oz (5/16) Lucento 4.17 SC 5.5 fl oz (7/15, 8/12) Provost Silver 3.52 SC 13 fl oz (7/30, 8/28)	1.3	12.3	4935 a-c
14. Topguard 1.04 SC 14 fl oz (5/16)	1.3	10.5	2270 ef
15. Topguard EQ 4.29 SC 8 fl oz (5/16)	1.0	11.0	2966 e
P(F)	0.51	0.57	**<0.0001**
LSD	N.S.	N.S.	837.0

[z] 6-inch band at planting treatments applied 16 May; first foliar treatment for leaf spot program was applied at 45 days after planting (30 Jun) and followed by applications on two-week timings as prescribed. All foliar applications were applied with Induce 0.125% v/v.

[y] Counts of infection centers in the two center rows of each plot or a total of 70 ft row. An infection center was a point with symptoms and/or signs of a disease and included 6 in. on either side of that point. Plots were scouted for disease on 17 Jul and 3 Aug but none observed.

[x] Yields are weight of peanuts with moisture content adjusted to 7%. Peanuts were dug 19 Oct and harvested 5 Nov. Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).

TEST ID: PTLFSPOT320

PURPOSE: To evaluate fungicide treatments for control of peanut leaf spot and impact on yield at three locations, site 1

LOCATION: Tidewater Research Farm, Hare Rd., Suffolk, VA

CROP INFORMATION:

Field	29
Crop history	2019 wheat/soy, 2018 wheat/soy, 2017 peanut
Planting date	16 May
Variety	Sullivan
Seeding rate	ca. 4 seed/row ft (143 lb/A)
Plot length/width	35’ x 12’
Number of rows	4
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	5 Nov

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

	IF liquid	**Foliar spray**
Equipment	CO_2 sprayer	Tractor plot sprayer
Pressure (psi)		38 psi
Nozzle type	.075 microtube	8002 TwinJet
Volume (gal/A)	5 gal/A	19.88 gal/A
Surfactant		NIS 0.125% v/v

APPLICATION SCHEDULE:

A	In-furrow (at planting)
B	Pegging (49 DAP)
C	R3 (63 DAP)
D	R3 + 2 weeks (77 DAP)
E	R3 + 4 weeks (91 DAP)
F	R3 + 6 weeks (105 DAP)
G	R3 + 8 weeks (119 DAP)

TREATMENTS:

Trt #	**Product and formulation**	**Rate/A**	**Appl. timing**	**Appl. date**
1	Admire Pro 4.6 SC + Proline 480 SC	8.5 fl oz 5.7 fl oz	 A	 16 May
2	Admire Pro 4.6 SC + Proline 480 SC Elatus 45 WG + Miravis 1.67 SC Bravo Weather Stik	8.5 fl oz 5.7 fl oz 9.5 oz wt 3.4 fl oz 24 fl oz	 A CE G	 16 May 17 Jul, 13 Aug 14 Sep
3	Admire Pro 4.6 SC + Proline 480 SC Elatus 45 WG + Miravis 1.67 SC Bravo Weather Stik	8.5 fl oz 5.7 fl oz 9.5 oz wt 3.4 fl oz 24 fl oz	 A DF G	 16 May 31 Jul, 28 Aug 14 Sep

4	Admire Pro 4.6SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Miravis 1.67 SC	3.4 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
5	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Miravis 1.67 SC	3.4 fl oz	CE	17 Jul, 13 Aug
	Elatus 45 WG	9.5 oz wt	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
6	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Domark 230 ME	2.5 fl oz		
	+ Bravo Weather Stik	16 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
7	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Miravis 1.67 SC	3.4 fl oz	CE	17 Jul, 13 Aug
	Omega 500 F	24 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
8	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Elatus 45 WG	9.5 oz/wt	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
9	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Priaxor 4.17 SC	8 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	
10	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Provost Silver 3.52 SC	13 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
11	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Lucento 4.17 SC	5.5 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
12	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Revytek SC	12 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep

13	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Excalia SC	2.65 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
14	Admire Pro 4.6 SC	8.5 fl oz		
	+ Velum Prime 500 SC	6.5 fl oz	A	16 May
	Absolute 500 SC	3.5 fl oz	C	17 Jul
	Propulse 400 SC	13.6 fl oz	D	31 Jul
	+ Elatus 45 WG	7.3 wt oz		
	Bravo Weather Stik	24 fl oz	EG	13 Aug, 14 Sep
	Provost Silver 3.52 SC	13 fl oz	F	28 Aug
15	Admire Pro 4.6 SC	8.5 fl oz		
	+ Velum Prime 500 SC	15.84 fl oz	A	16 May
	Provost Silver 3.52 SC	13 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
16	Admire Pro 4.6 SC	8.5 fl oz		
	+ Velum Prime 500 SC	15.84 fl oz	A	16 May
	Propulse 400 SC	13.6 fl oz	B	1 Jul
	Provost Silver 3.52 SC	13 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
17	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Propulse 400 SC	13.6 fl oz	B	1 Jul
	Provost Silver 3.52 SC	13 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep

SOIL TYPE: Goldsboro fine sandy loam

SOIL FERTILITY REPORT (Jan 2020):

pH	**P** (lb/A)	**K** (lb/A)	**Ca** (lb/A)	**Mg** (lb/A)	**Zn** (ppm)	**Mn** (ppm)	**Cu** (ppm)	**Fe** (ppm)	**B** (ppm)
5.9	31	79	345	43	0.4	2.5	0.3	14.3	0.1

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None except treatments

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
5/17/20	Herbicide	Strongarm	0.45 fl oz
5/17/20	Herbicide	Dual II MAGNUM	1.5 pt
5/17/20	Herbicide	Prowl H2O	1.0 pt
5/17/20	Fertility	Boron	1.0 qt
6/4/20	Insecticide	Orthene 75 S	12 oz
6/8/20	Herbicide	Pursuit	4 fl oz
6/25/20	Herbicide	Basagran	1.5 pt
6/25/20	Herbicide	Fusilade DX	1 pt
7/7/20	Herbicide	Storm	1.5 pt
7/7/20	Herbicide	Basagran	1 pt
7/13/20	Fertility	Manganese	2 qt
7/13/20	Insecticide	Danitol 2.4 EC	8 fl oz
7/16/20	Fertility	Landplaster	1500 lb
7/27/20	Insecticide	Danitol 2.4 EC	8 fl oz
8/6/20	Herbicide	Tide 2 EC (Clethodim)	16 fl oz

Table 1. Effect of fungicide treatment on disease incidence in peanut (PTLFSPOT320, Suffolk, VA 2020).

Treatment, rate/A and application timing/date[z]	Leaf spot (1-10 scale)[y]				% leaf spot[w]
	24 Aug	11 Sep	30 Sep	AUDPC[x]	9 Oct
1. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F)	3.5 a	6.0 a	8.5 a	223.3 a	90.0 a
2. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt + Miravis 1.67 SC 3.4 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz (9/14)	2.0 b-d	1.5 h	5.0 bc	93.3 e-g	46.3 cd
3. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt + Miravis 1.67 SC 3.4 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.8 ab	3.0 c-f	1.8 g	96.9 c-g	21.3 d
4. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.8 cd	1.5 h	5.5 b	95.8 d-g	77.5 ab
5. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz (7/17, 8/13) Elatus 45 WG 9.5 oz/wt (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.8 cd	1.8 gh	3.0 ef	76.6 g	32.5 d
6. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Domark 230 ME 2.5 fl oz + Bravo Weather Stik 16 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.0 b-d	3.3 c-e	4.5 b-d	120.9 bc	55.0 b-d
7. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz (7/17, 8/13) Omega 500 F 24 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.5 d	1.8 gh	3.5 d-f	79.1 g	52.5 b-d
8. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.5 bc	3.5 cd	3.5 d-f	120.5 b-d	47.5 cd
9. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Priaxor 4.17 SC 8 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.3 b-d	3.3 c-e	3.5 d-f	113.6 c-e	52.5 b-d
10. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Provost Silver 3.52 SC 13 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.5 d	3.3 c-e	3.3 ef	104.5 c-f	57.5 b-d
11. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Lucento 4.17 SC 5.5 fl oz (7/13, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.5 d	3.8 bc	3.3 ef	113.8 c-e	52.5 b-d

12. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Revytek SC 12 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.0 b-d	2.8 d-f	3.3 ef	99.8 c-g	32.5 d
13. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Excalia SC 2.65 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.3 b-d	4.5 b	4.0 c-e	141.5 b	67.5 bc
14. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 15.84 fl oz (F) Absolute 500 SC 3.5 fl oz (7/17) Propulse 400 SC 13.6 fl oz + Elatus 45 WG 7.3 wt/oz (7/31) Bravo Weather Stik 24 fl oz (8/13, 9/14) Provost Silver 3.52 SC 13 fl oz (8/28)	1.5 d	2.3 f-h	3.0 ef	83.6 fg	55.0 b-d
15. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 6.5 fl oz (F) Provost Silver 3.52 SC 13 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.5 d	2.8 d-f	2.8 fg	90.5 e-g	55.0 b-d
16. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 15.84 fl oz (F) Propulse 400 SC 13.6 fl oz Provost Silver 3.52 SC 13 fl oz (7/13, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.0 b-d	2.3 f-h	2.8 fg	85.8 fg	42.5 cd
17. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Propulse 400 SC 13.6 fl oz Provost Silver 3.52 SC 13 fl oz 7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.8 cd	2.5 e-g	3.0 ef	90.5 e-g	42.5 cd
P(F)	**0.0003**	**<0.0001**	**<0.0001**	**<0.0001**	**0.002**
LSD	0.80	0.98	1.11	25.06	31.12

[z] (F) In-furrow (16 May); (P) broadcast at pegging (1 Jul). First fungicide for leaf spot program was applied at R3 (17 Jul) and followed by applications on two-week timings as prescribed. All foliar treatments applied with Induce 0.125% v/v.

[y] Florida leaf spot scale: 1 = no disease, 10 = dead plants, Chiteka et al. (1988). Untreated control (Trt. 1) plots were observed for leaf spot on 7 Aug; little to no lesions observed.

[x] AUDPC = area under the disease progress curve.

[w] Percent of leaves in two treatment rows with symptoms of leaf spot.
Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment on soilborne disease and yield in peanut (PTLFSPOT320, Suffolk, VA 2020).

Treatment, rate/A and application timing/date[z]	Sclerotinia blight[y]		Yield (lb/A)[x]
	30 Sep	16 Oct	
1. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F)	0.3 c	8.8 c-e	1863 g
2. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt + Miravis 1.67 SC 3.4 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz (9/14)	0.8 bc	8.3 de	4949 a-c
3. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt + Miravis 1.67 SC 3.4 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	0.3 c	4.0 e	5052 ab
4. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	0.3 c	7.5 de	4255 c-f
5. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz (7/17, 8/13) Elatus 45 WG 9.5 oz/wt (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	0.3 c	3.8 e	5160 a
6. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Domark 230 ME 2.5 fl oz + Bravo Weather Stik 16 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.3 bc	8.5 de	4276 c-f
7. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz (7/17, 8/13) Omega 500 F 24 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.0 bc	7.0 de	4720 a-d
8. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.3 a-c	13.8 a-d	3696 f
9. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Priaxor 4.17 SC 8 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.0 bc	11.0 b-e	4507 a-e
10. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Provost Silver 3.52 SC 13 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.8 ab	19.5 ab	4068 d-f
11. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Lucento 4.17 SC 5.5 fl oz (7/13, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.3 a-c	19.0 ab	4222 d-f

12. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Revytek SC 12 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.5 a-c	15.8 a-d	4402 b-f
13. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Excalia SC 2.65 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	4.5 a	21.3 a	3801 ef
14. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 15.84 fl oz (F) Absolute 500 SC 3.5 fl oz (7/17) Propulse 400 SC 13.6 fl oz + Elatus 45 WG 7.3 wt/oz (7/31) Bravo Weather Stik 24 fl oz (8/13, 9/14) Provost Silver 3.52 SC 13 fl oz (8/28)	2.0 bc	18.3 a-c	4248 c-f
15. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 6.5 fl oz (F) Provost Silver 3.52 SC 13 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.8 ab	20.0 ab	4145 d-f
16. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 15.84 fl oz (F) Propulse 400 SC 13.6 fl oz Provost Silver 3.52 SC 13 fl oz (7/13, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.0 bc	15.3 a-d	4536 a-d
17. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Propulse 400 SC 13.6 fl oz Provost Silver 3.52 SC 13 fl oz 7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.0 bc	15.3 a-d	4304 c-f
P(F)	**0.03**	**0.002**	**<0.0001**
LSD	2.32	9.67	709.0

[z] (F) In-furrow (16 May); (P) broadcast at pegging (1 Jul). First fungicide for leaf spot program was applied at R3 (17 Jul) and followed by applications on two-week timings as prescribed. All foliar treatments applied with Induce 0.125% v/v.

[y] Counts of infection centers in the two center rows of each plot or a total of 70 ft row. An infection center was a point with symptoms and/or signs of a disease and included 6 in. on either side of that point.

[x] Yields are weight of peanuts with moisture content adjusted to 7%. Peanuts were dug 10 Oct and harvested 5 Nov. Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).

TEST ID: PTLFSPOT420

PURPOSE: To evaluate fungicide treatments for control of peanut leaf spot and Sclerotinia blight, and impact on yield at three locations, site 2

LOCATION: Tidewater Research Farm, Hare Rd., Suffolk, VA

CROP INFORMATION:

Field	34B
Crop history	2019 corn, 2018 cotton, 2017 peanut
Planting date	16 May
Variety	Sullivan
Seeding rate	ca. 4 seed/row ft (143 lb/A)
Plot length/width	35’ x 12’
Number of rows	4
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	4 Nov

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

	IF liquid	**Foliar spray**
Equipment	CO_2 sprayer	Tractor plot sprayer
Pressure (psi)		38 psi
Nozzle type	.075 microtube	8002 TwinJet
Volume (gal/A)	5 gal/A	19.88 gal/A
Surfactant		NIS 0.125% v/v

APPLICATION SCHEDULE:

A	In-furrow (at planting)
B	Pegging (49 DAP)
C	R3 (63 DAP)
D	R3 + 2 weeks (77 DAP)
E	R3 + 4 weeks (91 DAP)
F	R3 + 6 weeks (105 DAP)
G	R3 + 8 weeks (119 DAP)

TREATMENTS:

Trt #	**Product and formulation**	**Rate/A**	**Appl. timing**	**Appl. date**
1	Admire Pro 4.6 SC + Proline 480 SC	8.5 fl oz 5.7 fl oz	 A	 16 May
2	Admire Pro 4.6 SC + Proline 480 SC Elatus 45 WG + Miravis 1.67 SC Bravo Weather Stik	8.5 fl oz 5.7 fl oz 9.5 oz wt 3.4 fl oz 24 fl oz	 A CE G	 16 May 17 Jul, 13 Aug 14 Sep
3	Admire Pro 4.6 SC + Proline 480 SC Elatus 45 WG + Miravis 1.67 SC Bravo Weather Stik	8.5 fl oz 5.7 fl oz 9.5 oz wt 3.4 fl oz 24 fl oz	 A DF G	 16 May 31 Jul, 28 Aug 14 Sep

4	Admire Pro 4.6SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Miravis 1.67 SC	3.4 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
5	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Miravis 1.67 SC	3.4 fl oz	CE	17 Jul, 13 Aug
	Elatus 45 WG	9.5 oz wt	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
6	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Domark 230 ME	2.5 fl oz		
	+ Bravo Weather Stik	16 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
7	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Miravis 1.67 SC	3.4 fl oz	CE	17 Jul, 13 Aug
	Omega 500 F	24 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
8	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Elatus 45 WG	9.5 oz/wt	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
9	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Priaxor 4.17 SC	8 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	
10	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Provost Silver 3.52 SC	13 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
11	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Lucento 4.17 SC	5.5 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
12	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Revytek SC	12 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep

13	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Excalia SC	2.65 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
14	Admire Pro 4.6 SC	8.5 fl oz		
	+ Velum Prime 500 SC	6.5 fl oz	A	16 May
	Absolute 500 SC	3.5 fl oz	C	17 Jul
	Propulse 400 SC	13.6 fl oz	D	31 Jul
	+ Elatus 45 WG	7.3 wt oz		
	Bravo Weather Stik	24 fl oz	EG	13 Aug, 14 Sep
	Provost Silver 3.52 SC	13 fl oz	F	28 Aug
15	Admire Pro 4.6 SC	8.5 fl oz		
	+ Velum Prime 500 SC	15.84 fl oz	A	16 May
	Provost Silver 3.52 SC	13 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
16	Admire Pro 4.6 SC	8.5 fl oz		
	+ Velum Prime 500 SC	15.84 fl oz	A	16 May
	Propulse 400 SC	13.6 fl oz	B	1 Jul
	Provost Silver 3.52 SC	13 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
17	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	16 May
	Propulse 400 SC	13.6 fl oz	B	1 Jul
	Provost Silver 3.52 SC	13 fl oz	CE	17 Jul, 13 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	31 Jul, 28 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep

SOIL TYPE: Kenansville loamy fine sand

SOIL FERTILITY REPORT (Jan 2020):

pH	**P (lb/A)**	**K (lb/A)**	**Ca (lb/A)**	**Mg (lb/A)**	**Zn (ppm)**	**Mn (ppm)**	**Cu (ppm)**	**Fe (ppm)**	**B (ppm)**
6.4	72	86	574	68	0.6	3.3	0.2	16.0	0.1

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None except treatments

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
5/17/20	Herbicide	Strongarm	0.45 fl oz
5/17/20	Herbicide	Dual II MAGNUM	1.5 pt
5/17/20	Herbicide	Prowl H2O	1.0 pt
5/17/20	Fertility	Boron	1.0 qt
6/4/20	Insecticide	Orthene 75 S	12 oz
6/25/20	Herbicide	Basagran	1.5 pt
6/25/20	Herbicide	Fusilade DX	1 pt
7/7/20	Herbicide	Storm	1.5 pt
7/7/20	Herbicide	Basagran	1 pt
7/13/20	Fertility	Manganese	2 qt
7/13/20	Insecticide	Danitol 2.4 EC	8 fl oz
7/17/20	Fertility	Landplaster	1500 lb
7/24/20	Insecticide	Danitol 2.4 EC	8 fl oz
8/6/20	Herbicide	Tide 2 EC (Clethodim)	16 fl oz

Table 1. Effect of fungicide treatment on disease incidence in peanut (PTLFSPOT420, Suffolk, VA 2020).

Treatment, rate/A and application timing/date[z]	Leaf spot (1-10)[y]				% leaf spot[w]
	26 Aug	13 Sep	28 Sep	AUDPC[x]	8 Oct
1. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F)	1.8	4.0 a	6.3 a	128.6 a	97.5 a
2. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt + Miravis 1.67 SC 3.4 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz (9/14)	2.5	1.0 d	1.8 b	52.1 bc	57.5 b
3. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt + Miravis 1.67 SC 3.4 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.8	1.0 d	1.8 b	45.4 bc	1.0 e
4. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.0	1.3 cd	1.8 b	51.8 bc	40.0 c
5. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz (7/17, 8/13) Elatus 45 WG 9.5 oz/wt (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.8	1.0 d	1.0 b	39.8 c	5.3 e
6. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Domark 230 ME 2.5 fl oz + Bravo Weather Stik 16 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.8	1.3 cd	1.3 b	45.8 bc	12.5 de
7. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz (7/17, 8/13) Omega 500 F 24 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.0	1.0 d	1.3 b	43.9 c	10.0 de
8. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.8	2.0 bc	1.8 b	61.9 b	27.5 cd
9. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Priaxor 4.17 SC 8 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.8	1.5 b-d	1.3 b	49.9 bc	20.0 de
10. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Provost Silver 3.52 SC 13 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.5	1.5 b-d	1.0 b	45.8 bc	18.8 de
11. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Lucento 4.17 SC 5.5 fl oz (7/13, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.3	1.5 b-d	1.3 b	45.4 bc	13.8 de

12. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Revytek SC 12 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.8	1.0 d	1.0 b	39.8 c	12.5 de
13. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Excalia SC 2.65 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.5	2.3 b	1.5 b	61.9 b	40.0 c
14. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 15.84 fl oz (F) Absolute 500 SC 3.5 fl oz (7/17) Propulse 400 SC 13.6 fl oz + Elatus 45 WG 7.3 wt/oz (7/31) Bravo Weather Stik 24 fl oz (8/13, 9/14) Provost Silver 3.52 SC 13 fl oz (8/28)	1.5	1.5 b-d	1.3 b	47.6 bc	23.8 cd
15. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 6.5 fl oz (F) Provost Silver 3.52 SC 13 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.8	1.3 cd	1.0 b	43.9 c	12.5 de
16. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 15.84 fl oz (F) Propulse 400 SC 13.6 fl oz Provost Silver 3.52 SC 13 fl oz (7/13, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.8	1.8 b-d	1.0 b	52.1 bc	10.3 de
17. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Propulse 400 SC 13.6 fl oz Provost Silver 3.52 SC 13 fl oz 7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.8	1.3 cd	1.5 b	47.6 bc	8.8 de
P(F)	0.28	**<0.0001**	**<0.0001**	**<0.0001**	**<0.0001**
LSD	N.S.	0.77	0.83	16.96	16.70

[z] (F) In-furrow (16 May); (P) broadcast at pegging (1 Jul). First fungicide for leaf spot program was applied at R3 (17 Jul) and followed by applications on two-week timings as prescribed. All foliar treatments applied with Induce 0.125% v/v.

[y] Florida leaf spot scale: 1 = no disease, 10 = dead plants, Chiteka et al. (1988). Untreated control (Trt. 1) plots were observed for leaf spot on 7 Aug, little to no lesions observed.

[x] AUDPC = area under the disease progress curve.

[w] Percent of leaves in two treatment rows with symptoms of leaf spot.
Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment on soilborne disease and yield in peanut (PTLFSPOT420, Suffolk, VA 2020).

Treatment, rate/A and application timing/date[z]	Sclerotinia blight[y]				Yield (lb/A)[w]
	13 Sep	28 Sep	15 Oct	AUDPC[x]	
1. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F)	12.8 ab	38.8 ab	45.5 a	1102.4 a	1538 d-f
2. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt + Miravis 1.67 SC 3.4 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz (9/14)	1.0 g	11.0 gh	35.3 cd	483.1 fg	3459 ab
3. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt + Miravis 1.67 SC 3.4 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	4.3 d-g	15.8 fg	35.0 cd	581.4 ef	3675 a
4. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	4.8 d-g	22.3 ef	38.5 bc	718.9 de	2573 bc
5. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz (7/17, 8/13) Elatus 45 WG 9.5 oz/wt (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	2.3 e-g	6.5 gh	30.0 de	375.9 fg	4052 a
6. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Domark 230 ME 2.5 fl oz + Bravo Weather Stik 16 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	13.3 a	39.3 ab	45.0 a	1109.9 a	1247 ef
7. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz (7/17, 8/13) Omega 500 F 24 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	1.5 fg	5.3 h	28.0 e	333.3 g	3825 a
8. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	6.0 c-g	23.8 d-f	42.0 ab	782.0 c-e	2430 cd
9. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Priaxor 4.17 SC 8 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	5.0 d-g	26.5 c-e	43.3 ab	829.1 b-d	2055 c-e
10. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Provost Silver 3.52 SC 13 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	12.0 a-c	37.8 ab	44.8 a	1074.4 a	1539 d-f
11. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Lucento 4.17 SC 5.5 fl oz (7/13, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	9.8 a-d	33.8 a-c	44.5 ab	991.4 a-c	1378 ef

12. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Revytek SC 12 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	12.5 a-c	34.3 a-c	44.8 a	1022.1 ab	1354 ef
13. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Excalia SC 2.65 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	13.3 a	41.0 a	45.5 a	1142.1 a	954 f
14. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 15.84 fl oz (F) Absolute 500 SC 3.5 fl oz (7/17) Propulse 400 SC 13.6 fl oz + Elatus 45 WG 7.3 wt/oz (7/31) Bravo Weather Stik 24 fl oz (8/13, 9/14) Provost Silver 3.52 SC 13 fl oz (8/28)	7.5 a-g	25.5 c-e	44.3 ab	840.4 b-d	2088 c-e
15. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 6.5 fl oz (F) Provost Silver 3.52 SC 13 fl oz (7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	8.0 a-f	31.5 b-e	43.5 ab	933.8 a-c	1992 c-e
16. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 15.84 fl oz (F) Propulse 400 SC 13.6 fl oz Provost Silver 3.52 SC 13 fl oz (7/13, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	6.5 b-g	32.8 a-d	42.8 ab	936.1 a-c	1940 c-e
17. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Propulse 400 SC 13.6 fl oz Provost Silver 3.52 SC 13 fl oz 7/17, 8/13) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/31, 8/28) Bravo Weather Stik 24 fl oz (9/14)	8.8 a-e	36.0 ab	45.5 a	1028.4 ab	1191 ef
P(F)	**0.0008**	**<0.0001**	**<0.0001**	**<0.0001**	**<0.0001**
LSD	6.58	9.37	6.22	209.58	969.59

[z] (F) In-furrow (16 May); (P) broadcast at pegging (1 Jul). First fungicide for leaf spot program was applied at R3 (17 Jul) and followed by applications on two-week timings as prescribed. All foliar treatments applied with Induce 0.125% v/v.

[y] Counts of infection centers in the two center rows of each plot or a total of 70 ft row. An infection center was a point with symptoms and/or signs of a disease and included 6 in. on either side of that point.

[x] AUDPC = area under the disease progress curve.

[w] Yields are weight of peanuts with moisture content adjusted to 7%. Peanuts were dug 19 Oct and harvested 4 Nov. Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).

TEST ID: PTLFSPOT520

PURPOSE: To evaluate fungicide treatments for control of peanut leaf spot and Sclerotinia blight, and impact on yield at three locations, site 3

LOCATION: Tidewater AREC, 6321 Holland Rd., Suffolk, VA

CROP INFORMATION:

Field	46A
Crop history	2019 corn, 2018 cotton, 2017 peanut
Planting date	15 May
Variety	Sullivan
Seeding rate	ca. 4 seed/row ft (143 lb/A)
Plot length/width	35’ x 12’
Number of rows	4
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	5 Nov

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

	IF liquid	**Foliar spray**
Equipment	CO_2 sprayer	Tractor plot sprayer
Pressure (psi)		38 psi
Nozzle type	.075 microtube	8002 TwinJet
Volume (gal/A)	5 gal/A	19.88 gal/A
Surfactant		NIS 0.125% v/v

APPLICATION SCHEDULE:

A	In-furrow (at planting)
B	Pegging (49 DAP)
C	R3 (63 DAP)
D	R3 + 2 weeks (77 DAP)
E	R3 + 4 weeks (91 DAP)
F	R3 + 6 weeks (105 DAP)
G	R3 + 8 weeks (119 DAP)

TREATMENTS:

Trt #	**Product and formulation**	**Rate/A**	**Appl. timing**	**Appl. date**
1	Admire Pro 4.6 SC + Proline 480 SC	8.5 fl oz 5.7 fl oz	 A	 15 May
2	Admire Pro 4.6 SC + Proline 480 SC Elatus 45 WG + Miravis 1.67 SC Bravo Weather Stik	8.5 fl oz 5.7 fl oz 9.5 oz wt 3.4 fl oz 24 fl oz	 A CE G	 15 May 17 Jul, 12 Aug 14 Sep
3	Admire Pro 4.6 SC + Proline 480 SC Elatus 45 WG + Miravis 1.67 SC Bravo Weather Stik	8.5 fl oz 5.7 fl oz 9.5 oz wt 3.4 fl oz 24 fl oz	 A DF G	 15 May 30 Jul, 27 Aug 14 Sep

4	Admire Pro 4.6SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	15 May
	Miravis 1.67 SC	3.4 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	CE	17 Jul, 12 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
5	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	15 May
	Miravis 1.67 SC	3.4 fl oz	CE	17 Jul, 12 Aug
	Elatus 45 WG	9.5 oz wt	DF	30 Jul, 27 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
6	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	15 May
	Domark 230 ME	2.5 fl oz		
	+ Bravo Weather Stik	16 fl oz	CE	17 Jul, 12 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	30 Jul, 27 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
7	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	15 May
	Miravis 1.67 SC	3.4 fl oz	CE	17 Jul, 12 Aug
	Omega 500 F	24 fl oz	DF	30 Jul, 27 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
8	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	15 May
	Elatus 45 WG	9.5 oz/wt	CE	17 Jul, 12 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	30 Jul, 27 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
9	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	15 May
	Priaxor 4.17 SC	8 fl oz	CE	17 Jul, 12 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	30 Jul, 27 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
10	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	15 May
	Provost Silver 3.52 SC	13 fl oz	CE	17 Jul, 12 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	30 Jul, 27 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
11	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	15 May
	Lucento 4.17 SC	5.5 fl oz	CE	17 Jul, 12 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	30 Jul, 27 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
12	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	15 May
	Revytek SC	12 fl oz	CE	17 Jul, 12 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	30 Jul, 27 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep

13	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	15 May
	Excalia SC	2.65 fl oz	CE	17 Jul, 12 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	30 Jul, 27 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
14	Admire Pro 4.6 SC	8.5 fl oz		
	+ Velum Prime 500 SC	6.5 fl oz	A	15 May
	Absolute 500 SC	3.5 fl oz	C	17 Jul
	Propulse 400 SC	13.6 fl oz	D	30 Jul
	+ Elatus 45 WG	7.3 wt oz		
	Bravo Weather Stik	24 fl oz	EG	12 Aug, 14 Sep
	Provost Silver 3.52 SC	13 fl oz	F	27 Aug
15	Admire Pro 4.6 SC	8.5 fl oz		
	+ Velum Prime 500 SC	15.84 fl oz	A	15 May
	Provost Silver 3.52 SC	13 fl oz	CE	17 Jul, 12 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	30 Jul, 27 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
16	Admire Pro 4.6 SC	8.5 fl oz		
	+ Velum Prime 500 SC	15.84 fl oz	A	15 May
	Propulse 400 SC	13.6 fl oz	B	1 Jul
	Provost Silver 3.52 SC	13 fl oz	CE	17 Jul, 12 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	30 Jul, 27 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep
17	Admire Pro 4.6 SC	8.5 fl oz		
	+ Proline 480 SC	5.7 fl oz	A	15 May
	Propulse 400 SC	13.6 fl oz	B	1 Jul
	Provost Silver 3.52 SC	13 fl oz	CE	17 Jul, 12 Aug
	Bravo Weather Stik	24 fl oz		
	+ Tebuconazole 3.6 F	7.2 fl oz	DF	30 Jul, 27 Aug
	Bravo Weather Stik	24 fl oz	G	14 Sep

SOIL TYPE: Nansemond fine sandy loam

SOIL FERTILITY REPORT (Jan 2020):

pH	**P (lb/A)**	**K (lb/A)**	**Ca (lb/A)**	**Mg (lb/A)**	**Zn (ppm)**	**Mn (ppm)**	**Cu (ppm)**	**Fe (ppm)**	**B (ppm)**
6.1	95	164	858	77	0.7	3.1	0.4	40.5	0.1

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None except treatments

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
5/17/20	Herbicide	Strongarm	0.45 fl oz
5/17/20	Herbicide	Dual II MAGNUM	1.5 pt
5/17/20	Herbicide	Prowl H2O	1.0 pt
5/17/20	Fertility	Boron	1.0 qt
6/4/20	Insecticide	Orthene 75 S	12 oz
6/25/20	Herbicide	Basagran	1.5 pt
6/25/20	Herbicide	Fusilade DX	1 pt
7/7/20	Herbicide	Storm	1.5 pt
7/7/20	Herbicide	Basagran	1 pt
7/13/20	Fertility	Manganese	2 qt
7/13/20	Insecticide	Danitol 2.4 EC	8 fl oz
7/16/20	Fertility	Landplaster	1500 lb
7/24/20	Insecticide	Danitol 2.4 EC	8 fl oz
8/6/20	Herbicide	Tide 2 EC (Clethodim)	16 fl oz

Table 1. Effect of fungicide treatment on disease incidence in peanut (PTLFSPOT520, Suffolk, VA 2020).

Treatment, rate/A and application timing/date[z]	Leaf spot (1-10)[y]				% leaf spot[w]
	25 Aug	14 Sep	30 Sep	AUDPC[x]	9 Oct
1. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F)	1.3	2.5 a	5.5 a	101.5 a	75.0 a
2. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt + Miravis 1.67 SC 3.4 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.0 c	1.3 bc	38.0 c	5.3 b
3. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt + Miravis 1.67 SC 3.4 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.0 c	1.0 c	36.0 c	1.0 b
4. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.3 bc	1.5 b	44.5 bc	3.0 b
5. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz (7/17, 8/12) Elatus 45 WG 9.5 oz/wt (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.0 c	1.0 c	36.0 c	1.0 b
6. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Domark 230 ME 2.5 fl oz + Bravo Weather Stik 16 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.0 c	1.0 c	36.0 c	1.0 b
7. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz (7/17, 8/12) Omega 500 F 24 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.0 c	1.3 bc	38.0 c	3.3 b
8. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.0 c	1.0 c	36.0 c	1.0 b
9. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Priaxor 4.17 SC 8 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.3 bc	1.3 bc	42.5 bc	2.0 b
10. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Provost Silver 3.52 SC 13 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.3 bc	1.0 c	40.5 bc	2.0 b
11. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Lucento 4.17 SC 5.5 fl oz (7/13, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.8 b	1.0 c	49.5 b	2.0 b

12. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Revytek SC 12 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.0 c	1.0 c	36.0 c	1.0 b
13. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Excalia SC 2.65 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.3 bc	1.0 c	40.5 bc	2.0 b
14. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 15.84 fl oz (F) Absolute 500 SC 3.5 fl oz (7/17) Propulse 400 SC 13.6 fl oz + Elatus 45 WG 7.3 wt/oz (7/30) Bravo Weather Stik 24 fl oz (8/12, 9/14) Provost Silver 3.52 SC 13 fl oz (8/27)	1.0	1.0 c	1.5 b	40.0 bc	3.3 b
15. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 6.5 fl oz (F) Provost Silver 3.52 SC 13 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.0 c	1.0 c	36.0 c	1.0 b
16. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 15.84 fl oz (F) Propulse 400 SC 13.6 fl oz Provost Silver 3.52 SC 13 fl oz (7/13, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.0 c	1.0 c	36.0 c	2.0 b
17. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Propulse 400 SC 13.6 fl oz Provost Silver 3.52 SC 13 fl oz 7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	1.0 c	1.0 c	36.0 c	1.0 b
P(F)	0.47	**<0.0001**	**<0.0001**	**<0.0001**	**<0.0001**
LSD	N.S.	0.53	0.45	11.00	7.21

[z] (F) In-furrow (15 May); (P) broadcast at pegging (1 Jul). First fungicide for leaf spot program was applied at R3 (17 Jul) and followed by applications on two-week timings as prescribed. All foliar treatments applied with Induce 0.125% v/v.

[y] Florida leaf spot scale: 1 = no disease, 10 = dead plants, Chiteka et al. (1988). Untreated control (Trt. 1) plots were observed for leaf spot on 7 Aug; little to no lesions observed.

[x] AUDPC = area under the disease progress curve.

[w] Percent of leaves in two treatment rows with symptoms of leaf spot.
Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment on soilborne disease and yield in peanut (PTLFSPOT520, Suffolk, VA 2020).

Treatment, rate/A and application timing/date[z]	Sclerotinia blight[y]					Yield (lb/A)[w]
	28 Aug	14 Sep	30 Sep	20 Oct	AUDPC[x]	
1. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F)	2.0	5.8 a-d	15.8 a-c	25.0 a-d	645.4 a-d	3008
2. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt + Miravis 1.67 SC 3.4 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz (9/14)	0.0	0.3 g	3.8 de	12.5 ef	196.6 ef	4376
3. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt + Miravis 1.67 SC 3.4 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	3.0 c-g	4.8 c-e	13.0 d-f	273.5 d-f	4012
4. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	0.0	1.0 e-g	5.8 c-e	15.5 c-f	275.0 d-f	3861
5. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz (7/17, 8/12) Elatus 45 WG 9.5 oz/wt (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	0.0	0.5 g	9.5 b-e	11.0 f	289.3 d-f	3785
6. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Domark 230 ME 2.5 fl oz + Bravo Weather Stik 16 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	4.8	8.0 ab	19.8 ab	29.8 ab	825.4 ab	2692
7. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Miravis 1.67 SC 3.4 fl oz (7/17, 8/12) Omega 500 F 24 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	0.0	0.8 fg	0.8 e	11.3 f	138.4 f	3849
8. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Elatus 45 WG 9.5 oz/wt (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	3.5 b-g	12.8 a-d	24.3 a-e	538.3 a-e	3416
9. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Priaxor 4.17 SC 8 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	0.3	2.5 c-g	8.5 c-e	19.3 b-f	388.9 c-f	3435
10. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Provost Silver 3.52 SC 13 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	2.8	5.3 a-f	11.8 a-e	19.5 b-f	516.5 b-f	3321
11. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Lucento 4.17 SC 5.5 fl oz (7/13, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	0.8	4.3 b-g	10.3 b-e	21.0 a-f	471.0 b-f	3370

12. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Revytek SC 12 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	3.3	5.5 a-e	15.3 a-c	28.8 ab	680.4 a-c	2662
13. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Excalia SC 2.65 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	2.8	9.5 a	22.0 a	33.0 a	906.1 a	2434
14. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 15.84 fl oz (F) Absolute 500 SC 3.5 fl oz (7/17) Propulse 400 SC 13.6 fl oz + Elatus 45 WG 7.3 wt/oz (7/30) Bravo Weather Stik 24 fl oz (8/12, 9/14) Provost Silver 3.52 SC 13 fl oz (8/27)	0.5	2.3 d-g	9.0 b-e	18.0 b-f	383.4 c-f	3569
15. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 6.5 fl oz (F) Provost Silver 3.52 SC 13 fl oz (7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	1.0	3.5 b-g	11.5 a-e	20.3 b-f	475.8 b-f	3309
16. Admire Pro 4.6 SC 8.5 fl oz + Velum Prime 500 SC 15.84 fl oz (F) Propulse 400 SC 13.6 fl oz Provost Silver 3.52 SC 13 fl oz (7/13, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	0.8	3.0 c-g	10.8 b-e	20.0 b-f	449.4 b-f	3027
17. Admire Pro 4.6 SC 8.5 fl oz + Proline 480 SC 5.7 fl oz (F) Propulse 400 SC 13.6 fl oz Provost Silver 3.52 SC 13 fl oz 7/17, 8/12) Bravo Weather Stik 24 fl oz + Tebuconazole 3.6 F 7.2 fl oz (7/30, 8/27) Bravo Weather Stik 24 fl oz (9/14)	2.5	7.0 a-c	12.8 a-d	26.8 a-c	633.8 a-d	2908
P(F)	0.10	**0.005**	**0.03**	**0.01**	**0.007**	0.10
LSD	N.S.	4.70	11.03	12.39	384.03	N.S.

[z] (F) In-furrow (15 May); (P) broadcast at pegging (1 Jul). First fungicide for leaf spot program was applied at R3 (17 Jul) and followed by applications on two-week timings as prescribed. All foliar treatments applied with Induce 0.125% v/v.

[y] Counts of infection centers in the two center rows of each plot or a total of 70 ft row. An infection center was a point with symptoms and/or signs of a disease and included 6 in. on either side of that point.

[x] AUDPC = area under the disease progress curve.

[w] Yields are weight of peanuts with moisture content adjusted to 7%. Peanuts were dug 20 Oct and harvested 5 Nov. Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).

TEST ID: COTSEEDFUN120

PURPOSE: To evaluate fungicide seed treatments and seeding rate for control of damping-off diseases and impact on plant health and yield in cotton

LOCATION: Tidewater Research Farm, Hare Rd., Suffolk, VA

CROP INFORMATION:

Field	16B
Crop history	2019 peanut, 2018 corn, 2017 cotton
Planting date	15 May
Variety	DP 1646 B2XF
Seeding rate	3.5 - 4 seed/row ft
Plot length/width	30’
Number of rows	2
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	3 Dec

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENTS:

Trt.	# Seed/ft	Seed treatment	In-furrow trt and rate/A
1	3	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt	- -
2	4	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt	- -
3	3	Aeris Seed Applied System 0.75 mg ai/seed	- -
4	4	Aeris Seed Applied System 0.75 mg ai/seed	- -
5	3	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt + Aeris Seed Applied System 0.75 mg ai/seed	- -
6	4	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt + Aeris Seed Applied System 0.75 mg ai/seed	- -
7	3	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 1.5 oz + EverGol Xtend (Prem #1) 0.64 oz /cwt	- -
8	4	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 1.5 oz + EverGol Xtend (Prem #1) 0.64 oz /cwt	- -
9	3	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 1.5 oz + EverGol Xtend (Prem #1) 0.64 oz /cwt + Aeris Seed Applied System 0.75 mg ai/seed	- -
10	4	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 1.5 oz + EverGol Xtend (Prem #1) 0.64 oz /cwt + Aeris Seed Applied System 0.75 mg ai/seed	- -
11	3	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt + Vibrance CST (Prem #2) 4.08 mg ai/seed	- -
12	4	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt + Vibrance CST (Prem #2) 4.08 mg ai/seed	- -
13	3	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt	Azoxystrobin (Quadris) 6 fl oz
14	4	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt	Azoxystrobin (Quadris) 6 fl oz

SOIL TYPE: Kenansville loamy fine sand

SOIL FERTILITY REPORT (Jan 2020):

pH	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)
6.3	110	240	1266	91	0.6	5.8	0.4	26.1	0.2

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	Standard

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
3/19/20	Herbicide	2,4-D	1 pt
3/19/20	Herbicide	Panther	2 fl oz
5/4/20	Fertility	10-10-28	285 lbs
5/17/20	Herbicide	Prowl H2O	1 pt
6/5/20	Herbicide	Roundup WeatherMAX	22 fl oz
6/12/20	Herbicide	Roundup WeatherMAX	20 fl oz
6/12/20	Insecticide	Orthene 75 S	12 oz
7/8/20	Fertility	24-0-0-3	80 units
7/23/20	Insecticide	Transform WG	2.45 oz
8/10/20	Plant growth regulator	Pentia	16 fl oz
8/10/20	Herbicide	Roundup WeatherMAX	24 fl oz
8/10/20	Insecticide	Besiege	12.8 fl oz
8/10/20	Insecticide	Bifenthrin	6 fl oz
10/21/20	Defoliant/boll opener	Finish 6 Pro	1 qt
10/21/20	Defoliant/boll opener	Folex 6 EC	4 fl oz
10/21/20	Defoliant/boll opener	Dropp SC	3 fl oz

Table 1. Effect of seeding rate and fungicide seed treatment on emergence and thrips injury in cotton (COTSEEDFUN120, Suffolk, VA 2020).

Seeding rate /row ft	Treatment and rate[z]	Plants/ft[y]		Thrips injury (0-5)[x]	
		29 May	11 Jun	4 Jun	10 Jun
1. 3 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt (S)	2.0 cd	2.0 de	4.4 a	4.3 a
2. 4 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt (S)	2.2 c	2.2 d	3.0 b	3.6 b-d
3. 3 seed	Aeris Seed Applied System 0.75 mg ai/seed (S)	2.1 cd	2.1 d	3.3 b	3.4 d-f
4. 4 seed	Aeris Seed Applied System 0.75 mg ai/seed (S)	3.2 ab	3.2 ab	3.9 a	4.0 a-c
5. 3 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt + Aeris Seed Applied System 0.75 mg ai/seed (S)	2.0 cd	2.1 de	3.1 b	3.1 d-f
6. 4 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt + Aeris Seed Applied System 0.75 mg ai/seed (S)	2.9 b	2.8 c	2.8 b	2.9 f
7. 3 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 1.5 oz + EverGol Xtend (Prem #1) 0.64 oz /cwt (S)	1.9 cd	1.9 de	3.0 b	3.1 d-f
8. 4 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 1.5 oz + EverGol Xtend (Prem #1) 0.64 oz /cwt (S)	3.4 a	3.3 a	3.9 a	4.1 ab
9. 3 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 1.5 oz + EverGol Xtend (Prem #1) 0.64 oz /cwt + Aeris Seed Applied System 0.75 mg ai/seed (S)	1.7 d	1.8 e	3.1 b	3.5 c-e
10. 4 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 1.5 oz + EverGol Xtend (Prem #1) 0.64 oz /cwt + Aeris Seed Applied System 0.75 mg ai/seed (S)	3.0 ab	3.0 bc	2.8 b	2.9 f
11. 3 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt + Vibrance CST (Prem #2) 4.08 mg ai/seed (S) Quadris 6 fl oz/A (F)	2.3 c	2.0 de	4.1 a	4.1 ab
12. 4 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt + Vibrance CST (Prem #2) 4.08 mg ai/seed (S) Quadris 6 fl oz/A (F)	3.0 ab	3.1 a-c	3.0 b	3.0 ef
13. 3 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt (S) + Quadris 6 fl oz/A (F)	2.0 cd	1.9 de	3.3 b	3.1 d-f
14. 4 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt (S) + Quadris 6 fl oz/A (F)	2.9 b	3.0 a-c	2.9 b	3.0 ef
P(F)		**<0.0001**	**<0.0001**	**<0.0001**	**<0.0001**
LSD		0.41	0.35	0.51	0.51

[z] (S) = seed treatment; (F) = in furrow at planting (trts. 13 & 14). Seed was planted 15 May.
[y] Determined from counts in two, 30-ft rows per plot.
[x] Thrips injury rating scale: 0 = no damage, 5 = dead plants.
Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).

Table 2. Effect of seeding rate and fungicide seed treatment on plant health and yield in cotton (COTSEEDFUN120, Suffolk, VA 2020).

Seeding rate/row ft	Treatment and rate[z]	Vigor, 1-10[y] 22 Jun	Yield[x]	
			lb/A	bales/A
1. 3 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt (S)	6.6 d	3588	3.6
2. 4 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt (S)	9.1 ab	3591	3.5
3. 3 seed	Aeris Seed Applied System 0.75 mg ai/seed (S)	9.4 a	3524	3.5
4. 4 seed	Aeris Seed Applied System 0.75 mg ai/seed (S)	8.4 bc	3476	3.6
5. 3 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt + Aeris Seed Applied System 0.75 mg ai/seed (S)	9.5 a	3494	3.5
6. 4 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt + Aeris Seed Applied System 0.75 mg ai/seed (S)	9.6 a	3594	3.7
7. 3 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 1.5 oz + EverGol Xtend (Prem #1) 0.64 oz /cwt (S)	9.1 ab	3536	3.6
8. 4 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 1.5 oz + EverGol Xtend (Prem #1) 0.64 oz /cwt (S)	7.9 c	3303	3.3
9. 3 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 1.5 oz + EverGol Xtend (Prem #1) 0.64 oz /cwt + Aeris Seed Applied System 0.75 mg ai/seed (S)	9.3 ab	3258	3.3
10. 4 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 1.5 oz + EverGol Xtend (Prem #1) 0.64 oz /cwt + Aeris Seed Applied System 0.75 mg ai/seed (S)	9.6 a	3672	3.6
11. 3 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt + Vibrance CST (Prem #2) 4.08 mg ai/seed (S) Quadris 6 fl oz/A (F)	7.9 c	3612	3.5
12. 4 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt + Vibrance CST (Prem #2) 4.08 mg ai/seed (S) Quadris 6 fl oz/A (F)	9.8 a	3706	3.7
13. 3 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt (S) + Quadris 6 fl oz/A (F)	9.6 a	3346	3.4
14. 4 seed	Spera 1.8 oz + Vortex 0.08 oz + Allegiance FL 0.75 oz + EverGol Prime 0.32 oz/cwt (S) + Quadris 6 fl oz/A (F)	9.9 a	3506	3.5
P(F)		**<0.0001**	0.96	0.94
LSD		0.98	N.S.	N.S.

[z] (S) = seed treatment; (F) = in furrow at planting trts. 13 & 14). Seed was planted 15 May.

[y] Vigor index rating scale: 10 = 100% vigor, 1 = no vigor.

[x] Weight (lb/A) includes lint + seed, bales/A are weight of lint only. Lint weight (480 lb/bale) was determined by ginning samples of seed cotton from each treatment. Plots were harvested on 3 Dec.
Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).

TEST ID: COTSEEDNEMA120

PURPOSE: To evaluate in-furrow and seed treatment nematicides for control of plant-parasitic nematodes in cotton and impact on yield

LOCATION: Tidewater Research Farm, Hare Rd., Suffolk, VA

CROP INFORMATION:

Field	16B
Trial GPA coordinates	36.664085, -76.732527
Crop history	2019 peanut, 2018 corn, 2017 cotton
Planting date	15 May
Variety	DP 1646 B2XF
Seeding rate	3.5 - 4 seed/row ft
Plot length/width	30’
Number of rows	2
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	3 Dec

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

	IF liquid	**IF granular**
Equipment	---	Nobel box
Pressure (psi)		---
Nozzle type	.075 microtube	---
Volume (gal/A)	5 gal/A	lb/A (trt rate)

TREATMENTS:

Trt #	**Seed treatment and rate**	**In-furrow treatment and rate/A**
1	Base Fungicide, non-nematicide control	- -
2	CoPEO Prime 0.2 mg ai/seed	- -
3	BioST Nematicide 100 7.2 oz/cwt	- -
4	Base Fungicide, non-nematicide control	Velum Prime 500 SC 6.5 fl oz
5	Base Fungicide, non-nematicide control	Propulse 480 SC 13.6 fl oz
6	CoPEO Prime 0.2 mg ai/seed	Velum Prime 500 SC 6 fl oz
7	CoPEO Prime 0.2 mg ai/seed	Propulse 480 SC 13.6 fl oz

SOIL TYPE: Kenansville loamy fine sand

SOIL FERTILITY REPORT (Jan 2020):

pH	**P (lb/A)**	**K (lb/A)**	**Ca (lb/A)**	**Mg (lb/A)**	**Zn (ppm)**	**Mn (ppm)**	**Cu (ppm)**	**Fe (ppm)**	**B (ppm)**
6.3	110	240	1266	91	0.6	5.8	0.4	26.1	0.2

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None except treatments

MAINTENANCE CHEMICAL PROGRAMS:

Date	Type and target	Product and formulation	Rate/A
3/19/20	Herbicide	2,4-D	1 pt
3/19/20	Herbicide	Panther	2 fl oz
5/4/20	Fertility	10-10-28	285 lbs
5/17/20	Herbicide	Prowl H2O	1 pt
6/4/20	Insecticide	Orthene 75 S	12 oz
6/5/20	Herbicide	Roundup WeatherMAX	22 fl oz
6/12/20	Herbicide	Roundup WeatherMAX	20 fl oz
6/12/20	Insecticide	Orthene 75 S	12 oz
7/8/20	Fertility	24-0-0-3	80 units
7/23/20	Insecticide	Transform WG	2.45 oz
8/10/20	Plant growth regulator	Pentia	16 fl oz
8/10/20	Herbicide	Roundup WeatherMAX	24 fl oz
8/10/20	Insecticide	Besiege	12.8 fl oz
8/10/20	Insecticide	Bifenthrin	6 fl oz
10/21/20	Defoliant/boll opener	Finish 6 Pro	1 qt
10/21/20	Defoliant/boll opener	Folex 6 EC	4 fl oz
10/21/20	Defoliant/boll opener	Dropp SC	3 fl oz

Table 1. Effect of fungicide treatment on emergence and plant health in cotton (COTSEEDNEMA120, Suffolk, VA 2020).

Seed treatment[z]	In-furrow rate/A[z]	Plants/ft.[y] 11 Jun	Vigor (1-6)[x] 12 Jun
1. Base fungicide, non-nematicide control	- -	3.2 a	5.5
2. CoPEO Prime 0.2 mg ai/seed	- -	2.2 b	5.5
3. BioST Nematicide 100 7.2 oz/cwt	- -	2.4 b	4.5
4. Base fungicide, non-nematicide control	Velum Prime 500 SC 6.5 fl oz	2.9 a	5.4
5. Base fungicide, non-nematicide control	Propulse 480 SC 13.6 fl oz	3.2 a	5.5
6. CoPEO Prime 0.2 mg ai/seed	Velum Prime 500 SC 6.5 fl oz	1.6 c	5.4
7. CoPEO Prime 0.2 mg ai/seed	Propulse 480 SC 13.6 fl oz	1.6 c	5.0
P(F)		**<0.0001**	0.23
LSD		0.49	N.S.

[z] (F) In-furrow at planting 9 May; seed treatments were applied by personnel with Bayer CropScience.
[y] Determined from counts in two, 30-ft rows per plot.
[x] Vigor index rating scale: 6 = 100% vigor, 1 = no vigor.
Means followed by the same letter(s) in a column are not significantly different according to Fisher's Protected LSD (P=0.05).

Table 2. Mid-season nematode populations in composite samples by treatment (COTSEEDNEMA120, Suffolk, VA 2020).

Seed treatment[z]	In-furrow rate/A[z]	Nematodes /500 cc soil[y] 8 Jul	
		Root knot	Stubby root
1. Base fungicide, non-nematicide control	- -	1060	0
2. CoPEO Prime 0.2 mg ai/seed	- -	340	60
3. BioST Nematicide 100 7.2 oz/cwt	- -	520	20
4. Base fungicide, non-nematicide control	Velum Prime 500 SC 6.5 fl oz	200	40
5. Base fungicide, non-nematicide control	Propulse 480 SC 13.6 fl oz	380	60
6. CoPEO Prime 0.2 mg ai/seed	Velum Prime 500 SC 6.5 fl oz	280	20
7. CoPEO Prime 0.2 mg ai/seed	Propulse 480 SC 13.6 fl oz	340	40

[z] (F) In-furrow at planting 9 May; seed treatments were applied by personnel with Bayer CropScience.
[y] A pre-plant soil composite was sampled from four untreated areas of trial area and tested for nematode populations on 9 May. Number nematodes/500 cc soil were as follows: 1840 root knot. For mid-season sampling on 8 Jul, a composite sample was taken from 4 reps of each treatment and counted. Roots were observed for galling at harvest, no galling was observed.

Table 3. Effect of fungicide treatment on yield in cotton (COTSEEDNEMA120, Suffolk, VA 2020).

Seed treatment[z]	In-furrow rate/A[z]	Yield[x]	
		lb/A	bales/A
1. Base fungicide, non-nematicide control	- -	3458	3.4
2. CoPEO Prime 0.2 mg ai/seed	- -	3385	3.3
3. BioST Nematicide 100 7.2 oz/cwt	- -	3446	3.5
4. Base fungicide, non-nematicide control	Velum Prime 500 SC 6.5 fl oz	2962	2.9
5. Base fungicide, non-nematicide control	Propulse 480 SC 13.6 fl oz	3098	3.1
6. CoPEO Prime 0.2 mg ai/seed	Velum Prime 500 SC 6.5 fl oz	3724	3.7
7. CoPEO Prime 0.2 mg ai/seed	Propulse 480 SC 13.6 fl oz	3376	3.4
P(F)		0.34	0.34
LSD		N.S.	N.S.

[z] (F) In-furrow at planting 9 May; Seed treatments were applied by personnel with Bayer CropScience.
[x] Weight (lb/A) includes lint + seed, bales/A are weight of lint only. Lint weight (480 lb/bale) was determined by ginning samples of seed cotton from each treatment. Plots were harvested on 3 Dec.

TEST ID: SOYFOLFUN120

PURPOSE: To compare fungicide treatments for foliar disease control of soybean and impact in yield

LOCATION: Tidewater AREC, 6321 Holland Rd., Suffolk, VA

CROP INFORMATION:

Field	56
Crop history	2019 cotton, 2018 soybean, 2017 cotton
Planting date	27 May
Variety	AG52X9
Seeding rate	10 seed/row ft
Plot length/width	30’ x 6’
Number of rows	4
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	9 Nov

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

Equipment	Lee Spider Sprayer
Pressure (psi)	38 psi
Nozzle type	Twinjet 8002VS
Volume (gal/A)	19.88
Surfactant	NIS 0.25% v/v (except trt 11)

TREATMENTS:

Trt #	Fungicide and formulation	Rate/A	App. timing	App. date
1	Untreated control			
2	Revytek SC	8.0 fl oz	R3	28 Jul
3	Priaxor 4.17 SC + Tilt 3.6 EC	4.0 fl oz 4.0 fl oz	R3	28 Jul
4	VeltyMA SC	7.0 fl oz	R3	28 Jul
5	Miravis Top 1.67 SC	13.7 fl oz	R3	28 Jul
6	Delaro 325 SC	8.0 fl oz	R3	28 Jul
7	Quadris Top SBX 3.76 SC	7.5 fl oz	R3	28 Jul
8	Domark 230 ME	4.0 fl oz	R3	28 Jul
9	Topguard EQ 4.29 SC	5.0 fl oz	R3	28 Jul
10	Lucento 4.17 SC	5.0 fl oz	R3	28 Jul
11	BS-CB	10.0 fl oz	R3	28 Jul
12	Untreated control 2			

SOIL TYPE: Rains fine sandy loam

SOIL FERTILITY REPORT (Jan 2020):

pH	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)
6.5	91	197	1380	152	0.7	5.0	0.5	34.2	0.2

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
6/11/20	Herbicide	Roundup WeatherMAX	22 fl oz
8/6/20	Herbicide	Roundup WeatherMAX	22 fl oz

Table 1. Effect of fungicide treatment on foliar disease in soybean (SOYFOLFUN120, Suffolk, VA 2020).

Treatment and rate/A[z]	% foliar disease[y] 24 Sep		% defoliation[x] 6 Oct
	Cercospora blight	Anthracnose	
1. Untreated control	1.0	5.5	47.5 a
2. Revytek SC 8 fl oz	1.0	4.8	16.3 e
3. Priaxor 4.17 SC 4 fl oz + Tilt 3.6 EC 4 fl oz	1.0	7.3	31.3 b-d
4. Veltyma SC 7 fl oz	1.0	7.3	23.8 de
5. Miravis Top 1.67 SC 13.7 fl oz	1.0	8.0	16.3 e
6. Delaro 325 SC 8 fl oz	1.0	7.3	28.8 b-e
7. Quadris Top SBX 3.76 SC 7.5 fl oz	1.0	5.5	26.3 c-e
8. Domark 230 ME 4 fl oz	1.0	6.0	38.8 a-c
9. Topguard EQ 4.29 SC 5 fl oz	1.0	8.0	37.5 a-c
10. Lucento 4.17 SC 5 fl oz	1.0	5.5	35.0 a-d
11. BS-CB 10 g	1.0	4.8	40.0 ab
12. Untreated control 2	1.0	7.3	41.3 ab
P(F)	- -	0.10	**0.0004**
LSD	- -	N.S.	13.05

[z] Foliar fungicides were applied at R3 on 28 Jul. All treatments except #11 were applied with Induce 0.25% v/v.
[y] Percent leaf area with symptoms of foliar disease.
[x] Percent canopy defoliated as a result of disease or senescence.
Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).
Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment on yield and grade in soybean (SOYFOLFUN120, Suffolk, VA 2020).

Treatment, rate/A and timing[z]	Yield (bu/A)[y]	Weight/ 100 seed (oz)	% purple seed stain[x]	% phomopsis seed decay[x]	% anthrac-nose[x]
1. Untreated control	62.3	.6068	0.5	1.8 bc	4.0
2. Revytek SC 8 fl oz	66.2	.5982	0.8	2.3 b	6.5
3. Priaxor 4.17 SC 4 fl oz + Tilt 3.6 EC 4 fl oz	63.9	.6041	0.5	1.3 bc	5.8
4. Veltyma SC 7 fl oz	60.6	.6134	0.3	0.5 bc	5.3
5. Miravis Top 1.67 SC 13.7 fl oz	64.6	.6140	0.5	0.8 bc	4.8
6. Delaro 325 SC 8 fl oz	63.4	.6143	0.3	1.5 bc	4.5
7. Quadris Top SBX 3.76 SC 7.5 fl oz	64.1	.5992	0.0	4.5 a	6.5
8. Domark 230 ME 4 fl oz	58.6	.6159	0.8	1.0 bc	5.0
9. Topguard EQ 4.29 SC 5 fl oz	64.5	.5894	0.3	0.0 c	3.3
10. Lucento 4.17 SC 5 fl oz	64.3	.6052	0.3	1.5 bc	6.5
11. BS-CB 10 g	57.1	.5949	0.3	0.5 bc	2.5
12. Untreated control 2	63.2	.6286	0.3	0.8 bc	3.5
P(F)	0.30	0.16	0.92	**0.02**	0.43
LSD	N.S.	N.S.	N.S.	2.16	N.S.

[z] Foliar fungicides were applied at R3 on 28 Jul. All treatments except #11 were applied with Induce 0.25% v/v.
[y] Yields are weight of soybean with 13.5% moisture. One bushel equals 60 lb. Soybean was harvested on 9 Nov.
[x] Data are percent of 100 seed with symptoms of indicated disease.
Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).

TEST ID: SOYFOLFUN220

PURPOSE: To compare fungicide treatments for foliar disease control in soybean and impact on yield

LOCATION: Tidewater AREC, 6321 Holland Rd., Suffolk, VA

CROP INFORMATION:

Field	56
Crop history	2019 cotton, 2018 soybean, 2017 cotton
Planting date	27 May
Variety	AG48X9
Seeding rate	10 seed/row ft
Plot length/width	30’ x 6’
Number of rows	4
Row spacing	36”
Alleys (length between blocks)	8’
Harvest date	9 Nov

EXPERIMENTAL DESIGN: Randomized complete block with four replicates

TREATMENT APPLICATION:

Equipment	Lee Spider Sprayer
Pressure (psi)	38 psi
Nozzle type	Twinjet 8002VS
Volume (gal/A)	19.88
Surfactant	NIS 0.25% v/v (except trt. 11)

TREATMENTS:

Trt #	Fungicide and formulation	Rate/A	App. timing	App. date
1	Untreated			
2	Revytek SC	8.0 fl oz	R3	28 Jul
3	Priaxor 4.17 SC + Tilt 3.6 EC	4.0 fl oz 4.0 fl oz	R3	28 Jul
4	VeltyMA SC	7.0 fl oz	R3	28 Jul
5	Miravis Top 1.67 SC	13.7 fl oz	R3	28 Jul
6	Delaro 325 SC	8.0 fl oz	R3	28 Jul
7	Quadris Top SBX 3.76 SC	7.5 fl oz	R3	28 Jul
8	Domark 230 ME	4.0 fl oz	R3	28 Jul
9	Topguard EQ 4.29 SC	5.0 fl oz	R3	28 Jul
10	Lucento 4.17 SC	5.0 fl oz	R3	28 Jul
11	BS-CB	10.0 fl oz	R3	28 Jul
12	Untreated control 2			

SOIL TYPE: Rains fine sandy loam

SOIL FERTILITY REPORT (Jan 2020):

pH	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)
6.5	91	197	1380	152	0.7	5.0	0.5	34.2	0.2

MAINTENANCE CHEMICAL PROGRAMS:

Fertilizer	Standard
Herbicides	Standard
Insecticides	Standard
Fungicides	None except treatments
Nematicides	None

MAINTENANCE CHEMICAL APPLICATIONS:

Date	Type and target	Product and formulation	Rate/A
6/11/20	Herbicide	Roundup WeatherMAX	22 fl oz
8/6/20	Herbicide	Roundup WeatherMAX	22 fl oz

Table 1. Effect of fungicide treatment on foliar disease in soybean (SOYFOLFUN220, Suffolk, VA 2020).

Treatment and rate/A[z]	% foliar disease[y] 24 Sep		% defoliation[x] 6 Oct
	Frog eye leaf spot	Anthracnose	
1. Untreated control	1.0	55.0 a	90.0 ab
2. Revytek SC 8 fl oz	1.0	25.0 f	66.3 e
3. Priaxor 4.17 SC 4 fl oz + Tilt 3.6 EC 4 fl oz	1.0	37.5 c-e	80.0 cd
4. Veltyma SC 7 fl oz	1.0	37.5 c-e	73.8 c-e
5. Miravis Top 1.67 SC 13.7 fl oz	1.0	32.5 d-f	81.3 b-d
6. Delaro 325 SC 8 fl oz	1.0	42.5 b-d	77.5 c-e
7. Quadris Top SBX 3.76 SC 7.5 fl oz	1.0	42.5 b-d	71.3 de
8. Domark 230 ME 4 fl oz	1.0	55.0 a	82.5 a-c
9. Topguard EQ 4.29 SC 5 fl oz	1.0	45.0 a-c	82.5 a-c
10. Lucento 4.17 SC 5 fl oz	1.0	30.0 ef	77.5 c-e
11. BS-CB 10 g	1.0	55.0 a	90.0 ab
12. Untreated control 2	1.0	50.0 ab	91.3 a
P(F)	- -	**<0.0001**	**0.0003**
LSD	- -	10.92	10.33

[z] Foliar fungicides were applied at R3 on 28 Jul. All treatments except #11 were applied with Induce 0.25% v/v.
[y] Percent leaf area with symptoms of foliar disease.
[x] Percent canopy defoliated as a result of disease or senescence.
Means in a column followed by the same letter(s) are not significantly different according to Fisher's Protected LSD (*P*=0.05).
Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 2. Effect of fungicide treatment on yield and grade in soybean (SOYFOLFUN220, Suffolk, VA 2020).

Treatment, rate/A and timing[z]	Yield (bu/A)[y]	Weight/ 100 seed (oz)	% purple seed stain[x]	% phomopsis seed decay[x]	% anthrac-nose[x]
1. Untreated control	62.5	.6616	2.3	2.3	3.5
2. Revytek SC 8 fl oz	63.3	.6694	0.5	1.8	1.8
3. Priaxor 4.17 SC 4 fl oz + Tilt 3.6 EC 4 fl oz	60.0	.6633	0.5	3.3	3.0
4. Veltyma SC 7 fl oz	66.8	.6760	1.5	2.5	3.0
5. Miravis Top 1.67 SC 13.7 fl oz	63.3	.6816	1.3	2.3	2.8
6. Delaro 325 SC 8 fl oz	65.9	.6817	1.5	0.5	2.5
7. Quadris Top SBX 3.76 SC 7.5 fl oz	66.1	.6791	1.3	1.3	3.0
8. Domark 230 ME 4 fl oz	63.6	.6788	2.3	0.8	5.0
9. Topguard EQ 4.29 SC 5 fl oz	57.3	.6564	3.0	1.5	4.5
10. Lucento 4.17 SC 5 fl oz	55.5	.6679	1.5	1.3	1.0
11. BS-CB 10 g	61.9	.6448	1.8	2.0	3.3
12. Untreated control 2	64.6	.6507	2.3	2.8	4.8
P(F)	0.27	0.52	0.60	0.71	0.41
LSD	N.S.	N.S.	N.S.	N.S.	N.S.

[z] Foliar fungicides were applied at R3 28 Jul. All treatments except #11 were applied with Induce 0.25% v/v.
[y] Yields are weight of soybean with 13.5% moisture. One bushel equals 60 lb. Soybean was harvested on 9 Nov.
[x] Data are percent of 100 seed with symptoms of indicated disease.

CLIMATOLOGICAL SUMMARY OF THE 2020 GROWING SEASON AT THE TIDEWATER AGRICULTURAL RESEARCH & EXTENSION CENTER, SUFFOLK, VA.

Table 1. Daily maximum and minimum temperatures (F°) November 2019 - April 2020. [z]

Day of month	NOV		DEC		JAN		FEB		MAR		APR	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	74	40	64	43	56	31	47	42	53	21	55	41
2	63	36	51	41	61	32	58	35	70	36	64	41
3	61	36	52	36	58	45	71	44	70	46	72	42
4	67	33	54	32	63	47	70	58	63	43	60	40
5	71	50	54	30	51	31	69	45	53	44	71	37
6	61	38	56	26	59	30	74	47	55	41	77	50
7	72	36	49	26	57	28	64	37	54	29	80	50
8	58	33	58	23	55	27	49	27	61	26	83	61
9	55	27	65	48	48	25	55	31	71	40	80	53
10	64	29	75	53	69	32	64	33	72	58	58	38
11	69	39	53	31	74	52	72	60	70	49	64	29
12	56	30	45	29	72	56	58	48	73	49	76	44
13	41	23	55	30	69	56	65	48	76	53	81	59
14	48	21	59	46	67	55	54	33	65	40	65	51
15	49	41	58	38	62	49	43	23	53	46	56	37
16	48	43	69	37	64	41	52	28	56	44	65	33
17	48	42	66	41	44	26	57	34	67	45	71	36
18	46	43	47	30	48	31	62	34	63	48	66	42
19	48	43	40	24	57	31	57	31	82	51	70	36
20	58	34	49	22	38	24	44	32	86	68	62	48
21	56	31	46	29	39	21	37	19	76	47	75	48
22	65	46	51	26	45	20	48	15	57	46	67	35
23	56	36	55	38	49	26	62	27	51	46	65	46
24	61	38	58	33	64	35	54	32	61	46	79	55
25	61	30	61	34	62	39	64	48	56	47	65	53
26	68	33	64	32	53	32	63	52	62	41	74	54
27	61	47	64	39	56	29	57	32	74	51	62	44
28	59	39	70	45	52	29	53	26	85	55	71	40
29	54	31	65	44	49	25	48	28	88	62	80	53
30	48	39	77	55	50	29			77	59	72	59
31					54	29			61	45		
Average	**58**	**36**	**58**	**35**	**56**	**34**	**58**	**36**	**67**	**46**	**70**	**45**
Normal	**64**	**39**	**56**	**33**	**51**	**29**	**55**	**31**	**61**	**37**	**72**	**47**
Deviation from normal	**-6**	**-3**	**+2**	**+2**	**+5**	**+5**	**+3**	**+5**	**+6**	**+9**	**-3**	**-2**

[z] Data collected with Watchdog Weather station Series 2450 (Spectrum Technologies, Aurora, IL) located at the Tidewater Research Farm, Hare Rd., Suffolk, VA. Normal monthly temperature means determined using 15-yr data (2005-2019).

Table 2. Daily maximum and minimum temperatures (F°) May 2020 – October 2020. [z]

Day of month	MAY		JUN		JUL		AUG		SEP		OCT	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	64	53	75	54	91	70	92	75	86	71	82	52
2	72	48	84	52	90	69	93	74	92	74	72	50
3	86	54	92	69	96	70	88	72	94	77	70	46
4	80	57	93	73	91	72	89	71	93	73	69	47
5	62	48	88	71	91	68	92	73	82	60	74	47
6	68	51	91	74	93	69	91	72	83	57	77	45
7	67	46	85	65	92	71	88	73	84	55	82	54
8	71	46	89	62	86	72	89	72	86	65	80	53
9	60	37	91	65	87	75	89	72	80	74	75	50
10	69	33	88	71	92	74	92	71	85	75	67	61
11	69	49	83	73	92	73	91	71	87	75	72	66
12	65	35	81	66	94	69	92	72	80	64	81	68
13	72	42	79	61	92	71	89	73	84	64	75	56
14	79	49	78	56	94	68	87	75	83	62	76	47
15	84	61	65	61	92	69	86	73	73	57	80	46
16	88	63	66	61	88	67	77	70	78	53	70	53
17	80	63	79	66	95	71	85	69	72	64	65	41
18	69	63	83	64	98	73	92	68	74	62	74	40
19	63	54	84	64	99	74	88	67	67	52	78	48
20	60	54	82	67	101	79	86	69	71	52	83	62
21	70	57	88	67	100	76	87	68	66	49	85	61
22	83	68	92	70	100	74	88	73	71	47	81	55
23	84	67	90	70	98	74	89	74	79	48	78	56
24	70	61	89	67	91	73	84	73	69	55	84	56
25	75	60	83	67	96	72	91	73	68	61	68	57
26	72	63	88	65	99	71	90	69	78	66	63	57
27	82	66	91	67	100	75	93	69	77	64	65	59
28	83	73	90	71	102	75	94	74	84	62	76	58
29	85	74	92	71	90	74	86	77	79	63	82	64
30	87	70	93	69	95	73	91	68	72	54	76	45
31	75	56			97	77	86	64			61	40
Average	**74**	**56**	**85**	**66**	**94**	**72**	**89**	**71**	**79**	**62**	**75**	**53**
Normal	**80**	**57**	**88**	**65**	**91**	**68**	**89**	**67**	**84**	**62**	**74**	**50**
Deviation from normal	**-6**	**-1**	**-3**	**+1**	**+4**	**+4**	**0**	**+4**	**-5**	**0**	**+1**	**+3**

[z] Data collected with Watchdog Weather station Series 2450 (Spectrum Technologies, Aurora, IL) located at the Tidewater Research Farm, Hare Rd., Suffolk, VA. Normal monthly temperature means determined using 15-yr data (2005-2019).

Table 3. Daily precipitation (inches) November 2019– April 2020. [z]

Day of month	NOV	DEC	JAN	FEB	MAR	APR
1	0.36	0.35	0	0.17	0	0
2	0	0.12	0	0.01	0	0.01
3	0	0	0.52	0	0.02	0
4	0	0	0.57	0	0	0
5	0.11	0	0.19	0.04	0	0
6	0	0	0	0.46	0.26	0
7	0.01	0	0.17	0.13	0	0
8	0.08	0.02	0	0.49	0	0
9	0	0.62	0	0	0	0
10	0	0	0	0	0	0
11	0	0.35	0	0.16	0	0
12	0.53	0	0.01	0	0	0
13	0	0.75	0.25	0.2	0.04	0.34
14	0	0.25	1.1	0	0	0
15	0.66	0	0	0	0	0.27
16	0	0	0	0	0	0
17	0	0.24	0	0	0	0
18	0.08	0	0.1	0.01	0	0.64
19	0	0	0.02	0.23	0.08	0.03
20	0	0	0	0.04	0	0.75
21	0	0	0	0.42	0.05	0
22	0	0	0	0	0	0
23	0.39	0	0	0.01	0.24	0
24	0.19	0	0	0.01	0	0.8
25	0	0	0.67	0.04	0	0
26	0	0	0	0.03	0.01	0.09
27	0.15	0	0	0.07	0.02	0.02
28	0	0	0	0	0.01	0
29	0	0.02	0	0	0.01	0
30	0	0.04	0		0	1.63
31			0.34		0	
Total	**2.56**	**2.76**	**3.94**	**2.52**	**0.74**	**4.58**
Normal	**3.36**	**3.47**	**3.25**	**3.29**	**3.33**	**3.19**
Deviation from normal	**-0.80**	**-0.71**	**+0.69**	**-0.77**	**-2.59**	**1.39**

[z] Data collected with Watchdog Weather station Series 2450 (Spectrum Technologies, Aurora, IL) located at the Tidewater Research Farm, Hare Rd., Suffolk, VA. Normal monthly rainfall total determined using 15-yr data (2005-2019).

Table 4. Daily precipitation (inches) May 2020 – October 2020.[z]

Day of month	MAY	JUN	JUL	AUG	SEP	OCT
1	0.1	0	0.05	0.18	0.97	0
2	0	0	0	0	0	0
3	0	0	0	1.15	0	0
4	0	0	0	1.0	0	0
5	0	0.06	0	0.2	0	0
6	0.47	0.01	0	1.53	0	0
7	0	1.1	0	0.01	0	0
8	0.02	0	1.07	1.23	0	0
9	0.02	0	0.02	0	2.28	0
10	0	0	0	0	0.97	0.22
11	0	0.01	0	0	0.13	0.27
12	0	0.49	0	0	0	0.2
13	0	0	0	0.97	0	0
14	0	0	0.24	0.18	0.01	0
15	0	0.4	0	0.94	0	0
16	0	0.96	0	0.06	0	0.1
17	0	0.16	0	0	1.29	0
18	0.56	0	0	0	2.44	0
19	0.25	0	0	0.03	0	0
20	0.02	0.01	0	0.01	0	0
21	0.21	0	0	0.33	0	0
22	0.43	0.62	0	0.57	0	0
23	0.03	0	0.09	0.01	0	0
24	0	0	0	0	0	0
25	0	0.01	0	0	0.19	0.25
26	0	0	0	0	0.22	0
27	0.2	0	0	0	0	0
28	0.52	0	0.19	0	0	0
29	0.26	0	0	0.05	1.52	0.03
30	0.41	0	0	0	0.18	0.25
31	0		0.43	0.05		0
Total	**3.50**	**3.83**	**2.09**	**8.50**	**10.20**	**1.32**
Normal	**4.07**	**4.30**	**4.71**	**5.36**	**5.67**	**4.46**
Deviation from normal	**+0.57**	**-0.47**	**-2.62**	**+3.14**	**+4.53**	**-3.14**

[z] Data collected with Watchdog Weather station Series 2450 (Spectrum Technologies, Aurora, IL) located at the Tidewater Research Farm, Hare Rd., Suffolk, VA. Normal monthly rainfall total determined using 15-yr data (2005-2019).