



2021 PEANUT DISEASE MANAGEMENT REPORT

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Peanut disease management trials were conducted at the Oklahoma State University Caddo Research Station near Fort Cobb in 2021. Spanish peanut 'Ole' were planted on May 7, 2021, in 36-inch rows. Peanuts were fertilized based on OSU soil testing recommendations and were irrigated on an as-needed basis. The entire trial area was treated with the following herbicide program: Prowl® (1 qt/A) PPI, Valor® (2 oz/A) PRE, Dual Magnum® (1.33 pt/A) POST1, Cobra® (12.5 fl oz/A) + Basagran® (1 qt/A) + Butyrac® 200 (1 pt/A) + Warrant® (1 qt/A) + Shadow® (1 pt/A) + Dyne-Amic® (6 oz/A) POST2.

Trials were maintained weed free throughout the growing season with additional hand weeding. Cool, wet conditions led to slow development of peanut growth during the late spring and early summer. A mid-season application of nitrogen (120 lb/A 46-0-0) was applied due to lack of adequate nodule development and the plants exhibiting signs of nitrogen deficiency. Prevathon® (20 oz/A) was applied in August due to a fall armyworm outbreak. Peanuts were dug (Oct. 8), field dried and harvested (Oct. 19). Peanuts received 3.85 inches of rain between digging and thrashing.

Two trials were established to evaluate fungicides for control of leaf spot in peanuts. In each trial, up to four applications were made, starting in early July. This coincided with the following application timings: POST1 (P1) - July 6, POST2 (P2) - July 22, POST3 (P3) - Aug. 6, POST4 (P4) - Aug. 17.

Trial PFCS21-04 was established to evaluate peanut disease response to Lucento. Treatments evaluated Lucento® (5.5 fl oz/A) applied in a fungicide program with Bravo Weather Stik® (24 fl oz/A) and/or Headline® (12 fl oz/A). Lucento® was also applied in a program with Topsin M WSB® (0.5 lb/A) + Penncozeb® (1.5 lb/A) and Abound Flowable® (18.5 fl oz/A). These treatments were compared to a standard Bravo Weather Stik® (P1, P3) followed by Folicur® (7.2 fl oz; P2, P4). All treatments reduced leaf spot (Florida Leaf Spot Scale) except for the standard program of Bravo® f/by Folicur® at 117 days after planting (DAP) and 153 DAP (Table 1). Peanut defoliation was reduced with all treatments compared to the untreated. All the Lucento programs had less defoliation than the Bravo® f/by Folicur program. Yields increased with all fungicide programs compared to the untreated. Both the Lucento®, Bravo®, Lucento® and Lucento®, Bravo® and Lucento®, and Headline® yielded more than the Bravo® f/by Folicur® program.

Trial PFCS21-05 was established to evaluate peanut disease response to Miravis® and Excalia®. Miravis® (3.4 fl oz/A) and Excalia® (3.0 fl oz/A) were applied in a fungicide regimen with Bravo Weather Stik® (24 fl oz/A). This was compared to a Bravo Weather Stik® alone

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program. All treatments reduced leaf spot (Florida Leaf Spot Scale) compared to the untreated except for two applications of Bravo® followed by two applications of Excalia® at 117 and 139 DAP (Table 2). Bravo® (P1, P3) followed by Miravis® (P2, P4) had less leaf spot and defoliation than any other fungicide treatment. Peanut yields increased with all fungicide programs. These trials reinforce the importance of fungicide programs to protect peanut yields from disease.

Appreciation is extended to the Oklahoma Peanut Commission for support of this research and to Bobby Weidenmaier, Brennan Leighton and Harley Houston of the Oklahoma State University Caddo Research Station for assistance in conducting these trials.

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Table 1. Peanut leaf spot and yield with Lucento® based fungicide programs at Fort Cobb, 2021^a.

Treatment	Application timing	102	117	139	153	153	Yield lb/A
		DAP	DAP	DAP	DAP	DAP	
		Florida Leaf Spot Scale					% Defol
Untreated		2.5	2.8	5.5	8.0	75	2870
Lucento®, Bravo®, Lucento®, Headline®	P1, P2, P3, P4	1.5	1.5	3.0	4.0	10	4110
Bravo®, Lucento®, Headline®, Lucento®	P1, P2, P3, P4	1.0	1.3	3.0	4.3	15	3990
Lucento®, Bravo®, Lucento® Topsin/ Penncozeb, Lucento®	P2, P3, P4	1.0	1.8	2.8	5.3	14	4080
Abound®, Lucento®	P1, P2, P3, P4	1.0	1.3	2.5	4.0	10	3940
Bravo®, Folicur®, Bravo®, Folicur®	P1, P2, P3, P4	1.3	2.3	4.3	7.3	55	3540
LSD P=.10		0.5	0.7	0.7	1.7	7	470
CV (%)		26	31	17	25	19	10
Treatment Prob (F)		0.0002	0.0090	0.0001	0.0019	0.0001	0.0024

^aTreatment rates in fl oz/A: Lucento® (5.5), Bravo® Weather Stick (24.0), Headline® (12.0), Abound® Flowable (18.5), Folicur® (7.2), Topsin® M WSB (0.5 lb/A), Penncozeb® (1.5 lb/A); LSD = least significant difference, CV = coefficient of variation, DAP = days after planting, Defol = defoliation; Application Timings: POST1 (P1) = 60 DAP, POST2 (P2) = 76 DAP, POST3 (P3) = 91 DAP, POST4 (P4) = 102 DAP



Table 2. Peanut leaf spot and yield with Miravis® and Excalia® based fungicide programs at Fort Cobb, 2021^a.

Treatment	Application timing	102	117	139	153	153	Yield lb/A
		DAP	DAP	DAP	DAP	DAP	
		Florida Leaf Spot Scale					% Defol
Untreated		2.5	3.0	5.0	8.5	75	2590
Bravo®, Bravo®, Bravo®, Bravo®	P1, P2, P3, P4	1.0	2.0	3.8	5.3	26	3610
Bravo®, Miravis®, Bravo®, Miravis®	P1, P2, P3, P4	1.0	1.5	3.0	3.0	8	3640
Bravo®, Bravo®, Excalia®, Excalia®	P1, P2, P3, P4	1.5	2.5	4.8	6.3	58	3620
Bravo®, Bravo®, Excalia®, Bravo®	P1, P2, P3, P4	1.3	2.0	4.0	5.3	30	3260
Bravo®, Bravo®, Excalia®/Microthiol®, Bravo®	P1, P2, P3, P4	1.0	1.8	3.5	5.0	23	3430
LSD P=.10		0.5	0.7	0.5	1.2	9	520
CV (%)		30	25	10	17	20	13
Treatment Prob (F)		0.0008	0.0150	0.0001	0.0001	0.0001	0.0219

^aTreatment rates in fl oz/A: Bravo® Weather Stick (24.0), Miravis® (3.4), Excalia® (3.0); LSD = least significant difference, CV = coefficient of variation, DAP = days after planting, Defol = defoliation; Application Timings: POST1 (P1) = 60 DAP, POST2 (P2) = 76 DAP, POST3 (P3) = 91 DAP, POST4 (P4) = 102 DAP