

NATIONAL PEANUT BOARD
Progress Report
March 2005
Plant Pathology

1. Subject Area:

Plant Pathology

2. Title:

Peanut Defoliation as Related to Salt Scorch and Temperature Extremes

3. Personnel and Agency:

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4. Introduction:

Defoliation of West Texas Peanut produced with high salt water is a problem in most years. Plants appear normal until about mid August. At that time many fields display marginal leaf death while others display varying degrees of yellow canopy. The first moisture event following these symptoms results in significant defoliation due to various fungal organisms which colonize these necrotic or weakened leaves. Both excessive heat and/or excessive early fall cool temperatures appear to enhance the problem. This premature defoliation shuts down photosynthesis resulting in less pod maturity and more pod loss prior to harvest.

5. Summary:

As the accompanying data sheets will show, numerous fungicides and fungicide combinations were tested in 2004. The summer of 2004 was one that in two locations did not lend itself to significant foliage problems. Most treatments displayed some positive yield responses.

6. Materials and Methods:

Plots were established in Collingsworth, Dawson and Erath Counties. All plots were replicated three times and each plot was 2 rows X 100 feet. All chemicals were hand sprayed with a CO₂ backpack sprayer. Spray timing varied with plant age and location.

7. Results and Discussion:

See accompanying data for specific results on specific farms. The 2004 treatments displayed yield increases in all except the Dawson County location. The Erath County location displayed the largest return. This is probably due to the fact that fall conditions were wetter here and thus more disease developed. As in 2003 the 2004 returns to leafspot treatments above the "caprock" were practically non existent on these runner type peanuts. These two years data leads me to question whether a grower should spray runner peanuts for leafspot above the "cap". Spanish and Valencia types will be more prone to leafspot. The Collingsworth location although practically void of leafspot in 2004 had significant leafspot in 2003. In 2004 this location displayed significant color differences among treatments with the experimental treatment USF 2010 showing up considerable darker green. There apparently are effects of this chemical other than disease (at least leafspot) control. This color enhancing effect is worth your attention if and when this product is labeled.

**Quail Leafspot
Collingsworth County**

Treatment	Chemical	Rate/acre	Days After Planting
1	Echo 720	1.5 pts	45, 60, 75, 90, 105, 120, 135
2	Echo 825	22 oz	45, 60, 75, 90, 105, 120, 135
3	USF 2010	3.5 oz	45, 60, 75, 90, 105, 120, 135
4	Stratego	7 oz	45, 60, 75, 90, 105, 120, 135
5	USF 2010 Induce	3.5 oz .1	45, 60, 75, 90, 105, 120, 135 45, 60, 75, 90, 105, 120, 135
6	Untreated Check		
7	Headline Bravo	9 oz 1.5 pts	45, 75, 105, 135 60, 90, 120
8	Endura	9 oz	45, 60, 75, 90, 105, 120, 135
9	Echo 720 Folicur Induce	1.5 pts 7.2 oz .06	45, 60, 135 75, 90, 105, 120 75, 90, 105, 120
10	Headline Bravo	9oz 1.5 pts	75, 120 105

45 Day Spray = June 21, 2004

Harvest Date = October 22, 2004

Type = Runner

Soil = Sandy Loam

**Quail Leafspot
Collingsworth County**

Treatment	Color rating	Yield #/acre	Grade	% Damaged	% Immature	Value/\$ acre	Avg
1	6	5175	78%	1%	1%	983	992
	5	5116	79%	1%	0%	980	
	5	5293	79%	1%	0%	1014	
2	6	4999	78%	2%	0%	946	968
	5	5175	78%	2%	0%	979	
	4	5234	77%	2%	0%	978	
3	3	5058	77%	2%	0%	936	1025
	2	5587	78%	2%	0%	1048	
	2	5763	78%	1%	0%	1090	
4	2	5763	79%	1%	0%	1104	1027
	4	4881	78%	1%	0%	923	
	2	5705	75%	2%	0%	1055	
5	1	5705	78%	2%	0%	1070	1096
	1	5763	78%	2%	0%	1081	
	1	5940	79%	1%	0%	1138	
6	7	4705	76%	2%	0%	859	827
	5	4176	77%	2%	0%	773	
	6	4646	76%	2%	0%	849	
7	4	5116	75%	2%	0%	922	970
	1	5116	76%	2%	0%	934	
	2	5646	77%	1%	0%	1054	
8	5	5234	79%	1%	0%	1003	1032
	5	5411	78%	2%	0%	1015	
	4	5705	78%	1%	0%	1079	
9	4	5352	75%	2%	0%	965	1013
	5	5234	80%	1%	0%	1016	
	6	5646	78%	2%	0%	1058	
10	3	4999	78%	1%	0%	946	943
	4	5293	77%	2%	0%	980	
	3	4881	77%	2%	0%	903	

**Color rating: 1 – darkest green foliage
10 - yellow**

Color differences were easily detectable and were not due to leafspot.

Leafspot in rateable levels was not present in any plot.

All values are based on a loan value of \$356.06/ton with quality parameters.

**Lamesa Leafspot
Dawson County**

Treatment	Chemical	Rate/acre	Days After Planting
1	Echo 720	1.5 pts	60, 75, 90, 105, 120, 135
2	Echo 825	22 oz	60, 75, 90, 105, 120, 135
3	USF 2010	3.5 oz	60, 75, 90, 105, 120, 135
4	Stratego	7 oz	60, 75, 90, 105, 120, 135
5	USF 2010	3.5 oz	60, 75, 90, 105, 120, 135
	Induce	.1	60, 75, 90, 105, 120, 135
6	Untreated Check		
7	Headline	9 oz	75, 105, 135
	Bravo	1.5 pts	60, 90, 120
8	Endura	9 oz	60, 75, 90, 105, 120, 135
9	Echo 720	1.5 pts	60, 135
	Folicur	7.2 oz	75, 90, 105, 120
	Induce	.06	75, 90, 105, 120
10	Headline	9 oz	75, 120
	Bravo	1.5 pts	105

Spray began on the 60 day = June 22, 2004

75 day = July 5, 2004

90 day = July 20, 2004

105 day = August 2, 2004

120 day = August 17, 2004

135 day = August 28, 2004

Harvest Date = October 22, 2004

Leafspot of any type was not detectable in this location

**Lamesa Leafspot
Dawson County**

Treatment	Rep	Yield #/acre	Grade	% Damaged	% Immature	Value/ \$ acre	Avg
1	1	5148	74%	0%	1%	928	1011
	2	5676	75%	0%	0%	1033	
	3	5742	77%	1%	0%	1072	
2	1	5280	75%	1%	0%	960	998
	2	5544	77%	0%	0%	1035	
	3	5412	76%	1%	0%	998	
3	1	5478	75%	1%	0%	997	1001
	2	5610	75%	1%	0%	1021	
	3	5346	76%	0%	0%	985	
4	1	5610	74%	1%	0%	1007	1004
	2	5874	75%	1%	0%	1069	
	3	5214	74%	1%	0%	936	
5	1	5148	76%	0%	0%	949	957
	2	5148	76%	1%	0%	961	
	3	5214	77%	0%	0%	961	
6	1	5346	76%	1%	0%	998	1018
	2	5742	77%	1%	0%	1072	
	3	5412	75%	1%	0%	984	
7	1	5610	75%	1%	0%	1021	997
	2	5214	76%	1%	0%	961	
	3	5478	76%	0%	0%	1010	
8	1	5478	77%	0%	0%	1023	998
	2	5544	76%	1%	0%	1022	
	3	5214	75%	0%	0%	948	
9	1	5280	75%	1%	0%	960	973
	2	5214	75%	0%	0%	961	
	3	5346	76%	0%	0%	998	
10	1	5214	77%	0%	0%	961	952
	2	5346	75%	1%	0%	972	
	3	5082	75%	0%	0%	924	

All values are based on a loan value \$356.06/ton with quality parameters.

**Stephenville Leafspot
Erath County**

Treatment	Chemical	Rate/acre	Days After Planting
1	Echo 720	1.5 pts	45, 60, 75, 90, 105, 120, 135
2	Echo 825	22 oz	45, 60, 75, 90, 105, 120, 135
3	USF 2010	3.5 oz	45, 60, 75, 90, 105, 120, 135
4	Stratego	7 oz	45, 60, 75, 90, 105, 120, 135
5	USF 2010	3.5 oz	45, 60, 75, 90, 105, 120, 135
	Induce	.1	45, 60, 75, 90, 105, 120, 135
6	Untreated check		
7	Headline	9 oz	45, 75, 105, 135
	Bravo	1.5 pts	60, 90, 120
8	Endura	9 oz	45, 60, 75, 90, 105, 120, 135
9	Echo 720	1.5 pts	45, 60, 135
	Folicur	7.2 oz	75, 90, 105, 120
	Induce	.06	75, 90, 105, 120

Double rate of herbicide (Treflan) prior to planting.

45 day spray moved to 50 days due to size of peanuts = June, 24, 2004

60 day = July 9, 2004

75 day = July 23, 2004

90 day = August 5, 2004

105 day = August 23, 2004

120 day = September 2, 2004

135 day = September 14, 2004

At digging all untreated checks were dead due to leafspot. On a scale of 1-10 they were given a 10. All other treatments and reps received either a 2 or 3 rating.

Harvest Date = October 15, 2004

**Stephenville Leafspot
Erath County**

Treatment	Rep	Yield #/acre	Grade	% Damaged	% Immature	Value/ \$ acre	Avg
1	1	1162	71%	1%	4%	203	238
	2	1162	70%	1%	4%	200	
	3	1742	73%	0%	2%	311	
2	1	1307	74%	1%	3%	237	254
	2	1742	70%	0%	4%	262	
	3	1452	74%	0%	2%	263	
3	1	2033	68%	2%	5%	339	329
	2	1597	75%	1%	2%	293	
	3	2033	71%	1%	4%	356	
4	1	1888	71%	2%	3%	326	307
	2	2323	73%	0%	3%	416	
	3	1016	70%	1%	3%	175	
5	1	2033	72%	1%	2%	358	298
	2	1307	72%	1%	2%	230	
	3	1742	72%	0%	3%	307	
6	1	1016	70%	1%	3%	175	171
	2	1307	70%	1%	5%	226	
	3	871	70%	0%	6%	152	
	4	726	72%	1%	4%	129	
7	1	1162	70%	1%	4%	201	273
	2	1597	73%	0%	2%	285	
	3	1888	72%	1%	3%	334	
8	1	1742	70%	1%	3%	299	311
	2	2178	70%	0%	5%	377	
	3	1452	72%	0%	2%	256	
9	1	1888	70%	2%	3%	325	265
	2	1307	70%	0%	3%	225	
	3	1452	68%	0%	5%	245	

All values are based on a loan value of \$356.06/ton with quality parameters.