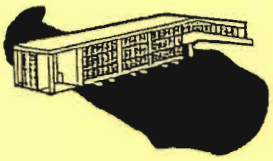
CLEMSON
UNIVERSITY

Clemson University Tobacco Tour

Clemson
University



Pee Dee Research
And
Education Center

JULY 10, 2014

2014 CLEMSON UNIVERSITY TOBACCO TOUR

JULY 10

(1)	8:15 AM	Registration	PDREC (Meet at Tobacco Facility in Back)
	8:30 AM	Welcome	Dr. Matthew Smith PDREC Director
	8:40 AM	Solar Curing	Russell Henderson, Dr. Bruce Fortnum
	8:50 AM	Agronomy	Dr. J. Michael Moore
	9:30 AM	Curing Study and Irrigation	Mr. Russell Henderson- Graduate Student
	10:10 AM	Entomology	Dr. Francis Reay-Jones
	10:40 AM	Diseases	Dr. Paul D. Peterson, Dr. Bruce Fortnum
(2)	12:00 PM	Lunch	Thunderbird Country Buffet and Restaurant
(3)	2:30 PM	Black Shank Fungicide Trials	Lee Newman Farm David Dewitt—Sumter County Agent
	3:30 PM	End of Tour	

DIRECTIONS TO TEST LOCATIONS

(1) Pee Dee Research and Education Center: From I-95 South, take exit 169 and turn right on TV Road (west). Go to end of TV Road and turn left. PDREC is about 1 mile on right. Tour starts at Tobacco Facility at rear of PDREC.

(2) Thunderbird Country Buffet and Restaurant: After leaving PDREC, return to I-95 South. Take exit 164 to right. Cross over US-52. The Thunderbird is straight ahead.

(3) Lee Newman Farm: Leave the Thunderbird and proceed South on I-95. Take Exit 135 to Sumter (US378). Turn right onto Hwy 378 and travel for approximately 12 miles. Keep left at the fork onto Hwy 763 for about 1 min. Turn left at SC 260 S/Mims Rd for about 5 minutes. The field will be on the left.

2014 Tobacco Tour Sponsors

Carolina Soil Co.

Chemtura

Cross Creek Seed Co.

Drexel

Farm Bureau

Gold Leaf Seed

UST Tobacco

Valent

Altria

PMI

South Carolina Tobacco Board

Syngenta

We deeply appreciate the continued support of our sponsors for the Tobacco Tour and the funding we receive from the tobacco industry for our research. We are 100 % supported by you and could not do our work without this support!

AGRONOMY

2014 NORTH CAROLINA FLUE-CURED TOBACCO OFFICIAL VARIETY TEST										
Commercial Varieties										
Trt. No	Variety or Line	Generation or Year of Release	Pedigree	BS	GW	FW	RK	Bn. Sp.	Virus	Sponsor
1	GF 318	2008	Hybrid	R	R		R			Raynor
2	Speight 220	2002	(K-346 X SP 117)(SP 116 X K 346)	R	R		R			CC
3	PVH 2275	2010	Hybrid		R		R1		PVY/TEV	Rickard
4	PVH 2110	2005	Hybrid		R		M.inco			Rickard
5	CC 33	2008	Hybrid	R	R		M.j/R			CC
6	Speight 225	2003	(SP 168 X K 346)(SPA-95 X (SPA-95 X SP 168)	R	R		R			CC
7	Speight 168	1996	Coker 371G X Spt. G 118	H	H		R			CC
8	NC 939	2012	Hybrid	R	R		TCN/R			NC
9	NC 299	2001	Hybrid	R	R		TCN/R			CC
10	CC 35	2007	Hybrid	R	R		M.j/R			CC
11	PVH 1118	2004	Hybrid	R	R		TCN/R			Rickard
12	PVH 2254	2011	Hybrid	R	R				TMV	Rickard
13	NC 471	2003	Hybrid	R	R				TMV	Raynor
14	CU 159	2013	Hybrid							SC
15	CU 144	2012	Hybrid							SC
16	GL 395	2010	Hybrid	R	R		R			GL
17	CU 186	2013	Hybrid							SC
18	K 326	1981	McNair 225 (McNair 30 x NC 95)	L	L		R			GL,Ric,CC
19	CC 67	2008	Hybrid	R	R		TCN/R		TMV	CC
20	CU 124	2012	Hybrid							SC
21	NC 938	2012	Hybrid	R	R		R		TMV	NC
22	CC 37	2006	Hybrid	R	R		TCN/R	M.j/R	TMV	CC
23	CC 143	2012	Hybrid	R	R		R			CC
24	CC 27	2003	Hybrid	R	R		TCN/R		TMV	CC
25	Speight 227	2003	(SP 151 X K 346)(SP 202 X K 346)	R	R		R			CC
26	NC 925	2010	N/A	R			R			GL,Ric,CC
27	GL 338	2009	Hybrid	R	R					GL
28	CC 700	2005	Hybrid	R	R		TCN/R			CC
29	GL 368	2009	Hybrid	R	R					GL
30	CC 13	2005	Hybrid	R	R		M.j/R			CC
31	NC 72	1996	Hybrid	H	L		R			Rickard
32	NC 196	2002	Hybrid	R	L		R			GL
33	PVH 1452	2006	Hybrid	R	R		TCN/R			Rickard
34	CU 171	2013	Hybrid							SC
35	NC 606	1998	NC 729 X NC 82	R	R		R			Raynor
36	CC 1063	2011	Hybrid	R	R		R			CC
37	NC 92	2007	Hybrid	R	R		TCN/R			Rickard
38	NC 297	1998	Hybrid	R	R		R		TMV	GL
39	RJR 901	2011	Hybrid	R	R		R			CC
40	Speight 236	2005	(SP 168 X SP 196)(SP 179 X SP 177)	R	R		R			CC
41	CU 110	2010	Hybrid							SC
42	NC 960	2013	Hybrid							NC
43	PVH 2310	2013	Hybrid	R		R	M.inco	M.ar	TMV/PVY	Rickard
44	PVH 2281	2013	Hybrid	R	R					Rickard
45	NC 2326	1965	(Hicks x 9102)(Hicks)(Hicks)(Hicks)	L	Su	M				NC
46	GL 362	2012	Hybrid	R	R		R		PVY	GL
47	PVH 1600	2013	Hybrid	R	R		M.inco			Rickard
48	NC 95	1961	(C-139 X Bel. 4-30) x (C-139 X Hicks)	L	H	M	R			NC
49	GL 398	2013	Hybrid	R	R		R			GL
50	K 346	1988	McNair 926 x 80241	H	H		R			GL

[1]Resistance; H - High; M - Moderate; L - Low; R - Resistance; T - Tolerant; Su - Susceptable
Diseases: BS - Black Shank; GW - Granville Wilt; FW - Fusarium Wilt; RK - Root Know; Bn. Sp. - Brown Spot;
TMV - Tobacco Mosaic Virus; PVY - Potato Vius 'y'; TSMV - Tomato Spotted Wilt Virus;
TCN - Tobacoo Cyst Nematode; TEV - Tobacco Etch Virus; M.j. - Meloidogyne javanica

2014 FLUE - CURED REGIONAL FARM TEST										
GEORGIA, SOUTH CAROLINA, NORTH CAROLINA, AND VIRGINIA										
Trt. No	Variety or Line	Generation or Year of Release	Pedigree	BS	GW	FW	RK	Bn. Sp.	Virus	Sponsor
1	NC 2326	1965	(Hicks X 9102)(Hicks)(Hicks)Hicks)	L	Su	M				NC
2	NC 95	1961	(C-139 X Bel. 4-30)X(C-139 X Hicks)	L	H	M	R			NC
3	K 326	1981	McNair 225(McNair 30 X NC 95)	L	L		R			GL
4	CU 45	F1	Hybrid							SC
5	NCEX68	F1	Hybrid							NC
6	GLEX 309	F1	Hybrid							GL
7	PXH 12	F1	Hybrid							Rickard
8	NCEX36	F1	Hybrid							NC
9	CU 185	F1	Hybrid							SC
10	GLEX 394	F1	Hybrid							GL
11	CU 208	F1	Hybrid							SC
12	CU 204	F1	Hybrid							SC
13	NCEX69	F1	Hybrid							NC
14	NCEX40	F1	Hybrid							NC
15	PXH 16	F1	Hybrid							Rickard

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Diseases: BS - Black Shank; GW - Granville Wilt; FW - Fusarium Wilt; RK - Root Know; Bn. Sp. - Brown Spot; TMV - Tobacco Mosaic Virus; PVY - Potato Virus 'y'; TSMV - Tomato Spotted Wilt Virus; TCN - Tobacoo Cyst Nematode; TEV - Tobacco Etch Virus; M.j. - Meloidogyne javanica

2014 FLUE-CURED REGIONAL SMALL PLOT TEST GEORGIA, SOUTH CAROLINA, NORTH CAROLINA, AND VIRGINIA										
Trt. No	Variety or Line	Generation or Year of Release	Pedigree	BS	GW	FW	RK	Bn. Sp.	Virus	Sponsor
1	NC 2326	1965	(Hicks X 9102)(Hicks)Hicks)Hicks)	L	SU	M				NC
2	NC 95	1961	(C-139XBel.4-30)x(C-139XHicks)	L	H	M	R			NC
3	K 326	1981	McNair 225 (McNair 30 X NC95)	L	L		R			GL
4	XHN 52	F1	Hybrid	R		R	M.incog	M.aren	TMV/PVY	Rickard
5	CU 181	F1	Hybrid							SC
6	CU 158	F1	Hybrid							SC
7	NCEX65	F1	Hybrid	R	R		TCN/R			NC
8	CU 178	F1	Hybrid							SC
9	GLEX 976	F1	Hybrid							GL
10	XHN 60	F1	Hybrid	R	R	R	M.incog	M.aren	TMV	Rickard
11	NCEX63	F1	Hybrid	R	R		TCN/R			NC
12	AOV 413	F1	Hybrid							AO
13	CC Exp. 4	F1	Hybrid	R	R		R	R		CC
14	GLEX 965	F1	Hybrid							GL
15	CU 211	F1	Hybrid							SC
16	XHN 64	F1	Hybrid	R		R	M.incog	M.aren	TMV/PVY	Rickard
17	NCEX62	F1	Hybrid	R	R		R			NC
18	CC Exp 6	F1	Hybrid	R	R		R			CC
19	CC Exp. 5	F1	Hybrid	R	R		R			CC
20	NCEX64	F1	Hybrid	R	R		TCN/R			NC
21	ULT 164	F1	Hybrid						TMV	ULT
22	ULT 115	F1	Hybrid						TMV	ULT
23	XHN 65	F1	Hybrid	R		R	M.incog	M.aren	TMV/PVY	Rickard
24	NCEX66	F1	Hybrid	R	R		TCN/R			NC
25	CU 183	F1	Hybrid							SC
26	NCEX67	F1	Hybrid	R	R		R			NC
27	CC Exp. 1	F1	Hybrid	R	R		R			CC

[1]Resistance; H - High; M - Moderate; L - Low; R - Resistance; T - Tolerant; Su - Susceptable
Diseases: BS - Black Shank; GW - Granville Wilt; FW - Fusarium Wilt; RK - Root Know; Bn. Sp - Brown Spot;
TMV - Tobacco Mosaic Virus; PVY - Potato Vius 'y', TSMV - Tomato Spotted Wilt Virus;
TCN - Tobacoo Cyst Nematode, TEV - Tobacco Etch Virus, M j - Meloidogyne javanica

2014 Tobacco Agronomy - Pee Dee Research & Education Center

Canal

			Regional Small Plot																										F		
R3			55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	61	
			21	3	14	26	13	12	8	11	17	19	27	4	26	16	1	7	20	25	5	10	18	9	6	23	22	24	15	9	
R2			28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	31	
			25	4	5	2	7	19	8	6	11	22	17	3	10	27	16	2	23	13	21	1	18	15	20	14	24	12	9	4	
R1			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	1	
			2	12	27	11	13	3	19	1	6	8	10	22	14	23	24	18	9	21	7	4	17	5	15	26	20	16	25	3	

			Regional Farm Test																												
			62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
			3	11	10	14	15	12	5	8	1	6	4	7	13	2	13	9	4	14	15	8	7	3	5	10	2	1	12	6	11
			32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
			13	12	7	11	10	5	8	2	14	3	6	15	9	1	4	3	12	5	2	6	15	8	7	13	10	2	11	1	14
			2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
			6	2	1	9	11	8	5	10	14	7	15	12	4	13	6	9	15	8	12	7	13	4	3	14	5	9	1	10	11

			Official Variety Test																												
R1			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
			7	19	5	44	47	33	34	4	12	25	13	35	24	8	17	26	16	36	45	49	42	37	46	29	40	20	6	41	
R2			51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	
			1	41	40	38	49	39	22	12	18	37	34	38	36	3	21	23	35	13	20	29	42	2	6	43	24	14	28	41	
R3			101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	
			33	37	4	15	14	21	17	36	32	10	35	7	11	34	29	5	8	38	3	48	27	28	31	9	49	41	30	2	

			Official Variety Test																										Low Alkaloid		
			29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	1	2	3	4	5		
			23	48	18	28	15	50	27	2	1	11	14	10	9	3	39	44	21	43	22	30	32	31	5	2	3	4	1		
			79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	6	7	8	9	10		
			19	15	16	11	27	33	50	32	4	31	5	8	9	10	17	26	25	7	30	45	47	48	4	3	5	2	1		
			129	130	131	132	133	134	135	136	137	138	##	140	141	142	143	144	145	146	147	148	149	150	11	12	13	14	15		
			13	1	19	40	43	39	6	42	46	16	45	25	20	18	12	44	47	22	26	50	24	23	5	1	3	4	2		

Field Road

Solar Assisted Curing

Russell Henderson, David Reed, Dewitt Gooden & Bruce Fortnum

Objective: To assess efficiency of a barn design that utilizes solar heat to preheat combusted air and to assess operational differences of prototype barn versus companion standard barn

Barns Tested: Long Sun Barn II (Solar) & Long Eagle II (Standard)

Treatments: Four cures per year

2011 - 2013 Solar Assisted Curing Study Preliminary Results

Lbs Cured Leaf per Gallon LP				
Barn	2011	2012	2013	**Average**
Solar	9.43 ± 2.23	9.94 ± 1.83	12.3 ± 2.11	10.56 ± 2.28
Standard	11.6 ± 2.50	10.5 ± 1.81	14.4 ± 2.38	12.16 ±2.68

KW per Cure				
Barn	2011*	2012	2013	**Average**
Solar	1859 ± 116	1454 ± 118	1915 ± 483	1719 ± 370
Standard	1690 ± 72	1420 ± 263	1745 ± 381	1604 ±313

*2 Cures

Drought Stress Curing Study 1 – Drip Irrigation Trial

Russell Henderson, Bruce Fortnum & Dewitt Gooden

Objective: To collect curing data on drought stressed tobacco

Treatment List:

1. Conventional
2. Normal N rate, normal irrigation
3. Additional 23 lbs N, normal irrigation
4. Normal N rate, deficit irrigation
5. Additional 23 lbs N, deficit irrigation

2014 Drought Stress Curing Study 1 Plot Plan

Plot	B	B	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	B	B
Rep			1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	4	4	4	4	4	5	5	5	5	5	6	6	6	6	6		
Trt			4	5	3	1	2	5	4	1	2	3	5	4	1	3	2	2	3	4	5	1	4	5	1	2	3	5	1	2	3	4		
N				+	+			+				+	+			+			+		+			+			+	+			+			
H_2O			-	-				-	-				-	-						-	-		-	-				-				-		

Treatments 2-5 grown under plastic mulch and drip irrigated

Drought Stress Curing Study 2 – Center Pivot Irrigation Trial

Russell Henderson, Bruce Fortnum & Dewitt Gooden

Objective: Collect curing data on drought stressed tobacco under variable rate irrigation

Treatment List:

Fertility – 750 lbs of 6-6-18 at TP

A. 65 lbs N
B. 75 lbs N
C. 85 lbs N
D. 95 lbs N

2014 Drought Stress Curing Study 2 Plot Plan

Rep 4	Irrigation	0"	0.5"	1"
	lbs N	B B B B 95 85 75 65 B B B B B B B B	B B B B 85 65 95 75 B B B B B B B B	B B B B 65 75 85 95 B B B B B B B B
Rep 3	Irrigation	0.5"	1"	0"
	lbs N	B B B B 95 85 75 65 B B B B B B B B	B B B B 85 65 95 75 B B B B B B B B	B B B B 65 75 85 95 B B B B B B B B
Rep 2	Irrigation	1"	0"	0.5"
	lbs N	B B B B 95 85 75 65 B B B B B B B B	B B B B 85 65 95 75 B B B B B B B B	B B B B 65 75 85 95 B B B B B B B B
Rep 1	Irrigation	0"	0.5"	1"
	lbs N	B B B B 95 85 75 65 B B B B B B B B	B B B B 85 65 95 75 B B B B B B B B	B B B B 65 75 85 95 B B B B B B B B

2013 Drought Stress Curing Study 2 Preliminary Results

N	Quality Index	Lbs Cure Leaf/Acre	Dollar Value/Acre
65	75.1 ± 8.5	2,377 ± 860	3,750 ± 1,537
75	81.8 ± 7.3	2,335 ± 629	3,897 ± 1,290
85	79.1 ± 5.3	2,503 ± 637	4,042 ± 937
95	79.4 ± 9.0	2,474 ± 715	4,078 ± 1,352

Entomology

Evaluation of Insecticides for Tobacco Hornworm and Tobacco Budworm Control on Tobacco

Francis Reay-Jones

Greenhouse tray drench, transplant water

Admire Pro (Bayer)	Chemical class: Neonicotinoid Active ingredient: Imidacloprid
Coragen (DuPont):	Chemical class: Anthranilic diamide Active ingredient: Rynaxypyr
Verimark (DuPont): (Not yet labeled):	Chemical class: Anthranilic diamide Active ingredient: Cyazypyr

Foliar applications

Belt (Bayer):	Chemical class: Phthalic Acid Diamide Active ingredient: Flubendiamide
Coragen (DuPont):	Chemical class: Anthranilic diamide Active ingredient: Rynaxypyr
Blackhawk (Dow)	Chemical class: Naturalyte Active ingredient: Spinosad (36%)
Besiege (Syngenta):	Chemical class: Anthranilic diamide + pyrethroid Active ingredients: Rynaxypyr + lambda-cyhalothrin
DiPel (Valent U.S.A.)	Chemical class: Bacterium Active ingredient: Bt

Map of tobacco insecticide trial, Pee Dee REC, 2014

P	D								
R	G	H	M	O	F	B	L	I	Q
Q	M	D	J	J	N	A	C	K	E
O	P	E	R	I	C	G	K	A	L
H	N	D	B	G	M	N	F	B	H
J	F	C	R	P	I	L	A	Q	E
K	L	M	N	O	P	Q	R	O	K
A	B	C	D	E	F	G	H	I	J

Admire Pro applied 5/1/2014
Verimark applied 5/5/2014
Transplant date 5/6/2014

Rep 1
Rep 2
Rep 3
Rep 4

		GREENHOUSE	TRANSPLANT	FOLIAR APPLICATIONS
1	A	Verimark 13.5oz	-	BLACKHAWK 2oz/ac
2	B	Verimark 13.5oz	Coragen 7oz	BLACKHAWK 2oz/ac
3	C	Verimark 13.5oz, Admire Pro 1.2oz	-	BLACKHAWK 2oz/ac
4	D	Verimark 13.5oz, Admire Pro 1.2oz	Coragen 7oz	BLACKHAWK 2oz/ac
5	E	Admire Pro 1.2oz	Coragen 7oz	BLACKHAWK 2oz/ac
6	F	Untreated	-	BLACKHAWK 2oz/ac
7	G	Admire Pro 1.2oz	Coragen 5oz	BLACKHAWK 2oz/ac
8	H	Admire Pro 1.2oz	-	UNTREATED
9	I	Admire Pro 1.2oz		BLACKHAWK 1.5oz/ac
10	J	Admire Pro 1.2oz		BLACKHAWK 2oz/ac
11	K	Admire Pro 1.2oz		CORAGEN 3.5oz/ac
12	L	Admire Pro 1.2oz		CORAGEN 5oz/ac
13	M	Admire Pro 1.2oz		CORAGEN 7oz/ac
14	N	Admire Pro 1.2oz		BELT 2oz/ac
15	O	Admire Pro 1.2oz		BELT 3oz/ac
16	P	Admire Pro 1.2oz		BESIEGE 6oz/ac
17	Q	Admire Pro 1.2oz		BESIEGE 9oz/ac
18	R	Admire Pro 1.2oz		DIPEL 0.5 lb/ac

PATHOLOGY

Suppression of Bacterial Wilt during Mechanical Transmission using MH at Harvest – 2014

Paul D. Peterson & Bruce Fortnum

Objective: To evaluate the effect of Maleic Hydrazide rates and application methods on bacterial wilt following mechanical transmission during harvesting

Treatment list:

1. UT Left /right inoc
2. MH 1.5 gal/A Spray Conv/spray
3. MH 1.0 gal/A Spray Conv/spray
4. MH 0.5 gal/A Spray Conv/spray
5. MH 0.5 gal/A sponge applicator/directed spray
6. MH 1.0 gal/A sponge applicator/ directed spray
7. MH 1.5 gal/A sponge applicator/directed spray
8. Non-inoculated Control

Rep 4	Trt	3	8	1	7	5	2	6	4
	Plot	25	26	27	28	29	30	31	32
Rep 3	Trt	5	7	4	6	2	8	3	1
	Plot	17	18	19	20	21	22	23	24
Rep 2	Trt	4	8	5	6	1	2	7	3
	Plot	9	10	11	12	13	14	15	16
Rep 1	Trt	1	2	3	4	5	6	7	8
	Plot	1	2	3	4	5	6	7	8

Conveyor Spray = Hood-Directed Foliar Spray (4-Row Commercial High Boy Sprayer)

Foliar Spray = Standard Foliar Spray (4-Row Commercial High Boy Sprayer)

Stem Paint = Application Directly to Stem

Stem Spray = Application "shot" down center of Stem

Suppression of Bacterial Wilt during Mechanical Transmission using MH at Harvest - 2013

Treatment	Final Disease Severity	Tukey Significance	Vascular Necrosis	Tukey Significance
Inoculated Control	4.75	A	4.65	A
MH 0.5 gal foliar spray	4	AB	4.05	B
MH 0.5 gal stem spray	4	AB	3.87	B
MH 0.5 gal conveyor spray	3.75	BC	3.75	B
MH 0.5 gal stem paint	3.75	BC	3.75	B
MH 1.0 gal conveyor spray	3	CD	2.82	CDE
MH 1.0 gal foliar spray	3	CD	2.95	C
MH 1.0 gal stem spray	3	CD	2.85	CD
1.5 gal foliar spray	2.5	DE	2.4	DEF
MH 1.0 gal stem paint	2.5	DE	2.42	CDEF
MH 1.5 gal stem spray	2.25	DE	2.3	EF
MH 1.5 gal stem paint	2	E	1.9	F
MH 1.5 gal conveyor spray	1.75	E	**1.92**	F
Non-inoculated Control	<0.001	F	<0.001	G

Suppression of Bacterial Wilt during Mechanical Transmission using Fatty Alcohols at Harvest – 2014

Paul D. Peterson & Bruce Fortnum

Objective: Evaluate C8 + C10 and C10 fatty alcohols for suppression of mechanical transmission of bacterial wilt at harvest.

Treatments

	Standard system	Belt system
1.	Mach untreated check	Mach untreated check
2.	Hand Harvested	No leaf removed
3.	Control Inc	C10 FA 4% rate (640 ml/TV8000)
4.	Control Inc	C8 + C10 FA 4% rate (640 ml/TV8000)
5.	Control Inc	C10 FA 8% rate (640 ml/TV8000)
6.	Control Inc	C 8 + C10 FA 8% rate (1280 ml/TV8000)
7.	Mach untreated check	Mach untreated check
8.	Control	C10 FA 16% rate (640 ml/TV8000)
9.	Control	C8 + C10 FA 16% rate (1280 ml/TV8000)
10.	Mach Inoc	Mach Inoc

	6	9	4	5	7	2	8	10	3	1
Plot	31	32	33	34	35	36	37	38	39	40
	10	8	7	5	4	6	3	1	2	9
Plot	21	22	23	24	25	26	27	28	29	30
	2	1	3	10	8	7	9	5	6	4
Plot	11	12	13	14	15	16	17	18	19	20
	1	2	3	4	5	6	7	8	9	10
Plot	1	2	3	4	5	6	7	8	9	10

Suppression of Bacterial Wilt during Mechanical Transmission using Fatty Alcohols at Harvest– 2013

Trial 1

Treatment	Stem necrosis	Percent Disease
Belt NInoc	0	0
Std NInoc	0.1	5
Belt Inoc	**1.75**	53
Std Inoc	3.3	78
Belt + 8% C10	**0.4**	12
Belt + 16% CF10	**0.2**	10
Hand Harvested	0.1	2
No leaf removed	0	8

Trial 2

Treatment	Stem necrosis	Disease Index
Belt NInoc	0	0
Std NInoc	0	0
Belt Inoc	**3.8**	4
Std Inoc	5	5
Belt + 8% C10	**0.5**	1.5
Belt + 16% C10	**0.6**	1.5
MH	1.97	2.75
Control MH n-inoc	0	0

Bacterial Wilt Variety Evaluation Trial 2014

Range 1	Range 2	Range 3	Range 4	Range 5	Range 6	Range 7	Range 8	Range 9
V11	S27	V32	V7	F8	S23	V20	F7	S26
V9	V4	V16	F6	S15	V2	V43	F15	S12
S21	F13	V33	V37	S20	V47	V48	V5	S19
V21	S4	F14	S22	V6	V45	V46	V8	S13
V42	V10	S11	S16	V35	V34	F5	S18	V49
V28	F2	V27	V26	F12	S24	V36	S8	V38
V1	V41	F11	S25	S5	V29	V14	S10	V13
V15	F3	V30	S7	S2	V22	V18	F1	V23
V31	V25	F9	V50	V17	V39	S1	V24	F10
V40	V44	F4	V19	S9	S6	S14	S17	V3
V4	V2	F3	V43	V18	V8	F4	S3	V12
V42	V39	V37	S20	S19	S14	S17	F5	V3
F2	V6	V7	S18	V41	V40	V11	F1	S16
V17	V50	V13	S1	S22	F8	V32	V34	V44
V12	V24	F7	S25	V19	V35	V16	S12	V22
S21	V36	V38	F6	V28	V30	S2	V33	V23
S4	V45	S10	F14	V9	F13	S26	S6	V5
S7	V29	V20	F12	S11	S13	S27	V31	V25
S8	S15	V26	V47	V21	S24	F10	V10	V15
V14	V46	F9	S23	V27	V1	S9	F11	V49
F15	S3	S5	V48	S25	S1	F2	S26	V28
V19	F4	S23	V3	V46	S4	V32	S2	F12
V26	V14	S8	F1	V29	V12	V11	S7	F11
S3	V49	V22	F3	V16	V47	V31	V30	S24
V10	V45	F7	S19	S11	V42	V15	V48	V40
V18	V13	V2	S20	V4	V27	S5	S15	F5
F15	S6	V21	V33	V5	S27	V9	V36	F13
S22	V34	V25	V24	S21	S12	F6	V23	V35
V8	V20	S17	F9	S13	V43	V50	F10	S10
S16	V6	V17	V7	V39	F14	S18	V38	V37
V41	V44	S9	F8	V1	S14			

Black Shank Fungicide Trial 1 (Valent) – 2014

Lee Newman Farm

Bruce Fortnum and Paul D. Peterson

Objective: Evaluation of Presidio for control of Black Shank

Treatments		Application rate	Method
1.	Untreated control		----
2.	Presidio	4 fl oz/A	1+2+3
3.	Presidio	4 fl oz/A	1+3
4.	Ridomil Gold	0.25 + 1 pt/A	1+2+3

Method

1 = transplant water

2 = first cultivation

3 = layby

Treatments

End of field

1	2	3	4
Block 4			
4	2	1	3
Block 3			
3	2	1	4
Block 2			
4	3	1	2
Block 1			

Black Shank Fungicide Trial 2 (Syngenta) - 2014
Lee Newman Farm

Bruce Fortnum and Paul D. Peterson

Objective: Evaluation of chemical control for Back Shank

Treatments		Application rate	Method
1.	Untreated control		----
2.	Ridomil Gold	8 + 16 fl oz/A	1+2
3.	Presidio	4 + 4 fl oz/A	1+2
4.	….. 12	experimentals	

Method

1 = transplant water

2 = first cultivation

3 = layby

Treatments

End of field

X	x	11	7	10	2	x	x
8	5	1	4	12	3	6	9

Block 4

X	x	7	6	2	11	x	x
3	5	9	4	10	8	1	12

Block 3

x	x	11	2	9	4	x	x
6	3	12	7	1	8	10	5

Block 2

X	x	9	10	11	12	x	x
1	2	3	4	5	6	7	8

Block 1

Telone Nematicide Trial - 2014

Bruce Fortnum and Paul D. Peterson

Objective: Evaluate reduced application rates of C-17 for control of *Meloidogyne* spp. and bacterial wilt.

1. Untreated control
2. Telone 4 gal/A
3. Telone 6 gal/A
4. Telone 8 gal/A
5. Telone C17 6 gal/A
6. Telone C 17 8 gal/A
7. Telone C 17 10.5 gal/A

Rep 4	22	23	24	25	26	27	28
Trt	7	3	1	5	6	4	2
Rep 3	15	16	17	18	19	20	21
Trt	3	4	2	1	7	5	6
Rep 2	8	9	10	11	12	13	14
Trt	5	6	7	4	1	2	3
Rep 1	1	2	3	4	5	6	7
Trt	1	2	3	4	5	6	7