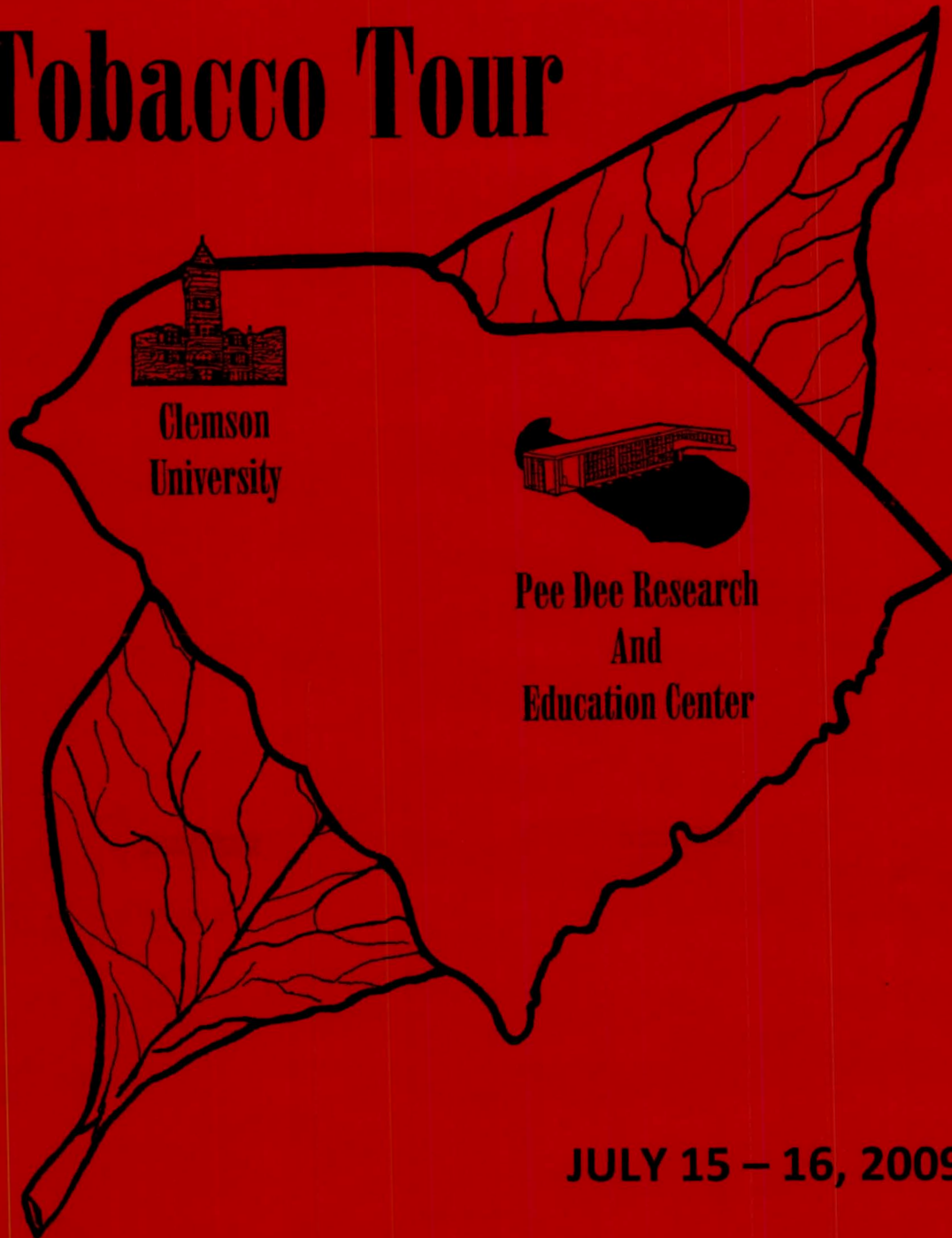


CLEMSON  
UNIVERSITY

# Clemson University Tobacco Tour



JULY 15 – 16, 2009

CLEMSON UNIVERSITY TOBACCO TOUR  
JULY 15 – 16, 2009

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**JULY 15**

	3:00 PM	Registration	PDREC (Meet at Tobacco Facility in back)
(1)	3:45 PM	Potassium Fertility Study	Thomas Durant Farm, Clarendon County
(2)	4:45 PM	TSWV Management	Frankie Woodward Farm, Darlington County
	6:30 PM	Social Time	PDREC (Rooms 279 & 282 in Main Building)
	7:00 PM	Dinner	PDREC (Tobacco Team)

**JULY 16**

	8:00 AM	Registration	PDREC (Meet at Tobacco Facility in back)
	8:20 AM	Welcome	Dr. Bruce Fortnum, Dr. Laurie Lawson
	8:30 AM	Entomology	Dr. Francis Reay-Jones, Dr. Albert Johnson
	9:15 AM	Agronomy	Dr. Dewitt Gooden
	10:15 AM	Diseases	Dr. Bruce Fortnum, Dr. Paul Peterson
(3)	12:15 PM	Black Shank Nursery Ridomil Trials	Buddy Calhoun Farm, Marlboro County
(4)	1:15 PM	Lunch	Charcoal Grill, Dillon
	2:00 PM	End of Tour	

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**DIRECTIONS TO TEST LOCATIONS**

- (1) Thomas Durant Farm – Travel south on I-95 to Exit 132 and take SC 527, turn left, to first road to right (CR 104). Follow 2 miles to CR 222 to right. Test by cemetery at end of road.
- (2) Frankie Woodward Farm – From PDREC, turn right on Pocket Road and travel 1.7 miles. Turn right on Charleston Road (S-16-35) & travel 3.8 miles; turn left on Cashua Ferry Road & travel .10 miles; turn right on Mechanicsville Road & travel 5.2 miles. Dead end into Mont Clare Road. Trial is on right.
- (3) Buddy Calhoun Farm – After leaving PDREC turn left on Pocket Road. At the end of Pocket Road, turn left to CR 26 (becomes CR 495) and continue to SC 34 and turn right. Travel about 7.3 miles to CR 31 and turn left. Travel about 3 miles to SC 38. Turn left and travel 1.5 miles to Browntown Church and turn right to CR 32. Travel approximately 10 miles to dirt road just before McLucas Cemetery on left. Test located on right of dirt road.
- (4) Charcoal Grill – Continue on CR 32 to Clio. Turn right to SC 9 and travel to Dillon (approximately 15 miles) to Charcoal Grill on 107 N. 1<sup>st</sup> Avenue.

**THANKS FOR COMING AND HAVE A SAFE TRIP**

We would like to thank the following sponsors for their continued support of our tobacco educational programs in South Carolina.

## **2009 TOBACCO TOUR SPONSORS**

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**BAYER CROPSCIENCE  
CHEMTURA  
CROSS CREEK SEED  
DOW AGROSCIENCES  
DREXEL CHEMICAL COMPANY  
GOLD LEAF SEED COMPANY  
RICKARD SEED, INC.  
UNIROYAL  
VALENT CORPORATION**

THOMAS DURANT POTASSIUM FERTILITY STUDY – 2009

CLARENDON COUNTY

LEON MCFADDEN ROAD

CEMETERY

A= 70 LBS NITROGEN FROM 19% NIT SOL (35 GAL), NO POTASH OR PHOSPHORUS.

B= 667 LBS 6-6-18 PLUS 30 LBS OF N FROM 19% NIT SOL (15 GAL).

C= 545 LBS KMAG PLUS 70 LBS N FROM 19% NIT SOL (35 GAL).

Plots are 4 rows with 3 replications each.

Soil types range from Lynchburg on the west to Fuquay in the middle to Troup on the east side of the field.

**DuRant Farms Potassium Test 2009**

**Bed/Tellone II** 6.25 Gallons/Acre

**Prepmaster** Spartan 7 OZ/Acre

Prowl 1QT/Acre

Lorsban 4E 2QT/Acre

**Variety NC71**

Admire in Greenhouse

**Plant date:** 4/21/09

**Pop-up fertilizer** (11-37-0): 2QT/100 Gallons Water; 150 Gallons Water/Acre

**Ridomil Gold:** 8OZ/Acre band

**Megafol:** 1 pint/Acre

**Quadris:** 8OZ/Acre

**Contact:** 3 trips @ 2 Gallons/Acre

**Prime +:** 1 trip @ 2 Quarts/Acre

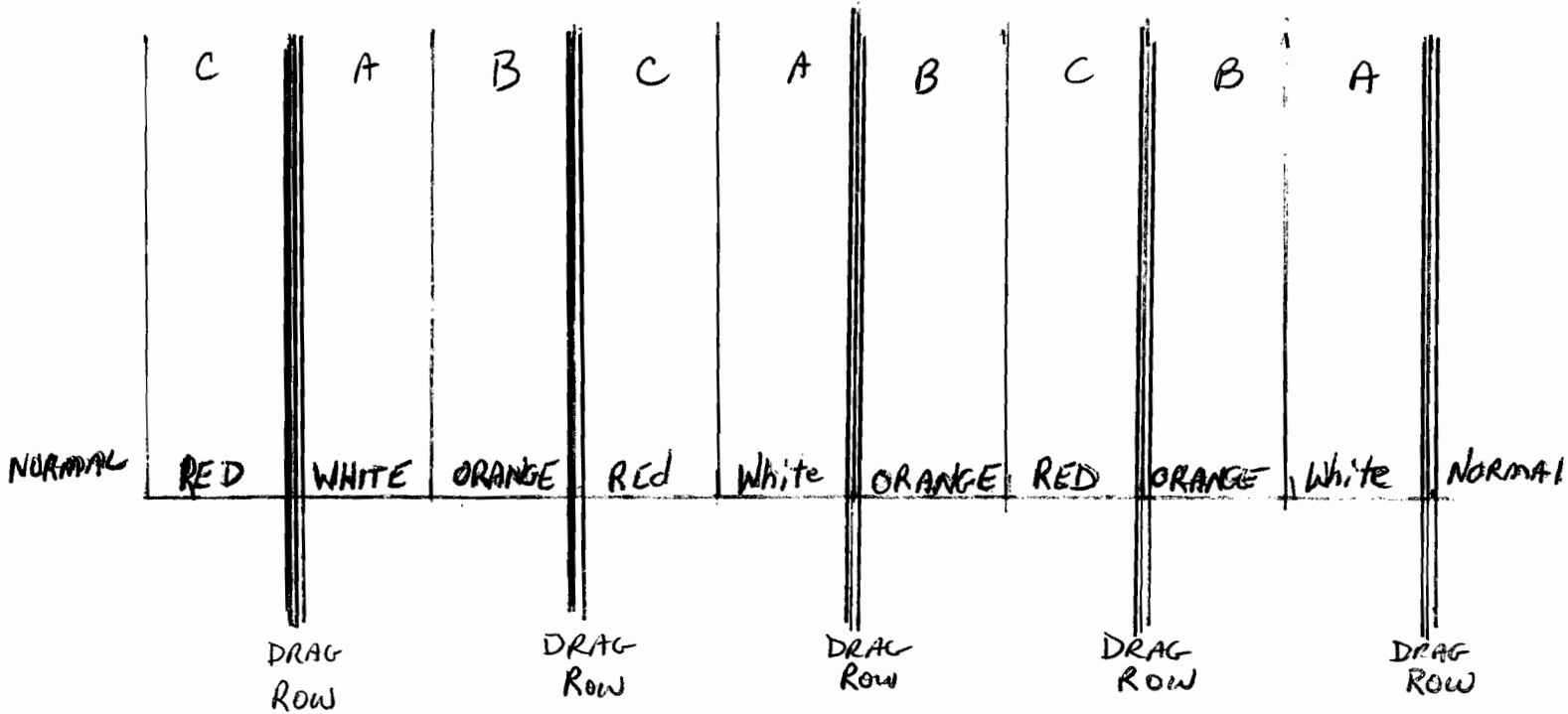
**MH 30:** 1 trip @ 1 Gallon/Acre

**Acephate:** 97 3 trips

**Tracer:** 1 trip

**Hand Crew:** 3 trips

	<b><u>19% Nitrogen</u></b>	<b><u>Fertilizer</u></b>
<b><u>Red</u></b>	34 Gallons/Acre	K-mag (600 Pounds/Acre)
<b><u>White</u></b>	34 Gallons/Acre	0
<b><u>Orange</u></b>	17 Gallons/Acre	6-6-18 Blend (656 Pounds/Acre)



## 2009 PEE DEE REC TOBACCO AGRONOMIC DATA

Soil Type: Norfolk Loamy Sand

Previous Crop: Corn

Fumigation: 2/9/09 (10.5 gal/a in row)

Pre-plant Treatments: 4/16/09 8 oz Spartan  
1 qt Command  
2 qt Lorsban  
Materials sprayed on a knocked down bed and incorporated.

Tobacco Transplanted: April 20, 2009

Fertility: 750 lbs 6-6-18 applied at planting.  
205 lbs 15.5 (Cal-nitrate) applied on 5/04/09.  
5 lbs of 5-45-15 (starter fertilizer) in transplant water.

Insect Sprays: 3 times with Orthene  
2 times with Tracer

Lay-by Cultivation: 6/01/09

Sucker Control: 1<sup>st</sup> Contact 6/15/09  
2<sup>nd</sup> Contact 6/22/09 for RGR and 6/19/09 for regular crop.  
3<sup>rd</sup> Spray 6/30/09 for RGR and 6/25/09 for regular crop (1.5 gal RMH + 0.5 gal Flupro).  
4<sup>th</sup> Spray 7/08/09 for RGR.

Rainfall since transplanting:

April 16, 2009	1.24"
April 22, 2009	0.19"
May	6.94"
June	5.70"
July	4.25"





**2009 NORTH CAROLINA FLUE-CURED TOBACCO VARIETY TEST**

**Commercial Varieties**

**Disease Resistance<sup>1</sup>**

<u>Trt. No.</u>	<u>Variety OR Line</u>	<u>Generation/ Yr of Release</u>	<u>Pedigree</u>	<u>BS</u>	<u>GW</u>	<u>FW</u>	<u>RK</u>	<u>Bn. Sp.</u>	<u>Virus</u>	<u>Sponsor</u>
1	NC 291	1997	Hybrid	R	R		TCN/R		PVY/TEV	CC
2	Speight 236	2005	(SP 168 X SP 196) (SP 179 X SP 177)	R	R		R			SPT
3	Speight 220	2002	(K 346 X SP 117) (SP 116 X K 346)	R	R		R			SPT
4	CC 27	2003	Hybrid	R	R		TCN/R		TMV	CC
5	NC 72	1996	Hybrid	H	L		R			Rickard
6	PVH 1118	2004	Hybrid	R	R		TCN/R			Rickard
7	Speight 168	1996	Coker 371G X Spt. G 118	H	H		R			SPT
8	CC 65	2007	Hybrid	R	R		M.jR			CC
9	Speight 225	2003	(SP 168 X K 346) (SPA 95 X SP 168)	R	R		R			SPT
10	K 346	1988	McNair 926 X 80241	H	H		R			GL
11	NC 297	1998	Hybrid	R	R		R		TMV	GL
12	PVH 1596	2008	Hybrid	R	R		R			Profigen
13	CC 13	2005	Hybrid	R	R		M.jR			CC
14	GF 52	2007	Hybrid	R	R		R		TMV	GF
15	RGH 4	1994	Hybrid	M	H		R		TMV	Rickard
16	NC 196	2002	Hybrid	R	L		R			GL
17	NC 299	2001	Hybrid	R	R		TCN/R			CC
18	K 326	1981	McNair 225 (McNair 30 X NC 95)	L	L		R			GL
19	CC 67	2008	Hybrid	R	R		TCN/R		TMV	CC
20	K 149	1988	[(G-28 X 354) X [CB-139 X F-105]X (G-28 X 354)] McNair 399	M	H		R			GL
21	Speight 210	2000	(SP 116 X G-126) (K 346 X G-28)	R	R		R			SPT
22	CC 75	2008	Hybrid	R	R		TCN/R M.jR		TMV	CC
23	CC 35	2007	Hybrid	R	R		M.jR			CC
24	NC 71	1995	Hybrid	H	M		R			Rickard
25	CC 700	2005	Hybrid	R	R		TCN/R			CC
26	Speight 227	2003	(SP 151 X K 346) (SP 202 X K 346)	R	R		R			SPT
27	Speight H-20	1999	Hybrid	R	R		R		TMV	SPT
28	CC 15	2008	Hybrid	R	R		M.j/R			CC
29	K 394	1983	Speight G-28 X McNair 944	H	M					GL
30	NC 471	2003	Hybrid	R	R				TMV	Raynor
31	PVH 2110	2005	Hybrid							Profigen
32	RGH 51	1998	Hybrid	R	R		R			Rickard

<sup>1</sup>Resistance; H-High; M-Moderate; L-Low; R-Resistant; T-Tolerant; Su-Susceptible

Diseases: BS-Black Shank; GW-Granville Wilt; FW-Fusarium Wilt; RK-Root Knot; Bn.Sp.-Brown Spot;

TMV-Tobacco Mosaic Virus; PVY-Potato Virus 'y'; TSWV-Tomato Spotted Wilt Virus; TCN-Tobacco Cyst Nematode; TEV-Tobacco Etch Virus; M.j-Meloidogyne javanica

<sup>2</sup>Non-Flowering genotypes: Should be topped at 18 harvestable leaves.

**2009 NORTH CAROLINA FLUE-CURED TOBACCO VARIETY TEST**  
**Commercial Varieties (Continued)**

**Disease Resistance<sup>1</sup>**

<u>Trt. No.</u>	<u>Variety OR Line</u>	<u>Generation/ Yr of Release</u>	<u>Pedigree</u>	<u>BS</u>	<u>GW</u>	<u>FW</u>	<u>RK</u>	<u>Bn. Sp.</u>	<u>Virus</u>	<u>Sponsor</u>
33	NC 92	2007	Hybrid	R	R		TCN/R			NC
34	NC 55	1994	(K 346 X DH 1220) X (K 326 X Coker 371-Gold)	L	L		R		PVY/TEV	GL
35	Speight NF3 <sup>2</sup>	1996	Speight NF 1 X NC 0007	H	H		R			SPT
36	GF 318	2008	Hybrid	R	R		R			GF
37	NC 606	1998	NC 729 X NC 82	R	R		R			Raynor
38	PVH 1452	2006	Hybrid	R	R		TCN/R			Profigen
39	CC 33	2008	Hybrid	R	R		M.j/R			CC
40	NC 102	2001	Hybrid	R	R				TMV/PVY	Rickard
41	K 399	1979	(C-139 X C-319) X NC 95							GL
42	Speight 234	2004	(SP 168 X K 346)	R	R		R			SPT
43	GL 939	1992	McN 926 X 80241	R	R		R			GL
44	CC 37	2006	Hybrid	R	R		TCN/R M.j/R		TMV	CC
45	RG 17	1993	K 326 X 399	L	M		R			Rickard
46	CC 455 (Exp)									

<sup>1</sup>Resistance; H-High; M-Moderate; L-Low; R-Resistant; T-Tolerant; Su-Susceptible

Diseases: BS-Black Shank; GW-Granville Wilt; FW-Fusarium Wilt; RK-Root Knot; Bn.Sp.-Brown Spot;

TMV-Tobacco Mosaic Virus; PVY-Potato Virus 'y'; TSWV-Tomato Spotted Wilt Virus; TCN-Tobacco Cyst Nematode; TEV-Tobacco Etch Virus; M.j-Meloidogyne javanica

<sup>2</sup>Non-Flowering genotypes: Should be topped at 18 harvestable leaves.

**2009 FLUE-CURED REGIONAL SMALL PLOT TEST  
GEORGIA, SOUTH CAROLINA, NORTH CAROLINA AND VIRGINIA**

**Disease Resistance<sup>1</sup>**

<b>Trt. No.</b>	<b>Variety OR Line</b>	<b>Generation/ Yr of Release</b>	<b>Pedigree</b>	<b>BS</b>	<b>GW</b>	<b>FW</b>	<b>RK</b>	<b>Bn. Sp.</b>	<b>Virus</b>	<b>Sponsor</b>
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	CC 920	F1	Hybrid	R	R		R			CC
5	EXP. 480	F1	Hybrid							GL
6	XP 278	F1	Hybrid	R	R		R			Profigen
7	XP 275	F1	Hybrid	R		R	R		TMV PVY	Profigen
8	NCEX23	F7		R	R		TCN/R			NC
9	EXP. 819	F1	Hybrid							GL
10	CC 304	F1	Hybrid	R	R		R		TMV	CC
11	NCEX 25	F1	Hybrid	R			R			NC
12	CU 118	F1	Hybrid							SC
13	RJR 911	F1	Hybrid	R	R		R			RJR
14	RJR 908	F1	Hybrid	R	R		R			RJR
15	CU 95	F1	Hybrid							SC
16	NCEX 16	F1	Hybrid	R	R		TCN/R			NC
17	ULT 142	F1	Hybrid						PVY	ULT
18	EXP. 388	F1	Hybrid							GL
19	XP 248	F1	Hybrid	R	R		R			Profigen
20	NCEX 10	F1	Hybrid	R	R		TCN/R			NC
21	ULT 112	F1	Hybrid						TMV	ULT
22	CC 151	F1	Hybrid	R	R		R			CC
23	GL 395	F1	Hybrid							GL
24	EXP. 822	F1	Hybrid							GL
25	XP 254	F1	Hybrid		R		R		TMV	Profigen
26	RJR 909	F1	Hybrid	R	R		R			RJR
27	AOV 911	F1	Hybrid						TMV	AO
28	RJR 910	F1	Hybrid	R	R					RJR
29	CU 113	F1	Hybrid							SC
30	NCEX 19	F1	Hybrid	R	R		TCN/R			NC
31	CU 110	F1	Hybrid							SC
32	CU 100	F1	Hybrid							SC
33	RJR 901	F1	Hybrid	R	R		R			RJR
34	NCEX 24	F1	Hybrid	R	R		TCN/R			NC
35	XP 340	F1	Hybrid	R		R	R		TMV/PVY	Profigen

<sup>1</sup>Resistance; H-High; M-Moderate; L-Low; R-Resistant; T-Tolerant; Su-Susceptible

Diseases: BS-Black Shank; GW-Granville Wilt; FW-Fusarium Wilt; RK-Root Knot; Bn.Sp.-Brown Spot;

TMV-Tobacco Mosaic Virus; PVY-Potato Virus 'y'; TSWV-Tomato Spotted Wilt Virus; TCN-Tobacco Cyst Nematode; TEV-Tobacco Etch Virus; M.j-Meloidogyne javanica

<sup>2</sup>Non-Flowering genotypes: Should be topped at 18 harvestable leaves.

**2009 FLUE-CURED REGIONAL FARM TEST  
 GEORGIA, SOUTH CAROLINA, NORTH CAROLINA AND VIRGINIA**

**Disease Resistance<sup>1</sup>**

<b>Trt. No.</b>	<b>Variety OR Line</b>	<b>Generation/ Yr of Release</b>	<b>Pedigree</b>	<b>BS</b>	<b>GW</b>	<b>FW</b>	<b>RK</b>	<b>Bn. Sp.</b>	<b>Virus</b>	<b>Sponsor</b>
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	XP 324	F1	Hybrid	R	R					Profigen
4	NCEX 15	F1	Hybrid	R	R		TCN/R			NC
5	CU 94	F1	Hybrid							SC
6	EXP. 806	F1	Hybrid							GL
7	RJR 651	F1	Hybrid	R	R		R	R		RJR
8	CU 90	F1	Hybrid							SC
9	EXP. 803	F1	Hybrid							GL
10	NCEX 13	F1	Hybrid	R	R		TCN/R			NC

<sup>1</sup>Resistance; H-High; M-Moderate; L-Low; R-Resistant; T-Tolerant; Su-Susceptible

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

2009 Regional Tobacco Growth Regulator Test: two-row plots, 4 replications

TREATMENTS	Formulated chemical (ml/1000 ml) (applications)				Spray method (applications)			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th
1. Topped and not suckered	-	-	-	-	-	-	-	-
2. FAIR 85/FAIR 85/(FAIR-30 & FLUPRO) TM 2.0 GPA/2.5 GPA/(1.5 GPA & 0.5 GPA)	40	50	(30+10)	-	OT	OT+ 3-5D	OT+ 7D	-
3. O-TAC/O-TAC/O-TAC 2.0 GPA/2.5 GPA/2.5 GPA APPLY ADDITIONAL APPLICATIONS IF NEEDED	40	50	50	-	OT	OT+ 3-5D	OT+ 7D	-
4. FAIR 85/FAIR 85/FAIR 85 2.0 GPA/2.5 GPA/2.5 GPA APPLY ADDITIONAL APPLICATIONS IF NEEDED	40	50	50	-	OT	OT+ 3-5D	OT+ 7D	-
5. FAIR 85/ FAIR 85/ DREXALIN PLUS 2.0 GPA/2.5 GPA/0.5 GPA	40	50	10	-	OT	OT+ 3-5D	OT+ 7D	-
6. FAIR 85/ FAIR 85/ FLUPRO 2.0 GPA/2.5 GPA/0.5 GPA	40	50	(30+10)	-	OT	OT+ 3-5D	OT+ 7D	-
7. FAIR 85 2.0 GPA (FAIR 85 & FLUPRO)/(FAIR 85 & FLUPRO) (2.5 GPA & 0.25 GPA)/(2.5 GPA & 0.25 GPA) TM	40	(50+5)	(50+5)	-	OT	OT+ 3-5D	OT+ 7D	-
8. FAIR 85/FAIR 85/FLUPRO/FAIR-30 2.0 GPA/2.5 GPA/0.5 GPA/1.0 GPA MH APPLIED AFTER 1 <sup>ST</sup> HARVEST	40	50	10	20	OT	OT+ 3-5D	OT+ 7D	OT+ 7D
9. FAIR 85/FAIR 85/FLUPRO/FAIR-30 2.0 GPA/2.5 GPA/0.5 GPA/1.5 GPA MH APPLIED AFTER 1 <sup>ST</sup> HARVEST	40	50	10	30	OT	OT+ 3-5D	OT+ 7D	OT+ 7D
10. FAIR 85/FAIR 85/ (FAIR-30 & FLUPRO) 2.0 GPA/2.5 GPA/(1.0 GPA & .5 GPA) TM	40	50	(20+10)	-	OT	OT+ 3-5D	OT+ 7D	-
11. FAIR 85/FAIR 85 2.0 GPA/2.5 GPA (FAIR-30 & FLUPRO)/(FAIR-30 & FLUPRO) (0.75 GPA & 0.25 GPA)/(0.75 GPA & 0.25 GPA) TM	40	50	(15+5)	(15+5)	OT	OT+ 3-5D	OT+ 7D	OT+ 7D
12. OST/OST/FP/FP (2.0 GPA/2.5 GPA/0.25 GPA/0.25 GPA)	40	50	5	5				
13. OST/OST/OST+FP/RMH+FP (2.0 GPA/2.5 GPA/ 2.5 GPA +.25/1.0 GPA +.25 GPA)	40	50	(50+5)	(20+5)				
14. OST/OST/RMH+FP 2.0 GPA/ 2.5 GPA/ 1.0 GPA + 0.5 GPA	40	50	(20+10)					
15. OST/OST/RMH+FP 2.0 GPA/ 2.5 GPA/ 1.5 GPA + 0.5 GPA	40	50	(30+10)					

GPA = 50 gallons per acre; Equivalentents based on 6000 plants per acre.

OT = over-the-top as 30 ml/plant early button stage; OT @ 3-5D = 3-5 days after 1<sup>st</sup> appl.; OT@7D = 7 days after 2<sup>nd</sup> and 3<sup>rd</sup> appl.

Flupro from Chemtura Corporation.

Fair 85, O-Tac and Fair-30 from Fair Products, Inc.

Drexalin Plus from Drexel Chemical Corporation.

Fair-30 = 1.5 lb ai/gal; Fair-85 and O-Tac = 6.01 ai/gal; Flupro = 1.2 lb ai/gal; Drexalin Plus = 1.2 lb ai/gal.

## CURING EFFICIENCY DEMONSTRATIONS FOR 2009

<u>GROWER</u>	<u>COUNTY</u>	<u>INSULATED BARN</u>	<u>DAMPER CONTROL</u>	<u>HEAT EXCHANGER</u>
JAY WILLARD	SUMTER	X	X	
DANNY HAMMOND	HORRY	X	X	
RAY GALLOWAY	DARLINGTON	X		
STEVE SQUIRES	GEORGETOWN	X	X	X
WILLIAM JOHNSON	HORRY			X

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

Francis Reay-Jones

## Greenhouse tray drench, transplant water

Durivo 2.5 SC (Syngenta): Chemical class: Anthranilic diamide + neonicotinoid  
Active ingredients: Rynaxypyr + thiamethoxam

## Foliar applications

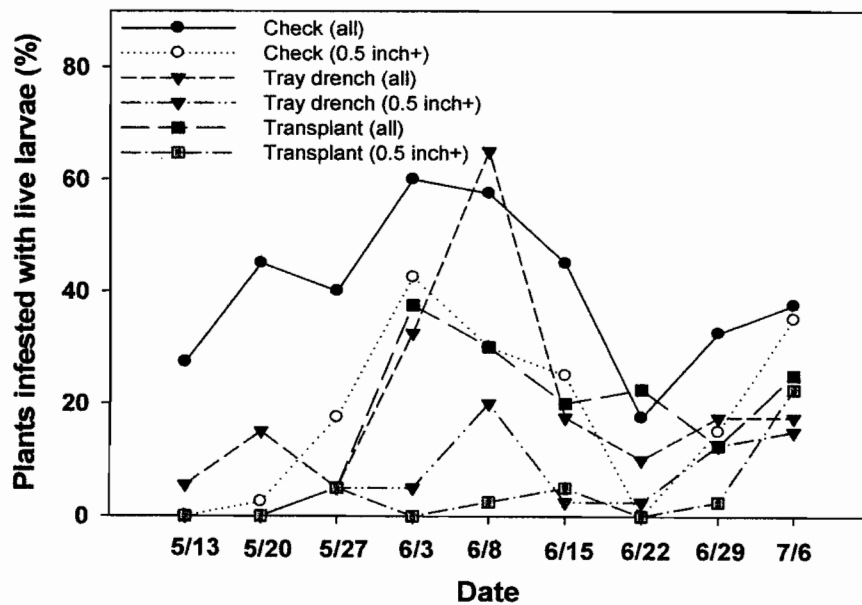
Voliam Flexi 40WG (Syngenta): Chemical class: Anthranilic diamide + neonicotinoid  
Active ingredients: Rynaxypyr + thiamethoxam

Voliam Express 1.25 ZC (Syngenta): Chemical class: Anthranilic diamide + pyrethroid  
Active ingredients: Rynaxypyr + lambda-cyhalothrin

Belt (Bayer): Chemical class: Phthalic Acid Diamide  
Active ingredient: Flubendiamide

Coragen (DuPont): Chemical class: Anthranilic diamide  
Active ingredient: Rynaxypyr

**Efficacy of Durivo**



**Map of tobacco insecticide trial, Pee Dee REC, 2009**

R	M	E	H	C	T	P	G	N	J	S	L	O	U	A	Q	B	D	F	K	I	Rep 4
F	S	D	L	A	N	T	C	I	Q	K	H	R	U	O	M	G	J	E	B	P	Rep 3
A	N	T	E	I	K	U	L	C	P	Q	R	F	S	J	O	M	B	D	G	H	Rep 2
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	Rep 1

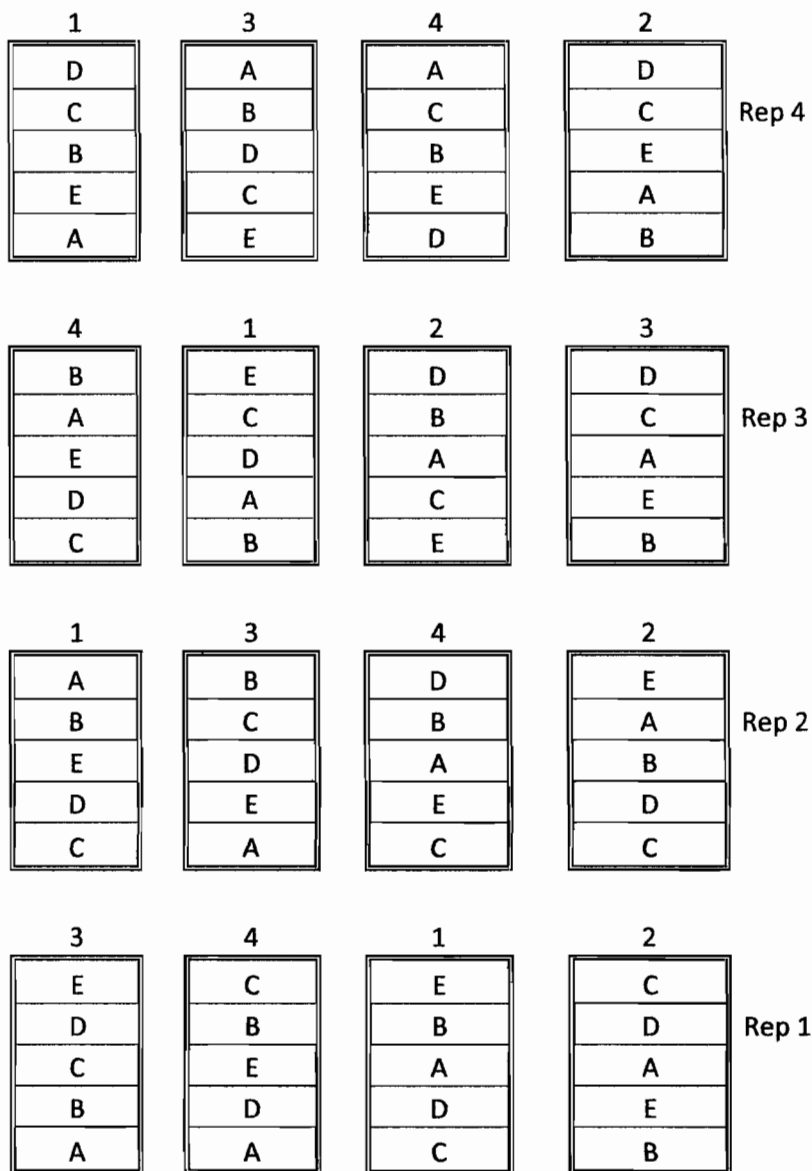
- A – DuPont - Coragen 20 SC 3.5 fl oz.ac + Admire Pro
- B – DuPont - Coragen 20 SC 5 fl oz.ac + Admire Pro
- C – DuPont new product 13.5 fl oz/ac + Admire Pro
- D – DuPont new product 27 fl oz/ac + Admire Pro
- E – Untreated + Admire Pro
- F - Tracer 2 fl oz/ac + Admire Pro
- G – Syngenta DURIVO 2.5 SC 10.3 fl oz/ac tray drench
- H – Syngenta DURIVO 2.5 SC 10.3 fl oz/ac transplant
- I – Syngenta - VOLIAM FLEXI 40 WG 2.5 oz/ac + Admire Pro
- J - Syngenta - VOLIAM FLEXI 40 WG 4 oz/ac + Admire Pro
- K - Syngenta - VOLIAM XPRESS 1.25 ZC 5 fl oz/ac + Admire Pro
- L - Syngenta - VOLIAM XPRESS 1.25 ZC 7 fl oz/ac + Admire Pro
- M - Syngenta - VOLIAM XPRESS 1.25 ZC 9 fl oz/ac + Admire Pro
- N - Bayer - BELT 480 SC 3 fl oz/ac + Admire Pro
- O - Bayer - BELT 480 SC 3 fl oz/ac + NIS 0.25% + Admire Pro
- P - Tracer 2 fl oz/ac
- Q - Splitworm - Coragen drop nozzle + Admire Pro
- R - Splitworm - Coragen spray base + Admire Pro
- S - Splitworm – Check + Admire Pro



### Map of Novaluron trial, 2009

Insecticide treatment

Variety



Varieties

- A NC 71
- B Speight 168
- C CC 27
- D NC 196
- E K 326

Insecticide

- 1 UTC
- 2 Novaluron 0.83EC 9 oz/ac
- 3 Novaluron 0.83EC 12 oz/ac
- 4 Novaluron 0.83EC 24 oz/ac

# Tomato Spotted Wilt Trial - 2009

## Tobacco Pathology

Georgetown County – Lloyd Baxly  
 Darlington County – Frankie Woodard  
 Bruce Fortnum & Lanair Johnson

### Treatments

1. Check – no treatment
2. Admire
3. Admire + actigard on a 10 spray schedule
4. Admire + actigard at the transplanting
5. Admire + actigard first appearance
6. Admire + actigard occurrence at 10% /level

### *Plot plan*

1	2	3	4	5	6	3	5	1	2	4	6
2	5	3	6	1	4	6	3	1	5	4	

Treatment	Percent Disease		
	5/1/09	5/22/09	6/11/09
1	1.1	4.6	14
2	0.2	1.5	5.9
3	0	1.4	3.6
4	0	1.8	6.3
5	0.1	1.5	4

# TOBACCO PATHOLOGY

Pee Dee REC 2009

Bruce Fortnum

Paul Peterson

## CORESTA – *Meloidogyne arenaria* race 2 Tolerance Trial

**Title:** Evaluation of tobacco germplasm for tolerance to *Meloidogyne arenaria* race 2.

NF	LK 113	K 326	LK 89	CC 37
F	LK 113	K 326	LK 89	CC 37
NF	XP 2A	LK 89	CC 13	K 371
F	XP 2A	LK 89	CC 13	K 371
F	CC 37	LK 113	PVH 2259	LK 113
NF	CC 37	LK 113	PVH 2259	LK 113
F	LK 89	XP 2A	CC 33	NC 95
NF	LK 89	XP 2A	CC 33	NC 95
NF	CC 13	CC 37	K 326	K RK 6
F	CC 13	CC 37	K 326	K RK 6
NF	NC 95	PVH 2259	K 371	CC 35
F	NC 95	PVH 2259	K 371	CC 35
F	PVH 2259	PVH 2275	LK 113	STNCB
NF	PVH 2259	PVH 2275	LK 113	STNCB
F	CC 33	STNCB	K RK 6	XP 2A
NF	CC 33	STNCB	K RK 6	XP 2A
NF	STNCB	K RK 6	XP 2A	PVH 2259
F	STNCB	K RK 6	XP 2A	PVH 2259
NF	LK 89	PVH 2275	NC 95	PVH 2275
F	LK 89	PVH 2275	NC 95	PVH 2275
F	K RK 6	K 371	CC 37	CC 13
NF	K RK 6	K 371	CC 37	CC 13
F	CC 35	CC 13	STNCB	PVH 2275
NF	CC 35	CC 13	STNCB	PVH 2275
NF	K 371	CC 33	NC 95	CC 33
F	K 371	CC 33	NC 95	CC 33
NF	K 326	CC 35	CC 35	K 326
F	K 326	CC 35	CC 35	K 326

## 2008 data

<b>Entry</b>	<b>Yield</b>	<b>Yield + 1,3-D</b>	<b>RG</b>	<b>RG + 1,3- D</b>
C 371	2001	3928	7.2	4.8
RJR 35	3590	3928	3.4	0.8
RJR 39	2539	3786	2.6	1
CC13	3125	4322	4.4	2.8
CC33	2796	3936	3.3	1.3
PVH 2259	3196	4188	5.8	1.9
PVH 2275	3140	3906	3.3	1.2
KRK 26	2739	4060	3.1	1.2
K 30 R	2639	3216	5.8	3.1
NC 95	2248	3381	6.4	3.6
STNCB	3008	3621	1.7	0.8
Okinawa	1922	1876	6.0	0.9
XP1A	2798	3447	2.5	1
XP2A	3075	3511	2.4	1

## ***Ralstonia solanacearum* Virulence/Pathogenicity Trial**

**Bruce Fortnum  
Paul Peterson  
Asimina Mila**

**Title:** Evaluation of the virulence and pathogenicity of *R. solanacearum* isolates when mechanically inoculated to above ground portions of tobacco stems.

**Inoculation date:** July 8, 2009

1. NC 132
2. 108-3
3. SC 06
4. SC 10
5. K 74
6. SC 11
7. GA 91A
8. SC12
9. RSO 81-5
10. DILY
11. Y6
12. Y3
13. 82-7
14. MM-121
15. MM-60
16. MM-96
17. MM-114
18. RS 346 M7
19. MM-139
20. MM-115
21. MM-85
22. MM-113
23. MM-118
24. Control – hand topped

*R. solanacearum* Strain Trial 2009

16	18	11	6	2	23	3	7	20	15	1	4
12	24	13	8	12	17	9	14	10	21	5	19
<b>73</b>	<b>74</b>	<b>75</b>	<b>76</b>	<b>77</b>	<b>78</b>	<b>79</b>	<b>80</b>	<b>81</b>	<b>82</b>	<b>83</b>	<b>84</b>
<b>ROW NUMBER</b>											

14	2	5	17	13	8	22	23	3	18	11	21
6	1	15	9	4	16	12	7	20	19	10	24
<b>49</b>	<b>50</b>	<b>51</b>	<b>52</b>	<b>53</b>	<b>54</b>	<b>55</b>	<b>56</b>	<b>57</b>	<b>58</b>	<b>59</b>	<b>60</b>
<b>ROW NUMBER</b>											

5	10	24	20	16	19	21	2	22	7	13	9
11	15	6	14	3	12	23	18	1	8	17	4
<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>35</b>	<b>36</b>
<b>ROW NUMBER</b>											

13	14	15	16	17	18	19	20	21	22	23	24
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>ROW NUMBER</b>											

## Plant Maturity and Disease Expression

Bruce Fortnum  
Paul Peterson

**Title:** Effect of plant age on the susceptibility of flue-cured tobacco to mechanical transmission of *Rastonia solanacearum*

- |    |            |                             |
|----|------------|-----------------------------|
| 1  | Topping    | early button                |
| 2  |            | mid flower                  |
| 3. |            | late flower                 |
| 4. | Harvesting | Primings                    |
| 5. |            | Lugs                        |
| 6. |            | Cutters                     |
| 7. | Untreated  | left topped, right untopped |

### *Plot plan*

#### **Rep 4**

3	1	5	6	7	4	2
22	23	24	25	26	27	28

#### **Rep 3**

7	6	4	2	5	1	3
15	16	17	18	19	20	21

#### **Rep 2**

5	3	1	7	4	2	6
8	9	10	11	12	1	14

#### **Rep 1**

1	2	3	4	5	6	7
1	2	3	4	5	6	7

**Bacterial Wilt Topping Trial**  
**Pee Dee REC 2009**  
**Bruce Fortnum**  
**Paul Peterson**

**Title:** Effect of disinfectant application volume on efficacy of a new topping system used to control mechanical transmission of *R. solanacearum*.

Treatments	Placement	Rate Gal/A
1. C10 50% Antac	Tshaft	0.75
2. C10 50%	Tshaft	1.00
3. C10 50%	Tshaft	1.50
6. Clorox 50%	Tshaft	0.75
5. Clorox 50%	Tshaft	1.00
4. Clorox 50%	Tshaft	1.50
7. Clorox 100%	Tshaft	1.00
8. UTC/hand		

***Plot Plan***

Trt	6	4	5	7	2	8	3	1
	25	26	27	28	29	30	31	32

Trt	8	7	5	4	6	3	1	2
	17	18	19	20	21	22	23	24

Trt	2	1	3	7	5	6	4	8
	9	10	11	12	13	14	15	16

Trt	1	3	2	8	4	5	6	7
	1	2	3	4	5	6	7	8



**Bacterial wilt Topping Trial**  
**Pee Dee REC 2009**  
**Bruce Fortnum**  
**Paul Peterson**

**Title:** Evaluation of various chemical treatments to reduce mechanical transmission of *R. solanacearum* during topping using a new topping system

1. Burch	Clorox 100%	IN
2. Burch	Clorox 50%	IN
3. Burch	Agriprep 500 ppm	IN
4. Burch	Agriprep 200 ppm	IN
5. Burch	MH	IN
6. Burch	C10 fatty alcohol 25%	IN
7. Burch	---	IN
8. Hand	topped	CK

*Plot Plan*

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

## Biological Control

**Title:** Evaluation of biological control organisms for suppression of mechanical transmission of *Ralstonia solanacearum* during topping.

### **Selected *R. solanacearum* germplasm**

1. SC 10
2. NC 132
3. SC10 + Bio 1
4. SC10 + Bio 2
5. SC10 + Bio 3
6. SC 10 + Bio 4
7. NC 132 + Bio 1
8. NC 132 + Bio 2
9. NC132 + Bio 3
10. NC 132 + Bio 4
11. Bio 1
12. Bio 2
13. Bio 3
14. Bio 4
15. UTC
16. Hand topped

## Bacterial Wilt Resistance to Mechanical Transmission of *Ralstonia solanacearum*

Bruce Fortnum  
Paul Peterson

**Title:** Host resistance to mechanical transmission of *Ralstonia solanacearum* during the topping operation.

V 10	V 16	V 9	V 2
V 11	V 9	V 13	V 26
V 44	V 26	V 26	V 16
V 13	V 31	V 29	V 9
V 2	V 10	V 31	V 13
V 26	V 44	V 16	V 29
V 9	V 2	V 44	V 10
V 31	V 13	V 10	V 31
V 16	V 29	V 11	V 44
V 29	V 11	V 2	V 11

Variety Code	Variety	Bacterial Wilt Resistance (DI)
V2	Speight 236	9
V9	Speight 225	5
V10	K 346	16
V11	NC 297	20
V13	CC 13	15
V16	NC 196	12
V26	Speight 227	2
V29	K 394	37
V31	PVH 2110	9
V44	CC 37	3

REGIONAL FLUE-CURED TOBACCO VARIETY  
DISEASE EVALUATION

BLACK SHANK

MARK PULLEN  
BRUCE FORTNUM

PEE DEE RESEARCH & EDUCATION CENTER  
FLORENCE, SOUTH CAROLINA



## Regional Farm Test

	27-May	10-Jun	24-Jun	9-Jul	% Dead
1071	10	10	4	3	70.00
1071	14	8	0	0	100.00
R 1	21	20	11	7	66.67
R 1	21	21	16	6	71.43
R 1	20	18	12	5	75.00
R 2	18	18	13	9	50.00
R 2	20	20	15	11	45.00
R 2	21	20	17	9	57.14
R 3	20	20	19	11	45.00
R 3	20	20	17	12	40.00
R 3	19	19	19	14	26.32
R 4	21	21	14	7	66.67
R 4	22	22	22	19	13.64
R 4	18	16	8	3	83.33
R 5	19	19	14	8	57.89
R 5	17	17	15	9	47.06
R 5	20	20	20	19	5.00
R 6	20	20	14	10	50.00
R 6	21	20	14	9	57.14
R 6	19	17	7	5	73.68
R 7	19	18	18	12	36.84
R 7	22	20	12	7	68.18
R 7	19	19	19	17	10.53
R 8	17	17	17	16	5.88
R 8	21	21	21	18	14.29
R 8	22	22	22	22	0.00
R 9	19	19	18	12	36.84
R 9	20	20	20	15	25.00
R 9	18	18	18	17	5.56
R10	18	17	8	4	77.78
R10	22	22	22	20	9.09
R10	16	16	10	8	50.00

## 2009 Black shank

## Surviving Plants

## Regional Small Plot Test

	27-May	10-Jun	24-Jun	9-Jul	% Dead
S 1	21	21	14	5	76.19
S 1	16	16	11	3	81.25
S 1	20	18	12	6	70.00
S 2	16	16	15	9	43.75
S 2	18	18	15	12	33.33
S 2	21	21	21	13	38.10
S 3	21	21	15	10	52.38
S 3	22	22	22	18	18.18
S 3	18	17	13	9	50.00
S 4	18	17	7	4	77.78
S 4	16	16	14	10	37.50
S 4	17	17	10	3	82.35
S 5	21	20	7	7	66.67
S 5	21	17	6	1	95.24
S 5	19	15	8	6	68.42
S 6	22	22	19	7	68.18
S 6	23	23	23	10	56.52
S 6	16	16	15	9	43.75
S 7	17	17	14	8	52.94
S 7	20	20	8	5	75.00
S 7	20	18	10	5	75.00
S 8	20	20	15	5	75.00
S 8	18	17	13	6	66.67
S 8	16	15	11	8	50.00
S 9	21	21	21	18	14.29
S 9	21	21	19	19	9.52
S 9	19	18	17	15	21.05
S10	19	19	17	10	47.37
S10	16	16	15	8	50.00
S10	17	17	16	9	47.06
S11	17	17	17	16	5.88
S11	21	21	20	15	28.57
S11	19	19	19	17	10.53
S12	18	18	18	14	22.22
S12	17	17	17	15	11.76
S12	21	21	21	14	33.33
S13	21	21	18	12	42.86
S13	19	19	18	17	10.53
S13	21	21	20	14	33.33
S14	22	22	22	22	0.00
S14	19	19	18	17	10.53
S14	20	20	20	16	20.00
S15	19	19	19	16	15.79
S15	21	21	21	18	14.29
S15	22	22	22	18	18.18

S16	18	18	11	8	55.56
S16	20	19	12	5	75.00
S16	20	18	9	5	75.00
S17	18	18	17	10	44.44
S17	19	19	14	8	57.89
S17	22	22	21	18	18.18
S18	22	19	17	9	59.09
S18	18	18	18	18	0.00
S18	15	15	14	9	40.00
S19	21	20	16	9	57.14
S19	18	18	18	18	0.00
S19	17	16	16	11	35.29
S20	21	21	18	10	52.38
S20	19	19	19	15	21.05
S20	16	13	7	4	75.00
S21	20	20	12	7	65.00
S21	19	18	10	5	73.68
S21	21	19	9	5	76.19
S22	19	18	17	14	26.32
S22	20	20	19	17	15.00
S22	22	22	22	22	0.00
S23	20	20	20	17	15.00
S23	18	18	18	16	11.11
S23	21	21	19	17	19.05
S24	22	22	18	12	45.45
S24	17	17	15	13	23.53
S24	17	17	16	9	47.06
S25	21	21	15	7	66.67
S25	22	22	22	17	22.73
S25	18	18	13	7	61.11
S26	17	17	16	14	17.65
S26	22	22	22	22	0.00
S26	19	19	19	16	15.79
S27	18	18	6	3	83.33
S27	15	14	4	4	73.33
S27	18	13	7	1	94.44
S28	17	17	17	16	5.88
S28	20	20	19	19	5.00
S28	23	23	23	23	0.00
S29	21	21	19	16	23.81
S29	19	19	19	18	5.26
S29	16	15	14	11	31.25
S30	21	21	16	10	52.38
S30	17	17	15	9	47.06
S30	20	19	12	10	50.00
S31	19	19	12	9	52.63
S31	16	16	12	11	31.25
S31	22	19	14	9	59.09
S32	20	20	19	15	25.00
S32	19	19	18	15	21.05
S32	18	18	18	18	0.00
S33	18	18	13	4	77.78
S33	21	18	8	4	80.95
S33	18	18	13	7	61.11
S34	21	21	19	10	52.38
S34	20	20	20	17	15.00
S34	20	20	20	17	15.00
S35	18	18	13	6	66.67
S35	18	17	10	7	61.11
S35	21	17	4	3	85.71



2009 Black shank

Surviving Plants

Official Variety Test

	27-May	10-Jun	24-Jun	9-Jul	% Dead
V 1	15	15	12	10	33.33
V 1	22	22	16	9	59.09
V 1	18	18	14	9	50.00
V 2	10	10	9	9	10.00
V 2	16	16	16	15	6.25
V 2	22	22	22	21	4.55
V 3	17	17	17	17	0.00
V 3	18	18	17	10	44.44
V 3	18	17	17	13	27.78
V 4	19	19	17	11	42.11
V 4	21	21	21	21	0.00
V 4	16	15	11	5	68.75
V 5	20	20	11	6	70.00
V 5	22	21	21	21	4.55
V 5	17	17	14	6	64.71
V 6	19	19	15	7	63.16
V 6	20	20	15	8	60.00
V 6	18	18	15	5	72.22
V 7	18	18	15	14	22.22
V 7	17	17	15	10	41.18
V 7	18	18	18	14	22.22
V 8	19	19	16	7	63.16
V 8	18	18	16	13	27.78
V 8	20	20	20	19	5.00
V 9	22	22	22	19	13.64
V 9	20	19	19	19	5.00
V 9	18	17	17	16	11.11
V10	18	18	18	18	0.00
V10	20	20	20	17	15.00
V10	17	17	17	15	11.76
V11	19	19	16	7	63.16
V11	17	17	14	8	52.94
V11	17	17	13	6	64.71
V12	22	21	20	15	31.82
V12	19	19	19	17	10.53
V12	20	20	20	15	25.00
V13	21	21	19	11	47.62
V13	21	21	19	8	61.90
V13	21	21	20	7	66.67
V14	19	19	17	8	57.89
V14	17	17	13	5	70.59
V14	20	20	14	4	80.00
V15	20	19	17	9	55.00
V15	21	21	17	16	23.81
V15	21	20	14	11	47.62
V16	19	19	18	10	47.37
V16	17	17	17	14	17.65
V16	14	14	12	9	35.71
V17	15	15	13	11	26.67
V17	16	16	16	10	37.50
V17	19	19	17	12	36.84
V18	17	17	14	7	58.82
V18	17	16	10	4	76.47
V18	25	25	25	25	0.00
V19	18	18	17	11	38.89
V19	14	14	12	8	42.86
V19	23	23	23	23	0.00

V20	21	21	20	17	19.05
V20	19	19	18	15	21.05
V20	23	23	21	17	26.09
V21	22	21	17	11	50.00
V21	20	19	16	11	45.00
V21	12	12	12	12	0.00
V22	18	18	17	17	5.56
V22	19	19	15	11	42.11
V22	21	21	3	1	95.24
V23	19	18	10	8	57.89
V23	17	17	14	11	35.29
V23	21	10	2	1	95.24
V24	21	21	15	12	42.86
V24	17	17	17	13	23.53
V24	19	18	18	15	21.05
V25	17	17	17	17	0.00
V25	17	16	12	6	64.71
V25	23	22	20	12	47.83
V26	18	18	18	18	0.00
V26	19	19	19	17	10.53
V26	19	19	17	17	10.53
V27	21	21	18	11	47.62
V27	21	21	19	12	42.86
V27	21	21	20	20	4.76
V28	22	20	4	2	90.91
V28	15	15	11	9	40.00
V28	18	18	17	17	5.56
V29	16	16	15	15	6.25
V29	18	18	18	16	11.11
V29	19	19	19	18	5.26
V30	18	18	17	15	16.67
V30	19	19	19	16	15.79
V30	21	21	21	21	0.00
V31	21	21	16	12	42.86
V31	18	18	16	10	44.44
V31	21	21	21	19	9.52
V32	23	23	18	12	47.83
V32	19	19	17	6	68.42
V32	20	20	19	14	30.00
V33	21	21	21	19	9.52
V33	13	13	7	3	76.92
V33	18	17	7	4	77.78
V34	20	20	12	7	65.00
V34	19	19	19	8	57.89
V34	18	17	12	6	66.67
V35	17	17	16	16	5.88
V35	8	8	8	7	12.50
V35	15	15	15	12	20.00
V36	21	21	15	10	52.38
V36	22	22	20	13	40.91
V36	13	13	13	13	0.00
V37	17	17	16	16	5.88
V37	18	17	17	17	5.56
V37	18	18	15	13	27.78
V38	17	17	17	12	29.41
V38	18	18	18	12	33.33
V38	21	21	19	13	38.10
V39	15	15	14	10	33.33
V39	18	18	14	8	55.56
V39	21	21	21	21	0.00

V40	20	19	16	11	45.00
V40	18	17	15	8	55.56
V40	22	21	20	12	45.45
V41	19	19	19	18	5.26
V41	20	20	20	20	0.00
V41	16	16	16	14	12.50
V42	17	17	17	13	23.53
V42	18	18	16	13	27.78
V42	20	20	17	12	40.00
V43	17	17	16	13	23.53
V43	20	20	19	13	35.00
V43	23	23	23	23	0.00
V44	22	22	17	12	45.45
V44	19	19	15	8	57.89
V44	19	19	18	16	15.79
V45	19	19	18	12	36.84
V45	22	22	22	19	13.64
V45	22	21	19	12	45.45
V46	21	21	12	4	80.95
V46	18	18	16	11	38.89
V46	19	18	13	7	63.16

**REGIONAL FLUE-CURED TOBACCO VARIETY  
DISEASE EVALUATION**

**BACTERIAL WILT**

**MARK PULLEN**

**BRUCE FORTNUM**

**PEE DEE RESEARCH & EDUCATION CENTER  
FLORENCE, SOUTH CAROLINA**



2009 Bacterial Wilt  
Regional Farm Test

Surviving Plants

	15-May	29-May	12-Jun	26-Jun	% Dead
R 1	20	17	14	6	70.00
R 1	21	14	3	0	100.00
R 1	23	15	7	2	91.30
R 2	21	20	17	10	52.38
R 2	22	22	21	20	9.09
R 2	22	21	21	21	4.55
R 3	21	15	13	6	71.43
R 3	22	17	16	12	45.45
R 3	22	16	6	5	77.27
R 4	20	18	10	8	60.00
R 4	22	19	14	10	54.55
R 4	22	13	5	4	81.82
R 5	22	17	14	5	77.27
R 5	23	17	10	4	82.61
R 5	21	18	14	10	52.38
R 6	19	16	16	11	42.11
R 6	21	16	13	9	57.14
R 6	19	19	15	11	42.11
R 7	22	20	11	5	77.27
R 7	21	15	10	8	61.90
R 7	22	13	11	5	77.27
R 8	22	22	22	17	22.73
R 8	22	21	18	18	18.18
R 8	23	20	15	14	39.13
R 9	19	18	15	10	47.37
R 9	23	17	11	4	82.61
R 9	22	20	17	15	31.82
R10	22	19	14	6	72.73
R10	18	16	11	5	72.22
R10	21	17	17	12	42.86

2009 Bacterial Wilt  
Regional Small Plot Test

Surviving Plants

	15-May	29-May	12-Jun	26-Jun	% Dead
S 1	19	17	9	6	68.42
S 1	21	8	2	0	100.00
S 1	20	11	6	3	85.00
S 2	21	20	19	16	23.81
S 2	22	22	16	9	59.09
S 2	22	18	17	15	31.82
S 3	21	16	11	5	76.19
S 3	20	17	14	10	50.00
S 3	22	12	5	3	86.36
S 4	19	6	2	0	100.00
S 4	21	12	7	2	90.48
S 4	21	16	9	4	80.95
S 5	20	18	12	7	65.00
S 5	21	4	3	1	95.24
S 5	21	15	12	8	61.90
S 6	21	20	17	12	42.86
S 6	20	18	17	16	20.00
S 6	21	16	15	10	52.38
S 7	22	22	21	13	40.91
S 7	19	16	7	2	89.47
S 7	19	14	13	10	47.37
S 8	20	20	18	15	25.00
S 8	21	17	11	7	66.67
S 8	22	17	12	9	59.09
S 9	22	18	11	7	68.18
S 9	23	17	11	10	56.52
S 9	21	20	19	17	19.05
S10	22	17	14	9	59.09
S10	20	15	12	8	60.00
S10	22	17	10	5	77.27
S11	19	17	17	14	26.32
S11	23	19	8	3	86.96
S11	19	14	10	9	52.63
S12	22	19	13	10	54.55
S12	21	12	8	4	80.95
S12	22	19	17	11	50.00
S13	20	13	9	5	75.00
S13	22	20	13	8	63.64
S13	20	19	14	8	60.00
S14	20	17	11	10	50.00
S14	23	23	21	15	34.78
S14	22	20	17	15	31.82
S15	21	19	13	10	52.38
S15	21	21	20	19	9.52
S15	22	21	17	14	36.36
S16	21	14	1	0	100.00
S16	23	20	11	4	82.61
S16	23	22	20	15	34.78

S17	21	14	10	4	80.95
S17	20	12	9	7	65.00
S17	21	21	15	6	71.43
S18	21	18	11	5	76.19
S18	19	16	10	7	63.16
S18	19	16	10	6	68.42
S19	22	19	9	4	81.82
S19	22	20	14	6	72.73
S19	21	10	5	1	95.24
S20	21	20	16	12	42.86
S20	22	18	11	5	77.27
S20	20	17	9	2	90.00
S21	21	8	4	4	80.95
S21	21	15	9	7	66.67
S21	23	18	14	14	39.13
S22	22	15	13	5	77.27
S22	18	14	13	9	50.00
S22	21	17	11	6	71.43
S23	22	19	17	15	31.82
S23	22	19	14	12	45.45
S23	22	13	7	2	90.91
S24	21	19	18	18	14.29
S24	21	19	17	13	38.10
S24	19	11	9	7	63.16
S25	17	13	8	5	70.59
S25	19	12	7	2	89.47
S25	23	17	16	13	43.48
S26	22	22	20	15	31.82
S26	21	20	17	17	19.05
S26	21	19	16	14	33.33
S27	20	20	18	15	25.00
S27	21	19	16	13	38.10
S27	21	21	19	18	14.29
S28	18	18	16	13	27.78
S28	20	20	20	17	15.00
S28	22	20	15	10	54.55
S29	22	21	18	18	18.18
S29	22	22	15	11	50.00
S29	21	21	21	19	9.52
S30	22	18	12	6	72.73
S30	22	14	6	5	77.27
S30	22	19	16	11	50.00
S31	21	19	13	6	71.43
S31	21	19	17	15	28.57
S31	22	22	17	16	27.27



S32	22	21	20	18	18.18
S32	22	21	18	16	27.27
S32	22	21	14	12	45.45
S33	21	14	8	3	85.71
S33	22	15	9	6	72.73
S33	19	13	7	3	84.21
S34	21	19	13	8	61.90
S34	23	22	18	8	65.22
S34	22	20	18	13	40.91
S35	22	17	12	7	68.18
S35	22	19	16	9	59.09
S35	20	17	10	8	60.00

2009 Bacterial Wilt  
Official Variety Test

Surviving Plants

	15-May	29-May	12-Jun	26-Jun	% Dead
V 1	17	15	11	7	58.82
V 1	21	12	6	3	85.71
V 1	21	12	7	7	66.67
V 2	22	15	12	7	68.18
V 2	23	22	21	16	30.43
V 2	21	18	14	11	47.62
V 3	22	22	22	22	0.00
V 3	20	19	18	16	20.00
V 3	20	20	19	16	20.00
V 4	21	19	16	10	52.38
V 4	22	21	19	17	22.73
V 4	20	20	19	15	25.00
V 5	21	20	14	7	66.67
V 5	20	10	3	2	90.00
V 5	18	14	10	4	77.78
V 6	19	18	14	8	57.89
V 6	23	11	6	5	78.26
V 6	21	16	12	10	52.38
V 7	23	23	22	21	8.70
V 7	22	14	5	0	100.00
V 7	15	14	13	10	33.33
V 8	18	14	9	3	83.33
V 8	20	15	6	2	90.00
V 8	19	8	6	5	73.68
V 9	20	20	14	5	75.00
V 9	20	20	16	15	25.00
V 9	22	19	17	12	45.45
V10	21	21	15	10	52.38
V10	22	15	9	9	59.09
V10	21	20	19	17	19.05
V11	23	21	16	11	52.17
V11	14	11	8	4	71.43
V11	22	16	8	6	72.73
V12	22	17	12	9	59.09
V12	22	19	17	17	22.73
V12	22	19	14	13	40.91
V13	22	21	16	9	59.09
V13	20	17	12	6	70.00
V13	20	13	11	7	65.00
V14	22	21	12	4	81.82
V14	22	13	9	4	81.82
V14	21	16	14	12	42.86
V15	19	19	19	13	31.58
V15	16	11	8	7	56.25
V15	23	11	10	6	73.91
V16	21	19	11	9	57.14
V16	21	13	10	6	71.43
V16	19	14	11	11	42.11

V17	18	17	16	9	50.00
V17	22	21	14	9	59.09
V17	20	17	11	9	55.00
V18	23	12	2	0	100.00
V18	22	15	7	2	90.91
V18	19	12	8	2	89.47
V19	20	18	10	4	80.00
V19	20	17	11	7	65.00
V19	23	21	17	16	30.43
V20	20	18	18	13	35.00
V20	20	19	19	17	15.00
V20	22	19	16	11	50.00
V21	21	21	17	8	61.90
V21	22	20	13	4	81.82
V21	21	17	11	10	52.38
V22	22	18	9	3	86.36
V22	20	17	11	6	70.00
V22	21	17	16	10	52.38
V23	21	10	5	2	90.48
V23	21	21	12	6	71.43
V23	20	10	6	5	75.00
V24	20	18	16	11	45.00
V24	20	15	6	4	80.00
V24	21	20	16	12	42.86
V25	22	19	17	15	31.82
V25	20	13	11	7	65.00
V25	20	17	12	8	60.00
V26	17	17	17	13	23.53
V26	16	16	15	15	6.25
V26	19	17	16	15	21.05
V27	19	19	19	15	21.05
V27	21	20	14	9	57.14
V27	23	18	16	13	43.48
V28	19	19	16	13	31.58
V28	18	10	4	2	88.89
V28	19	17	13	7	63.16
V29	20	18	13	7	65.00
V29	20	14	8	3	85.00
V29	21	12	4	1	95.24
V30	21	21	21	18	14.29
V30	20	19	17	16	20.00
V30	21	20	18	15	28.57
V31	21	19	18	17	19.05
V31	19	8	4	0	100.00
V31	22	17	11	6	72.73

V32	22	21	19	12	45.45
V32	19	10	4	3	84.21
V32	22	21	16	14	36.36
V33	21	21	17	11	47.62
V33	21	18	13	6	71.43
V33	19	15	10	7	63.16
V34	21	15	8	4	80.95
V34	23	10	3	1	95.65
V34	21	14	7	3	85.71
V35	23	20	19	18	21.74
V35	21	17	12	10	52.38
V35	17	17	13	11	35.29
V36	22	21	10	6	72.73
V36	20	19	18	14	30.00
V36	20	16	13	10	50.00
V36	21	16	12	8	61.90
V37	20	18	17	14	30.00
V37	22	22	20	18	18.18
V37	21	19	14	10	52.38
V38	20	17	14	9	55.00
V38	20	20	18	15	25.00
V38	19	17	15	15	21.05
V38	23	22	19	18	21.74
V39	18	17	16	13	27.78
V39	21	19	16	12	42.86
V39	19	15	12	7	63.16
V39	21	19	17	12	42.86
V40	21	15	8	2	90.48
V40	21	19	10	5	76.19
V40	18	14	10	4	77.78
V40	20	18	16	11	45.00
V41	19	18	16	10	47.37
V41	22	16	8	3	86.36
V41	21	15	12	10	52.38
V42	20	19	16	14	30.00
V42	21	16	14	11	47.62
V42	19	19	15	14	26.32
V42	21	14	12	9	57.14
V43	20	16	8	6	70.00
V43	21	18	16	8	61.90
V43	23	18	12	10	56.52
V44	23	21	15	11	52.17
V44	22	22	16	14	36.36
V44	23	18	17	15	34.78
V44	21	20	20	16	23.81
V45	20	17	16	12	40.00
V45	22	16	11	10	54.55
V45	18	13	9	8	55.56
V46	22	18	11	3	86.36
V46	22	14	6	3	86.36
V46	20	16	14	10	50.00

