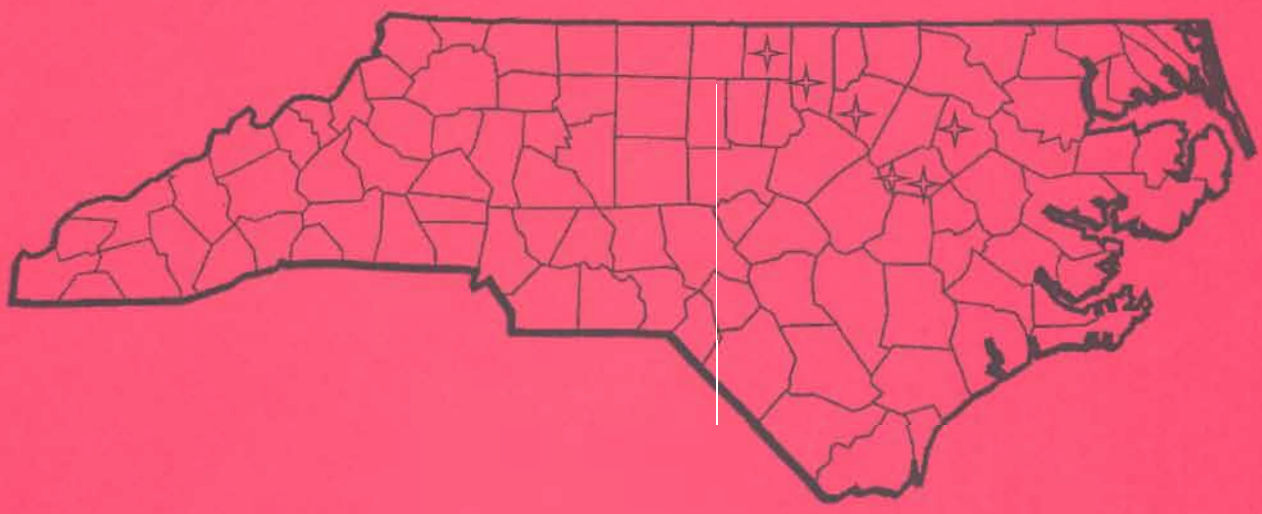
North Carolina Combined Tobacco Tour

July 23-25, 2012



North Carolina Cooperative Extension Service
North Carolina State University

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PLANT PATHOLOGY

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Gold Leaf Seed Company
TriEst Ag Group
N.C. Tobacco Research Comm.
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BIOLOGICAL & AGRICULTURAL ENGINEERING

Altria Client Services
JTI
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ENTOMOLOGY

Bayer Crop Science
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CROP SCIENCE

Alliance One International
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Gold Leaf Seed Company
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Philip Morris International
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Raynor Seed Company
RJ Reynolds Tobacco Company
Speight Seed Farm, Inc.
Syngenta Corporation
United Phosphorus, Inc.
Universal Leaf
Valent USA

NORTH CAROLINA COMBINED TOBACCO TOUR 2012

Dr. Mina Mila
Plant Pathology

Dr. Loren R. Fisher & Mr. Matthew Vann
Crop Science

Dr. G.H. Ellington
Biological & Agricultural Engineering

Dr. Hannah J. Burrack & Dr. Clyde Sorenson
Entomology

Dr. Blake Brown
Agricultural and Resource Economics

Technical Support: Plant Pathology:
John Radcliff, Jane Dove Long, Hsien-Tser Tseng

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Zach McCool

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THE NORTH CAROLINA COOPERATIVE EXTENSION SERVICE

July 2012

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*Breakfast * Tuesday morning*

RJ Reynolds
*Lunch * Tuesday afternoon*

DuPont Crop Protection
*Breakfast * Wednesday morning*

Japan Tobacco International
*Lunch * Wednesday afternoon*

Alliance One Tobacco USA
Altria Client Services
BASF
Carolina Soils Co.
Cross Creek Seed
Drexel Chemical Company
F.W. Richard Seed
TriEst Ag Group
Universal Leaf North America US
Workman Tobacco Seed
Yara
Tour refreshments (The Chuckwagon), Tour Flags & Tour Book

TABLE OF CONTENTS

2012 TEST LOCATIONS

The field programs for this year included tests scattered throughout the tobacco area. Listed below are the various types of tests in the field, their location, cooperating growers, extension agents and station personnel who are responsible for them.

Plant Pathology

Location	Cooperator	Test Supervisor
Black Shank Variety Evaluation		
Caswell	Austin Farms	Will Strader
Franklin	May Farms	Charles Mitchell
Yadkin	Hassell & Jesse Brown	Jack Loudermilk
UCPRS		Lewis Pitt
Granville Wilt Variety Evaluation		
Craven	David Parker	Mike Carroll
Franklin	N & N Farms	Charles Mitchell
Johnston	Thornton Farms	Bryant Spivey
Wilson	Scott Brother's Farm	Norman Harrell
Black Shank Chemical Trials		
Sampson	George Warren	
Yadkin	Hassell & Jesse Brown	Jack Loudermilk
UCPRS		Lewis Pitt
Nematode Chemical Control		
Hoke	Eddie Baker	

Biological and Agricultural Engineering

Location	Grower Cooperator	County Agent
VFD Fan Speed Reduction Technology		
Wilson	Scott Farms	Norman Harrell
Johnston	Triple B Farms	Bryant Spivey
Harnett	DMG Farms	Brian Parrish
Variable Firing Rate Burner Technology		
Wilson	Scott Farms	Norman Harrell
Nash	Barnes Farming	Charlie Tyson
Wayne/Lenoir	Mac Grady Farms	Kevin Johnson/ Mark Keene
Wood-Chip Fired Hot Water Heating System		
Harnett	Ryan Patterson	Brian Parrish

Entomology

Trial	Location	Project Leaders
Insect management with foliar insecticides	Lower Coastal Plain Research Station *Lenoir County*	Zach McCool, Clyde Sorenson & Chris Jernigan
	Upper Coastal Plain Research Station *Edgecombe County*	Zach McCool, Clyde Sorenson & Louis Pitt
Neonicotiniod Longevity & Late Season Insect Management	Lower Coastal Plain Research Station *Lenoir County*	Alejandro Merchan, Zach McCool & Chris Jernigan
	Upper Coastal Plain Research Station *Edgecombe County*	Alejandro Merchan, Zach McCool & Louis Pitt
Soil Applied Registered & Unregistered Insecticides	Lower Coastal Plain Research Station *Lenoir County*	Zach McCool, Clyde Sorenson & Chris Jernigan
	Upper Coastal Plain Research Station *Edgecombe County*	Zach McCool, Clyde Sorenson & Louis Pitt
Soil Applied & Foliar Insecticide Combinations	Lower Coastal Plain Research Station *Lenoir County*	Zach McCool, Clyde Sorenson & Chris Jernigan
	Upper Coastal Plain Research Station *Edgecombe County*	Zach McCool, Clyde Sorenson & Louis Pitt
Systemic imidacloprid and tobacco budworm parasitism	Upper Coastal Plain Research Station *Edgecombe County*	Sally Taylor & Clyde Sorenson
	Lower Coastal Plain Research Station *Lenoir County*	Sally Taylor & Clyde Sorenson
Tomato Spotted Wilt Virus Management	Lower Coastal Plain Research Station *Lenoir County*	Zach McCool, Clyde Sorenson & Chris Jernigan

Crop Science

Location	Test Type
Whiteville Lloyd Ransom Superintendant	Various rates, Application Methods and Application Timing with Liquid Nitrogen (UAN) Various Rates and Application Timing with Liquid Nitrogen (UAN) Effects of Command 3ME, Prowl H2O and Spartan Charge for Weed Control Various Formulations and Rates of Devrinol for Weed Control Matrix Pre and Post-Emergence for Weed Control Evaluation of Maryland 609 and TN 90 LC for Yield and Quality OVT; OVTA; RV; RFT; Holdability
Kinston Randy Stancil Tobacco Supervisor	Regional Sucker Control Study Pesticide Residue Study Various Nitrogen Sources on Yield, Quality and Chemical Characteristics Chemtura Sucker Control Study Drexel Chemical Sucker Control study Fair Products Sucker Control Study Effects of Organic Nitrogen Sources on Yield and Quality Organic Nitrogen Rate study OVT; OVTA; RSP; RFT
Rocky Mount Lewis Pitts Tobacco Supervisor	Various Formulations and Rates of Devrinol for Weed Control Pesticide Residue Study Chemtura Sucker Control Study Impact of Palmer Amaranth Populations on Yield and Quality Transplant Water Fertilizer Starters on Yield and Quality OVT; OVTA; RSP; RFT
Oxford Carl Watson Tobacco Supervisor	Regional Sucker Control Study Drexel Chemical Sucker Control Study Various Rates, Application Methods and Application Timing With Liquid Nitrogen (UAN) Various Rates and Application Timing with Liquid Nitrogen (UAN) Effects of Organic Nitrogen Sources on Yield and Quality Organic Nitrogen Rate Study Matrix Pre and Post-Emergence for Weed Control OVT; OVTA; RSP; RFT

Crop Science

Reidsville Auman French Tobacco Supervisor	Burley Pesticide Residue Study Burley Regional Sucker Control Study Burley Chemtura Sucker Control Maryland 609 and TN 90 LC for Yield and Quality Various Nitrogen Sources for Yield, Quality and Chemical Characteristics on Burley Tobacco Burley OVT; RQT Study
Laurel Springs John Council Tobacco Supervisor	Burley OVT; RQT Study Burley Regional Preliminary Variety Study Burley Regional Sucker Control Study Burley Chemtura Sucker Control Study
Waynesville Kyle Miller Tobacco Supervisor	Maryland 609 and TN 90 LC for Yield and Quality Various Nitrogen Sources on Yield, Quality and Chemical Characteristics on Burley Tobacco

2012 Crop Science On-Farm Flue-Cured Extension Tests

Johnston County Bryant Spivey County Extension Director	Evaluation of Prime+ Carryover on Flue-Cured Tobacco followed by Sweet Potatoes The Impact of Various Tillage and Field Preparation Methods on Soil Moisture and Compaction
Forsyth County Tim Hambrick County Extension Agent	The Impact of Various Tillage and Field Preparation Methods on Soil Moisture and Compaction The Evaluation of Alternative Fertilizer Programs for Flue-cured Tobacco in the Western Piedmont of North Carolina
Davie County Scott Tilley County Extension Agent	The Evaluation of Alternative Fertilizer Programs for Flue-cured Tobacco in the Western Piedmont of North Carolina

2012 North Carolina Cominded Tobacco Tour
Driving Directions

Time	Directions	Miles
	Headquarters Hotel -- Hampton Inn	
	5606 Lamm Rd., Wilson, NC 27896	
Monday, July 23		
	NO TRAFFIC PROTECTION TO WELCOME DINNER	
	Directions from Hampton Inn to Silver Lake Restaurant	
	Right on Lamm Rd	2.4
	Continue onto Old Bailey Hwy	0.8
	Right on E Hornes Church Rd	3.1
	Left onto NC 58 N Hwy	0.5
	Left into Silver Lake Seafood Restaurant Parking Lot	
6:15pm -- Cash Bar	**Welcome Dinner -- Silver Lake Seafood Restaurant**	
7:00 pm -- Dinner	*5335 Nc Highway 58 N # A, Wilson, NC*	
Tuesday, July 24		
7:00	Depart Hotel	
	Left on Lamm Rd.	0.1
	Straight through stoplight at Raleigh Rd	3
	Straight through stoplight at Old Raleigh Rd	0.8
	Straight through stoplight at Hwy 42	1.3
	Right onto Radford Rd	1
	Straight through stopsign at Wiggins Mill Rd	1.6
	Right onto St. Mary's Church Rd	3.9
	Left on Oscar Loop Rd	0.6
	Right onto Simpson Rd	0.7
	Arrive at Scott Farms on Left	
7:30-8:30	**Scott Farms, Wilson County -- Ag. Engeneering**	
	7965 Simpson Rd. Lucama, NC	
	Breakfast	
	VFD Fan Speed Reduction Technology	
	Variable Firing Rate Burner Technology	
	Depart Scott Farms--Left on Simpson Rd	1.1
	Left at stopsign on St. Mary's Church Rd	0.3
	Left on Fannie Rd	0.4
	Left at stopsign on NC 581	0.6
	Straight through stopsign at Hwy 301	0.9
	Right onto Kirby Rd	0.8
	Left at stopsign onto Frank Rd	0.5
	Left onto farm path at Scott Brother's Farm	
8:40-9:20	**Scott Brothers Farm, Wilson County -- Plant Pathology**	
	8950 Frank Rd. Kenly, NC	
	Granville Wilt Variety Trial	

	Depart Scott Brother's Granville Wilt Variety Trial	
	Travel down farm path	0.5
	Left onto NC 581	1.8
	Right onto Hwy 301 North	5
	Straight through stoplight at Main St.	0.5
	Straight through stoplight at Little Rock Ch. Rd	2.9
	Straight through stoplight at I-795	0.3
	Straight through stoplight at Hwy 117	0.2
	Sraight through stoplight at US 264 E	0.2
	Straight through stoplight at US 264 W	0.9
	Straight through stoplight at Forest Hills Rd	1.1
	Straight through stoplight at Wilco Blvd	0.5
	Straight through stoplight at Ward Blvd	0.4
	Straight through stoplight at Thorne Ave	0.5
	Straight through stoplight at Black Creek Rd	0.3
	Straight through stoplight at Newburn St	0.1
	Straight through stoplight at Lane St	0.2
	Straight through stoplight at MLK Jr. Blvd	0.3
	Straight through stoplight at Marlow St	0.2
	Straight through stoplight at Lipscombe Rd	11.3
	Straight through stoplight at Mill Branch Rd	1.4
	Right at stoplight onto W. Tarboro Rd	250 ft
	Straight across railroad track to stay on Tarboro Rd	1.1
	Straight trough stopsign onto Bullock School Rd.	3.8
	Straight through stoplight at NC 43	2.1
	Left onto Antioch Rd	1.8
	Right at stopsign onto Nobels Millpond Rd	0.9
	Right into driveway at Upper Coastal Plains Research Station	
10:15--12:15	**Upper Coastal Plains Research Station, Edgecombe County** *2811 Nobles Mill Pond Rd. Rocky Mount, NC*	
	Chemical Control of Black Shank in FC Tobacco **Pesticide Residue Study** **Chemtura Sucker Control Test** **Impact of FC Tobacco on Palmer Amaranth Populations** **Systemic Neonicotinoids Longevity in Tobacco** **Systemic Imidacloprid and Tobacco Budworm Parasitism** **Efficacy of Foliar Insecticides Against the Tobacco Budworm and Tobacco Hornworm**	
	Right onto Nobels Millpond Rd to Depart Upper Coastal Plains Reasearch Station	0.2
	Left onto Howard Ave. Extension	0.5
	Left onto Kingsboro Rd	1.3
	Right into Eastern Carolina Ag. Center	
12:20--1:30	**Eastern Carolina Agriculture & Education Center, Edgecombe County** *1175 Kingsboro Road Rocky Mount, NC 27801*	
	Lunch	
	Right onto Kingsboro Rd	0.8
	Left onto US 64 W.	37
	Right at Exit 439 onto Hwy 39 N/Hwy 98 W	1.6
	Straight through stoplight at Old US 64	5
	Left at stoplight to stay on Hwy 39 N/Hwy 98 W	8.1
	Right onto Egypt Church Rd	0.8
	Right at driveway to May Farm test plot	
2:30-3:10	**May Farms, Franklin County -- Plant Pathology** *375 Egypt Church Rd., Louisburg, NC 27549*	
	Black Shank Variety Trial	

Wednesday, July 25

Time	Directions	Miles
	NO TRAFFIC PROTECTION FOR ENTIRE DAY	
8:00--9:40	**Oxford Tobacco Research Station** *300 Providence Road Oxford, NC 27565*	
	Regional Tobacco Growth Regulator Test **Matrix Pre and Post-Emergence in Tobacco for Weed Control** **Various Rates, Application Methods and Application Timing with Liquid Nitrogen (UAN) on FC Tobacco** **Various Rates and Application Timing of Liquid Nitrogen (UAN) on FC Tobacco** **Organic Nitrogen Rate Test in FC Tobacco** **Evaluate the Effects of Organic Nitrogen Sources on FC Tobacco**	
	Depart field	
	Left on SR 1166	0.8
	Left on Oxford Loop Rd	1.3
	Straight through stoplight at Roxboro Rd	0.6
	Left onto Hwy 96	5.8
	Left on Satterwhite Rd	4.8
	Right on Goshen Rd	0.1
	Left on Walnut Grove Rd	3.8
	Right on Thomas Green Rd	1.3
	Left onto farm path	
	Arrive at grower's farm	
10:10-10:50	**Aycock Farm ,Person County** *1285 Thomas Green Rd. Roxboro, NC*	
	Piedmont Tobacco Mechanization	
	Right back onto Thomas Green Rd	0.4
	Right onto Lawson Adcock Rd	1.6
	Right on Dirgie Mill Rd (SR 1452)	1.5
	Right to stay on Dirgie Mill Rd (SR 1452)	1.9
	Slight Left onto Olive Branch Rd	1.8
	Straight through stopsign at Hwy 49 onto Bowmantown Rd	4.4
	Right onto US-501 N/Boston Rd.	0.3
	1st Left onto Shiloh Church Rd	2.5
	Straight through stopsign onto Edwin Robertson Rd.	4.8
	Right onto McGehees Mill Rd	4.1
	Right onto Mt Carmell Rd/SR 699	1.8
	Left onto Coleman Dr/SR 697	1.7
	Right onto Hudson Rd/SR 779	0.7
	Left onto US 360 W/ US 58 W/ Philpott Rd	9.4
	Straight through stoplight	2.9
	Straight through stoplight at Cane Creek Rd	0.4
	Straight through stoplight at Mountain Hill Rd	1
	Straight through stoplight at Kentuck Rd	0.2
	Left onto Airport Rd	1.7
	Stay right onto Stinson Rd.	0.5
	Arrive at JTI Leaf Services on Left	
12:00	**JTI Leaf Services** *202 Stinson Dr. Danville, VA 24540*	
	Lunch & Facility Tour	

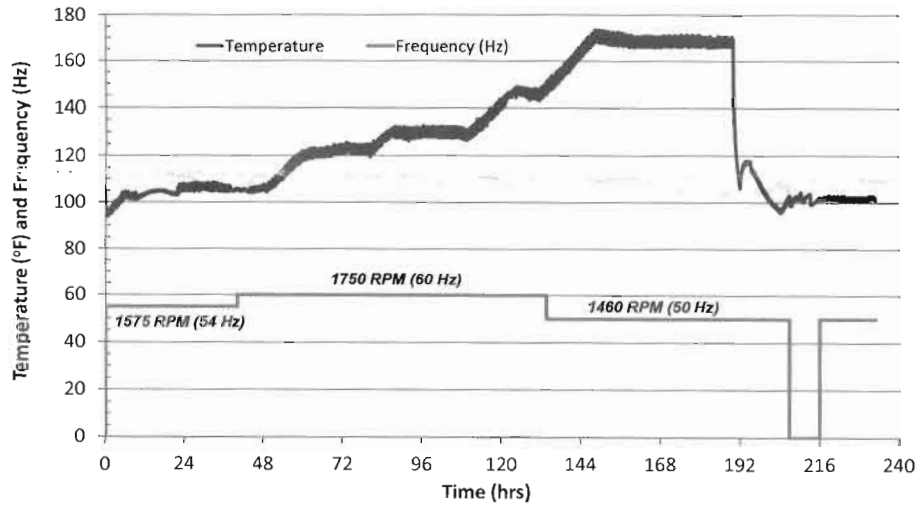
Variable Frequency Drive Average Electrical Energy Savings

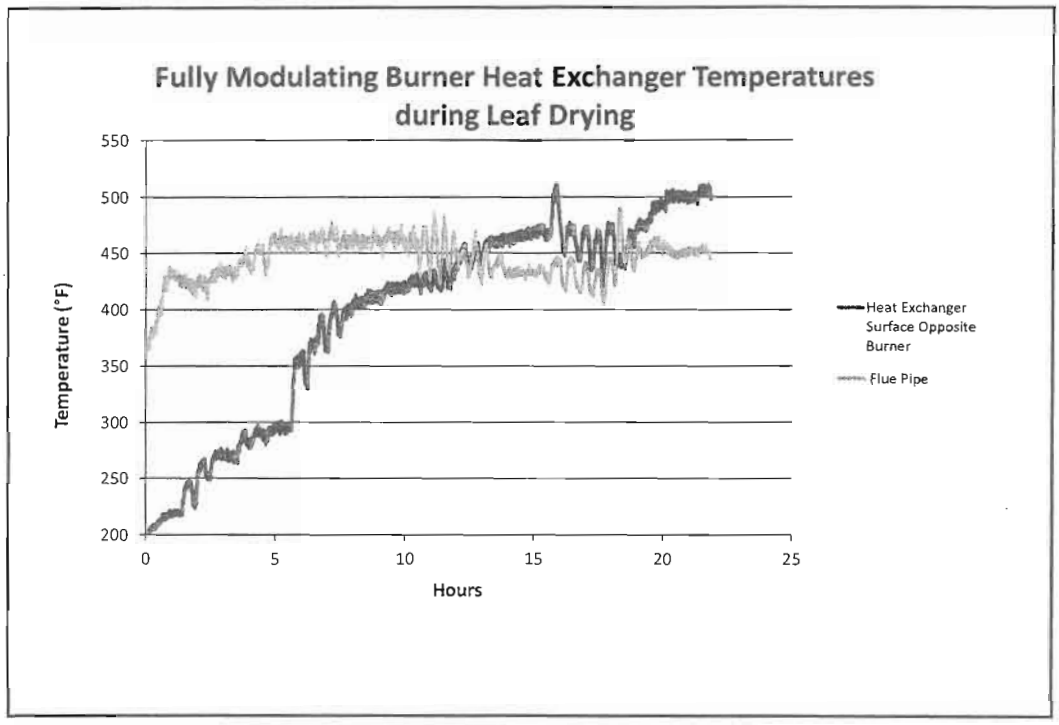
Location	Motor Hp, Phase	# of Cures @ Reduced Speed	AVG. kWh		AVG. Savings / cure		
			Check	VFD	kWh	%	*$
Scott Farms (2009)	10, 3-phase	4			207	12	29
Scott Farms		7	1696	1500	195	11	27
(2010)		3 – Mid &Upper	1695	1314	382	22	54
Scott Farms (2011)		4	1596	1312	284	16	40
Harnett (2011)	10, 1-phase	7	1745	1391	354	20	50

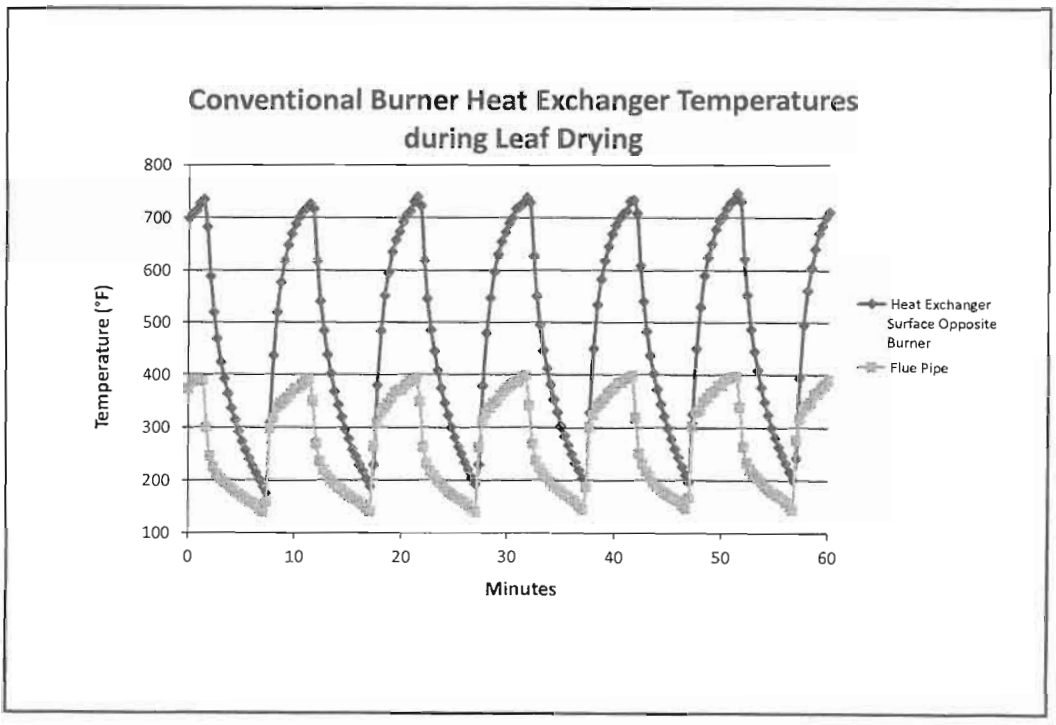
** 0.14 / kWh*

Temperature and Fan Speed Profiles

(Cure 2, Wilson County – 2011)




Fully Modulating Burner Heat Exchanger Temperatures during Leaf Drying
Temperature (°F)
550
500
450
400
350
300
250
200
0
5
10
15
20
25
Hours
Heat Exchanger Surface Opposite Burner
Flue Pipe


Conventional Burner Heat Exchanger Temperatures during Leaf Drying
Temperature (°F)
800
700
600
500
400
300
200
100
0
10
20
30
40
50
60
Minutes
Heat Exchanger Surface Opposite Burner
Flue Pipe

	118	119	120	121	122	123	124	125	126	127	128	Fill	Fill
	14	28	12	3	16	21	15	2	17	23	8		
Rep 4													
	105	106	107	108	109	110	111	112	113	114	115	116	117
	18	30	10	9	4	19	20	32	6	11	24	7	22
	92	93	94	95	96	97	98	99	100	101	102	103	104
	30	17	9	21	14	25	29	31	26	5	1	13	27
	79	80	81	82	83	84	85	86	87	88	89	90	91
Rep 3	31	4	2	25	29	1	27	19	13	15	5	23	18
	66	67	68	69	70	71	72	73	74	75	76	77	78
	6	22	11	3	10	32	26	24	28	8	16	20	7
	53	54	55	56	57	58	59	60	61	62	63	64	65
	21	31	10	28	9	30	20	5	3	7	23	27	12
Rep 2													
	40	41	42	43	44	45	46	47	48	49	50	51	52
	4	12	6	16	11	8	14	13	18	19	2	29	26
	27	28	29	30	31	32	33	34	35	36	37	38	39
	22	10	25	30	15	1	24	22	32	1	17	15	25
	14	15	16	17	18	19	20	21	22	23	24	25	26
Rep 1	11	9	12	32	21	13	4	3	19	23	20	7	8
	1	2	3	4	5	6	7	8	9	10	11	12	13
	31	29	16	28	14	26	2	5	6	27	24	17	18

2012 Granville Wilt Variety Trial, Wilson County

Means Table

Rating Date		6/4/2012	6/22/2012
Rating Data Type		Percent Dis	Percent Dis
ARM Action Codes			
Entry No.	Entry Name		
1	GL 368	4 a	23 ab
2	CC 65	19 a	62 a
3	CC 67	11 a	28 ab
4	PVH 1452	8 a	20 ab
5	NC 102	11 a	32 ab
6	GF 318	11 a	34 ab
7	CC 304	10 a	25 ab
8	NC 299	8 a	26 ab
9	GL 338	15 a	45 ab
10	CC 13	17 a	39 ab
11	CC 33	2 a	25 ab
12	NC 925	2 a	17 b
13	PVH 1118	6 a	39 ab
14	SP 236	5 a	31 ab
15	PVH 2110	5 a	27 ab
16	NC 92	6 a	21 ab
17	PVH 2275	6 a	21 ab
18	PVH 2248	7 a	35 ab
19	CC 35	12 a	49 ab
20	K 346	0 a	20 ab
21	CC 700	6 a	36 ab
22	GL 395	1 a	7 b
23	NC 471	14 a	31 ab
24	CC 37	4 a	17 b
25	PVH 2254	3 a	14 b
26	RJR 901	1 a	8 b
27	CC 1063	4 a	8 b
28	GF 157	8 a	33 ab
29	K 326	15 a	47 ab
30	K 394	13 a	50 ab
32	TI 442A	4 a	17 b
LSD (P=.05)		11.8	24
Standard Deviation		8.4	17.1
CV		106.86	59.43
Grand Mean		7.88	28.85
Bartlett's X2		55.27	47.736
P(Bartlett's X2)		0.003*	0.028*
Replicate F		1.408	1.523
Replicate Prob(F)		0.2453	0.2136
Treatment F		1.45	2.305
Treatment Prob(F)		0.0888	0.0011

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls

Rating Date		6/4/2012	6/22/2012	7/20/2012
Rating Data Type		Percent Dis	Percent Dis	Percent Dis
Entry No.	Entry Name	3	5	9
1	GL 368	4 a	23 ab	59 a-d
2	CC 65	19 a	62 a	75 abc
3	CC 67	11 a	28 ab	39 a-d
4	PVH 1452	8 a	20 ab	23 cd
5	NC 102	11 a	32 ab	54 a-d
6	GF 318	11 a	34 ab	40 a-d
7	CC 304	10 a	25 ab	27 cd
8	NC 299	8 a	26 ab	41 a-d
9	GL 338	15 a	45 ab	61 a-d
10	CC 13	17 a	39 ab	50 a-d
11	CC 33	2 a	25 ab	27 cd
12	NC 925	2 a	17 b	18 cd
13	PVH 1118	6 a	39 ab	45 a-d
14	SP 236	5 a	31 ab	37 a-d
15	PVH 2110	5 a	27 ab	44 a-d
16	NC 92	6 a	21 ab	45 a-d
17	PVH 2275	6 a	21 ab	34 bcd
18	PVH 2248	7 a	35 ab	34 bcd
19	CC 35	12 a	49 ab	86 ab
20	K 346	0 a	20 ab	9 d
21	CC 700	6 a	36 ab	51 a-d
22	GL 395	1 a	7 b	17 d
23	NC 471	14 a	31 ab	39 a-d
24	CC 37	4 a	17 b	14 d
25	PVH 2254	3 a	14 b	21 cd
26	RJR 901	1 a	8 b	11 d
27	CC 1063	4 a	8 b	13 d
28	GF 157	8 a	33 ab	43 a-d
29	K 326	15 a	47 ab	59 a-d
30	K 394	13 a	50 ab	93 a
32	TI 442A	4 a	17 b	34 bcd
LSD (P=.05)		11.8	24	31.5
Standard Deviation		8.4	17.1	22.5
Replicate F		1.408	1.523	2.771
Replicate Prob(F)		0.2453	0.2136	0.0459
Treatment F		1.45	2.305	3.42
Treatment Prob(F)		0.0888	0.0011	0.0001

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

2012 Black Shank Chemical Trial, Upper Coastal Plains Research Station

Means Table

Rating Data Type					Percent Dis	Percent Dis
Rating Date					6/18/2012	7/3/2012
Trt No.	Treatment Name	Rate	Rate Unit	Grow Stg		
1	Untreated Check				2 a	10 a
2	Presidio	4	fl oz/a	ATTRAN	2 a	0 a
	Presidio	4	fl oz/a	1st Cult		
	Presidio	4	fl oz/a	Layby		
3	Presido	4	fl oz/a	ATTRAN	0 a	6 a
	Revus	22	fl oz/a	1st Cult		
	Presidio	4	fl oz/a	Layby		
4	Revus	22	fl oz/a	ATTRAN	0 a	3 a
	Presidio	4	fl oz/a	1st Cult		
	Revus	22	fl oz/a	Layby		
5	Ridomil Gold	0.3	pt/a	ATTRAN	0 a	6 a
	Ridomil Gold	1	pt/a	1st Cult		
	Ridomil Gold	1	pt/a	Layby		
6	Exp. Fungicide	10	fl oz/a	ATTRAN	0 a	8 a
	Exp. Fungicide	10	fl oz/a	1st Cult		
	Exp. Fungicide	10	fl oz/a	Layby		
LSD (P=.05)					3.4	7.6
Standard Deviation					2.2	5.1
CV					296.65	92.22
Grand Mean					0.76	5.49
Bartlett's X2					0.84	5.947
P(Bartlett's X2)					0.359	0.203
Replicate F					0.455	0.302
Replicate Prob(F)					0.718	0.8235
Treatment F					1.091	1.966
Treatment Prob(F)					0.4051	0.1425

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

Rating Data Type					Percent Dis	Percent Dis	Percent Dis
Rating Date					6/18/2012	7/3/2012	7/19/2012
Trt No.	Treatment Name	Rate	Rate Unit	Grow Stg			
1	Untreated Check				2 a	10 a	50 a
2	Presidio	4	fl oz/a	ATTRAN	2 a	0 a	3 c
	Presidio	4	fl oz/a	1st Cult			
	Presidio	4	fl oz/a	Layby			
3	Presido	4	fl oz/a	ATTRAN	0 a	6 a	6 c
	Revus	22	fl oz/a	1st Cult			
	Presidio	4	fl oz/a	Layby			
4	Revus	22	fl oz/a	ATTRAN	0 a	3 a	11 c
	Presidio	4	fl oz/a	1st Cult			
	Revus	22	fl oz/a	Layby			
5	Ridomil Gold	0.25	pt/a	ATTRAN	0 a	6 a	8 c
	Ridomil Gold	1	pt/a	1st Cult			
	Ridomil Gold	1	pt/a	Layby			
6	V-10208	10	fl oz/a	ATTRAN	0 a	8 a	31 b
	V-10208	10	fl oz/a	1st Cult			
	V-10208	10	fl oz/a	Layby			
LSD (P=.05)					3.4	7.6	15.5
Standard Deviation					2.2	5.1	10.3
Replicate F					0.455	0.302	1.13
Replicate Prob(F)					0.718	0.8235	0.3684
Treatment F					1.091	1.966	12.835
Treatment Prob(F)					0.4051	0.1425	0.0001

SUPPLEMENTAL LABELING

Syngenta Crop Protection, LLC
P. O. Box 18300
Greensboro, North Carolina 27419-8300
SCP 1254A-S3 0112

GROUP	40	FUNGICIDE

Revus®

Fungicide

Active Ingredient/Guarantee:	
Mandipropamid*	23.3%
Other Ingredients:	76.7%
Total:	100.0%

* CAS No. 374726-62-2

Contains 1,2-benzisothiazolin-3-one at 0.017% as a preservative.

Contains 23.3% Mandipropamid equivalent to 2.08 pounds per gallon or 250 grams per liter of active ingredient

KEEP OUT OF REACH OF CHILDREN.

See additional precautionary statements and directions for use inside booklet.

EPA Reg. 100-1254

All applicable directions, restrictions and precautions on the EPA-registered label are to be followed. Before using Revus as permitted according to this supplemental label, read and follow all applicable directions, restrictions, and precautions on the EPA registered label on or attached to the pesticide product container. This Supplemental Labeling contains revised use instructions and or restrictions that may be different from those that appear on the container label. This Supplemental Labeling must be in the possession of the user at the time of pesticide application. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

syngenta

DIRECTIONS FOR USE

Crop	Disease	Rate fl. oz./Acre (lb a.i./A)	Remarks
Tobacco	Blue mold (*Peronospora tabacina*)	8.0 (0.13)	Begin applications prior to disease development and continue throughout the season on a 7-10 day interval. Make no more than 2 consecutive applications before switching to an effective non-Group 40 fungicide. Revus may be tank mixed with another fungicide labeled for blue mold that has a different mode of action. The addition of a spreading/penetrating type adjuvant such as a non-ionic based surfactant may improve activity.
	Application: For best results, use sufficient water volume to provide thorough coverage. Revus may be applied by ground, chemigation, or aerial application. Aerial applications must be made using a minimum of 2 gallons water per acre.		

Specific Use Restrictions:

- Do not apply more than 32 fl oz of product/A/season (0.52 lbs. a.i./A/season).
- Do not apply within 7 days of harvest (7 day PHI).

SCP 1254A-S3 0112

2012 PESTICIDE RESIDUE STUDY
UPPER COASTAL PLAIN RESEARCH STATION
ROCKY MOUNT, NC

404 2	403 3	402 1	401 4

REP IV

5' ALLEY

301 3	302 1	303 2	304 4

REP III

5' ALLEY

204 2	203 3	202 1	201 4

REP II

5' ALLEY

101 1	102 2	103 3	104 4

REP I

DESIGN: RANDOMIZED COMPLETE BLOCK.
PLOT SIZE: 4-ROWS, 8' WIDE AND 40' LONG. HARVEST 2 CENTER ROWS.
VARIETY: NC 71 (GREENHOUSE PLANTS). TRANSPLANTED: 4-17-12
FERTILIZATION: STANDARD RESEARCH STATION CULTURAL PRACTICES.
NOTE: DO NOT APPLY ANY INSECTICIDES THAT ARE IN THE TEST.

North Carolina State University

2012 PESTICIDE RESIDUE STUDY
LOREN FISHER MATTHEW VANN JOE PRIEST SCOTT WHITLEY

Trial ID: PRRM-12
Location: ROCKY MOUNT, NC

Study Director:
Investigator: Joseph A Priest

Reps: 4
Spray vol: 20 gal/ac

Plots: 16 by 45 feet
Mix size: 2 gallons (min 1.4545)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Amt Product to Measure	Plot No. By Rep 1	2	3	4
1	BELT SC (FLUBENDIAMIDE) 4 FIELD APPLICATIONS (EACH 3 OZ/A) (14 DAY PHI)	4.0	SC	0.094	lb ai/a	8.895 ml/mx	101	202	302	402
2	BELAY SC (CLOTHIANIDIN) 3 FIELD APPLICATIONS (EACH 4.0 OZ/A) (14 DAY PHI)	2.13	SC	0.067	lb ai/a	11.91 ml/mx	102	204	303	404
3	CAPTURE LRF (BIFENTHRIN) 2 FIELD APPLICATIONS BEFORE LAYBY (EACH 8.5 OZ/A)	1.5	EC	0.1	lb ai/a	25.23 ml/mx	103	203	301	403
4	CORAGEN S (CHLORANTRANILIPROLE) TRANSPLANT H2O TREATMENT (7 OZ/A) 2 FIELD APPLICATIONS-(EACH 4.2 OZ/A) (1 DAY PHI)	1.67 1.67	SC SC	0.091 0.055	lb ai/a lb ai/a	20.62 ml/mx 12.47 ml/mx	104	201	304	401

Sort Order: Treatment

2012 CHEMTURA SUCKER CONTROL TEST
UPPER COASTAL PLAIN RESEARCH STATION
ROCKY MOUNT, NC

REP IV

410 9	409 8	408 7	407 2	406 6	405 4	404 3	403 1	402 5	401 10
301 6	302 3	303 4	304 7	305 1	306 2	307 5	308 8	309 9	310 10

REP III

SMALL ALLEY

REP II

210 9	209 7	208 1	207 5	206 3	205 8	204 4	203 6	202 2	201 10
101 1	102 2	103 3	104 4	105 5	106 6	107 7	108 8	109 9	110 10

REP I

DESIGN: RANDOMIZED COMPLETE BLOCK
PLOT SIZE: 2 ROWS, 8' WIDE AND 40' LONG
VARIETY: NC 71 (GH PLANTS). TRANSPLANTED:4-17-12
FERTILIZATION: STANDARD RESEARCH STATION CULTURAL PRACTICES

North Carolina State University

2012 CHEMTURA SUCKER CONTROL TEST
LOREN FISHER MATTHEW VANN JOE PRIEST SCOTT WHITLEY

Trial ID: CHEMRM-12 Study Director:
Location: ROCKY MOUNT, NC Investigator: Joseph A Priest

Reps: 4 Plots: 8 by 40 feet
Spray vol: 50 gal/ac Mix size: 3 gallons (min 1.4692)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Amt Product to Measure	Plot No. By Rep 1	2	3	4
1	OST 2.0 GPA	6.01	EC	12.02	lb ai/a	454.2 ml/mx	101	208	305	403
	OST 2.5 GPA	6.01	EC	15.03	lb ai/a	567.9 ml/mx				
	(RMH-30 1.5 GPA &	1.5	EC	2.25	lb ai/a	340.7 ml/mx				
	FLUPRO 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	113.6 ml/mx				
	STANDARD (TG3-TG5-TG3)									
2	OST 2.0 GPA	6.01	EC	12.02	lb ai/a	454.2 ml/mx	102	202	306	407
	OST 2.5 GPA	6.01	EC	15.03	lb ai/a	567.9 ml/mx				
	(RMH-30 1.5 GPA &	1.5	EC	2.25	lb ai/a	340.7 ml/mx				
	FLUPRO 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	113.6 ml/mx				
	STANDARD (TG3-TG5-TG3) WITH CONVEYOR									
3	OST 2.0 GPA	6.01	EC	12.02	lb ai/a	454.2 ml/mx	103	206	302	404
	OST 2.5 GPA	6.01	EC	15.03	lb ai/a	567.9 ml/mx				
	(RMH-30 1.0 GPA &	1.5	EC	1.5	lb ai/a	227.1 ml/mx				
	FLUPRO 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	113.6 ml/mx				
	STANDARD (TG3-TG5-TG3)									
4	OST 2.0 GPA	6.01	EC	12.02	lb ai/a	454.2 ml/mx	104	204	303	405
	OST 2.5 GPA	6.01	EC	15.03	lb ai/a	567.9 ml/mx				
	(RMH-30 1.0 GPA &	1.5	EC	1.5	lb ai/a	227.1 ml/mx				
	FLUPRO 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	113.6 ml/mx				
	STANDARD (TG3-TG5-TG3) WITH CONVEYOR									
5	ROYALTAC 1.5 GPA	5.70	EC	8.55	lb ai/a	340.7 ml/mx	105	207	307	402
	(ROYALTAC 1.5 GPA &	5.70	EC	8.55	lb ai/a	340.7 ml/mx				
	FLUPRO 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	113.6 ml/mx				
	(ROYALTAC 1.5 GPA &	5.70	EC	8.55	lb ai/a	340.7 ml/mx				
	FLUPRO 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	113.6 ml/mx				
	STANDARD (TG3-TG5-TG3) WITH CONVEYOR									
6	OST 2.0 GPA	6.01	EC	12.02	lb ai/a	454.2 ml/mx	106	203	301	406
	(OST 2.5 GPA &	6.01	EC	15.03	lb ai/a	567.9 ml/mx				
	FLUPRO 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	113.6 ml/mx				
	(OST 2.5 GPA &	6.01	EC	15.03	lb ai/a	567.9 ml/mx				
	FLUPRO 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	113.6 ml/mx				
	STANDARD (TG3-TG5-TG3) WITH CONVEYOR									
7	ROYALTAC 1.5 GPA	5.70	EC	8.55	lb ai/a	340.7 ml/mx	107	209	304	408
	(ROYALTAC 1.5 GPA &	5.70	EC	8.55	lb ai/a	340.7 ml/mx				
	FLUPRO 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	113.6 ml/mx				
	ROYALTAC 1.5 GPA &	5.70	EC	8.55	lb ai/a	340.7 ml/mx				
	FLUPRO 0.25 GPA) TM	1.2	EC	0.3	lb ai/a	56.78 ml/mx				
	(ROYALTAC 1.5 GPA &	5.70	EC	8.55	lb ai/a	340.7 ml/mx				
	FLUPRO 0.25 GPA) TM	1.2	EC	0.3	lb ai/a	56.78 ml/mx				
	STANDARD (TG3-TG5-TG3) WITH CONVEYOR									
8	OST 2.0 GPA	6.01	EC	12.02	lb ai/a	454.2 ml/mx	108	205	308	409
	(OST 2.5 GPA &	6.01	EC	15.03	lb ai/a	567.9 ml/mx				
	FLUPRO 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	113.6 ml/mx				
	(OST 2.5 GPA &	6.01	EC	15.03	lb ai/a	567.9 ml/mx				
	FLUPRO 0.25 GPA) TM	1.2	EC	0.3	lb ai/a	56.78 ml/mx				
	(OST 2.5 GPA &	6.01	EC	15.03	lb ai/a	567.9 ml/mx				
	FLUPRO 0.25 GPA) TM	1.2	EC	0.3	lb ai/a	56.78 ml/mx				
	STANDARD (TG3-TG5-TG3) WITH CONVEYOR									

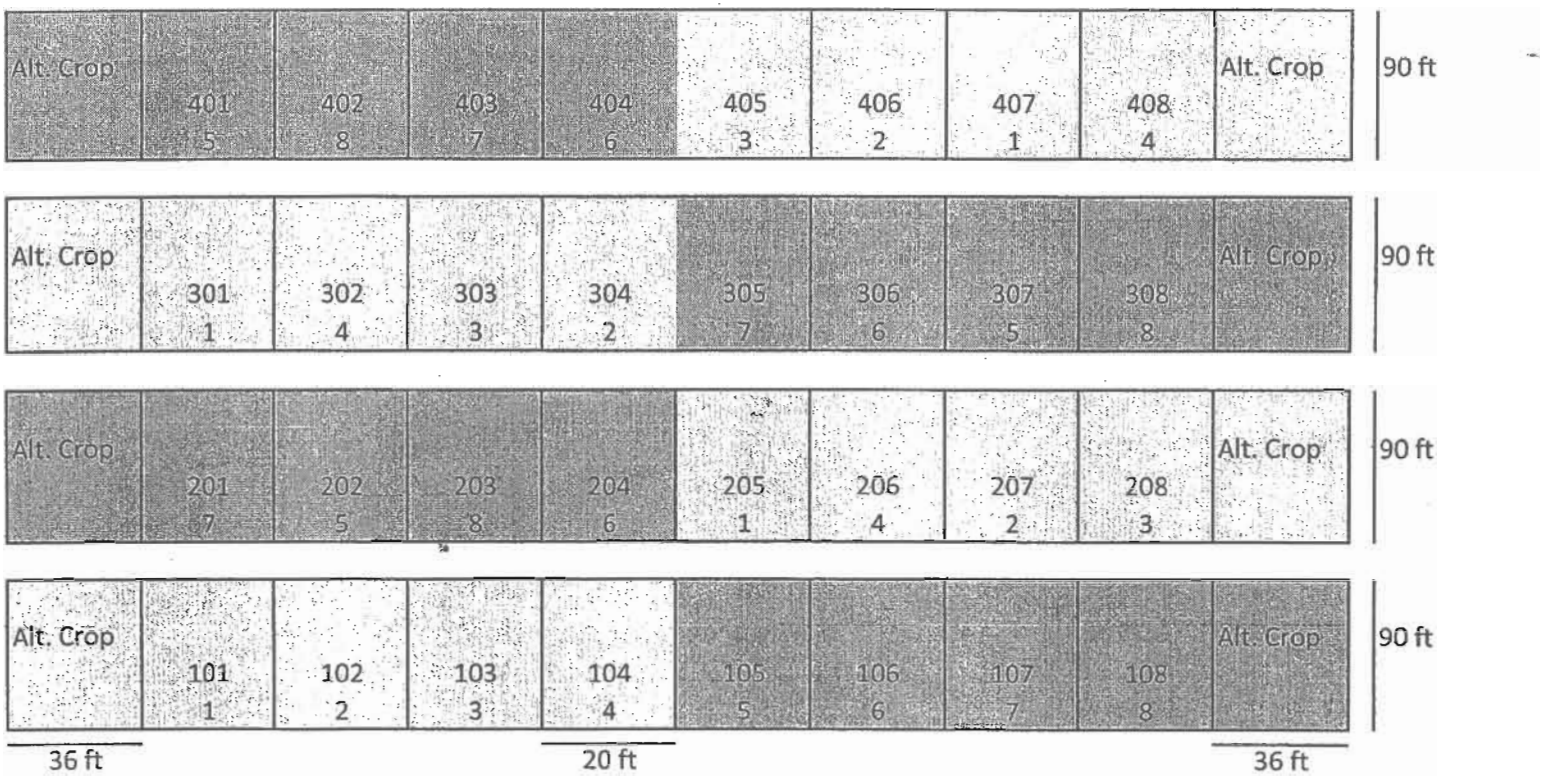
North Carolina State University

Reps: 4 Plots: 8 by 40 feet
Spray vol: 50 gal/ac Mix size: 3 gallons (min 1.4692)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Amt Product to Measure	Plot No. By Rep 1	2	3	4
9	ROYALTAC 1.5 GPA	5.70	EC	8.55	lb ai/a	340.7 ml/mx	109	210	309	410
	(OST 2.5 GPA &	6.01	EC	15.03	lb ai/a	567.9 ml/mx				
	FLUPRO 0.25 GPA) TM	1.2	EC	0.3	lb ai/a	56.78 ml/mx				
	(OST 2.5 GPA &	6.01	EC	15.03	lb ai/a	567.9 ml/mx				
	FLUPRO 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	113.6 ml/mx				
	STANDARD (TG3-TG5-TG3) WITH CONVEYOR									
10	TOPPED, NOT SUCKERED						110	201	310	401

Sort Order: Treatment

The Impact of Flue-cured Tobacco on Palmer Amaranth Populations



Treatments:

1) Disc w/Spartan-Hand Weed
2) Disc w/Spartan-No Hand Weed
3) Disc w/Command-Hand Weed
4) Disc w/Command- No Hand Weed
5) Plow w/Spartan-Hand Weed
6) Plow w/Spartan-No Hand Weed
7) Plow w/Command-Hand Weed
8) Plow w/Command-No Hand Weed

Disc
Plow

North Carolina State University

The Impact of Flue-cured Tobacco on Palmer Amaranth Populations

Trial ID: RSRM-12
Location: Rocky Mount, NC

Study Director: Matthew Vann
Investigator: Joseph A Priest

Reps: 4
Spray vol: 20.4 gal/ac

Plots: 20 by 90 feet
Mix size: 3 gallons (min 3.3719)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Amt Product to Measure	Plot No. By Rep 1	2	3	4
1	Disc w/Spartan-Hand Weed Command	3.5 3.0	SE ME	6 0.75	oz ai/a lb ai/a	59.64 ml/mx 139.2 ml/mx	101	205	301	407
2	Disc w/Spartan-No Hand Weed Command	3.5 3.0	SE ME	6 0.75	oz ai/a lb ai/a	59.64 ml/mx 139.2 ml/mx	102	207	304	406
3	Disc w/Command-Hand Weed	3.0	ME	0.75	lb ai/a	139.2 ml/mx	103	208	303	405
4	Disc w/Command-No Hand Weed	3.0	ME	0.75	lb ai/a	139.2 ml/mx	104	206	302	408
5	Plow w/Spartan-Hand Weed Command	3.5 3.0	SE ME	6 0.75	oz ai/a lb ai/a	59.64 ml/mx 139.2 ml/mx	105	202	307	401
6	Plow w/Spartan-No Hand Weed Command	3.5 3.0	SE ME	6 0.75	oz ai/a lb ai/a	59.64 ml/mx 139.2 ml/mx	106	204	306	404
7	Plow w/Command-Hand Weed	3.0	ME	0.75	lb ai/a	139.2 ml/mx	107	201	305	403
8	Plow w/Command-No Hand Weed	3.0	ME	0.75	lb ai/a	139.2 ml/mx	108	203	308	402
9	Plow Alt. Crop-Soybean						109	210	309	410
10	Disc Alt. Crop-Soybean						110	209	310	409

Sort Order: Treatment

Questions about flea beetle activity in systemically treated tobacco

From www.nccrops.com
Posted on May 30, 2012 by Hannah Burrack, North Carolina State University Extension Entomologist

Recently, I received two calls about tobacco flea beetle feeding and live beetles in tobacco that had been treated in the greenhouse with systemic insecticides (both were imidacloprid products). Reducing early season flea beetle feeding is one of the three main reason we use systemic insecticides in tobacco (reducing aphids and feeding by thrips vectors of Tomato Spotted Wilt Virus (TSWV) are the other two). The fact that live flea beetles were not only present but were also actively feeding on plants that had been treated was of concern. Both locations were between four and six weeks after transplant, and the key questions I had were:
1. Is the insecticide no longer (or never) present in the plant at insecticidal concentrations?
or
2. Are the beetles present not susceptible imidacloprid?
One of last week's calls was from the same grower who, in previous years, had expressed concern about difficult to control flea beetles during harvest, an issue that I've discussed for the last several years. In late summer 2010, we collected beetles from his field and conducted a leaf dip bioassay comparing field rates and twice the field rates of Assail (acetamiprid), Provado (imidacloprid, Admire Pro as a foliar application is now the recommended imidacloprid treatment in tobacco), Actara (thiamethoxam), and acephate. We found that all the insecticides killed more flea beetles than died naturally in the untreated control but that the neonicotinoid (IRAC Group 4A) insecticides (acetamiprid, imidacloprid, and thiamethoxam) acted faster than acephate.These results suggested that this population of flea beetles were susceptible to all the possible foliar applied materials in tobacco but that the Group 4A materials were faster acting. The full report from this bioassay is available here (subscription required).

Treatment	Rate	Live tobacco flea beetles (n = 10)	
		24 hours	72 hours
Actara (thiamethoxam)	3 oz	0.00 ± 0.00 a	0.00 ± 0.00 a
Actara (thiamethoxam)	6 oz	0.00 ± 0.00 a	0.00 ± 0.00 a
Assail (acetamiprid)	4 oz	0.83 ± 0.17 ab	0.17 ± 0.17 a
Assail (acetamiprid)	8 oz	0.17 ± 0.17 a	0.17 ± 0.17 a
Orthene (acephate)	16 oz	6.00 ± 1.37 c	1.33 ± 0.42 b
Orthene (acephate)	32 oz	2.00 ± 0.77 b	0.17 ± 0.17 a
Provado (imidacloprid)	4 fl oz	0.17 ± 0.17 a	0.17 ± 0.17 a
Provado (imidacloprid)	8 fl oz	0.33 ± 0.21 a	0.17 ± 0.17 a
UTC	NA	9.33 ± 0.21 d	7.83 ± 1.05 c

Figure 1. Live tobacco flea beetles after 24 and 72 exposure to leaves dipped in either the maximum label rate or twice the maximum label rate of labeled foliar insecticide in a 2011 bioassay. Means followed by the same letter are not significantly different ($\alpha = 0.05$) via Fisher's Protected LSD.

Last week, I conducted a similar bioassay to narrow down the possible reasons for the flea beetle feeding activity observed in systemically treated fields. I collected live flea beetles in a field in Johnston County, which the agent had previously contacted me about regarding potentially insecticide-related plant stunting issues, and returned them to our lab. I then set up four treatments:

1. Untreated control leaves from field grown tobacco plants that were never treated with systemic or foliar insecticides,
2. Leaves from plants which were treated with 1.2 fl oz Admire Pro/1000 plants 6 weeks ago and had no flea beetle damage following transplant,
3. Leaves from plants never treated with systemic or foliar insecticides, dipped in a pesticide solution equivalent to 0.7 fl oz Admire Pro/acre (lowest labeled foliar application rate) in 30 gpa water, and
4. Leaves from plants never treated with systemic or foliar insecticides, dipped in a pesticide solution equivalent to 1.4 fl oz Admire Pro/acre (highest labeled foliar application rate) in 30 gpa water.

The results of this assay were interesting. The greenhouse treated tobacco leaves no longer contained sufficient insecticide to kill the flea beetles when compared to the untreated control leaves. Given that this assay was conducted six weeks after the plants were treated, this is not entirely surprising. We have a parallel assay with green peach aphids using leaves from these same plants which will be repeated for several more weeks. However, both concentrations of Admire Pro applied as leaf dips (a simulated foliar application) killed nearly all the flea beetle adults and decreased their feeding activity.

	Percentage of live beetles ± SEM		Flea beetle holes,
Treatment	12 hours	72 hours	72 hours
0.7 fl oz Admire Pro/acre leaf dip	38.25 ± 5.94 **a**	1.67 ± 1.67 **a**	0.83 ± 0.31 a
1.4 fl oz Admire Pro/acre leaf dip	41.26 ± 6.79 a	4.44 ± 2.42 **a**	0.44 ± 0.34 a
1.2 fl oz Admire Pro/1000 plants	88.00 ± 3.59 **b**	75.25 ± 7.10 **b**	27.90 ± 3.75 b
Untreated control (UTC)	100.00 ± 0.00 **b**	79.50 ± 9.26 **b**	32.00 ± 4.62 **b**

Figure 2. Percentage of live tobacco flea beetles after 24 and 72 exposure to Admire Pro treatments. Means followed by the same letter are not significantly different ($\alpha = 0.05$) via Fisher's Protected LSD.

What do these results mean in the context of field infestations of flea beetles on imiacloprid treated plants?

It does not appear that the flea beetles collected at the Johnston County site are resistant to imidacloprid as evidenced by the fact that they were quickly killed by the leaf dip treatments at labeled rates of Admire Pro. However, it also appears that leaves collected from our research plots do not contain sufficient imidacloprid to kill flea beetles six weeks after treatment. This suggests that plants which were damaged by flea beetles despite being treated in the greenhouse also did not contain sufficient insecticide. Non uniform greenhouse insecticide application can lead to both too high and too low insecticide application rates, which may result in flea beetle damage concentrated on plant which do not contain sufficient insecticide to kill them. Fortunately, early season flea beetle injury may be unattractive but only impacts yield in very severe cases. This has been a strange spring for recently transplanted tobacco, and flea beetle injury is yet another unusual observation.

Systemic Neonicotinoids Longevity in Tobacco

Locations
Upper Coastal Plain Research Station
Rocky Mount, NC
Lower Coastal Plain Research Station
Kinston, NC

Principal Investigators
H. Alejandro Merchán and Hannah Burrack
Research Technician
Nick Allen

Purpose
To determine how long systemically applied neonicotinoid insecticides are effective against foliar pests, in order to improve late season management.

Treatments		Rate/plants	Application method
1.	Untreated Control		
2.	Admire Pro	0.6 fl oz/1000 plants	Greenhouse tray drench
3.	Admire Pro	1.2 fl oz/1000 plants	Greenhouse tray drench
4.	Platinum 2SG	0.5 oz/1000 plants	Greenhouse tray drench
5.	Platinum 2SG	1.3 oz/1000 plants	Greenhouse tray drench

Plot Map

401 **2**	402 **1**	403 **4**	404 **5**	405 **3**	401 **2**	402 **1**
301 **5**	302 **4**	303 **3**	304 **1**	305 **2**	301 **5**	302 **4**
201 **3**	202 **2**	203 **5**	204 **1**	205 **4**	201 **3**	202 **2**
101 **1**	102 **5**	103 **2**	104 **3**	105 **4**	101 **1**	102 **5**

Methods

Plots consist of 4, 50 ft rows each and treatments were replicated 4 times each. Treatments were applied in the greenhouse, previous to transplant.

Field Assay: Aphid (*Myzus persicae*) infested plants were counted weekly.

Laboratory Bioassay: Five leafs from each plot were collected weekly and brought back to the lab for bioassays. We cut a 2-inch leaf disc from each leaf, put it inside a small plastic container, with 1% agar, to keep it fresh, and added 3 adult aphids. After 24 hours we counted the

offspring and removed the adults. At 48 hours we counted live and dead immature aphids. For this assay, we used leaves coming from the first three blocks. We performed statistical analyses for Fecundity (# of offspring produced by 3 adults in 24 hours) and Survival (# of live nymphs after 24 hours of exposure to the different treatments).

Results to date

Field: No significant aphid infestation occurred this year in any treatment or location.

Bioassay:

Fecundity

Both concentrations of Admire Pro are consistently more effective in reducing fecundity of *Myzus persicae* in a 24 hour period than Platinum 2SC in both locations. Results with Platinum 2SC are mixed, in Kinston both concentrations of Platinum 2SC are not statistically different from the untreated control, while in Rocky Mount only the 0.5X rate is not different from the control. In both locations there was an upward trend in fecundity the first two weeks, reached a peak on the third week of sampling (8th WAT in Kinston, 7th WAT in Rocky Mount) and then started going down. Since the aphids used for this experiment all come from the same stock population, this trend must be related with leaf chemistry.

Survival

Both concentrations of Admire Pro are consistently more effective in reducing survival of aphid's nymphs after 24 hour of exposure than Platinum 2SC in both locations. Results with Platinum 2SC are mixed, in Kinston both concentrations of Platinum 2SC are statistically different from the untreated control, and even the 1X rate is statistically similar to the 1X rate of Admire Pro. In Rocky Mount the 0.5X rate is not statistically different from the control. In both locations survival also followed a similar trend as fecundity, where there was an upward tendency in the first two weeks, it reached a peak on the third week of sampling and then started going down. This similar result strongly suggests that this trend is related to leaf chemistry.

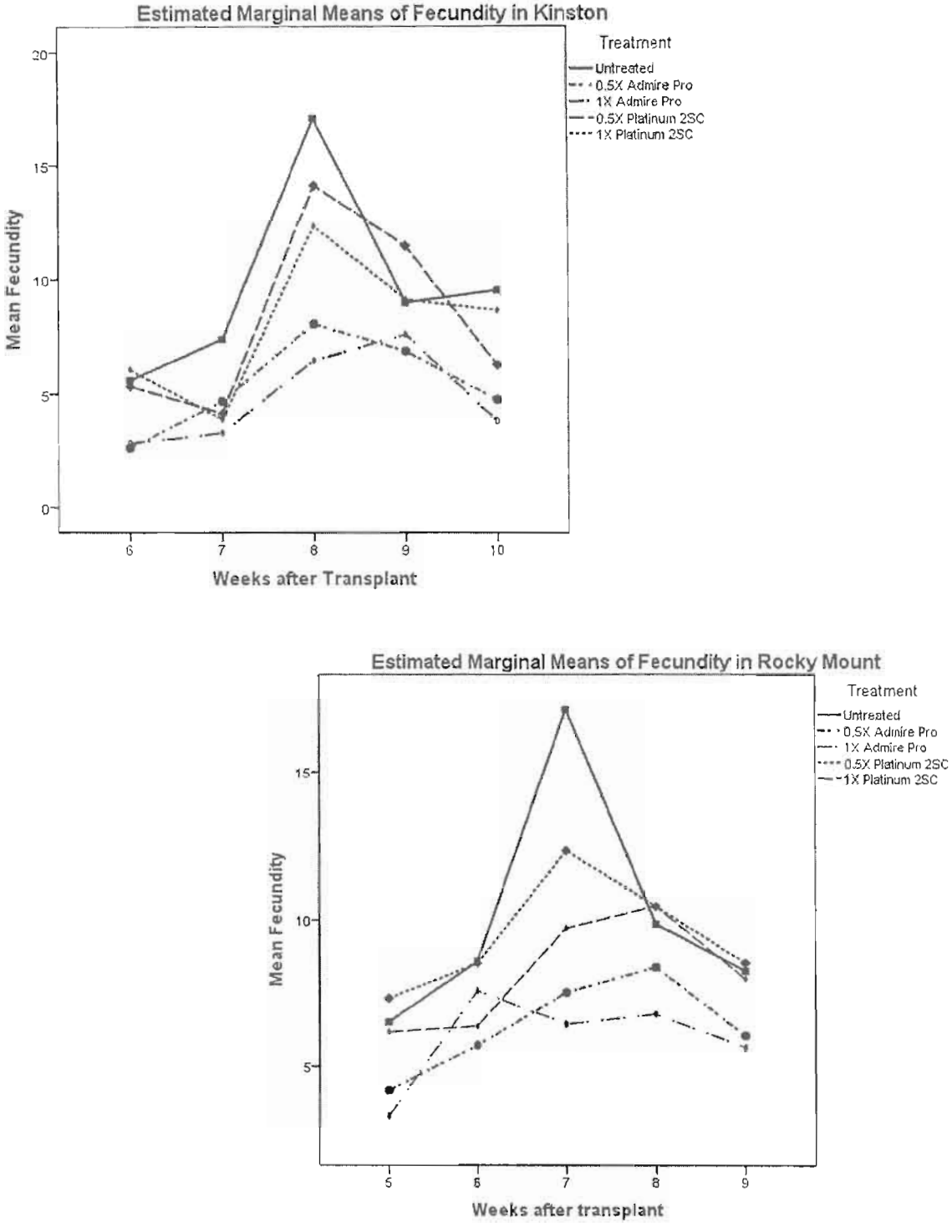


Figure 1: Average fecundity of 3 adult aphids after 24 hours of exposure to the different treatments.

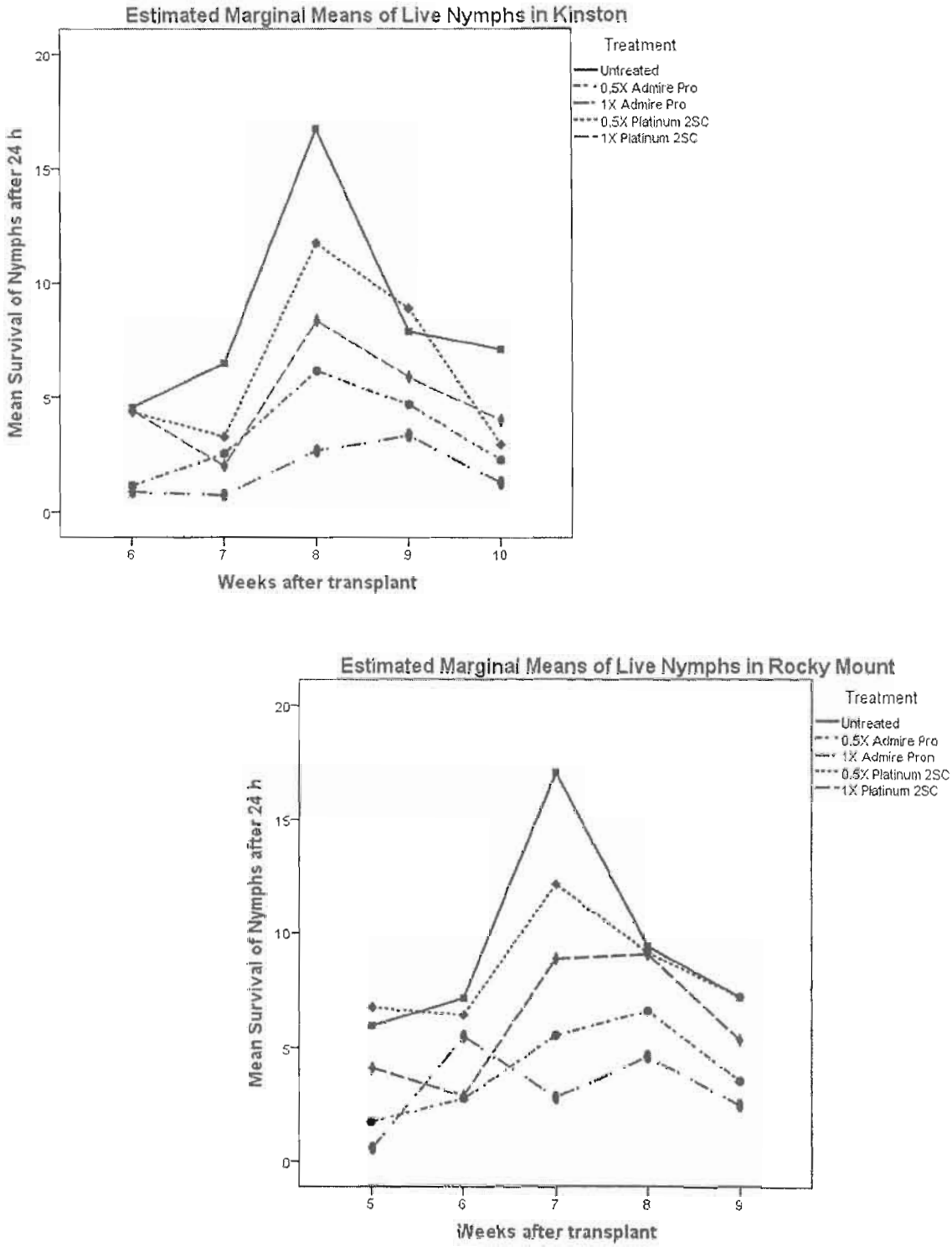


Figure 2: Average survival of immature aphids after 24 hours of exposure to the different treatments.

Systemic imidacloprid and tobacco budworm parasitism
Upper Coastal Plain Research Station

Locations
Upper Coastal Plain Research Station
Rocky Mount, NC
Lower Coastal Plain Research Station
Kinston, NC

Principle Investigators
Sally Taylor and Clyde Sorenson

Purpose
To assess the possible effects of systemic imidacloprid treatments on the instance of parasitism of the tobacco budworm, *Heliothis virescens*, by its two hymenopteran parasitoids, *Toxoneuron nigriceps* and *Campoletis sonorensis*.

Treatment		Rate	Application method
1.	Untreated control		
2.	Admire Pro	0.8 oz/1,000 plants	Greenhouse application
3.	Admire Pro	0.8 oz/1,000 plants	Transplant water drench

Plot Map

401 **2**	402 **1**	403 **3**
301 **1**	302 **2**	303 **3**
201 **3**	202 **1**	203 **2**
101 **2**	102 **3**	103 **1**

Methods
Tobacco plants were transplanted on 18 April (Kinston) or 30 April (Rocky Mount) in 8 row (Kinston) or 4 row (Rocky Mount), 50 ft plots (0.02 acres per plot). Plants were treated with Admire Pro (0.8 fl oz/1,000 plants imidacloprid) in the greenhouse 2 days before transplant or at plant using a transplant water treatment. Untreated controls were isolated in self-contained float beds prior to transplant.

At both stations, natural tobacco budworm infestations were assessed and recorded for each plot. Tobacco budworms at and above the 3rd instar were collected and reared in the laboratory to assess for parasitism rates by species. In addition, artificial infestations of budworms were established in Rocky Mount, collected after 1 week and observed for parasitism rates. Subsets of both natural and artificial samples were analyzed for imidacloprid content using ELISA.

Results to date

Natural infestations (Kinston)

On average, the infestation rates were only slightly higher in the transplant water treatment (27%) compared to the greenhouse application (22%) and the control (24%). Despite comparable numbers of small budworms, those in the first and second instars, inhabiting the three different treatments, significantly higher numbers of 3rd instar or larger larvae were collected from the insecticide treated plots, suggesting that parasitism, predation or a combination of both is decreasing the number of larvae reaching maturity in systemically treated tobacco. These results are consistent with the same trial carried out in 2011.

Natural infestations (Rocky Mount)

All three treatments had an average tobacco budworm infestation rate of 17%. More 3rd instar or larger larvae were collected from the insecticide treated plots when compared to the control.

Artificial infestations (Rocky Mount)

The percentage of tobacco budworm larvae that were recovered after one week of field exposure was lower in the untreated control than either of the two treated plots. This result is consistent with data collected in the 2011 season.

2011 Parasitism Summary

The rate of parasitism by *T. nigriceps* was not significantly different between either of the systemic treatments or the control in tobacco budworms collected from natural infestations. In artificial infestations, the parasitism rate was statistically higher in the control even though the rate exceeded 80% for all treatments. In natural infestations, the parasitism rate for *C. sonorensis* of 4% was higher in the control than both Admire Pro treatments (<1%). Parasitism by *C. sonorensis* was not observed in artificial infestations.

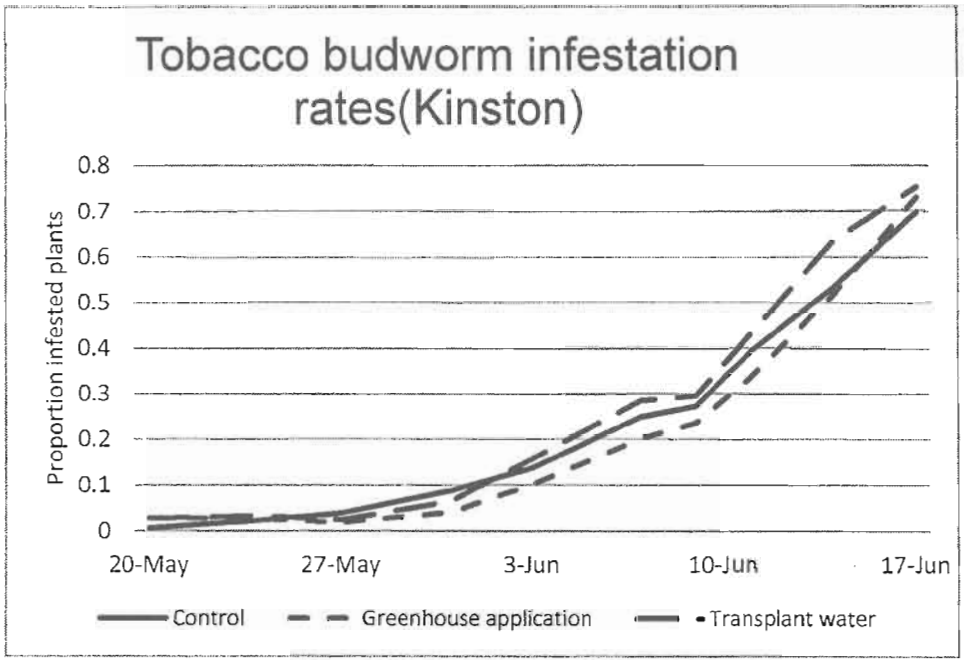


Figure 1. Proportion of plants in each treatment with young tobacco budworm larvae.

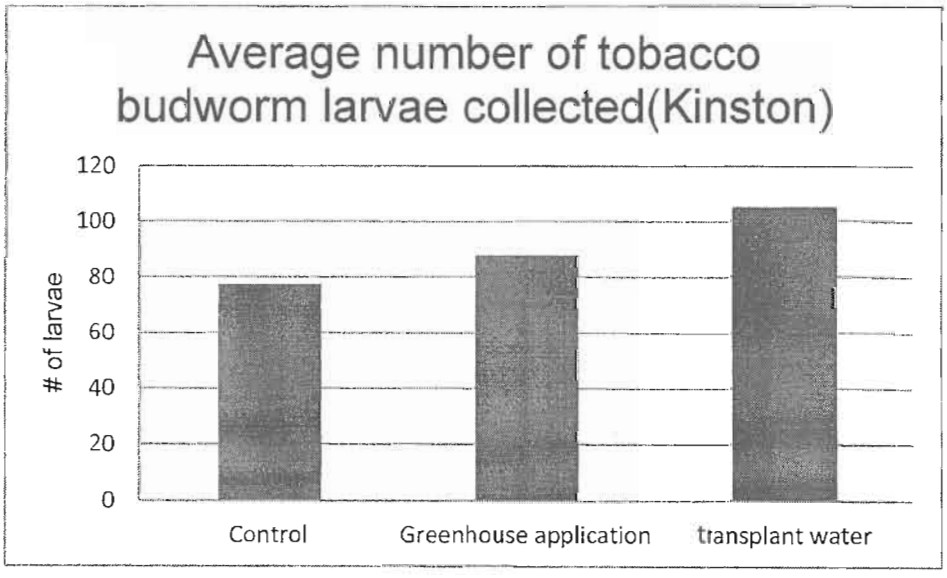


Figure 2. Average number of tobacco budworm 3rd instar or larger collected per plot in each treatment.

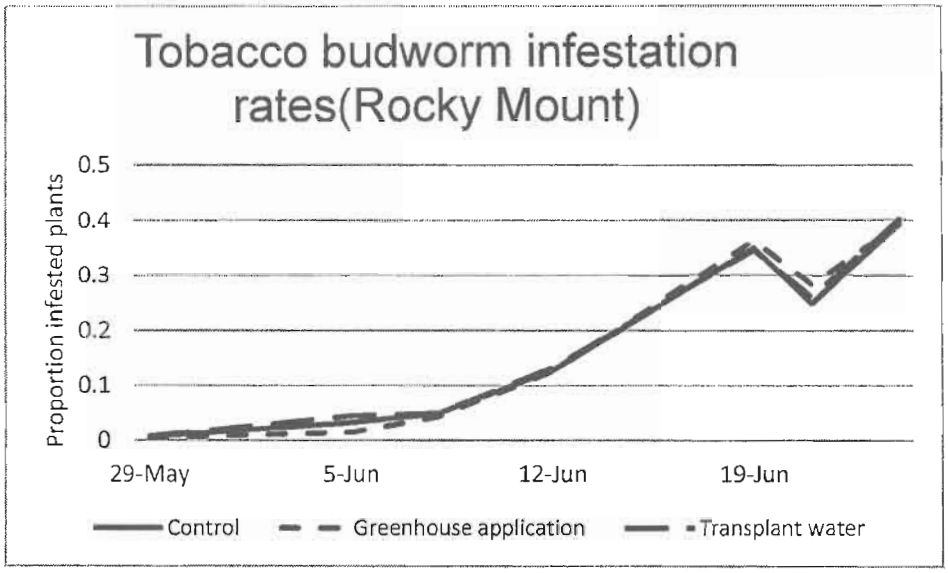


Figure 3. Proportion of plants in each treatment with young tobacco budworm larvae.

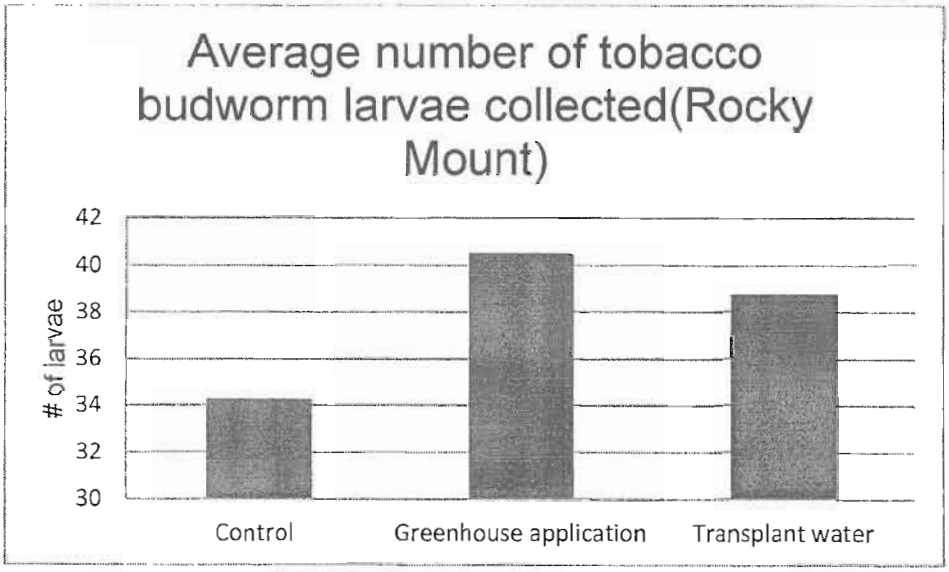


Figure 4. Average number of tobacco budworm 3rd instar or larger collected per plot in each treatment.

Efficacy of foliar insecticides against the tobacco budworm and tobacco hornworm complex

Locations
Upper Coastal Plain Research Station
Rocky Mount, NC
Lower Coastal Plain Research Station
Kinston, NC

Principle Investigator
Hannah Burrack
Research technician
Zach McCool

Purpose
To compare the efficacy of foliar applications of currently registered insecticides in tobacco against infestations of tobacco budworm/corn earworm and tobacco/tomato hornworm larvae.

Treatment	Active ingredient(s)	Application method
1. Untreated control		
2. Besiege, 9 fl oz/acre	Chlorantraniliprole & lambda cyhalothrin	Foliar, at threshold
3. Tracer, 0.75 fl oz/acre	Spinosad	Foliar, at threshold
4. Tracer, 1.25 fl oz/acre	Spinosad	Foliar, at threshold
5. Tracer, 1.75 fl oz/acre	Spinosad	Foliar, at threshold
6. Denim 10 fl oz/acre	Emamactin benzoate	Foliar, at threshold
7. Blackhawk, 1.04 oz/acre	Spinosad	Foliar, at threshold
8. Blackhawk, 1.74 oz/acre	Spinosad	Foliar, at threshold
9. Blackhawk, 2.43 oz/acre	Spinosad	Foliar, at threshold
10. Belt, 2 fl oz/acre	Flubendiamide	Foliar, at threshold
11. Coragen, 5 fl oz/acre	Chlorantraniliprole	Foliar, at threshold
12. Coragen, 7 fl oz/acre	Chlorantraniliprole	At transplant, in furrow

Plot Map
Total area: 0.864 acres

401 **3**	402 **10**	403 **7**	404 **4**	405 **12**	406 **6**	407 **2**	408 **8**	409 **11**	410 **9**	411 **5**	412 **1**
301 **1**	302 **6**	303 **12**	304 **11**	305 **4**	306 **8**	307 **7**	308 **2**	309 **10**	310 **9**	311 **3**	312 **5**
201 **3**	202 **5**	203 **7**	204 **1**	205 **2**	206 **11**	207 **10**	208 **4**	209 **9**	210 **6**	211 **12**	212 **8**
101 **4**	102 **6**	103 **1**	104 **3**	105 **7**	106 **11**	107 **9**	108 **8**	109 **5**	110 **10**	111 **12**	112 **2**

Methods
This experiment was conducted at the Lower Coastal Plain Research Station, Kinston, NC and the Upper Coastal Plain Research Station, Rocky Mount, NC. All plants were treated in the greenhouse with 0.6 fl oz Admire Pro/1000 plants to manage early season infestations of green peach aphids and tobacco flea beetles. Plants were transplanted on 18 April at Kinston and 1

May at Rocky Mount. Plots consisted of 4, 50 ft rows with between 23 and 28 plants each and were 0.018 acres total. Plants in the middle two row each plot were observed for caterpillars weekly beginning 4 weeks after transplants, and treatments were applied when plots reached 10% infestation (Kinston) or following a manual infestation of 10 second instar tobacco budworms per plot (Rocky Mount). Outer two rows served as buffers between plots. Treatments were applied in 30 gal water per acre at 60-65 psi pressure. Caterpillar counts were made 3-4, 7, and 10-11 days after treatment and then continued weekly until topping.

Results to date

All foliar insecticides significantly reduced both the numbers of artificially infested tobacco budworm larvae (Figure 1) and natural infestation (Figure 2). Natural infestations developed after insecticide were made and suggest some residual activity of the materials tested. Tobaco hornworm populations began to develop during the first week of July, approximately 21 days after insecticide treatments were applied, but hornworm populations in several of the treatments were significantly lower than untreated plots, particularly in plots treated with chlorantraniliprole, either at transplant or as a foliar treatment (Figure 3). Results at Kinston were similar to Rocky Mount, although there was a significant week by treatment interaction and hornworm larvae were not yet present in sufficient numbers to distinguish between treatments as of 10 July (Figure 4).

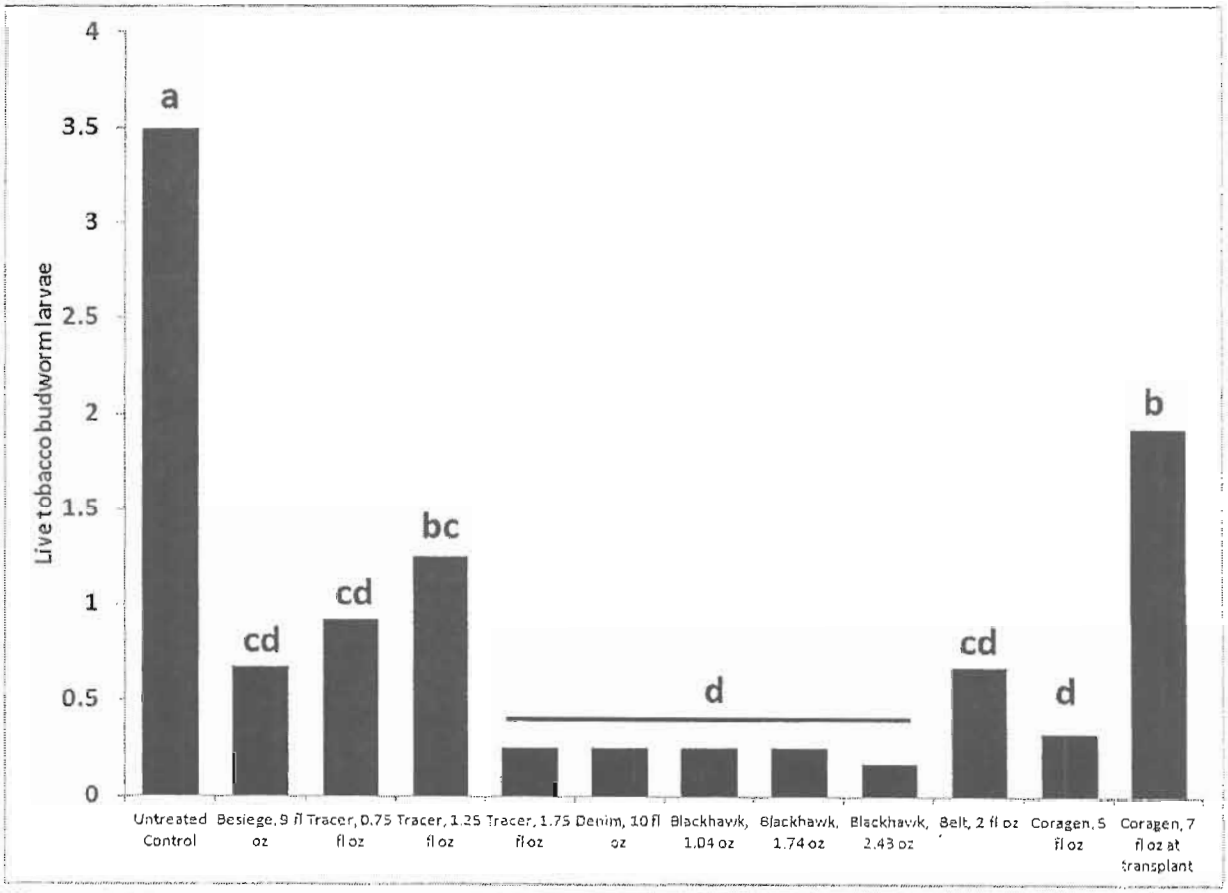


Figure 1. Live, artifically infested tobacco budworm larvae at Upper Coastal Plain Research Station, Rocky Mount, NC, averaged over all three observation dates.

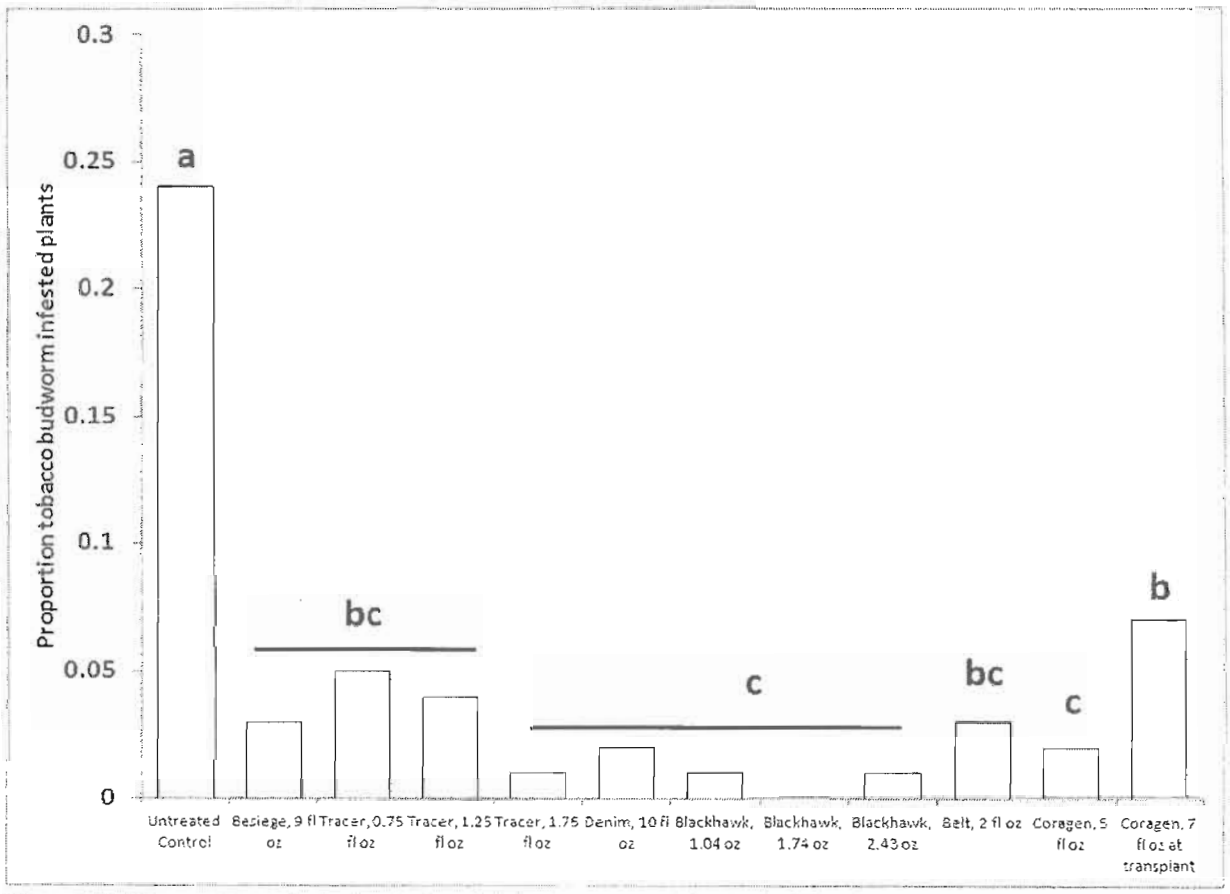


Figure 2. Proportion of all plants in middle two rows infested with tobacco budworm larvae, averaged over all three observation dates at Upper Coastal Plain Research Station, Rocky Mount, NC.

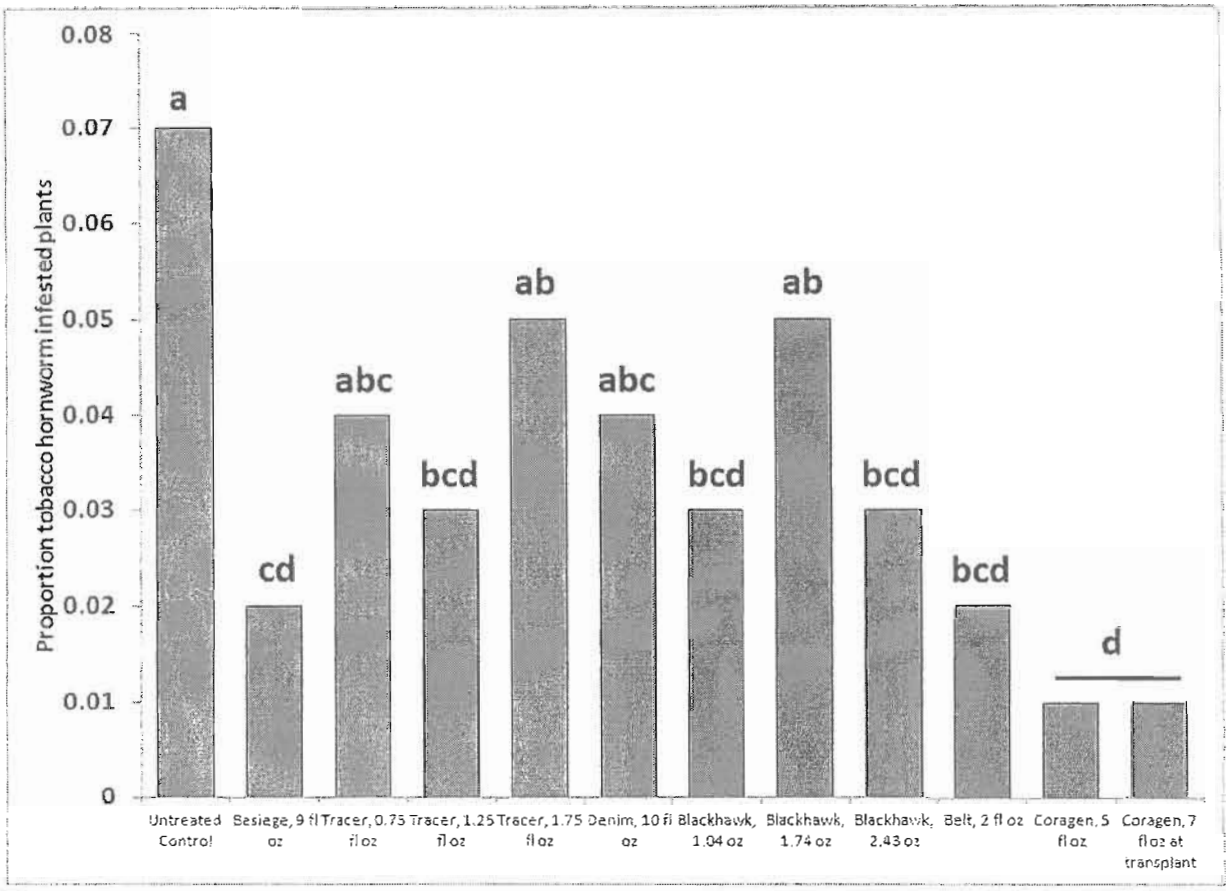


Figure 3. Proportion tobacco/tomato hornworm larvae infestation in the middle two row of each plot averaged over two observation dates, Upper Coastal Plain Research Station, Rocky Mount, NC.

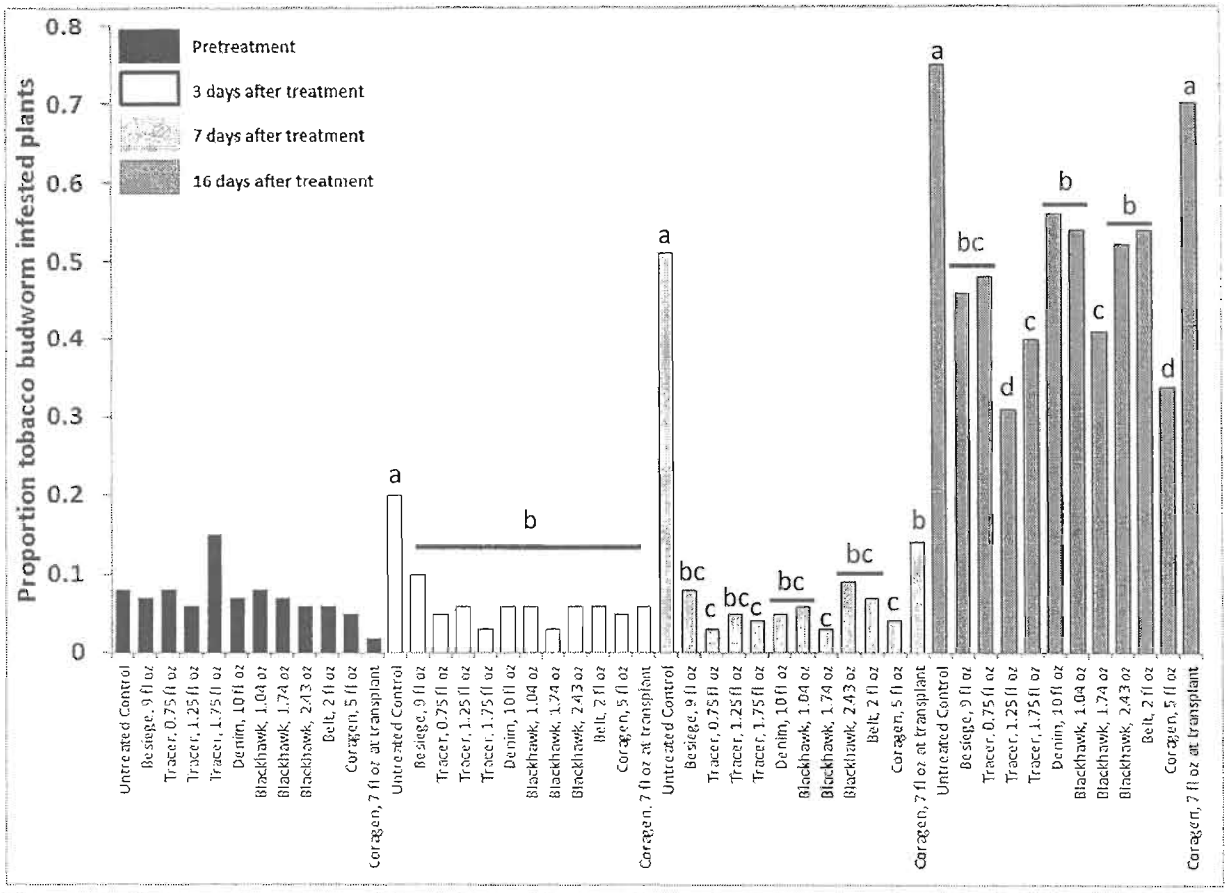


Figure 4. Tobacco budworm infestation at Lower Coastal Plain Research Station, Kinston, NC. Values within an observation date capped by the same letter are not significantly different (α = 0.05).

																	Rep 4		
	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	97	98	99	100
Rep 3	12	6	9	22	2	17	11	23	8	10	1	3	1	8	20	15	22	21	24	11
	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	93	94	95	96
	12	2	20	25	21	18	15	5	13	14	7	19	24	16	3	4	16	17	23	2
Rep 2																				
	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	89	90	91	92
	6	25	9	16	11	24	17	19	3	1	13	14	8	4	15	7	4	5	25	10
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	85	86	87	88
	20	14	6	9	24	3	23	8	16	18	23	21	10	22	5	20	6	9	19	18
Rep 1																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	81	82	83	84
	18	15	11	5	7	13	4	12	1	21	25	19	17	10	2	22	14	7	12	13

2012 Black Shank Variety Trial, Franklin County

Means Table

Rating Date		5/24/2012	6/7/2012	6/27/2012	7/11/2012
Rating Data Type		Percent Dis	Percent Dis	Percent Dis	Percent Dis
Entry No.	Entry Name				
1	GL 368	0 a	0 b	0 b	17 abc
2	K 326	0 a	2 b	21 ab	57 abc
3	CC 65	0 a	0 b	0 b	8 bc
4	CC 67	1 a	2 b	9 ab	52 abc
5	PVH 1452	0 a	1 b	1 b	32 abc
6	GF 318	0 a	0 b	9 ab	55 abc
7	CC 304	0 a	0 b	23 ab	54 abc
8	GL 338	0 a	7 b	30 ab	53 abc
9	CC 13	1 a	6 b	26 ab	72 ab
10	NC 196	0 a	1 b	10 ab	41 abc
11	CC 33	0 a	0 b	1 b	27 abc
12	NC 925	0 a	0 b	1 b	5 c
13	PVH 1118	0 a	3 b	18 ab	47 abc
14	NC 92	0 a	5 b	38 ab	57 abc
15	PVH 2275	1 a	5 b	45 a	74 a
16	PVH 2248	0 a	1 b	16 ab	63 abc
17	CC 35	0 a	1 b	2 b	4 c
18	K 346	0 a	1 b	6 b	31 abc
19	GL 395	0 a	0 b	5 b	25 abc
20	NC 471	0 a	0 b	7 b	51 abc
21	PVH 2254	0 a	2 b	17 ab	49 abc
22	RJR 901	0 a	4 b	9 ab	35 abc
23	CC 1063	0 a	1 b	5 b	36 abc
24	GF 157	0 a	0 b	1 b	11 abc
25	1071	1 a	16 a	33 ab	63 abc
LSD (P=.05)		1.2	7.1	21.4	35.4
Standard Deviation		0.8	5	15.1	25
CV		503.4	206.68	112.87	61.25
Grand Mean		0.16	2.43	13.4	40.83
Bartlett's X2		0.007	44.031	72.052	38.49
P(Bartlett's X2)		1	0.001*	0.001*	0.031*
Replicate F		0.671	0.809	2.114	4.311
Replicate Prob(F)		0.5723	0.493	0.1059	0.0075
Treatment F		0.864	1.999	2.945	2.743
Treatment Prob(F)		0.6467	0.0129	0.0002	0.0005

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)

2012 REGIONAL TOBACCO GROWTH REGULATOR TEST
OXFORD TOBACCO RESEARCH STATION
OXFORD, NC

REP IV

414 1	413 5	412 9	411 10	410 3	409 4	408 14	407 12	406 8	405 6	404 11	403 13	402 7	401 2
301 1	302 14	303 4	304 7	305 6	306 10	307 13	308 5	309 12	310 11	311 9	312 8	313 2	314 3

REP III

WIDE ALLEY

REP II

214 1	213 4	212 14	211 7	210 13	209 3	208 11	207 9	206 2	205 6	204 8	203 10	202 12	201 5
101 1	102 2	103 3	104 4	105 5	106 6	107 7	108 8	109 9	110 10	111 11	112 12	113 13	114 14

REP I

DESIGN: RANDOMIZED COMPLETE BLOCK

PLOT SIZE: 2-ROWS, 8' WIDE AND 40' LONG

VARIETY: CC 27 (GH PLANTS). TRANSPLANTED: 5-3-12

FERTILIZATION: NIORMAL RESEARCH STATION CULTURAL PRACTICES

North Carolina State University

2012 REGIONAL TOBACCO GROWTH REGULATOR TEST
JOE PRIEST LOREN FISHER MATTHEW VANN SCOTT WHITLEY

Trial ID: SCO-12 Study Director:
Location: OXFORD, NC Investigator: Joseph A Priest

Reps: 4 Plots: 8 by 40 feet
Spray vol: 50 gal/ac Mix size: 3 gallons (min 1.4692)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Spray Volume	Amt Product to Measure	Plot No. By Rep 1	2	3	4
1	TOPPED AND NOT SUCKERED							101	214	301	414
2	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	102	206	313	401
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	(FAIR PLUS 1.5 GPA &	1.5	EC	2.25	lb ai/a	50	340.7 ml/mx				
	PRIME+ 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
3	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	103	209	314	410
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	PRIME+ 0.5 GPA	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
	FAIR PLUS 1.5 GPA	1.5	EC	2.25	lb ai/a		340.7 ml/mx				
	(WITH CONVEYOR)										
4	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	104	213	303	409
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	PRIME+ 0.5 GPA	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
	FAIR PLUS 1.5 GPA	1.5	EC	2.25	lb ai/a		340.7 ml/mx				
5	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	105	201	308	413
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	PRIME+ 0.5 GPA	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
	FAIR PLUS 1.0 GPA	1.5	EC	1.5	lb ai/a		227.1 ml/mx				
	(WITH CONVEYOR)										
6	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	106	205	305	405
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	PRIME+ 0.5 GPA	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
	FAIR PLUS 1.0 GPA	1.5	EC	1.5	lb ai/a		227.1 ml/mx				
7	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	107	211	304	402
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	PRIME+ 0.5 GPA	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
	FAIR PLUS 0.5 GPA	1.5	EC	0.75	lb ai/a		113.6 ml/mx				
	(WITH CONVEYOR)										
8	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	108	204	312	406
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	PRIME+ 0.5 GPA	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
	FAIR PLUS 0.5 GPA	1.5	EC	0.75	lb ai/a		113.6 ml/mx				
9	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	109	207	311	412
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	(FAIR PLUS 0.5 GPA &	1.5	EC	0.75	lb ai/a	50	113.6 ml/mx				
	PRIME+ 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
	PRIME+ 0.25 GPA	1.2	EC	0.3	lb ai/a	50	56.78 ml/mx				
	(WITH CONVEYOR)										

North Carolina State University

Reps: 4 Plots: 8 by 40 feet
Spray vol: 50 gal/ac Mix size: 3 gallons (min 1.4692)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Spray Volume	Amt Product to Measure	Plot No. By Rep 1	2	3	4
10	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	110	203	306	411
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	(FAIR PLUS 0.5 GPA &	1.5	EC	0.75	lb ai/a	50	113.6 ml/mx				
	PRIME+ 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
	PRIME+ 0.25 GPA	1.2	EC	0.3	lb ai/a	50	56.78 ml/mx				
11	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	111	208	310	404
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	PRIME+ 0.5 GPA) TM	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
	PRIME+ 0.25 GPA	1.2	EC	0.3	lb ai/a	50	56.78 ml/mx				
	(WITH CONVEYOR)										
12	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	112	202	309	407
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	PRIME+ 0.5 GPA	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
	PRIME+ 0.25 GPA	1.2	EC	0.3	lb ai/a	50	56.78 ml/mx				
13	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	113	210	307	403
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	PRIME+ 0.5 GPA	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
	BUTRALIN 0.25 GPA	3.0	EC	0.75	lb ai/a		56.78 ml/mx				
	(WITH CONVEYOR)										
14	FAIR 85 2.0 GPA	6.01	EC	12.02	lb ai/a	50	454.2 ml/mx	114	212	302	408
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	FAIR 85 2.5 GPA	6.01	EC	15.02	lb ai/a	50	567.6 ml/mx				
	PRIME+ 0.5 GPA	1.2	EC	0.6	lb ai/a	50	113.6 ml/mx				
	BUTRALIN 0.25 GPA	3.0	EC	0.75	lb ai/a		56.78 ml/mx				

Sort Order: Treatment

Matrix Pre and Post-Emergence in Tobacco for Weed Control
Oxford Tobacco Research Station
Oxford, NC

Rep IV						Rep III					
406 3	405 1	404 4	403 2	402 6	401 5	306 3	305 2	304 1	303 5	302 6	301 4
101 1	102 2	103 3	104 4	105 5	106 6	201 2	202 1	203 3	204 6	205 4	206 5
Rep I						Rep II					

Design: Randomized complete block.

Plot size: 4-rows with 2 guard rows between treatments.

Variety: CC 27 (GH plants). Transplanted: 5-2-12

Fertilization: Normal research station cultural practices.

Note: Do not apply any herbicides to test.

North Carolina State University

Matrix Pre and Post-emergence in Flue-cured Tobacco for Weed Control

Loren Fisher Matthew Vann Joe Priest Scott Whitely

Trial ID: MCSO-12 Study Director:
Location: Oxford, NC Investigator: Joseph A Priest

Reps: 4 Plots: 16 by 50 feet
Spray vol: 20 gal/ac Mix size: 1.5 gallons (min 1.6162)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Amt Product to Measure	Plot No. By Rep 1	2	3	4
1	(COMMAND & SPARTAN CHARGE) TM (PPI)	3.0 3.5	ME SE	2.0 7.0	pt/a oz ai/a	70.97 ml/mx 35.48 ml/mx	101	202	304	405
2	(MATRIX & SPARTAN CHARGE) TM (PPI)	25 3.5	SG SE	1.0 7.0	oz/a oz ai/a	2.126 g/mx 35.48 ml/mx	102	201	305	403
3	(MATRIX & SPARTAN CHARGE) TM (PPI)	25 3.5	SG SE	2.0 7.0	oz/a oz ai/a	4.252 g/mx 35.48 ml/mx	103	203	306	406
4	SPARTAN CHARGE (PPI) MATRIX (POST PLANT) APPLY 21 DAYS	3.5 25	SE SG	7.0 1.0	oz ai/a oz/a	35.48 ml/mx 2.126 g/mx	104	205	301	404
5	SPARTAN CHARGE (PPI) MATRIX (POST PLANT) APPLY 21 DAYS	3.5 25	SE SG	7.0 2.0	oz ai/a oz/a	35.48 ml/mx 4.252 g/mx	105	206	303	401
6	UNTREATED CHECK						106	204	302	402

Sort Order: Treatment

Various Rates, Application Methods and Application Timing with Liquid Nitrogen (UAN) on FC Tobacco

Oxford Tobacco Research Station

Oxford, NC

Rep IV

408 5	407 3	406 6	405 7	404 4	403 2	402 8	401 1
301 8	302 6	303 1	304 2	305 4	306 3	307 5	308 7

Rep III

Wide alley

Rep II

208 4	207 8	206 5	205 2	204 7	203 1	202 3	201 6
101 1	102 2	103 3	104 4	105 5	106 6	107 7	108 8

Rep I

Design: Randomized complete block

Plot size: 4 rows, 16' wide and 40' long.

Variety: CC 27 (GH plants). Transplanted: 5-8-12

Fertilization: Test to receive a blanket application of K-mag according to soil test report. Project leader will apply the various nitrogen treatments using liquid 28% UAN.

North Carolina State University

Various Rates, Appli. Methods & Timing with Liq.Nitrogen (UAN) on FC Tob
Matthew Drake Loren Fisher Matthew Vann Joe Priest Scott Whitley

Trial ID: UANO-12 Study Director:
Location: OXFORD,NC Investigator: Joseph A Priest

Reps: 4 Plots: 16 by 50 feet

Trt No.	Treatment Name	Amt Product to Measure	Plot No. By Rep 1	2	3	4
1	CONTROL - 50% NITROGEN AFTER PLANTING 50% NITROGEN AT 4 WEEKS	NA for Unit NA for Unit	101	203	303	401
2	50% NITROGEN AFTER PLANTING 25% NITROGEN AT 4 WEEKS	NA for Unit NA for Unit	102	205	304	403
3	25% NITROGEN AFTER PLANTING 25% NITROGEN AT 4 WEEKS 25% NITROGEN AT 6 WEEKS 25% NITROGEN AT 8 WEEKS-STALK RUNDOWN	NA for Unit NA for Unit NA for Unit NA for Unit	103	202	306	407
4	25% NITROGEN AFTER PLANTING 25% NITROGEN AT 4 WEEKS 25% NITROGEN AT 6 WEEKS 25% NITROGEN AT 8 WEEKS-APPLY ON SOIL SURFACE	NA for Unit NA for Unit NA for Unit NA for Unit	104	208	305	404
5	25% NITROGEN AT 2 WEEKS 25% NITROGEN AT 4 WEEKS 50% NITROGEN AT 8 WEEKS-STALK RUNDOWN	NA for Unit NA for Unit NA for Unit	105	206	307	408
6	25% NITROGEN AT 2 WEEKS 25% NITROGEN AT 4 WEEKS 50% NITROGEN AT 8 WEEKS-APPLY ON SOIL SURFACE	NA for Unit NA for Unit NA for Unit	106	201	302	406
7	50% NITROGEN AFTER PLANTING 50% NITROGEN AT 4 WEEKS 25% NITROGEN AT 8 WEEKS-STALK RUNDOWN	NA for Unit NA for Unit NA for Unit	107	204	308	405
8	50% NITROGEN AFTER PLANTING 50% NITROGEN AT 4 WEEKS 25% NITROGEN AT 8 WEEKS-APPLY ON SOIL SURFACE	NA for Unit NA for Unit NA for Unit	108	207	301	402

Sort Order: Treatment

Various Rates and Application Timing of Liquid Nitrogen (UAN) on FC Tobacco

Oxford Tobacco Research Station

Oxford, NC

Rep IV

410 5	409 8	408 2	407 9	406 7	405 3	404 10	403 1	402 6	401 4
301 3	302 7	303 9	304 8	305 10	306 5	307 6	308 4	309 2	310 1

Rep III

Wide alley

Rep II

210 8	209 9	208 7	207 10	206 1	205 2	204 4	203 6	202 3	201 5
101 1	102 2	103 3	104 4	105 5	106 6	107 7	108 8	109 9	110 10

Rep I

Design: Randomized complete block

Plot size: 4-rows, 16' wide and 40 ' long.

Variety: CC 27 (GH plants). Transplanted: 5-8-12

Fertilization: Test to receive a blanket application of K-mag (0-0-22) according to soil test report. Project leader will apply the various nitrogen treatments using liquid 28% UAN.

North Carolina State University

Various Rates, & Application Timing with Liquid Nitrogen (UAN) on FC Tobacco
MATTHEW DRAKE LOREN FISHER MATTHEW VANN JOE PRIEST SCOTT WHITLEY

Trial ID: LNAO-12 Study Director:
Location: OXFORD, NC Investigator: Joseph A Priest

Reps: 4 Plots: 16 by 50 feet

Trt No.	Treatment Name	Amt Product to Measure	Plot No. By Rep 1	2	3	4
1	CONTROL - 50% NITROGEN AFTER PLANTING 50% NITROGEN AT 4 WEEKS	NA for Unit NA for Unit	101	206	310	403
2	50% NITROGEN AFTER PLANTING 25% NITROGEN AT 4 WEEKS	NA for Unit NA for Unit	102	205	309	408
3	25% NITROGEN AFTER PLANTING 25% NITROGEN AT 2 WEEKS 25% NITROGEN AT 4 WEEKS 25% NITROGEN AT 6 WEEKS	NA for Unit NA for Unit NA for Unit NA for Unit	103	202	301	405
4	25% NITROGEN AFTER PLANTING 25% NITROGEN AT 2 WEEKS 25% NITROGEN AT 4 WEEKS	NA for Unit NA for Unit NA for Unit	104	204	308	401
5	25% NITROGEN AFTER PLANTING 25% NITROGEN AT 4 WEEKS 25% NITROGEN AT 6 WEEKS 25% NITROGEN AT 8 WEEKS	NA for Unit NA for Unit NA for Unit NA for Unit	105	201	306	410
6	25% NITROGEN AFTER PLANTING 25% NITROGEN AT 4 WEEKS 25% NITROGEN AT 6 WEEKS	NA for Unit NA for Unit NA for Unit	106	203	307	402
7	25% NITROGEN AT 2 WEEKS 25% NITROGEN AT 4 WEEKS 50% NITROGEN AT 8 WEEKS	NA for Unit NA for Unit NA for Unit	107	208	302	406
8	25% NITROGEN AT 2 WEEKS 25% NITROGEN AT 4 WEEKS 25% NITROGEN AT 8 WEEKS	NA for Unit NA for Unit NA for Unit	108	210	304	409
9	50% NITROGEN AFTER PLANTING 50% NITROGEN AT 4 WEEKS 25% NITROGEN AT 8 WEEKS	NA for Unit NA for Unit NA for Unit	109	209	303	407
10	50% NITROGEN AFTER PLANTING 25% NITROGEN AT 4 WEEKS 25% NITROGEN AT 6 WEEKS	NA for Unit NA for Unit NA for Unit	110	207	305	404

Sort Order: Treatment

Organic Nitrogen Rate Test in Flue-Cured Tobacco
Oxford Tobacco Research Station
Oxford, NC

Rep IV

407 7	406 6	405 3	404 4	403 5	402 2	401 1
301 2	302 4	303 3	304 1	305 6	306 5	307 7

Rep III

Small Alley

Rep II

207 7	206 4	205 3	204 2	203 6	202 1	201 5
101 1	102 2	103 3	104 4	105 5	106 6	107 7

Rep I

Design: Randomized complete block
Plot size: 4-rows 16' wide and 45' long.
Variety: CC 27 (GH plants). Transplanted: 5-8-12
Fertilization: Research station will broadcast K-mag (0-0-22) to test. Project leader will apply the various organic nitrogen sources and rates.

Evaluate the Effects of Organic Nitrogen Sources on Flue-cured Tobacco

Oxford Tobacco Research Station

Oxford, NC

Rep IV

407 4	407A 4	406 2	406A 2	405 1	405A 1	404 3	404A 3	403 7	403A 7	402 6	402A 6	401 5	401A 5
301 1	301A 1	302 5	302A 5	303 6	303A 6	304 7	304A 7	305 2	305A 2	306 4	306A 4	307 3	307A 3

Rep III

Wide alley

Rep II

207 2	207A 2	206 7	206A 7	205 6	205A 6	204 3	204A 3	203 1	203A 1	202 4	202A 4	201 5	201A 5
101 1	101A 1	102 2	102A 2	103 3	103A 3	104 4	104A 4	105 5	105A 5	106 6	106A 6	107 7	107A 7

Rep I

Design: Randomized complete block

Plot size: 8 rows, 32' wide and 45' long. The 8 row plots are split into 2, 4 row plots.

No shading plots will receive admire in greenhouse. Shaded plots no admire.

Variety: CC 27 (GH plants). Transplanted: 5-8-12

Fertilization: Research station will broad cast K-mag (0-0-22) to test. Project leader will apply the various organic nitrogen sources.

TRAFFIC MANAGERS

Art Bradley, Extension Director, Edgecombe County

Norman Harrell, Extension Agent, Wilson County

Charles Mitchell, Extension Director, Franklin County

Charlie Tyson, Extension Director, Nash County

2013 TOBACCO TOUR

JULY (Dates to be announced)

North Carolina
Cooperative Extension Service
NORTH CAROLINA STATE UNIVERSITY
COLLEGE OF AGRICULTURE & LIFE SCIENCES

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