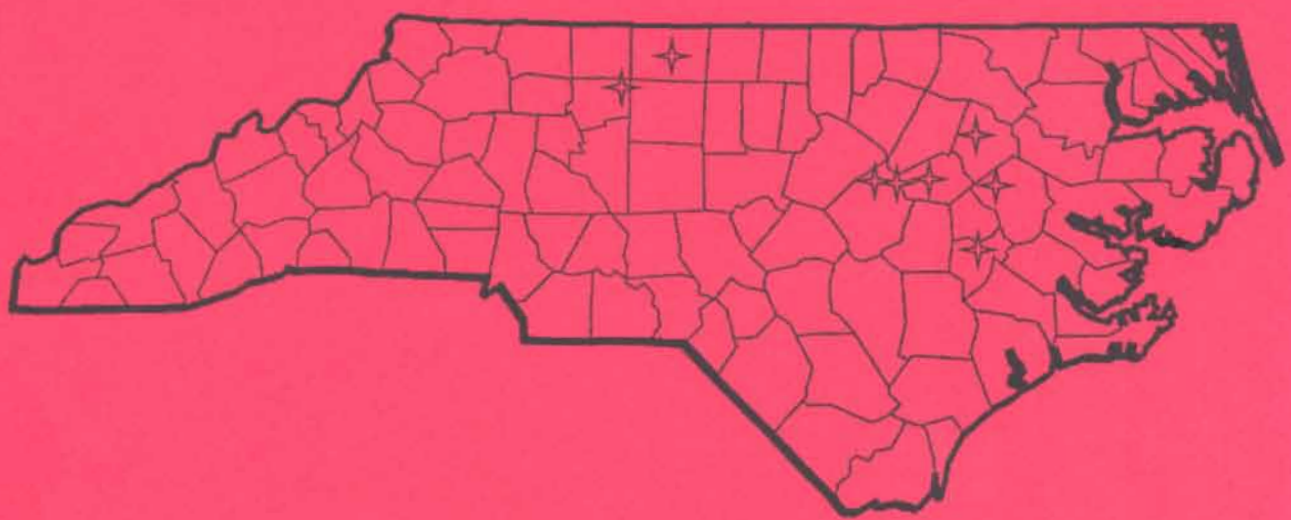
North Carolina Combined Flue-Cured and Burley Tobacco Tour

July 18-20, 2011



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NORTH CAROLINA COMBINED FLUE-CURED & BURLEY TOBACCO TOUR 2011

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July 2011

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Tour refreshments (The Chuckwagon), Tour Flags & Tour Book

TABLE OF CONTENTS

2011 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		
Surry	Ricky Snow	Joanna Radford
Iredell	Ralph Renager	
Yadkin	Hassell & Jesse Brown	Nancy Keith
UCPRS		Lewis Pitt
Granville Wilt Variety Evaluation		
Johnston	Will Boykin	Bryant Spivey
Wilson	Bryan Lamm	Norman Harrell
Wilson	Scott Brother's Farm	Norman Harrell
Fusarium Wilt Variety x Fumigation Evaluation		
Cumberland	Jeff Simpson	Colby Lambert
Black Shank Chemical Trials		
Forsyth	Tim Weavil	Tim Hambrick
UCPRS		Lewis Pitt
Black Shank Chemical x Fertilizer Trial		
Surry	Ricky Snow	Joanna Radford

2011 Field Trial Locations:

Trial	Location	Project Leaders
Tobacco Budworm Management in Seed Production	Lower Coastal Plain Research Station *Lenoir County*	Anna Chapman & Chris Jernigan
Movement and Longevity of New Insecticides	Lower Coastal Plain Research Station *Lenoir County*	Dylan Kraus, Anna Chapman & Chris Jernigan
	Upper Coastal Plain Research Station *Edgecombe County*	Dylan Kraus, Anna Chapman & Louis Pitt
	Greenhouse & Phytotron *NCSU Campus*	Dylan Kraus & Hannah Burrack
Neonicotiniod Longevity & Late Season Insect Management	Lower Coastal Plain Research Station *Lenoir County*	Alejandro Merchan, Anna Chapman & Chris Jernigan
	Upper Coastal Plain Research Station *Edgecombe County*	Alejandro Merchan, Anna Chapman & Louis Pitt
	Oxford Tobacco Research Station *Person County*	Alejandro Merchan, Anna Chapman & Fred Smith
Aphid Threshold Revision	Lower Coastal Plain Research Station *Lenoir County*	Anna Chapman & Chris Jernigan
	Upper Coastal Plain Research Station *Edgecombe County*	Anna Chapman & Louis Pitt
Pre and Post Topping Insect Management	Upper Coastal Plain Research Station *Edgecombe County*	Anna Chapman & Louis Pitt
Soil Applied Registered & Unregistered Insecticides	Upper Coastal Plain Research Station *Edgecombe County*	Anna Chapman & Louis Pitt
Unregistered Materials Trial	Lower Coastal Plain Research Station *Lenoir County*	Anna Chapman & Chris Jernigan
Drip Application of Insecticides	Hoke County	Cross Creek Seeds, Inc.
On Farm Comparisons of Tank Mixed Insecticides	Stokes County	Tim Hambrick & Dale Merritt

2011 Flue-Cured/Burley/Maryland Tobacco Research Tests
6/27/2011

Location	Test Type
Whiteville Lloyd Ransom Superintendent	Evaluate Maryland 609 & TN 90, 2 Plant Populations, 2 Nitrogen Rates for Yield and Quality OVT; OVTA; RV; RFT; Holdability Management Practices on Varieties K 326 & CC 35 to Reduce Alkaloids in the Cured-Leaf Evaluate PVH 2310, K 326 and NC 196 for Yield, Quality and Maturity
Kinston Randy Stancil Tobacco Supervisor	Regional Sucker Control Study Effects of Quadris Fungicide for Holdability Evaluation of Various Suckercides for Sucker Control with and without Conveyors Pesticide Residue Study Flue-cured and Burley OVT; OVTA; RSP; RFT
Rocky Mount Lewis Pitts Tobacco Supervisor	Effects of Tricard Rescue on Growth, Crop Safety, Yield & Quality Pesticide Residue Study Evaluation of Various Suckercides for Sucker Control with and without Conveyors Flue-cured and Burley OVT; OVTA; RFT; RSP Effects of Liquid Fertilizers & Quadris Fungicide for Holdability Effects of Water Soluble Fertilizers in the Transplant Water
Oxford Carl Watson Tobacco Supervisor	Regional Sucker Control Study OVT; OVTA; RSP; RFT Evaluate Alternative Curing Methods on Air-Cured Tobacco Types Effects of Liquid Fertilizers & Quadris Fungicide for Holdability
Reidsville Auman French Tobacco Supervisor	Air-Cured Tobacco Fertility Study Burley OVT; RQT Study Burley Regional Sucker Control Study Burley Sucker Control Study Burley Pesticide Residue Study Evaluate Maryland 609 & TN 90, 2 Plant Populations, 2 Nitrogen Rates for Yield and Quality

Location	Test Type
Laurel Springs	Burley OVT; RQT ; RPT Study
Keith Eller	Burley Regional Sucker Control Study
Tobacco Supervisor	Burley Sucker Control Study

2011 On-Farm Flue-Cured Extension Tests

Johnston-Wilson Co. Bryant Spivey County Extension Director Norman Harrell Extension Tobacco Agent	Sucker Control Study	Holland Farms (Grower)
Forsyth Co. Tim Hambrick Extension Tobacco Agent	Tillage Test	Marvin Eaton (Grower)

North Carolina Flue-Cured & Burley Tobacco Tour
Schedule and Driving Directions
Eastern Tour

Time/Date	Direction	Miles
Monday, July 18		
2:30 -- 4:30	**Lower Coastal Plains Research Station/Cunningham Research Farm**	
	200 Cunningham Rd. Kinston, NC	
	Effects of Neonicotinoid Insecticides on Parasitism of Tobacco Budworm	
	Regional Sucker Control Test	
	Pesticide Residue Study	
	Evaluation of MH, OST and FLUPRO for Sucker Control with and without Conveyors	
	Budworm Management in Seed Production	
	Flue-cured OVT, OVTA, RSP & RFT	
	NO TRAFFIC PROTECTION TO HOTEL	
	Directions to Hotel from Lower Coastal Plains Research Station	
	Depart Test (straight to Hwy 58)	0.1
	Left on Hwy 58	2.5
	Straight through stoplight at C.F. Harvey Parkway	4.7
	Right on NC Hwy 123	3
	Right at stopsign to stay on NC Hwy 123	4.3
	Straight through stopsign to stay on NC Hwy 123	2.8
	Right at stopsign on to Hwy 13/ Hwy 258	2
	Right on Hwy 13	3.7
	Right at stopsign on to Hwy 13/ Hwy 264 Alt E	6.8
	Left at stoplight onto Allen Road	2.2
	Left at stoplight onto Stantonsburg Road	0.3
	Right on Waterford Common Drive	0.1
	Arrive at Hotel on Right	
	Headquarters Hotel -- Candlewood Suites	
	1055 Waterford Commons Dr. Greenville, NC	
	NO TRAFFIC PROTECTION TO WELCOME DINNER	
	Directions from Candlewood Suites to Rock Springs Center	
6:15	Depart hotel for Welcome Dinner	0.1
	Right on Statonsburg Road	0.1
	Straight through stoplight at B's Barbeque Road	0.2
	Exit Right on to Hwy 264 E	0.1
	Right at Exit 75 for Hwy 43	1.4
	Left at end of ramp onto Hwy 43 N	1.9
	Left into parkling lot of Rock Springs Center	0.1
	Arrive at Rock Springs Center	
6:30	**Welcome Dinner -- Rock Springs Center**	
	4025 N Carolina 43 Greenville, NC	

Tuesday, July 19

7:00 Line up to Depart Candlewood Suites

Depart hotel	0.1
Right on Statonsburg Road	0.1
Straight through stoplight at B's Barbeque Road	0.2
Continue straight onto Hwy 264-W	7.2
Take Exit 66 for Wesley Church Rd	0.2
Right at end of exit ramp onto Wesley Church Rd	0.6
Straight through stopsign	1.2
Right onto Hwy 121	1
Left onto 7 Pines Rd	0.8
Arrive at stop on Right	

7:15--8:15 Breakfast -- Tucker Farm -- Pitt County
2529 7 Pines Rd. Greenville, NC

Depart Tucker Farm	
Right on 7 Pines Rd	3.7
Straight through stopsign at Hwy 222	1.3
Left on Hwy 43	5.3
Left at stopsign onto Hwy 43/Hwy 42	3.2
Right at stoplight onto Hwy 122 N/N 2nd St.	2.8
Left onto Davidson-Mercer Rd.	0.1
Right onto Silent Night Hill Rd.	2.1
Left ontoMcKendree Church Rd.	0.6
Right on Nobles Mill Pond Rd.	2.8
Left on gravel path to Upper Coastal Plains Research Station	
Arrive at trials	

8:50 -- 10:50 Upper Coastal Plains Research Station
2811 Nobles Mill Pond Rd. Rocky Mount, NC

(8:50 -- 9:40) ***Black Shank OVT, OVTA, RSP & RFT***
Black Shank Chemical Trial

(9:50 -- 10:40) ***Neonicotinoid Longevity Trial***
Corragen Longevity and Movement Trial

Right on Nobles Millpond Road	1
Left on Antioch Rd	1.8
Right on Bullock School Road	2.1
Straight through stoplight at NC-43	3.8
Straight through stopsign at Old Wilson Rd	0.9
Slight Left at stopsign and procede to stoplight at NC 301	0.1
Left at stoplight onto NC 301	1.4
Straight through stoplight at Sharpsburg	11.4
Straight through stoplight at NC 58	0.2

	Straight through stoplight at Marlow Street	0.3
	Straight through stoplight at NC 264-A	0.2
	Straight through stoplight at Ln Street	0.1
	Straight through stoplight at New Bern Road	0.3
	Straight through stoplight at Black Creek Road	0.5
	Straight through stoplight at Thorne Avenue	0.4
	Straight through stoplight at Purina Circle	0.4
	Right at stoplight onto Goldsboro Rd	0.2
	Arrive at Wilson County Agriculture Center on Left	

11:30 -- 12:30 Lunch -- Wilson County Ag. Center -- Wilson County
1806 Goldsboro St SW Wilson, NC

	Depart Wilson County Ag. Center	
	Right out of Ag. Center onto Goldsboro Rd	0.2
	Right at stoplight on to NC 301	0.1
	Straight through stoplight at Wilco Blvd	1.1
	Straight through stoplight at Forest Hills Rd	1.9
	Straight through stoplight at NC 264-W	0.2
	Straight through stoplight at NC 264-E	0.2
	Straight through stoplight at NC 117	0.2
	Straight through stoplight at Interstate 795	2.9
	Straight through stoplight at Raeford Rd	0.5
	Straight through stoplight at Lucama Rd	3
	Right onto Oscar Loop	100 ft
	Immediate Left onto Simpson Rd	0.7
	Arrive at Scott Farms on Left	

12:45 -- 1:30 Variable Rate Technology to Improve Energy Efficiency -- Scott Farms -- Wilson County
7965 Simpson Rd. Lucama, NC

	Right onto Simpson Rd	0.8
	right onto Oscar Loop Rd	100 ft
	Right onto Hwy 301	4.3
	Right at stoplight onto Hwy 222	0.9
	Right onto Old Route 22	0.4
	Left onto farm path past trailer between twin oaks	

1:40 -- 2:30 Sucker Control Trial -- Holland Farms -- Wilson County
1795 Hwy 222W Kenly, NC

	Right onto Hwy 222	6.4
	Straight through stopsign at Hwy 42	100 ft
	Right immediately onto Raper Rd.	0.3
	Right on farm path	
	Travel along farm path to test	

2:45 -- 3:30 Granville Wilt Variety Trial -- Boykin Farm -- Johnston County
11866 Raper Rd. Middlesex, NC

North Carolina Flue-Cured & Burley Tobacco Tour
Schedule and Driving Directions
Piedmont Tour

Time	Direction	Miles

Wednesday, July 20

NO TRAFFIC PROTECTION FOR ENTIRE DAY

9:00-10:30 Upper Piedmont Research Station
1944 Wentworth St. Reidsville, NC

Burley Regional Quality Test
Burley OVT
Burley Regional Sucker Control Test
Burley Pesticide Residue Study
Air-Cured Tobacco Test

Depart Research Station	
Right on Wentworth Street	1.9
Left at stopsign onto NC 87	0.1
Immediate Right at stoplight onto Sandy Cross Road	5.3
Right at stopsign onto Ironworks Road	2.2
Left at stopsign onto Highway 65	7.9
Straight through stopsign to stay on Hwy 65	2.3
Left onto Hwy 65/Hwy 68	0.7
Right onto Belews Creek Road	0.8
Straight at stoplight to stay on Belews Creek Road	0.1
Right at stoplight to stay on Belews Creek Road	7.1
Left onto Parham Road	0.1
Arrive at Test on Left	

11:15 - 12:15 Tillage Test -- Eaton Farm -- Forsyth County
7033 Parham Rd. Belews Creek, NC

Depart Test	
Right onto Belews Creek Road	1.8
Left onto Hwy 65	5.1
Right at stopsign to stay on Hwy 65	100 ft
Right at stopsign onto Hwy 311 N	0.5
Straight at stoplight to stay on Hwy 311 N	1.2
Left into Duke's Family Restaurant Parking lot	

12:30-1:45 Lunch -- Duke's Family Restaurant -- Stokes County
1075 N. Main St. Walnut Cove, NC

Effects of Neonicotinoid Insecticides on Parasitism of Tobacco Budworm

Sally Taylor and Clyde Sorenson
Department of Entomology
NCSU

Neonicotinoid insecticides such as imidacloprid are critically important to successful tobacco production in North Carolina because they provide excellent control of some pests, including tobacco aphids and flea beetles, and help suppress tomato spotted wilt virus. These chemicals have little or no activity against lepidoterous pests such as the tobacco budworm; however, there is evidence that they are toxic to some Hymenoptera, including, potentially, the parasitic wasps that contribute to tobacco budworm control. We are conducting field and laboratory studies to characterize what, if any, effect, imidacloprid has on the two major parasitoids of the tobacco budworm, *Toxonueron nigricipes* (the red-tailed wasp), and *Campoletis sonorensis*. The plots you see here contain three treatments: imidacloprid as a greenhouse tray drench, imidacloprid as as transplant water treatment, and an untreated control. We have collected budworms from these plots for approximately three weeks, recording infestation rates , and are still in the process of assessing parasitism rates in these insects in our lab.

Successful completion of this research will help ensure that we use these valuable pest management tools (both the insecticides and the biocontrol agents) in the most efficacious and sustainable manner.

Plot Layout Kinston

Planted 5/3/2011
Treatment 1=control
Treatment 2=greenhouse (0.8 oz. per 1000 plants, Admire)
Treatment 3=transplant water (5.2 oz/A, Admire)

Corn

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

Field Path

Tobacco Budworm Management in Seed Production
Lower Coastal Plain Research Station

Principle Investigator
Hannah Burrack
Technician
Anna Chapman

Purpose
To compare available materials for tobacco budworm management in tobacco seed production and reduce the amount of pesticide and number of applications necessary for effective budworm suppression in seed production.

Treatments

1.	Tracer	1.8 fl oz/A	Applied **weekly** at first sign of TBW
2.	Tracer	1.8 fl oz/A	Applied **biweekly** at first sign of TBW
3.	Belt	3 oz/A	Applied **biweekly** at first sign of TBW
4.	Coragen	5 oz/A	Applied **biweekly** at first sign of TBW
5.	Coragen	5 oz/A	Applied **every 4 weeks** at first sign of TBW
6.	Coragen	7 oz/A	Transplant application
7.	Coragen	7 oz/A	At first cultivation (first cult.)
8.	Coragen	7 oz, 5 oz	Transplant application, **biweekly** at first sign of TBW
9.	Coragen	7 oz, 5 oz	First cult. application, **biweekly** at first sign of TBW
10.	UTC		

Plot Map

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

Plots consist of 4, 50 ft rows and treatments are replicated 4 times each. Plants were transplant on 18 April, and transplant water treatments were applied immediately afterwards in 2 fl oz of finished solution per plant. First cultivation treatments were applied to both sides of the bed immediately before plots were cultivated on 12 May. Foliar treatments were first applied when budworms were found in the test plots (16 May), and will be continued on a timed basis until seed maturity. All treatments were applied with a single solid cone nozzle using a CO_2 pressurized backpack sprayer with 60 psi pressure and in 30 gpa water. Applications are directed into the bud or the top of the plant, depending upon the growth stage.

Tobacco budworm (*Heliothis virescens*) are counted weekly on 20 plants in each plot (10 plants/row). The number of damaged flowers, damaged capsules, and consumed capsules will be counted weekly.

Tobacco budworm management in seed production, 2010

Hannah J. Burrack
Assistant Professor and Extension Specialist
Department of Entomology
North Carolina State University

Anna V. Chapman
Research Technician

General methods

All foliar treatments were applied using a single nozzle boom fitted with a TG3 solid cone tip and powered by a CO_2 pressurized backpack sprayer. Treatments were applied in 30 gpa water using 60 psi pressure (unless otherwise noted). Unless otherwise noted, all data were analyzed via Proc Mixed (SAS v. 9.1.3; Cary, NC) with replicate as a random variable. In data tables, means followed by the same letter are not significantly different via LSD ($\alpha = 0.05$). For data collected on multiple dates, each date was analyzed separate, not as a repeated measure.

Tobacco budworm management in tobacco seed production

Purpose
1. To compare new insecticides to grower standards (Tracer; spinosad) applied every 7 days).
2. To determine if the frequency of tobacco budworm targeted insecticide applications could be reduced using new insecticides.

Sites
Lower Coastal Plain Research Station; Kinston, NC
R.J. Reynolds Breeding Plots; Walkertown, NC

Methods
Tobacco, *Nicotiana tobaccum*, var. K 326

Greenhouse grown tobacco plants, treated with 0.6 fl oz Admire Pro/1000 plants 2-3 days before transplant, were transplanted on 14 April (Kinston) or 7 May (Walkertown). Transplant water treatments were applied immediately after transplant in 2 fl oz of finished solution per plant. Plots consisted of 2 rows (Kinston) or 3 rows (Walkertown), 50 ft long each and containing approximately 26 plants. Plots were 0.01 (Kinston) or 0.014 (Walkertown) acres. Treatments were applied and counts made on rows 1 & 2 of each plot. Foliar treatments began at the first

sign of tobacco budworm larvae and continued through the end of data collection. Larvae first appeared at Kinston on 24 May, and 3 June at Walkertown.

The number of tobacco budworm larvae in 10 plants each in rows 1 & 2 of each plot were counted weekly. When the majority of the seed pods were mature, the flower head of 5 plants per plot were removed, and returned to the lab to assess the number of tobacco budworm larvae, damaged seed capsules, completely consumed seed capsules, and damaged flowers. This assessment was repeated for at least 3 weeks at each site.

Results

On all sample dates and at both locations, the biweekly applications of either Belt or Coragen were as effective or more effective in reducing tobacco budworm density and injury to seed pods. Coragen applications made every 4 weeks at the Walkertown location did not perform as well when compared to biweekly applications but occasionally reduced damage with respect to the untreated control. Systemic applications of Coragen, applied at transplant, did not reduce tobacco budworm injury at seed maturity compared to the control, regardless of insecticide rate.

Beneficial insects were numerous at the Walkertown site, and stilt bugs were counted on 5 plants per plot on 19 August. There was no difference in stilt bug densities in any of the treatments, suggesting that these generalist egg predators were not negatively impacted by any of the insecticides used.

Table 1. Damage ratings; Walkertown, NC[1]

Treatment, application method	Rate/ acre	19 August			
		Tobacco budworm larvae	Damaged seed capsules	Consumed seed capsules	Damaged flowers
Tracer (spinosad), weekly	1.8 fl oz	0.00 ± 0.00 **c**	57.00 ± 33.11 **bcd**	1.75 ± 1.03 **b**	16.00 ± 9.94 **abc**
Belt (flubendiamide), biweekly	3 fl oz	0.00 ± 0.00 **c**	0.25 ± 0.25 **d**	0.00 ± 0.00 **b**	0.25 ± 0.25 **c**
Coragen (chlorantroniliprole), biweekly	5 fl oz	0.00 ± 0.00 **c**	0.00 ± 0.00 **d**	0.00 ± 0.00 **b**	0.00 ± 0.00 **c**
Coragen (chlorantroniliprole), every 4 weeks	5 fl oz	0.75 ± 0.48 **abc**	31.25 ± 9.80 **cd**	2.00 ± 0.91 **b**	2.00 ± 0.91 **bc**
Coragen (chlorantroniliprole), transplant	3 fl oz	1.50 ± 0.65 **ab**	66.75 ± 22.57 **abc**	3.75 ± 1.75 **b**	51.75 ± 34.42 **a**
Coragen (chlorantroniliprole), transplant	7 fl oz	1.50 ± 0.29 **ab**	92.50 ± 14.95 **ab**	25.25 ± 8.33 **a**	41.50 ± 9.56 **ab**
Coragen (chlorantroniliprole), transplant	14 fl oz	1.75 ± 0.75 **a**	77.75 ± 27.86 **abc**	9.75 ± 5.54 **b**	13.50 ± 4.84 **abc**
Untreated control		0.50 ± 0.50 **bc**	122.25 ± 20.43 **a**	6.75 ± 0.85 **b**	42.25 ± 10.73 **a**
Treatment, application method	**Rate/ acre**	**25 August**			
		Tobacco budworm larvae	**Damaged seed capsules**	**Consumed seed capsules**	**Damaged flowers**
Tracer (spinosad), weekly	1.8 fl oz	0.00 ± 0.00 **c**	0.50 ± 0.50 **b**	0.00 ± 0.00 **c**	0.50 ± 0.50 **b**
Belt (flubendiamide), biweekly	3 fl oz	0.25 ± 0.25 **bc**	1.75 ± 1.75 **b**	0.00 ± 0.00 **c**	0.00 ± 0.00 **b**
Coragen (chlorantroniliprole), biweekly	5 fl oz	0.00 ± 0.00 **c**	0.00 ± 0.00 **b**	0.00 ± 0.00 **c**	0.00 ± 0.00 **b**
Coragen (chlorantroniliprole), every 4 weeks	5 fl oz	0.00 ± 0.00 **c**	35.25 ± 12.91 **b**	1.75 ± 0.63 **bc**	4.75 ± 4.11 **b**
Coragen (chlorantroniliprole), transplant	3 fl oz	1.75 ± 1.11 **abc**	108.25 ± 18.07 **a**	6.00 ± 2.12 **ab**	61.00 ± 15.72 **a**
Coragen (chlorantroniliprole), transplant	7 fl oz	2.75 ± 1.49 **ab**	110.75 ± 18.85 **a**	4.75 ± 1.44 **abc**	42.25 ± 19.82 **a**

Coragen (chlorantroniliprole), transplant	14 fl oz	3.50 ± 0.87 **a**	137.25 ± 28.92 **a**	5.25 ± 1.38 **ab**	51.00 ± 17.96 **a**
Untreated control		3.25 ± 1.31 **a**	122.75 ± 23.71 **a**	8.25 ± 3.47 **a**	41.25 ± 11.05 **a**
Treatment, application method	**Rate/ acre**	**31 August**			
		Tobacco budworm larvae	**Damaged seed capsules**	**Consumed seed capsules**	**Damaged flowers**
Tracer (spinosad), weekly	1.8 fl oz	0.00 ± 0.00 **d**	2.00 ± 1.22 **b**	0.00 ± 0.00 **c**	0.00 ± 0.00 **c**
Belt (flubendiamide), biweekly	3 fl oz	0.50 ± 0.29 **cd**	2.50 ± 1.85 **b**	0.00 ± 0.00 **c**	1.25 ± 0.75 **c**
Coragen (chlorantroniliprole), biweekly	5 fl oz	0.25 ± 0.25 **d**	1.00 ± 0.41 **b**	0.00 ± 0.00 **c**	0.25 ± 0.25 **c**
Coragen (chlorantroniliprole), every 4 weeks	5 fl oz	3.50 ± 1.50 **bc**	71.50 ± 26.41 **b**	4.25 ± 2.98 **bc**	14.00 ± 10.37 **c**
Coragen (chlorantroniliprole), transplant	3 fl oz	5.00 ± 1.08 **ab**	170.50 ± 14.26 **a**	11.75 ± 4.01 **b**	40.75 ± 4.78 **b**
Coragen (chlorantroniliprole), transplant	7 fl oz	6.50 ± 1.55 **ab**	191.50 ± 48.04 **a**	8.50 ± 2.53 **b**	70.50 ± 9.24 **a**
Coragen (chlorantroniliprole), transplant	14 fl oz	6.75 ± 2.17 **a**	171.25 ± 8.79 **a**	11.00 ± 1.35 **b**	45.50 ± 7.41 **b**
Untreated control		7.00 ± 1.35 **a**	210.25 ± 39.10 **a**	19.50 ± 4.35 **a**	69.25 ± 13.97 **a**

[1]Data analyzed via Proc GLM; means separated via LSD

Table 2. Damage ratings; Kinston, NC[1]

Treatment, application method	Rate/ acre	26 July			
		Tobacco budworm larvae	Damaged seed capsules	Consumed seed capsules	Damaged flowers
Tracer (spinosad), weekly	1.8 fl oz	0.00 ± 0.00 **c**	3.75 ± 1.55 **c**	1.00 ± 1.00 **bc**	4.25 ± 2.14 **c**
Belt (flubendiamide), biweekly	3 fl oz	0.25 ± 0.25 **c**	3.75 ± 1.70 **c**	0.75 ± 0.48 **bc**	3.50 ± 0.50 **c**
Coragen (chlorantroniliprole), biweekly	5 fl oz	0.50 ± 0.50 **c**	1.75 ± 0.63 **c**	0.25 ± 0.25 **c**	4.25 ± 0.28 **c**
Coragen (chlorantroniliprole), transplant	7 fl oz	3.50 ± 1.19 **b**	71.00 ± 36.53 **ab**	8.50 ± 2.40 **b**	126.75 ± 44.31 **b**
Coragen (chlorantroniliprole), transplant	10 fl oz	6.25 ± 1.11 **a**	66.50 ± 3.86 **b**	7.00 ± 1.96 **bc**	163.50 ± 26.23 **ab**
UTC		8.50 ± 1.04 **a**	117.25 ± 18.56 **a**	19.25 ± 5.85 **a**	232.75 ± 51.78 **a**
Treatment, application method	**Rate/ acre**	**3 August**			
		Tobacco budworm larvae	**Damaged seed capsules**	**Consumed seed capsules**	**Damaged flowers**
Tracer (spinosad), weekly	1.8 fl oz	0.25 ± 0.25 **b**	9.75 ± 5.12 **c**	0.75 ± 0.48 **b**	3.75 ± 2.78 **c**
Belt (flubendiamide), biweekly	3 fl oz	0.25 ± 0.25 **b**	8.50 ± 2.99 **c**	0.25 ± 0.25 **b**	0.25 ± 0.25 **c**
Coragen (chlorantroniliprole), biweekly	5 fl oz	0.25 ± 0.25 **b**	5.50 ± 2.90 **c**	0.00 ± 0.00 **b**	1.75 ± 0.85 **c**
Coragen (chlorantroniliprole), transplant	7 fl oz	1.75 ± 1.03 **b**	109.00 ± 51.80 **b**	11.00 ± 4.64 **a**	152.25 ± 82.03 **b**
Coragen (chlorantroniliprole), transplant	10 fl oz	4.25 ± 0.48 **a**	220.75 ± 31.71 **a**	16.50 ± 3.59 **a**	366.50 ± 61.89 **a**
UTC		3.75 ± 0.95 **a**	185.25 ± 23.30 **a**	10.00 ± 1.83 **a**	407.50 ± 29.39 **a**
Treatment, application method	**Rate/ acre**	**10 August**			
		Tobacco budworm larvae	**Damaged seed capsules**	**Consumed seed capsules**	**Damaged flowers**
Tracer (spinosad), weekly	1.8 fl oz	0.00 ± 0.00 **a**	1.50 ± 1.19 **b**	0.50 ± 0.50 **a**	0.00 ± 0.00 **b**
Belt (flubendiamide), biweekly	3 fl oz	0.00 ± 0.00 **a**	3.25 ± 1.31 **b**	0.50 ± 0.29 **a**	0.75 ± 0.48 **b**
Coragen (chlorantroniliprole), biweekly	5 fl oz	0.50 ± 0.29 **a**	2.75 ± 1.11 **b**	0.00 ± 0.00 **a**	0.25 ± 0.25 **b**
Coragen (chlorantroniliprole), transplant	7 fl oz	1.25 ± 0.63 **a**	128.25 ± 35.39 **a**	7.00 ± 3.85 **a**	60.25 ± 11.92 **a**
Coragen (chlorantroniliprole), transplant	10 fl oz	0.50 ± 0.29 **a**	139.50 ± 17.44 **a**	4.50 ± 2.18 **a**	57.75 ± 9.07 **ab**
UTC		0.50 ± 0.29 **a**	141.00 ± 16.17 **a**	4.75 ± 2.84 **a**	77.50 ± 8.86 **ab**
Treatment, application method	**Rate/**	**16 August**			

	acre	Tobacco budworm larvae	Damaged seed capsules	Consumed seed capsules	Damaged flowers
Tracer (spinosad), weekly	1.8 fl oz	0.25 ± 0.25 **a**	5.25 ± 1.65 **c**	1.00 ± 0.41 **cd**	1.00 ± 0.71 **c**
Belt (flubendiamide), biweekly	3 fl oz	0.00 ± 0.00 **a**	5.50 ± 1.85 **c**	0.25 ± 0.25 **d**	4.00 ± 2.38 **c**
Coragen (chlorantroniliprole), biweekly	5 fl oz	0.50 ± 0.29 **a**	2.50 ± 1.55 **c**	0.00 ± 0.00 **d**	0.00 ± 0.00 **c**
Coragen (chlorantroniliprole), transplant	7 fl oz	1.50 ± 0.50 **a**	114.00 ± 26.54 **b**	5.75 ± 2.43 **bc**	99.75 ± 20.63 **b**
Coragen (chlorantroniliprole), transplant	10 fl oz	1.25 ± 0.75 **a**	122.00 ± 14.27 **b**	13.00 ± 2.42 **a**	168.00 ± 36.78 **a**
UTC		0.75 ± 0.25 **a**	190.75 ± 10.63 **a**	8.00 ± 1.73 **b**	137.50 ± 21.99 **ab**

[1]Data analyzed via Proc GLM; means separated via LSD

Table 3. Stilt bug counts on 5 plants per plot, Walkertown, NC. 19 August 2010.

Treatment	Rate/acre	Stilt bug adults & larvae per 5 plants
Tracer (spinosad)	1.8 fl oz	42.50 ± 13.40 **a**
Belt (flubendiamide)	3 fl oz	46.00 ± 9.67 **a**
Coragen (chlorantroniliprole)	5 fl oz	40.75 ± 6.38 **a**
Coragen (chlorantroniliprole)	5 fl oz	41.00 ± 3.34 **a**
Coragen (chlorantroniliprole)	3 fl oz (TPW)	32.25 ± 5.92 **a**
Coragen (chlorantroniliprole)	7 fl oz (TPW)	29.25 ± 5.92 **a**
Coragen (chlorantroniliprole)	14 fl oz (TPW)	18.75 ± 2.39 **a**
UTC		42.25 ± 5.54 **a**

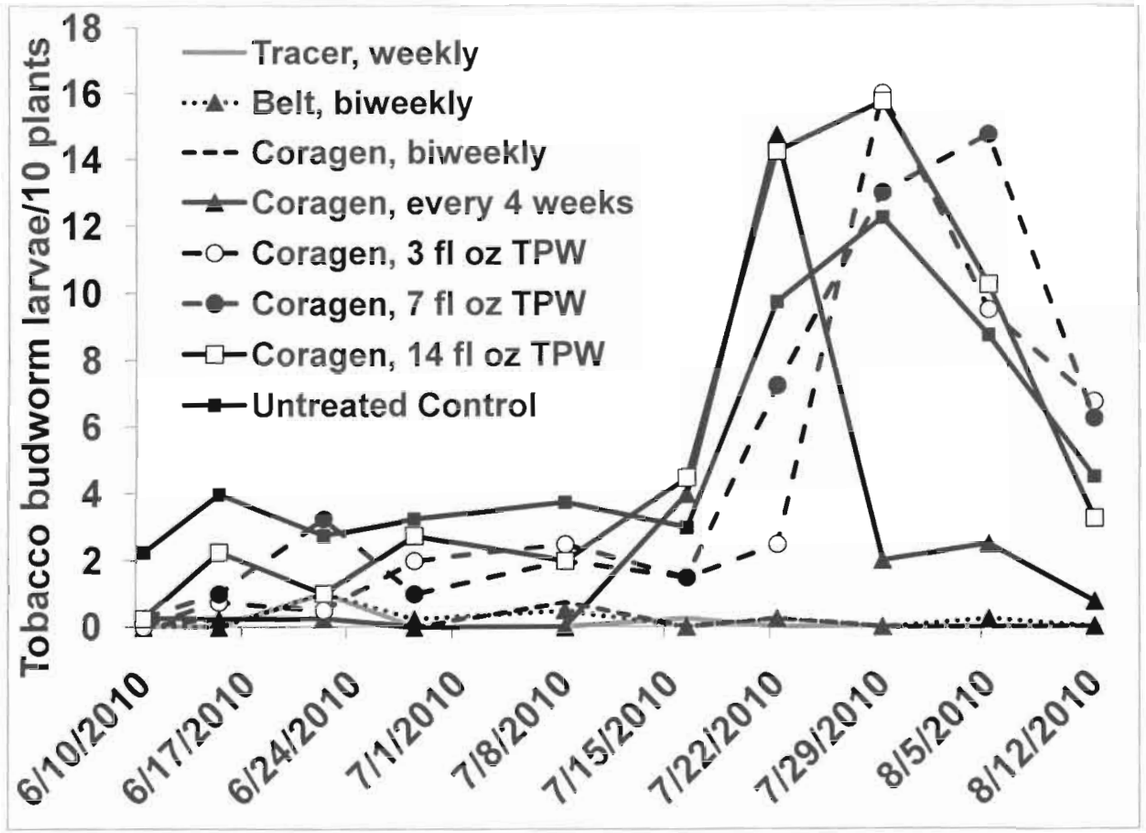
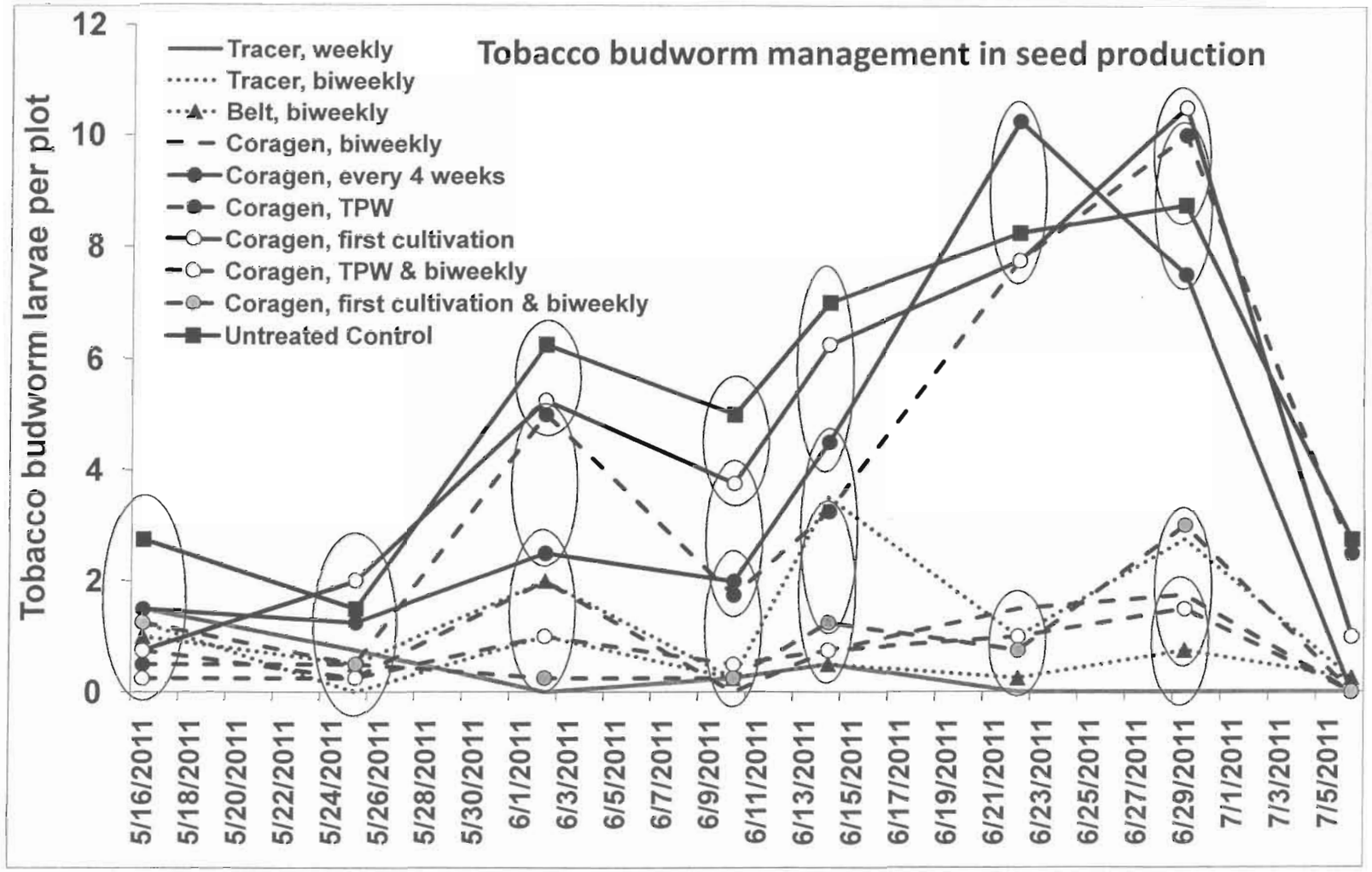


Figure 1. Average number of tobacco budworm larvae per plot each week.



2011 Tobacco budworm larvae in middle two rows of each plot, Kinston, NC.

North Carolina State University

2011 REGIONAL TOBACCO GROWTH REGULATOR TEST
JOE PRIEST LOREN FISHER SANDY STEWART SCOTT WHITLEY

Trial ID: SCK-11 Study Director:
Location: KINSTON, NC Investigator: Joseph A Priest

Reps: 4 Plots: 7.3 by 45 feet
Spray vol: 50 gal/ac Mix size: 3 gallons (min 1.5083)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Spray Volume	Volume Unit	Amt Product to Measure	Plot No. By Rep 1	2	3	4
1	TOPPED AND NOT SUCKERED								101	216	301	416
2	SUCKER-PLUCKER 2.0 GPA SUCKER-PLUCKER 2.5 GPA SUCKER-PLUCKER 2.5 GPA (SUPER SUCKER STUFF 1.5 GPA & PRIME+ 0.5 GPA) TM (50 GPA) CHECK TREATMENT (TG3; TG5; TG3) 50 GPA	6.01 6.01 6.01 1.5 1.2	EC EC EC EC EC	12.02 15.02 15.02 2.25 0.6	lb ai/a lb ai/a lb ai/a lb ai/a lb ai/a	50 50 50 50 50	GAL/AC GAL/AC GAL/AC GAL/AC GAL/AC	454.2 ml/mx 567.6 ml/mx 567.6 ml/mx 340.7 ml/mx 113.6 ml/mx	102	206	315	410
3	SUCKER-PLUCKER 2.0 GPA SUCKER-PLUCKER 2.5 GPA SUCKER-PLUCKER 2.5 GPA (SUPER SUCKER STUFF 1.5 GPA & PRIME+ 0.5 GPA) TM (50 GPA) CHECK FOR TREATMENT # 2 (WITH CONVEYOR) 50 GPA	6.01 6.01 6.01 1.5 1.2	EC EC EC EC EC	12.02 15.02 15.02 2.25 0.6	lb ai/a lb ai/a lb ai/a lb ai/a lb ai/a	50 50 50 50 50	GAL/AC GAL/AC GAL/AC GAL/AC GAL/AC	454.2 ml/mx 567.6 ml/mx 567.6 ml/mx 340.7 ml/mx 113.6 ml/mx	103	211	302	412
4	SUCKER-PLUCKER 2.0 GPA SUCKER-PLUCKER 2.5 GPA SUCKER-PLUCKER 2.5 GPA (TG3; TG5; TG3) 50 GPA APPLY ADDITIONAL APPLICATIONS IF NEEDED	6.01 6.01 6.01	EC EC EC	12.02 15.02 15.02	lb ai/a lb ai/a lb ai/a	50 50 50	GAL/AC GAL/AC GAL/AC	454.2 ml/mx 567.6 ml/mx 567.6 ml/mx	104	215	303	411
5	SUCKER-PLUCKER 2.0 GPA SUCKER-PLUCKER 2.5 GPA SUCKER-PLUCKER 2.5 GPA (WITH CONVEYOR) 50 GPA APPLY ADDITIONAL APPLICATIONS IF NEEDED	6.01 6.01 6.01	EC EC EC	12.02 15.02 15.02	lb ai/a lb ai/a lb ai/a	50 50 50	GAL/AC GAL/AC GAL/AC	454.2 ml/mx 567.6 ml/mx 567.6 ml/mx	105	214	310	415
6	SUCKER-PLUCKER 2.0 GPA SUCKER-PLUCKER 2.5 GPA SUCKER-PLUCKER 2.5 GPA (TG3; TG5; TG3) 35 GPA APPLY ADDITIONAL APPLICATIONS IF NEEDED	6.01 6.01 6.01	EC EC EC	12.02 15.02 15.02	lb ai/a lb ai/a lb ai/a	35 35 35	GAL/AC GAL/AC GAL/AC	648.9 ml/mx 810.8 ml/mx 810.8 ml/mx	106	205	308	406
7	SUCKER-PLUCKER 2.0 GPA SUCKER-PLUCKER 2.5 GPA SUCKER-PLUCKER 2.5 GPA (WITH CONVEYOR) 35 GPA APPLY ADDITIONAL APPLICATIONS IF NEEDED	6.01 6.01 6.01	EC EC EC	12.02 15.02 15.02	lb ai/a lb ai/a lb ai/a	35 35 35	GAL/AC GAL/AC GAL/AC	648.9 ml/mx 810.8 ml/mx 810.8 ml/mx	107	208	304	403
8	SUCKER-PLUCKER 2.0 GPA SUCKER-PLUCKER 2.5 GPA SUCKER-PLUCKER 2.5 GPA PRIME+ 0.5 GPA (ALTERNATE FORMULATION) (TG3; TG5; TG3) 50 GPA	6.01 6.01 6.01 1.2	EC EC EC EC	12.02 15.02 15.02 0.6	lb ai/a lb ai/a lb ai/a lb ai/a	50 50 50 50	GAL/AC GAL/AC GAL/AC GAL/AC	454.2 ml/mx 567.6 ml/mx 567.6 ml/mx 113.6 ml/mx	108	207	314	404
9	SUCKER-PLUCKER 2.0 GPA SUCKER-PLUCKER 2.5 GPA SUCKER-PLUCKER 2.5 GPA PRIME+ 0.5 GPA (ALTERNATE FORMULATION) (WITH CONVEYOR) 50 GPA	6.01 6.01 6.01 1.2	EC EC EC EC	12.02 15.02 15.02 0.6	lb ai/a lb ai/a lb ai/a lb ai/a	50 50 50 50	GAL/AC GAL/AC GAL/AC GAL/AC	454.2 ml/mx 567.6 ml/mx 567.6 ml/mx 113.6 ml/mx	109	204	313	414
10	SUCKER-PLUCKER 2.0 GPA SUCKER-PLUCKER 2.5 GPA SUCKER-PLUCKER 2.5 GPA SUPER SUCKER STUFF 1.5 GPA (TG3; TG5; TG3) 50 GPA	6.01 6.01 6.01 1.5	EC EC EC EC	12.02 15.02 15.02 2.25	lb ai/a lb ai/a lb ai/a lb ai/a	50 50 50 50	GAL/AC GAL/AC GAL/AC GAL/AC	454.2 ml/mx 567.6 ml/mx 567.6 ml/mx 340.7 ml/mx	110	203	307	413
11	SUCKER-PLUCKER 2.0 GPA SUCKER-PLUCKER 2.5 GPA SUCKER-PLUCKER 2.5 GPA SUPER SUCKER STUFF 1.5 GPA (WITH CONVEYOR) 50 GPA	6.01 6.01 6.01 1.5	EC EC EC EC	12.02 15.02 15.02 2.25	lb ai/a lb ai/a lb ai/a lb ai/a	50 50 50 50	GAL/AC GAL/AC GAL/AC GAL/AC	454.2 ml/mx 567.6 ml/mx 567.6 ml/mx 340.7 ml/mx	111	213	312	405
12	SUCKER-PLUCKER 2.0 GPA SUCKER-PLUCKER 2.5 GPA SUCKER-PLUCKER 2.5 GPA PRIME+ 0.5 GPA (2011 FORMULATION) (TG3; TG5; TG3) 50 GPA	6.01 6.01 6.01 1.2	EC EC EC EC	12.02 15.02 15.02 0.6	lb ai/a lb ai/a lb ai/a lb ai/a	50 50 50 50	GAL/AC GAL/AC GAL/AC GAL/AC	454.2 ml/mx 567.6 ml/mx 567.6 ml/mx 113.6 ml/mx	112	202	311	409
13	SUCKER-PLUCKER 2.0 GPA SUCKER-PLUCKER 2.5 GPA SUCKER-PLUCKER 2.5 GPA PRIME+ 0.5 GPA (2011 FORMULATION) SUPER SUCKER STUFF 1.5 GPA (TG3; TG5; TG3) 50 GPA MH AFTER 1ST HARVEST	6.01 6.01 6.01 1.2 1.5	EC EC EC EC EC	12.02 15.02 15.02 0.6 2.25	lb ai/a lb ai/a lb ai/a lb ai/a lb ai/a	50 50 50 50 50	GAL/AC GAL/AC GAL/AC GAL/AC GAL/AC	454.2 ml/mx 567.6 ml/mx 567.6 ml/mx 113.6 ml/mx 340.7 ml/mx	113	212	306	407

North Carolina State University

Reps: 4 Plots: 7.3 by 45 feet
Spray vol: 50 gal/ac Mix size: 3 gallons (min 1.5083)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Spray Volume	Volume Unit	Amt Product to Measure	Plot No. By Rep 1	2	3	4
14	SUCKER-PLUCKER 2.0 GPA	6.01	EC	12.02	lb ai/a	50	GAL/AC	454.2 ml/mx	114	201	316	402
	SUCKER-PLUCKER 2.5 GPA	6.01	EC	15.02	lb ai/a	50	GAL/AC	567.6 ml/mx				
	SUCKER-PLUCKER 2.5 GPA	6.01	EC	15.02	lb ai/a	50	GAL/AC	567.6 ml/mx				
	PRIME+ 0.5 GPA (2011 FORMULATION)	1.2	EC	0.6	lb ai/a	50	GAL/AC	113.6 ml/mx				
	SUPER SUCKER STUFF 1.0 GPA	1.5	EC	1.5	lb ai/a	50	GAL/AC	227.1 ml/mx				
	(TG3; TG5; TG3) 50 GPA											
	MH AFTER 1ST HARVEST											
15	SUCKER-PLUCKER 2.0 GPA	6.01	EC	12.02	lb ai/a	50	GAL/AC	454.2 ml/mx	115	210	309	408
	SUCKER-PLUCKER 2.5 GPA	6.01	EC	15.02	lb ai/a	50	GAL/AC	567.6 ml/mx				
	SUCKER-PLUCKER 2.5 GPA	6.01	EC	15.02	lb ai/a	50	GAL/AC	567.6 ml/mx				
	PRIME+ 0.5 GPA (2011 FORMULATION)	1.2	EC	0.6	lb ai/a	50	GAL/AC	113.6 ml/mx				
	SUPER SUCKER STUFF 0.5 GPA	1.5	EC	0.75	lb ai/a	50	GAL/AC	113.6 ml/mx				
	(TG3; TG5; TG3) 50 GPA											
	MH AFTER 1ST HARVEST											
16	SUCKER-PLUCKER 2.0 GPA	6.01	EC	12.02	lb ai/a	50	GAL/AC	454.2 ml/mx	116	209	305	401
	SUCKER-PLUCKER 2.5 GPA	6.01	EC	15.02	lb ai/a	50	GAL/AC	567.6 ml/mx				
	SUCKER-PLUCKER 2.5 GPA	6.01	EC	15.02	lb ai/a	50	GAL/AC	567.6 ml/mx				
	DREXALIN PLUS 0.5 GPA	1.2	EC	0.6	lb ai/a	50	GAL/AC	113.6 ml/mx				
	(TG3; TG5; TG3) 50 GPA											
17	SUCKER-PLUCKER 2.0 GPA	6.01	EC	12.02	lb ai/a	50	GAL/AC	454.2 ml/mx	117	217	317	417
	SUCKER-PLUCKER 2.5 GPA	6.01	EC	15.02	lb ai/a	50	GAL/AC	567.6 ml/mx				
	SUCKER-PLUCKER 2.5 GPA	6.01	EC	15.02	lb ai/a	50	GAL/AC	567.6 ml/mx				
	PRIME+ 0.5 GPA (2011 FORMULATION)	1.2	EC	0.6	lb ai/a	50	GAL/AC	113.6 ml/mx				
	SUPER SUCKER STUFF 1.5 GPA	1.5	EC	2.25	lb ai/a	50	GAL/AC	340.7 ml/mx				
	(WITH CONVEYOR 50 GPA											
	MH AFTER 1ST HARVEST											
18	SUCKER-PLUCKER 2.0 GPA	6.01	EC	12.02	lb ai/a	50	GAL/AC	454.2 ml/mx	118	218	318	418
	SUCKER-PLUCKER 2.5 GPA	6.01	EC	15.02	lb ai/a	50	GAL/AC	567.6 ml/mx				
	SUCKER-PLUCKER 2.5 GPA	6.01	EC	15.02	lb ai/a	50	GAL/AC	567.6 ml/mx				
	PRIME+ 0.5 GPA (2011 FORMULATION)	1.2	EC	0.6	lb ai/a	50	GAL/AC	113.6 ml/mx				
	SUPER SUCKER STUFF 1.0 GPA	1.5	EC	1.5	lb ai/a	50	GAL/AC	227.1 ml/mx				
	(WITH CONVEYOR 50 GPA											
	MH AFTER 1ST HARVEST											
19	SUCKER-PLUCKER 2.0 GPA	6.01	EC	12.02	lb ai/a	50	GAL/AC	454.2 ml/mx	119	219	319	419
	SUCKER-PLUCKER 2.5 GPA	6.01	EC	15.02	lb ai/a	50	GAL/AC	567.6 ml/mx				
	SUCKER-PLUCKER 2.5 GPA	6.01	EC	15.02	lb ai/a	50	GAL/AC	567.6 ml/mx				
	PRIME+ 0.5 GPA (2011 FORMULATION)	1.2	EC	0.6	lb ai/a	50	GAL/AC	113.6 ml/mx				
	SUPER SUCKER STUFF 0.5 GPA	1.5	EC	0.75	lb ai/a	50	GAL/AC	113.6 ml/mx				
	(WITH CONVEYOR) 50 GPA											
	MH AFTER 1ST HARVEST											

Sort Order: Treatment

2011 PESTICIDE RESIDUE STUDY
CUNNINGHAM RESEARCH STATION
KINSTON, NC

REP IV

404 2	403 1	402 3	401 4
301 3	302 2	303 4	304 1

REP III

WIDE ALLEY

REP II

204 4	203 1	202 2	201 3
101 1	102 4	103 3	104 2

REP I

WIDE ALLEY

DESIGN: RANDOMIZED COMPLETE BLOCK
PLOT SIZE: 4-ROWS, 14.6'' WIDE AND 40' LONG. HARVEST 2 CENTER ROWS.
VARIETY: NC 71 (GH PLANTS). TRANSPLANTED: 4- 20-2011
FERTILIZATION: NORMAL RESEARCH STATION CULTURAL PRACTICES.

North Carolina State University

2011 PESTICIDE RESIDUE STUDY
LOREN FISHER SANDY STEWART JOE PRIEST SCOTT WHITLEY

Trial ID: PRK-11 Study Director:
Location: KINSTON, NC Investigator: Joseph A Priest

Reps: 4 Plots: 7.3 by 45 feet
Spray vol: 20 gal/ac Mix size: 2 gallons (min .75413)

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	203	304	403
2	BELAY SC (CLOTHIANIDIN) 3 FIELD APPLICATIONS (EACH 4.0 OZ/A) (14 DAY PHI)	2.13	SC	0.125	lb ai/a	22.21 ml/mx	104	202	302	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	201	301	402
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	102	204	303	401

Sort Order: Treatment

EVALUATION OF MH, OST AND FLUPRO FOR SUCKER CONTROL IN FLUE-CURED TOBACCO WITH AND WITHOUT CONVEYORS
CUNNINGHAM RESEARCH STATION
KINSTON, NC

Rep IV

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

Rep III

Rep II

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

Rep I

Design: Randomized Complete Block
Plot Size: 2-rows, 7.3' wide and 40' long.
Variety: NC 71 (GH Plants). Transplanted: 4-20-2011
Fertilization: Normal Research Station Cultural Practices.

North Carolina State University

2011 CHEMTURA SUCKER CONTROL TEST
LOREN FISHER SANDY STEWART JOE PRIEST SCOTT WHITLEY

Trial ID: CHEMK-11 Study Director:
Location: KINSTON, NC Investigator: Joseph A Priest

Reps: 4 Plots: 7.3 by 45 feet
Spray vol: 50 gal/ac Mix size: 3 gallons (min 1.8853)

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	409
	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	OST 2.0 GPA	6.01	EC	12.02	lb ai/a	454.2 ml/mx	105	207	307	402
	(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)									
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	OST 2.0 GPA	6.01	EC	12.02	lb ai/a	454.2 ml/mx	107	209	304	408
	(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				
	(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)									
8	OST 2.0 GPA	6.01	EC	12.02	lb ai/a	454.2 ml/mx	108	205	308	404
	(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				
	(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									
9	TNS-UNTREATED CHECK						109	201	309	401

Sort Order: Treatment

2011 OFFICIAL VARIETY TEST
LOWER COASTAL PLAIN TOBACCO RESEARCH STATION. KINSTON. NC
K-OVT

REP I			REP II			REP III			
Plot	Entry		Plot	Entry		Plot	Entry		46 entries replicated three times
101	1		201	37		301	41		in one-row plots with 20
102	2		202	14		302	4		harvested plants in each plot.
103	3		203	19		303	37		
104	4		204	7		304	33		Rep I - Plots 101 - 146
105	5		205	5		305	24		Rep II - Plots 201 - 246
106	6		206	6		306	18		Rep III - Plots 301 - 346
107	7		207	34		307	26		
108	8		208	24		308	13		
109	9		209	4		309	9		
110	10		210	43		310	35		
111	11		211	31		311	34		
112	12		212	45		312	43		
113	13		213	21		313	16		
114	14		214	27		314	10		
115	15		215	30		315	29		
116	16		216	40		316	45		
117	17		217	32		317	5		
118	18		218	44		318	42		
119	19		219	41		319	2		
120	20		220	22		320	36		
121	21		221	18		321	25		
122	22		222	3		322	17		
123	23		223	26		323	21		
124	24		224	13		324	7		
125	25		225	39		325	14		
126	26		226	16		326	23		
127	27		227	15		327	1		
128	28		228	33		328	20		
129	29		229	10		329	12		
130	30		230	9		330	15		
131	31		231	8		331	46		
132	32		232	2		332	6		
133	33		233	29		333	11		
134	34		234	42		334	32		
135	35		235	20		335	19		
136	36		236	25		336	22		
137	37		237	17		337	28		
138	38		238	1		338	39		
139	39		239	46		339	31		
140	40		240	38		340	44		
141	41		241	11		341	27		
142	42		242	36		342	30		
143	43		243	28		343	8		
144	44		244	35		344	38		
145	45		245	23		345	40		
146	46		246	12		346	3		

2011 REGIONAL SMALL PLOT TEST
LOWER COASTAL PLAIN TOBACCO RESEARCH STATION. KINSTON. NC
K-RSP

REP I			REP II			REP III		
Plot	Entry		Plot	Entry		Plot	Entry	
101	1		201	25		301	14	
102	2		202	17		302	4	
103	3		203	3		303	20	
104	4		204	5		304	12	
105	5		205	15		305	16	
106	6		206	26		306	25	
107	7		207	16		307	6	
108	8		208	20		308	9	
109	9		209	23		309	24	
110	10		210	9		310	26	
111	11		211	18		311	22	
112	12		212	8		312	13	
113	13		213	10		313	1	
114	14		214	4		314	7	
115	15		215	7		315	5	
116	16		216	24		316	8	
117	17		217	1		317	17	
118	18		218	21		318	23	
119	19		219	12		319	2	
120	20		220	19		320	3	
121	21		221	6		321	18	
122	22		222	11		322	19	
123	23		223	22		323	11	
124	24		224	14		324	21	
125	25		225	2		325	10	
126	26		226	13		326	15	

26 entries replicated three times
one-row plots with 20 harvested plants in each plot.

Rep I - Plots 101 - 126
Rep II - Plots 201 - 226
Rep III - Plots 301 - 326

2011 ADVANCED BREEDING LINES
LOWER COASTAL PLAIN TOBACCO RESEARCH STATION. KINSTON. NC
K-OVTA

REP I			REP II			REP III		
Plot	Entry		Plot	Entry		Plot	Entry	
101	1		201	15		301	1	
102	2		202	1		302	13	
103	3		203	11		303	2	
104	4		204	14		304	11	
105	5		205	12		305	7	
106	6		206	8		306	8	
107	7		207	13		307	3	
108	8		208	2		308	12	
109	9		209	7		309	16	
110	10		210	4		310	6	
111	11		211	5		311	10	
112	12		212	3		312	14	
113	13		213	9		313	5	
114	14		214	16		314	15	
115	15		215	6		315	9	
116	16		216	10		316	4	

16 entries replicated three times
one-row plots with 20 harvested plants in each plot.

Rep I - Plots 101 - 116
Rep II - Plots 201 - 216
Rep III - Plots 301 - 316

2011 REGIONAL FARM TEST
LOWER COASTAL TOBACCO RESEARCH STATION, KINSTON, NC
K-RFT

REP I		
Plot	Entry	
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	
115	15	
116	16	

REP II		
Plot	Entry	
201	12	
202	11	
203	10	
204	6	
205	15	
206	16	
207	2	
208	7	
209	14	
210	4	
211	13	
212	1	
213	9	
214	5	
215	8	
216	3	

REP III		
Plot	Entry	
301	6	
302	13	
303	15	
304	1	
305	8	
306	16	
307	12	
308	4	
309	9	
310	7	
311	11	
312	14	
313	3	
314	10	
315	2	
316	5	

REP IV		
Plot	Entry	
401	16	
402	13	
403	1	
404	9	
405	4	
406	7	
407	10	
408	12	
409	3	
410	11	
411	15	
412	2	
413	6	
414	5	
415	8	
416	14	

REP V		
Plot	Entry	
501	14	
502	16	
503	1	
504	4	
505	6	
506	11	
507	8	
508	12	
509	3	
510	10	
511	2	
512	5	
513	13	
514	7	
515	9	
516	15	

REP VI		
Plot	Entry	
601	5	
602	8	
603	15	
604	16	
605	14	
606	6	
607	2	
608	4	
609	12	
610	3	
611	10	
612	9	
613	1	
614	13	
615	11	
616	7	

16 entries replicated six times in one-row plots with 20 harvested plants in each plot.

2011 NORTH CAROLINA FLUE-CURED TOBACCO VARIETY TEST										
Commercial Varieties										
Trt. No	Variety or Line	Generation or Year of Release	Pedigree	BS	GW	FW	RK	Bn. Sp.	Virus	Sponsor
1	GL 395	2010	Hybrid	R	R		R			GL
2	Speight 225	2003	(Sp 168 X K 346)(SPA 95 X SP 168)	R	R		R			SPT
3	CC 33	2008	Hybrid	R	R		M.j/R			CC
4	NC 297	1998	Hybrid	R	R		R		TMV	GL
5	NC 92	2007	Hybrid	R	R		TCN/R			NC
6	NC 55	1994	(K 346 X DH 1220)X(K326 X Coker 371-Gold)	L	L		R		PVY/TEV	GL
7	RGH 51	1998	Hybrid	R	R		R			Rickard
8	Speight 227	2003	(SP 151 X K 346)(SP 202 X K 346)	R	R		R			SPT
9	CU 110	2010	Hybrid							SC
10	PVH 1452	2006	Hybrid	R	R		TCN/R			Profigen
11	NC 925	2010	Hybrid	R			R			NC
12	GL 368	2009	Hybrid	R	R					GL
13	CC 67	2008	Hybrid	R	R		TCN/R		TMV	CC
14	PVH 2277	2009	Hybrid	R	R					Profigen
15	CU 90	2009	Hybrid	R	R					SC
16	RG 17	1993	K 326 X K 399	L	M		R			Rickard
17	CC 65	2007	Hybrid	R	R		M.j/R			CC
18	Speight 168	1996	Coker 371G X Spt. G 118	H	H		R			SPT
19	K 346	1988	McNair 926 X 80241	H	H		R			GL
20	NC 71	1995	Hybrid	H	M		R			Rickard
21	NC 72	1996	Hybrid	H	L		R			Rickard
22	NC 606	1998	NC 729 X NC 82	R	R		R			Raynor
23	Speight 220	2002	(K-346 X Sp 117)(SP 116 X K 346)	R	R		R			SPT
24	K 326	1981	McNair 225 (McNair 30 X NC 95)	L	L		R			GL,CC,RA
25	NC 196	2002	Hybrid	R	L		R			GL
26	CC 27	2003	Hybrid	R	R		TCN/R		TMV	CC
27	GL 338	2009	Hybrid	R	R					GL
28	CC 700	2005	Hybrid	R	R		TCN/R			CC
29	PVH 1118	2004	Hybrid	R	R		TCN/R			Rickard
30	CC 13	2005	Hybrid	R	R		M.j/R			CC
31	GL 939	1992	McN 926 X 80241	R	R		R			GL
32	K 149	1988	([G-28X354]X[CB-139XF-105]X[G-28X354]) McNair 399	M	H		R			GL
33	CC 304	2010	Hybrid	R	R		R		TMV	CC
34	CC 37	2006	Hybrid	R	R		TCN/R	M.j/R	TMV	CC
35	K 399	1979	(C-139 X C-139) X NC 95							GL
36	PVH 2248	2010	Hybrid		R		R1			Profigen
37	GF 318	2008	Hybrid	R	R		R			GF
38	PVH 2275	2010	Hybrid		R		R1		PVY/TEV	Profigen
39	NC 299	2001	Hybrid	R	R		TCN/R			CC
40	NC 291	1997	Hybrid	R	R		TCN/R		PVY/TEV	CC
41	PVH 1596	2008	Hybrid	R	R		R			Profigen
42	NC 102	2001	Hybrid	R	R				TMV/PVY	Rickard
43	Speight 236	2005	(SP 168 X SP 196)(SP 179 X SP 177)	R	R		R			SPT
44	K 394	1983	Speight G-28 X McNair 944	H	M					GL
45	PVH 2110	2005	Hybrid							Profigen
46	NC 471	2003	Hybrid	R	R				TMV	Raynor

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

2011 NORTH CAROLINA FLUE-CURED REGIONAL SMALL PLOT TEST										
GEORGIA, SOUTH CAROLINA, NORTH CAROLINA, AND VIRGINIA										
Trt. No	Variety or Line	Generation or Year of Release	Pedigree	BS	GW	FW	RK	Bn. Sp.	Virus	Sponsor
1	NC 2326	1965	(Hicks X 9102)(Hicks)Hicks)Hicks)	L	SU	M				NC
2	NC 95	1961	(C-139XBel.4-30)x(C-139XHicks)	L	H	M	R			NC
3	K 326	1981	McNair 225 (McNair 30 X NC95)	L	L		R			GL
4	CC 143	F1	Hybrid	R	R		R			CC
5	CU 144	F1	Hybrid							SC
6	PXH 11	F1	Hybrid	R	R	R	R		TMV PVY	Rickard
7	CU 164	F1	Hybrid							SC
8	NCEX38	F1	Hybrid	R	R		R		TMV	NC
9	CU 124	F1	Hybrid							SC
10	GLEX 336	F1	Hybrid	R	R		R			GL
11	PXH 10	F1	Hybrid	R			R1&2		TMV PVY	Rickard
12	NCEX31	Advanced		R	R		R			NC
13	PXH 8	F1	Hybrid	R	R		R			Rickard
14	GLEX 367	F1	Hybrid	R	R		R			GL
15	NCEX39	F1	Hybrid	R	R		TCN/R			NC
16	NCEX43	F1	Hybrid	R	R		TCN/R			NC
17	CC 223	F1	Hybrid	R	R		R			CC
18	CC 142	F1	Hybrid	R	R		R			CC
19	CU140	F1	Hybrid							SC
20	NCEX41	F1	Hybrid	R	R		TCN/R		TMV	NC
21	GLEX 335	F1	Hybrid	R	R		R			GL
22	PXH 9	F1	Hybrid	R	R		R			Rickard
23	CU 141	F1	Hybrid							SC
24	GLEX 325	F1	Hybrid	R	R		R			GL
25	ULT 113 Exp.	F1	Hybrid						TMV PVY	ULT
26	NCEX42	F1	Hybrid	R	R		R		TMV	NC

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

2011 NORTH CAROLINA FLUE-CURED OFFICIAL TOBACCO VARIETY TEST										
Advanced Breeding Lines										
Trt. No	Variety or Line	Generation or Year of Release	Pedigree	BS	GW	FW	RK	Bn. Sp.	Virus	Sponsor
1	NC 2326	1965	(HicksX9102)(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				NC
3	K 326	1981	McNair 225(McNair 30 X NC 95)	L	L		R			GL
4	CU 123	F1	Hybrid							SC
5	GF 164	F1	Hybrid	R	R		R			GF
6	NCEX44	F1	Hybrid	R	R		R1&3		TMV	NC
7	NCEX49	F1	Hybrid	R	R		R1&3		TMV	NC
8	PVH 2310	F1	Hybrid	R		R	R1&2		TMV PVY	Rickard
9	NCEX45	F1	Hybrid	R	R		TCN/R1&3			NC
10	CU 159	F1	Hybrid							SC
11	CU 165	F1	Hybrid							SC
12	NCEX48	F1	Hybrid	R	R		TCN/R1&3			NC
13	NCEX47	F1	Hybrid	R	R		R1&3			NC
14	CU 160	F1	Hybrid							SC
15	NCEX46	F1	Hybrid	R	R		R1&3		TMV	NC
16	CU 162	F1	Hybrid							SC

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

2011 NORTH CAROLINA FLUE-CURED REGIONAL FARM TEST GEORGIA, SOUTH CAROLINA, NORTH CAROLINA, AND VIRGINIA										
Trt. No	Variety or Line	Generation or Year of Release	Pedigree	BS	GW	FW	RK	Bn. Sp.	Virus	Sponsor
1	NC 2326	1965	(Hicks X 9102)(Hicks)Hicks)Hicks)	L	SU	M				NC
2	NC 95	1961	(C-139 X Bel. 4-30)X(C-139 X Hicks)	L	H	M	R			NC
3	K 326	1981	McNair 225(McNair 30 X NC 95)	L	L		R			GL
4	XP 254	F1	Hybrid	R	R				TMV	Rickard
5	CC 1036	F1	Hybrid	R	R		R			CC
6	GLEX 328	F1	Hybrid	R	R		R		TMV	GL
7	CU 1361	F1	Hybrid							SC
8	GLEX 362	F1	Hybrid	R	R	R	R		PVY	GL
9	NCEX34	F1	Hybrid	R	R		TCN/R			NC
10	ULT 123	F1	Hybrid						TMV	ULT
11	PXH 1	F1	Hybrid	R	R					Rickard
12	RJR 901	F1	Hybrid	R	R		R			RJR
13	NCTG 156	F1	Hybrid	R	R		TCN/R1&3			NC
14	GF 157	F1	NC 81 X 2012	R	R		R			GF
15	NCEX24	F1	Hybrid	R	R		TCN/R			NC
16	ULT 143	F1	Hybrid	R	R				PVY	ULT

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

	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324
	103	95	73	94	37	59	108	75	28	2	13	11	14	96	22	4	106	15	51	50	63	29	31	104	90	91	44
	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297
	1	38	71	7	27	83	30	97	80	62	72	36	101	107	18	98	84	67	81	55	54	87	88	60	99	53	77
Rep 3	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270
	23	34	65	85	33	102	43	45	89	78	12	32	64	79	47	46	35	3	16	69	10	40	58	56	20	52	48
	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243
	26	25	61	68	14	5	93	105	8	100	92	39	9	82	86	57	17	42	19	21	70	66	6	76	49	41	74
	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216
	12	29	35	44	14	87	9	54	108	75	36	48	74	38	49	40	53	77	57	13	80	93	79	30	72	22	83
	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189
	11	81	5	34	95	51	26	106	10	60	1	47	50	19	45	82	100	24	21	31	73	6	3	61	76	46	67
Rep 2	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162
	25	47	105	62	58	17	33	59	85	92	27	98	68	66	8	89	102	86	55	15	84	69	2	101	64	97	16
	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135
	32	23	88	71	28	43	78	90	39	4	18	94	96	41	63	65	52	103	99	7	104	56	70	37	20	91	107
	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108
	50	32	25	93	12	40	36	52	51	78	55	34	15	77	72	81	98	21	27	83	24	69	6	104	43	73	7
	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81
	29	46	88	22	107	23	102	65	33	28	48	3	66	106	103	26	57	30	92	8	56	41	90	54	11	16	62
Rep 1	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
	2	10	64	80	101	86	38	18	74	108	60	1	82	19	53	75	63	31	14	67	17	45	79	84	91	20	71
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
	59	70	39	87	99	35	96	4	105	68	5	42	44	97	37	89	49	85	9	13	94	76	47	61	100	95	58

Rating Data Type		Percent Dis
Rating Unit		Percent
Entry No.	Entry Name	
1	GL 395	0 c
2	SPT 225	2 c
3	CC 33	0 c
4	NC 297	2 c
5	NC 92	15 c
6	NC 55	8 c
7	RGH 51	6 c
8	SPT 227	0 c
9	CU 110	3 c
10	PVH 1452	0 c
11	NC 925	3 c
12	GL 368	0 c
13	CC 67	3 c
14	PVH 2277	0 c
15	CU 90	0 c
16	RG 17	5 c
17	CC 65	6 c
18	SPT 168	2 c
19	K 346	2 c
20	NC 71	3 c
21	NC 72	11 c
22	NC 606	0 c
23	SPT 220	2 c
24	K 326	3 c
25	NC 196	5 c
26	CC 27	5 c
27	GL 338	8 c
28	CC 700	0 c
29	PVH 1118	0 c
30	CC 13	3 c
31	GL 939	3 c
32	K 149	2 c
33	CC 304	3 c
34	CC 37	9 c
35	K 399	0 c
36	PVH 2248	5 c

Rating Data Type		Percent Dis
Rating Unit		Percent
Entry No.	Entry Name	
37	GF 318	0 c
38	PVH 2275	5 c
39	NC 299	6 c
40	NC 291	5 c
41	PVH 1596	3 c
42	NC 102	5 c
43	SPT 236	0 c
44	K 394	0 c
45	PVH 2110	5 c
46	NC 471	2 c
47	1071	71 b
48	NC 2326	2 c
49	NC 95	9 c
50	K 326	9 c
51	CU 123	0 c
52	GF 164	5 c
53	NCEX 44	0 c
54	NCEX 49	2 c
55	PVH 2310	8 c
56	NCEX 45	0 c
57	CU 159	2 c
58	CU 165	0 c
59	NCEX 48	9 c
60	NCEX 47	0 c
61	CU 160	0 c
62	NCEX 46	0 c
63	CU 162	0 c
64	1071	58 b
65	NC 2326	6 c
66	NC 95	3 c
67	K 326	3 c
68	CC 143	3 c
69	CU 144	5 c
70	PXH 11	11 c
71	CU 164	2 c
72	NCEX 38	0 c

Rating Data Type		Percent Dis
Rating Unit		Percent
Entry No.	Entry Name	
73	CU 124	6 c
74	GLEX 336	0 c
75	PXH 10	5 c
76	NCEX 31	0 c
77	PXH 8	8 c
78	GLEX 367	3 c
79	NCEX 39	0 c
80	NCEX 43	0 c
81	CC 223	0 c
82	CC 142	2 c
83	CU 140	5 c
84	NCEX 41	2 c
85	GLEX 335	2 c
86	PXH 9	3 c
87	CU 141	3 c
88	GLEX 325	8 c
89	ULT 113 EX	3 c
90	NCEX 42	6 c
91	1071	94 a
92	NC 2326	2 c
93	NC 95	0 c
94	K 326	5 c
95	XP 154	14 c
96	CC 1063	2 c
97	GLEX 328	6 c
98	CU 136	11 c
99	GLEX 362	6 c
100	NCEX 34	15 c
101	ULT 123	6 c
102	PXH 1	9 c
103	RJR 901	6 c
104	NCTG 156	0 c
105	GF 157	2 c
106	NCEX 24	3 c
107	ULT 143	5 c
108	1071	73 b

Replicate F	2.391
Replicate Prob(F)	0.094
Treatment F	9.217
Treatment Prob(F)	0.0001

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

14/July/2011 Means Table 2011 Black Shank OVT, OVTA, RSP RFT

Rating Data Type		Percent Dis
Rating Unit		Percent
Entry No.	Entry Name	
1	GL 395	17 i-p
2	SPT 225	11 k-p
3	CC 33	18 h-p
4	NC 297	27 d-p
5	NC 92	52 b-m
6	NC 55	67 a-e
7	RGH 51	41 c-p
8	SPT 227	12 j-p
9	CU 110	29 d-p
10	PVH 1452	17 i-p
11	NC 925	8 m-p
12	GL 368	9 l-p
13	CC 67	24 d-p
14	PVH 2277	17 i-p
15	CU 90	6 nop
16	RG 17	36 c-p
17	CC 65	29 d-p
18	SPT 168	27 d-p
19	K 346	3 op
20	NC 71	39 c-p
21	NC 72	53 b-l
22	NC 606	15 j-p
23	SPT 220	20 g-p
24	K 326	44 c-p
25	NC 196	18 h-p
26	CC 27	36 c-p
27	GL 338	52 b-m
28	CC 700	35 d-p
29	PVH 1118	27 d-p
30	CC 13	27 d-p
31	GL 939	18 h-p
32	K 149	27 d-p
33	CC 304	33 d-p
34	CC 37	44 c-p
35	K 399	11 k-p
36	PVH 2248	17 i-p

Rating Data Type		Percent Dis
Rating Unit		Percent
Entry No.	Entry Name	
37	GF 318	24 d-p
38	PVH 2275	61 a-i
39	NC 299	53 b-l
40	NC 291	39 c-p
41	PVH 1596	27 d-p
42	NC 102	38 c-p
43	SPT 236	0 p
44	K 394	11 k-p
45	PVH 2110	36 c-p
46	NC 471	15 j-p
47	1071	100 a
48	NC 2326	45 c-o
49	NC 95	80 abc
50	K 326	45 c-o
51	CU 123	6 nop
52	GF 164	29 d-p
53	NCEX 44	21 f-p
54	NCEX 49	18 h-p
55	PVH 2310	65 a-f
56	NCEX 45	9 l-p
57	CU 159	36 c-p
58	CU 165	12 j-p
59	NCEX 48	32 d-p
60	NCEX 47	21 f-p
61	CU 160	6 nop
62	NCEX 46	9 l-p
63	CU 162	15 j-p
64	1071	100 a
65	NC 2326	44 c-p
66	NC 95	68 a-d
67	K 326	41 c-p
68	CC 143	9 l-p
69	CU 144	18 h-p
70	PXH 11	39 c-p
71	CU 164	23 e-p
72	NCEX 38	12 j-p

Rating Data Type		Percent Dis
Rating Unit		Percent
Entry No.	Entry Name	
73	CU 124	35 d-p
74	GLEX 336	17 i-p
75	PXH 10	62 a-h
76	NCEX 31	11 k-p
77	PXH 8	64 a-g
78	GLEX 367	50 b-n
79	NCEX 39	11 k-p
80	NCEX 43	26 d-p
81	CC 223	20 g-p
82	CC 142	14 j-p
83	CU 140	32 d-p
84	NCEX 41	14 j-p
85	GLEX 335	15 j-p
86	PXH 9	30 d-p
87	CU 141	45 c-o
88	GLEX 325	68 a-d
89	ULT 113 EX	44 c-p
90	NCEX 42	17 i-p
91	1071	100 a
92	NC 2326	56 b-j
93	NC 95	68 a-d
94	K 326	38 c-p
95	XP 154	52 b-m
96	CC 1063	11 k-p
97	GLEX 328	39 c-p
98	CU 136	55 b-k
99	GLEX 362	24 d-p
100	NCEX 34	41 c-p
101	ULT 123	52 b-m
102	PXH 1	39 c-p
103	RJR 901	12 j-p
104	NCTG 156	24 d-p
105	GF 157	11 k-p
106	NCEX 24	6 nop
107	ULT 143	39 c-p
108	1071	94 ab

Replicate F	21.964
Replicate Prob(F)	0.0001
Treatment F	6.232
Treatment Prob(F)	0.0001

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

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

2-row plots

2011 UCPRS Black Shank Chemical Trial

16/Jun/2011 Means Table

Rating Data Type					Percent Dis
Rating Unit					percent
Trt No.	Treatment Name	Rate	Rate Unit	Timing	
1	Untreated Check				4 a
2	Presidio	4	fl oz/a	Attran	1 a
	Ridomil Gold SL	1	pt/a	1st Cult	
	Presidio	4	fl oz/a	Layby	
3	Ridomil Gold SL	0.25	pt/a	Attran	1 a
	Presidio	4	fl oz/a	1st Cult	
	Presidio	4	fl oz/a	Layby	
4	Presidio	4	fl oz/a	Attran	0 a
	Presidio	4	fl oz/a	1st Cult	
	Presidio	4	fl oz/a	Layby	
5	Presidio	8	fl oz/a	Attran	14 a
	Presidio	8	fl oz/a	1st Cult	
	Presidio	8	fl oz/a	Layby	
6	Ridomil Gold SL	0.25	pt/a	Attran	0 a
	Ridomil Gold SL	1	pt/a	1st Cult	
	Ridomil Gold SL	1	pt/a	Layby	
7	Ridomil Gold SL	0.5	pt/a	Attran	4 a
	Ridomil Gold SL	1.5	pt/a	Layby	
8	Revus	22	fl oz/a	Attran	6 a
	Ridomil Gold SL	1.5	pt/a	Layby	
9	Ridomil Gold SL	0.5	pt/a	Attran	2 a
	Revus +	22	fl oz/a +	1st cult	
	Ridomil Gold SL	0.75	pt/a		
10	Ridomil Gold SL	0.5	pt/a	Attran	6 a
	Revus	22	fl oz/a	1st cult	
	Ridomil Gold SL	0.75	pt/a	Layby	

Replicate F	5.778
Replicate Prob(F)	0.0035
Treatment F	1.202
Treatment Prob(F)	0.3341

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

Systemic Neonicotinoids Longevity in Tobacco
Upper Coastal Plain Research Station

Principal Investigators
H. Alejandro Merchán and Hannah Burrack
Research Technican
Anna Chapman

Purpose
To determine how long systemically applied neonicotinoid insecticides are effective against direct foliar pests, in order to improve late season management. To test two different bioassays using aphids, to determine its efficacy as indicators of insecticide presence.

Treatments	Rate	Application Method
1. Admire Pro	0.6 fl oz/1000 plants	Greenhouse
2. Admire Pro	1.2 fl oz/1000 plants	Greenhouse
3. Admire Pro	2.4 fl oz/1000 plants	Greenhouse
4. Platinum 2SG	0.5 oz/1000 plants	Greenhouse
5. Platinum 2SG	1.3 oz/1000 plants	Greenhouse
6. Platinum 2SG	2.6 oz/1000 plants	Greenhouse
7. Untreated control		

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

Aphid (*Myzus persicae*) infested plants were counted weekly and five leafs from each plot were collected and brought back to the lab for bioassays.

Bioassay 1: We cut a leaf disc from each leaf and put it inside a petri dish, with 1% agar, to keep it fresh. We added 6 aphids and counted live and dead aphids at 24, 72 and 144 hours.

Bioassay 2: We cut a leaf disc from each leaf and put it inside a petri dish, with 1% agar, to keep it fresh. We added 4 adult aphids and removed them after 24 hours. At 72 hours, we counted live and dead immature aphids. For this assay, we only used the plots that were treated with Admire and the Control.

Plot Map

401 **1**	402 **6**	403 **4**	404 **5**	405 **2**	406 **7**	407 **3**
301 **4**	302 **3**	303 **1**	304 **7**	305 **2**	306 **5**	307 **6**
201 **6**	202 **7**	203 **5**	204 **4**	205 **2**	206 **1**	207 **3**
101 **6**	102 **1**	103 **7**	104 **3**	105 **4**	106 **5**	107 **2**

Block 1: 101-107

Block 2: 201-207

Block 3: 301-307

Block 4: 401-407

Results to Date

Field:

All treatments have consistently fewer aphids in the field, than the untreated control. There seems to be no difference between Admire and Platinum, at any of the used rates.

Bioassay 1:

In this bioassay, the three different rates of Admire and the 2X rate of Platinum perform better than the 0.5X and 1X rate of Platinum. These two rates produce similar results as the control. We also had more mortality at 4 weeks after transplant, but after that, results have been stable (Figure 1).

Bioassay2:

In this bioassay, the three treatments performed better than the control, with the 2X and 1X being very similar, in terms of low survival. We also noted that results vary per week, with survival increasing each week, showing that the material is breaking down (Figure 2).

It seems that the second bioassay produce clearer results and takes less time to perform, showing that it can be a promising approach for further testing.

Significance

Neonicotiod insecticides act as antifeedants and growth regulators in green peach aphids, and this effect is rate dependent. Imidacloprid activity against green peach aphids begins to decrease 6 to 7 weeks after transplant.

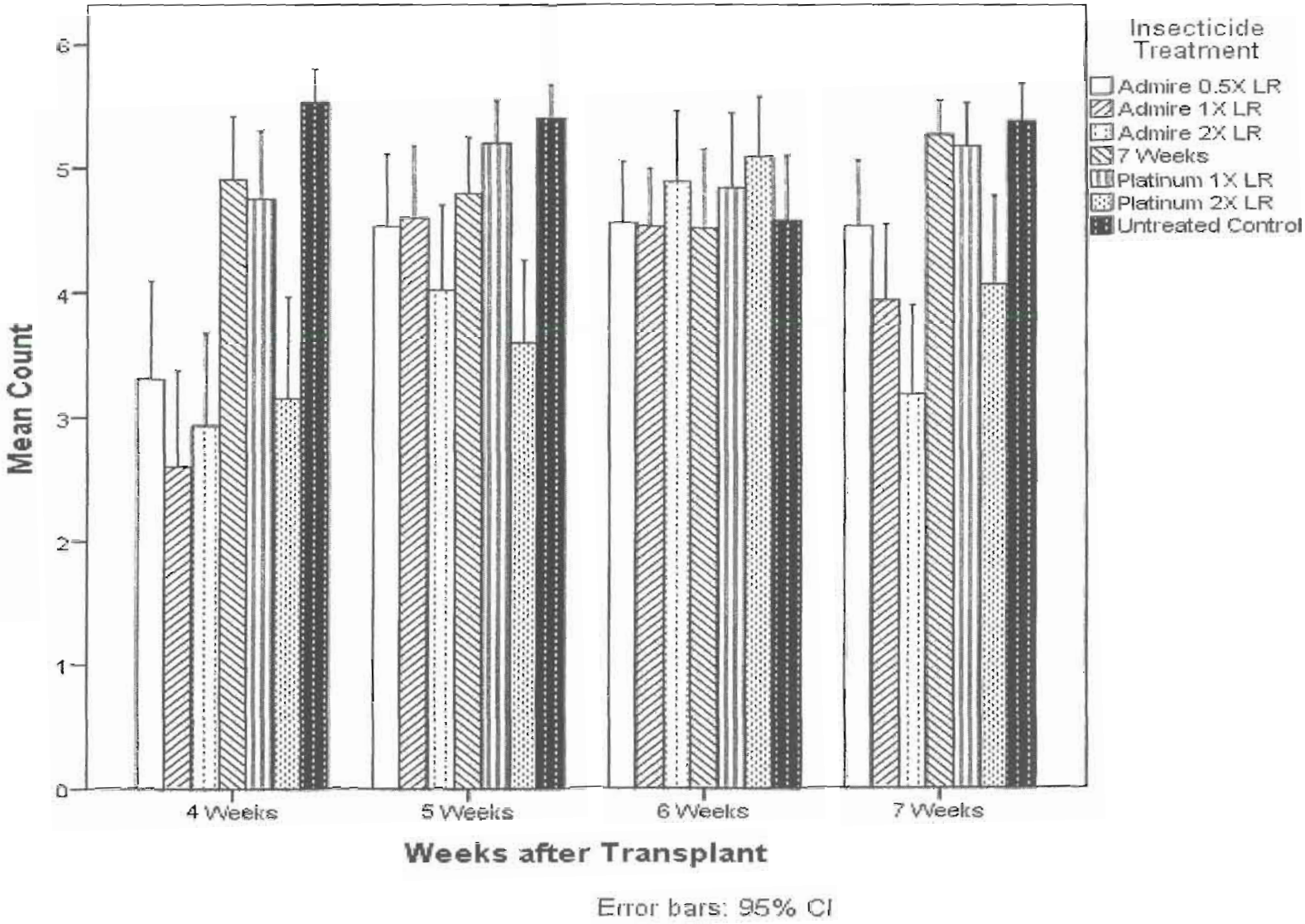


Figure 1: Average survival of 6 aphids after 144 hours of exposure to the different treatments.

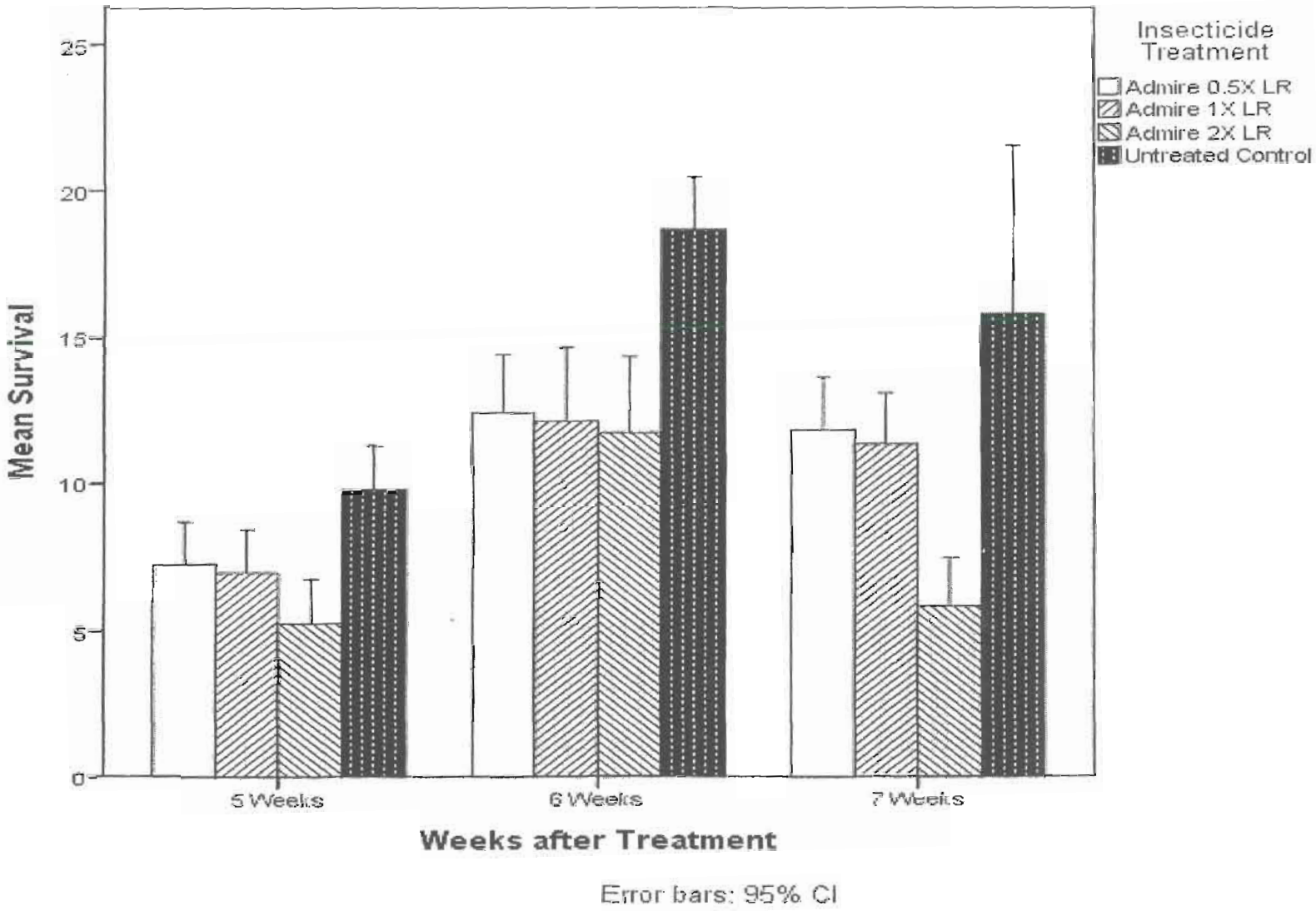


Figure 2: Average survival of immature aphids after 72 hours of exposure to the different treatments.

Movement and longevity of new insecticides
Upper Coastal Plain Research Station

Principle Investigator
Hannah Burrack
Undergraduate researcher
Dylan Kraus
Research technician
Anna Chapman

Purpose
To compare the efficacy and longevity of soil and foliar applied insecticides against tobacco budworms under field conditions of North Carolina, and to assess resistance management needs for new lepidopteran targeted insecticides in tobacco.

Treatments

1. Tracer or Blackhawk	1.8 fl or 2.0 oz/A	Foliar spray 30 gpa
2. Belt	3 oz/A	Foliar spray, 30 gpa
3. Belt	*3 oz/A*	*Stalk spray, 50 gpa*
4. Coragen	5 oz/A	Foliar spray, 30 gpa
5. Coragen	*5 oz/A*	*Stalk spray, 50 gpa*
6. Coragen	7 oz/A	Transplant water (Drench)
7. Coragen	7 oz/A	Transplant water (Furrow)
8. Untreated control		

Data for stalk spray treatments are not shown.

Location:
Upper Coastal Plain Research Station
Rocky Mount, NC
Lower Coastal Plain Research Station
Kinston, NC

Plot Map

401 **7**	402 **8**	403 **4**	404 **5**	405 **6**	406 **2**	407 **3**	408 **1**
301 **6**	302 **7**	303 **3**	304 **5**	305 **4**	306 **8**	307 **2**	308 **1**
201 **5**	202 **7**	203 **4**	204 **8**	205 **6**	206 **1**	207 **2**	208 **3**
101 **5**	102 **2**	103 **1**	104 **7**	105 **4**	106 **6**	107 **8**	108 **3**

Tobacco plants (var. K326 (Kinston) or var. NC71 (Rocky Mount)) were transplanted on 18 April (Kinston) or 21 April (Rocky Mount) in 4, 50 ft row plots

(0.02 acres per plot). Transplant water applications of Coragen were either applied at transplant (furrow, Treatment 7) or immediately after transplant (drench, Treatment 6). Drench treatment were applied in 2 fl oz of finished solution (107 gal per acre), while furrow treatments were applied using a gravity fed setter attachment. Plants were treated with Admire Pro (0.8 fl oz/1000 plants imidacloprid) in the greenhouse 2 to 3 days before transplant.

Foliar treatments were applied 16 May (Kinston) or 18 May (Rocky Mount), and stalk sprays were applied 14 June (Kinston) or 23 June (Rocky Mount).

Beginning 4 weeks after transplant, natural tobacco budworm infestations were assessed in rows 2 & 3 of each plot. In addition 5, 15 cm long leaves were collected from the center 2 rows of each plot and returned to the laboratory for use in bioassays. Leaves were halved, excluding the midrib. One half of each leaf was exposed to a single 2nd instar tobacco budworm larva, and the other half was reserved to quantify the concentration of chlorantraniliprole, the active ingredient in Coragen. Larval mortality and frass production were assessed 24 and 96 hours after exposure, and leaf area consumed was assessed at 96 hours.

Data are analyzed via SAS Proc Mixed, and means were separated via LSD.

Results to date, Rocky Mount

Laboratory assays
Mortality in soil applied treatments were not significantly different from the untreated control 5 weeks after transplant at both locations, but these similarities were gone by 6 weeks after transplant. A single application of either Belt (Bayer) or Coragen (DuPont) resulted in greater mortality than the control for 3 weeks after treatment, but control began to break down between 3 and 4 week after treatment.

Field observations
Overall dates, foliar applications of Tracer/Blackhawk, Belt, and Coragen and furrow transplant water application of Coragen had significantly fewer tobacco budworm infested plants and large tobacco budworm larvae than the untreated control or drench applied transplant water application of Coragen.

Tobacco budworm populations in furrow applied Coragen plots increased 7 weeks after transplant, while both foliar treatments remained low. Natural tobacco budworm populations decreased in all treatments by 8 weeks after transplant.

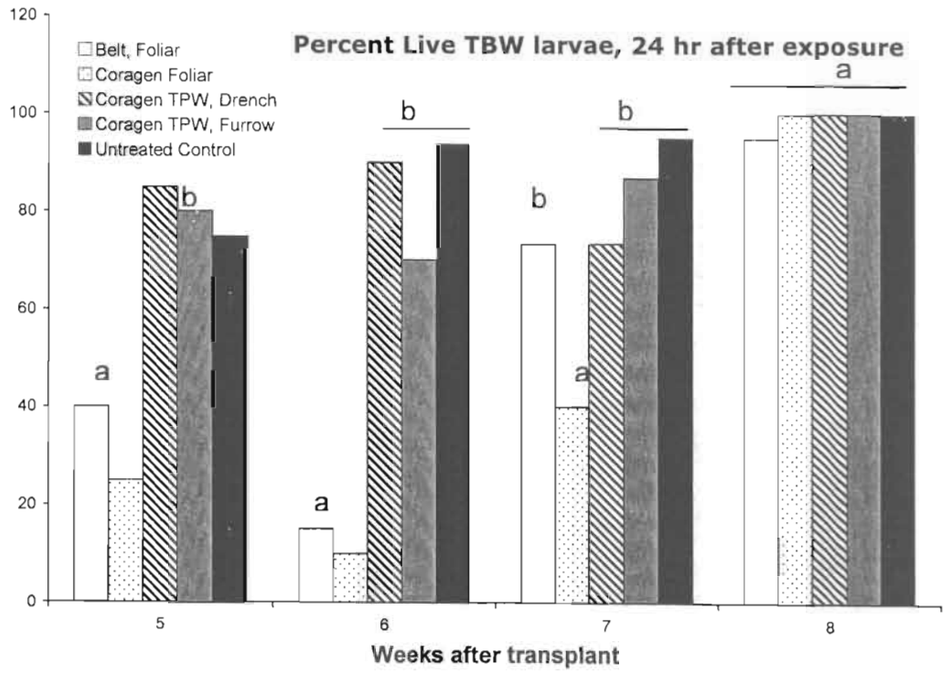


Figure 1. Percent live tobacco budworm larvae alive in laboratory assays, 24 hours after exposure

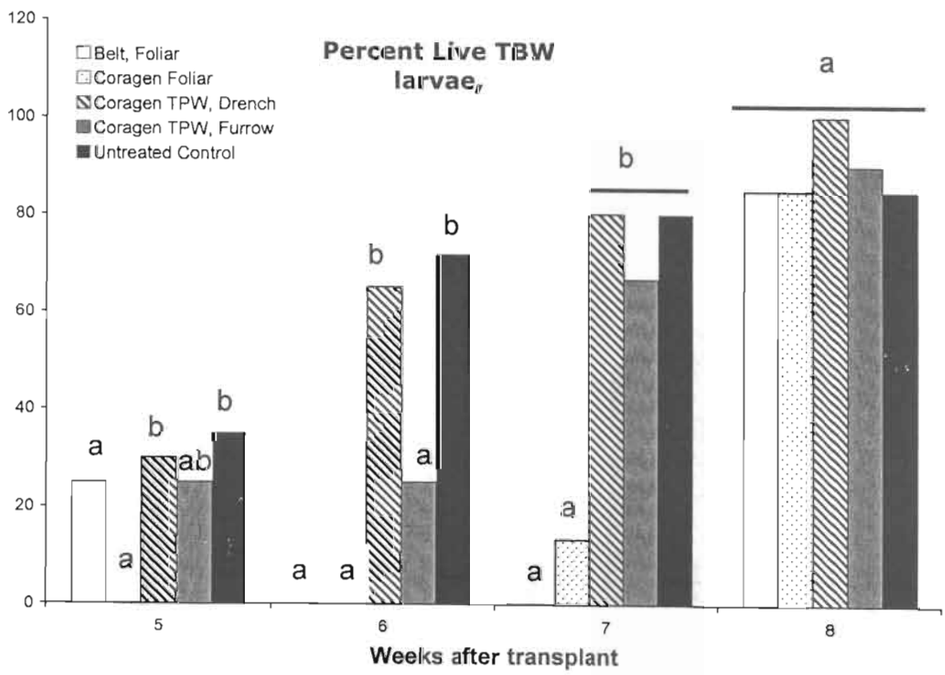


Figure 2. Percent live tobacco budworm larvae alive in laboratory assays, 96 hours after exposure.

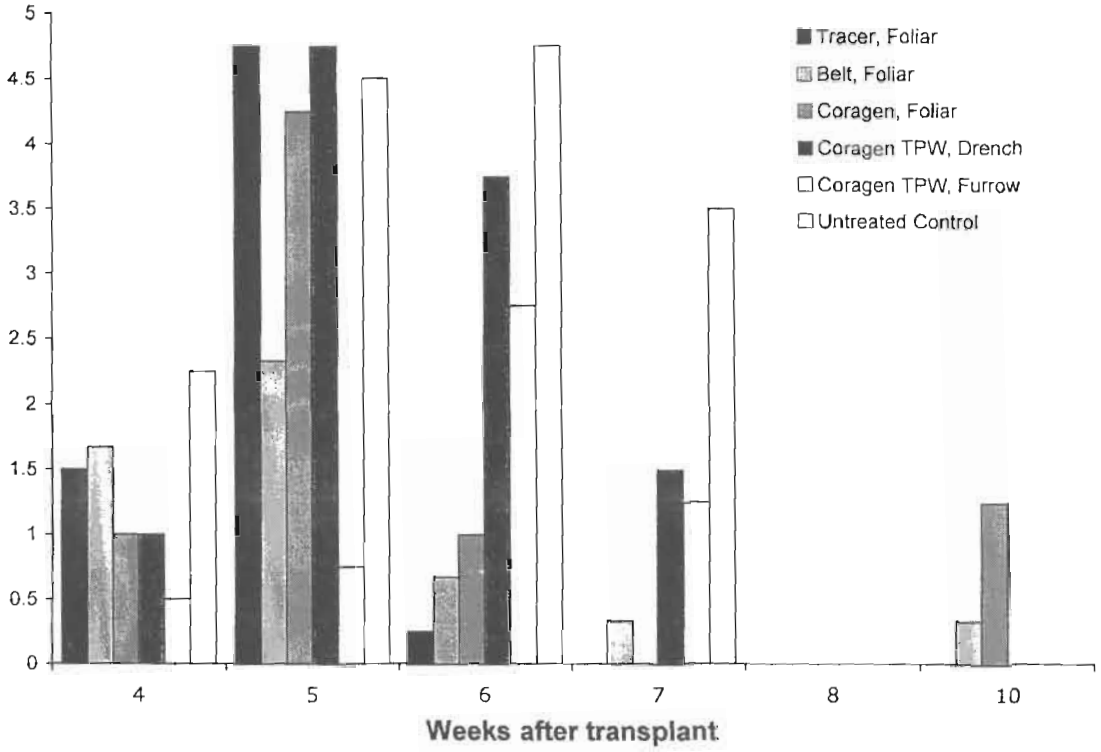


Figure 3. Tobacco budworm infested plants in the middle two rows of each plot.

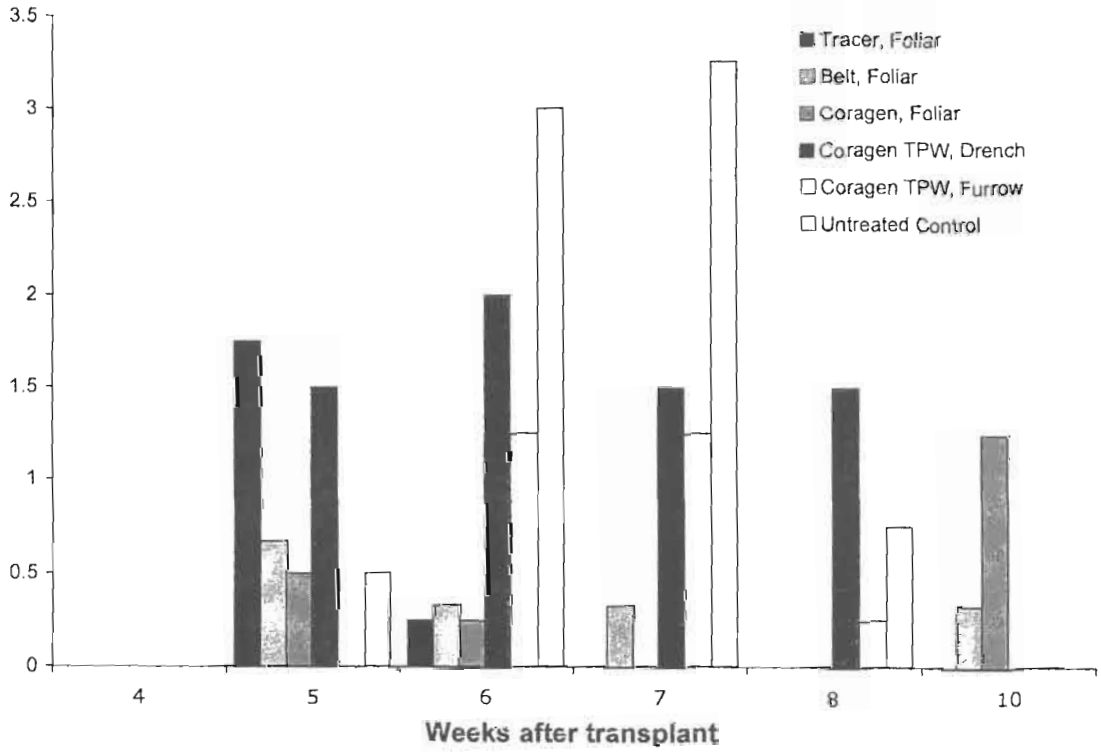


Figure. 4. Large tobacco budworm larvae in the middle two rows of each plot.

Variable Frequency Drive
Average Electrical Energy Savings

Location	Motor Hp and 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	10, 3-phase	8	1696	1500	195	11	27
(2010)		4 – Mid &Upper	1695	1314	382	22	54
Rock Ridge Farms	7.5, 3-phase	4	1002	748	253	25	35

** 0.14 / kWh*

NC State University
A&T State University
COOPERATIVE EXTENSION
Empowering People · Providing Solutions

JOHNSTON & WILSON COUNTY ON-FARM SUCKER CONTROL TEST
HOLLAND FARMS

401 6	402 8	403 10	404 11	405 1	406 3	407 5	408 12	409 4	410 7	411 9	412 2

REP IV

301 4	302 8	303 12	304 6	305 10	306 2	307 7	308 1	309 9	310 5	311 3	312 11

REP III

201 10	202 9	203 11	204 5	205 12	206 3	207 1	208 2	209 4	210 6	211 8	212 7

REP II

101 1	102 2	103 3	104 4	105 5	106 6	107 7	108 8	109 9	110 10	111 11	112 12

REP I

DESIGN: RCB
PLOT SIZE: 4-ROWS, 50' LONG
VARIETY: NC 196 TRANSPLANTED: 4-17-11
FERTILIZATION: 25 LB BAG OF 9-45-15 IN 300 GALLONS OF H2O AT TRANSPLANTING. BROADCST 400 LBS/A 0-0-31 OVERTOP AFTER TRANSPLANTING. APPLIED 28 GPA 24S ON 4-30-11.
1ST (4%) CONTACT APPLICATION 6-15-11
2ND (4%) CONTACT APPLICATION 6-21-11

North Carolina State University

JOHNSTON AND WILSON COUNTY SUCKER CONTROL ON-FARM TEST
HOLLAND FARMS

Trial ID: JWSC-11 Study Director:
Location: JOHNSTON & WILSON CO. Investigator: Joseph A Priest

Reps: 4 Plots: 16 by 50 feet
Spray vol: 50 gal/ac Mix size: 5 gallons (min 3.6731)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Spray Volume	Volume Unit	Amt Product to Measure	Plot No. By Rep 1	2	3	4
1	PRIME+ 0.5 GPA (3-5-3 - 50 GPA NO CONVEYORS)	1.2	EC	0.6	lb ai/a	50	GAL/AC	189.3 ml/mx	101	207	308	405
2	PRIME+ 0.5 GPA PRIME+ 0.25 GPA (3-5-3 - 50 GPA NO CONVEYORS)	1.2 1.2	EC EC	0.6 0.3	lb ai/a lb ai/a	50 50	GAL/AC GAL/AC	189.3 ml/mx 94.63 ml/mx	102	208	306	412
3	PRIME+ 0.5 GPA (3-5-3 - 50 GPA WITH CONVEYORS)	1.2	EC	0.6	lb ai/a	50	GAL/AC	189.3 ml/mx	103	206	311	406
4	PRIME+ 0.5 GPA PRIME+ 0.25 GPA (3-5-3 - 50 GPA WITH CONVEYORS)	1.2 1.2	EC EC	0.6 0.3	lb ai/a lb ai/a	50 50	GAL/AC GAL/AC	189.3 ml/mx 94.63 ml/mx	104	209	301	409
5	PRIME+ 0.5 GPA (3-5-3 - 35 GPA WITH CONVEYORS)	1.2	EC	0.6	lb ai/a	35	GAL/AC	270.4 ml/mx	105	204	310	407
6	PRIME+ 0.5 GPA (3-5-3 - 35 GPA NO CONVEYORS)	1.2	EC	0.6	lb ai/a	35	GAL/AC	270.4 ml/mx	106	210	304	401
7	PRIME+ 0.5 GPA PRIME+ 0.25 GPA (3-5-3 - 35 GPA WITH CONVEYORS)	1.2 1.2	EC EC	0.6 0.3	lb ai/a lb ai/a	35 35	GAL/AC GAL/AC	270.4 ml/mx 135.2 ml/mx	107	212	307	410
8	PRIME+ 0.5 GPA (DROP LINE)	1.2	EC	0.6	lb ai/a	50	GAL/AC	189.3 ml/mx	108	211	302	402
9	PRIME+ 0.75 GPA (DROP LINE)	1.2	EC	0.9	lb ai/a	50	GAL/AC	283.9 ml/mx	109	202	309	411
10	(RMH-30 1.5 GPA & PRIME+ 0.5 GPA) TM (3-5-3 - 50 GPA NO CONVEYORS	1.5 1.2	EC EC	2.25 0.6	lb ai/a lb ai/a	50 50	GAL/AC GAL/AC	567.8 ml/mx 189.3 ml/mx	110	201	305	403
11	(RMH-30 1.5 GPA & PRIME+ 0.5 GPA) TM (3-5-3 - 35 GPA WITH CONVEYORS)	1.5 1.2	EC EC	2.25 0.6	lb ai/a lb ai/a	35 35	GAL/AC GAL/AC	811.1 ml/mx 270.4 ml/mx	111	203	312	404
12	RMH-30 1.5 GPA & PRIME+ 0.5 GPA) TM (3-5-3 - 50 GPA WITH CONVEYORS)	1.5 1.2	EC EC	2.25 0.6	lb ai/a lb ai/a	50 50	GAL/AC GAL/AC	567.8 ml/mx 189.3 ml/mx	112	205	303	408

Sort Order: Treatment

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

2011 GW Variety Trial, Johnston Co.

Means Table

Rating Date		6/16/2011	6/29/2011	7/14/2011
Rating Data Type		Percent Dis	Percent Dis	Percent Dis
Entry No.	Entry Name			
1	GL 395	3 a	23 ab	41 a-e
2	SPT 225	2 a	12 b	19 e
3	CC 33	5 a	21 ab	38 a-e
4	NC 92	2 a	37 ab	53 a-e
5	CU 110	10 a	38 ab	46 a-e
6	PVH 1452	8 a	27 ab	37 a-e
7	NC 925	10 a	39 ab	50 a-e
8	GL 368	8 a	34 ab	43 a-e
9	CC 67	2 a	21 ab	34 b-e
10	PVH 2277	4 a	23 ab	40 a-e
11	CU 90	6 a	32 ab	44 a-e
12	K 346	2 a	18 ab	24 de
13	K 326	15 a	49 a	72 a
14	NC 196	4 a	21 ab	41 a-e
15	GL 338	8 a	41 ab	60 a-d
16	PVH 1118	8 a	50 a	68 ab
17	CC 13	1 a	54 a	62 abc
18	CC 304	5 a	38 ab	58 a-d
19	CC 37	2 a	11 b	18 e
20	PVH 2248	3 a	21 ab	37 a-e
21	GF 318	11 a	35 ab	54 a-e
22	PVH 2275	4 a	31 ab	45 a-e
23	PVH 1596	4 a	18 ab	27 cde
24	K 394	7 a	37 ab	68 ab
25	PVH 2110	3 a	24 ab	33 b-e
LSD (P=.05)		10	19.4	20.5
Standard Deviation		7.1	13.7	14.5
Replicate F		7.941	16.218	20.667
Replicate Prob(F)		0.0001	0.0001	0.0001
Treatment F		0.957	2.826	4.22
Treatment Prob(F)		0.5301	0.0004	0.0001

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

North Carolina State University

2011 BURLEY REGIONAL SUCKER CONTROL TEST - UPPER PIEDMONT RESEARCH STATION - REIDSVILLE, N.C.

Trial ID: 11BRSCREID
Protocol ID: 11BRSCREID Study Director: LOREN FISHER/JOE PRIEST/SCOTT WHITLEY
Location: REIDSVILLE, N.C. Investigator: Joseph A Priest

Reps: 4 Plots: 8 by 33 feet
Spray vol: 50 gal/ac Mix size: 2.5 gallons (min 1.2121)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Amt Product to Measure	Plot No. By Rep 1	2	3	4
1	TOPPED, NOT SUCKERED							101	209	306	403
2	ROYAL MH-30 @ 2.0 GPA	1.5	EC	3.0	LB A/A	AT	378.5 ml/mx	102	207	303	410
3	ROYAL MH-30 @ 1.5 GPA STANDARD BOOM	1.5	EC	2.25	LB A/A	AT AT	283.9 ml/mx	103	208	305	401
4	ROYAL MH-30 @ 1.5 GPA CONVEYOR	1.5	EC	2.25	LB A/A	AT AT	283.9 ml/mx	104	201	307	409
5	ROYAL MH-30 @ 1.5 GPA + FLUPRO @ 0.5 GPA (TM) STANDARD BOOM	1.5 1.2	EC EC	2.25 0.6	LB A/A LB A/A	AT AT	283.9 ml/mx 94.63 ml/mx	105	210	304	407
6	ROYAL MH-30 @ 1.5 GPA + FLUPRO @ 0.5 GPA (TM) CONVEYOR	1.5 1.2	EC EC	2.25 0.6	LB A/A LB A/A	AT AT	283.9 ml/mx 94.63 ml/mx	106	204	309	402
7	ROYAL MH-30 @ 1.0 GPA + FLUPRO @ 0.5 GPA (TM) STANDARD BOOM	1.5 1.2	EC EC	1.5 0.6	LB A/A LB A/A	AT AT	189.3 ml/mx 94.63 ml/mx	107	203	310	406
8	ROYAL MH-30 @ 1.0 GPA + FLUPRO @ 0.5 GPA (TM) CONVEYOR	1.5 1.2	EC EC	1.5 0.6	LB A/A LB A/A	AT AT	189.3 ml/mx 94.63 ml/mx	108	206	301	404
9	PRIME PLUS @ 1.0 GPA (CURRENT FORMULATION)	1.2	EC	1.2	LB A/A	AT	189.3 ml/mx	109	205	302	408
10	PRIME PLUS @ 1.0 GPA (OLD FORMULATION)	1.2	EC	1.2	LB A/A	AT	189.3 ml/mx	110	202	308	405

Sort Order: Treatment

North Carolina State University

2011 PESTICIDE RESIDUE STUDY ON BURLEY TOBACCO
LOREN FISHER SANDY STEWART JOE PRIEST SCOTT WHITLEY

Trial ID: 11BPRREID
Protocol ID: 11BPRREID Study Director: LOREN FISHER
Location: KINSTON, NC Investigator: Joseph A Priest

Reps: 4 Plots: 8 by 33 feet
Spray vol: 20 gal/ac Mix size: 2 gallons (min .60606)

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 A/A	6.895 ml/mx	101	203	302	404
2	BELAY SC (CLOTHIANIDIN) 3 FIELD APPLICATIONS (EACH 4.0 OZ/A) (14 DAY PHI)	2.13	SC	0.125	LB A/A	22.21 ml/mx	102	204	301	403
3	CAPTURE LRF (BIFENTHRIN) 2 FIELD APPLICATIONS BEFORE LAYBY (EACH 8.5 OZ/A)	1.5	EC	0.1	LB A/A	25.23 ml/mx	103	201	304	402
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 A/A LB A/A	20.62 ml/mx 12.47 ml/mx	104	202	303	401

Sort Order: Treatment

2011 BURLEY TOBACCO REGIONAL QUALITY TEST (R.Q.T.)
UPPER PIEDMONT RESEARCH STATION – REIDSVILLE, N.C.
NORTH CAROLINA STATE UNIVERSITY CROP SCIENCE DEPARTMENT

LOREN FISHER SANDY STEWART SCOTT WHITLEY JOE PRIEST

155'

REP. 3

G	301	302	303	304	305	306	307	308	309	310	311	312	G
U	4	9	6	12	3	10	8	11	1	5	7	2	U
A													A
R	ULT	NC	GF	XHB	CC	ULT	KTH	GF	KY 14	NC	ABH1	VA	R
D	601	BEX2	12	2	B66	681	2901	9035	LC	BEX1		509	D
2													2
ROWS													ROWS

110'

100'

REP. 2

G	201	202	203	204	205	206	207	208	209	210	211	212	G
U	5	10	7	11	8	1	9	4	12	2	6	3	U
A													A
R	NC	ULT	ABH1	GF	KTH	KY 14	NC	ULT	XHB	VA	GF	CC	R
D	BEX1	681		9035	2901	LC	BEX2	601	2	509	12	B66	D
2													2
ROWS													ROWS

55'

45'

REP. 1

G	101	102	103	104	105	106	107	108	109	110	111	112	G
U	1	2	3	4	5	6	7	8	9	10	11	12	U
A													A
R	KY 14	VA	CC	ULT	NC	GF	ABH1	KTH	NC	ULT	GF	XHB	R
D	LC	509	B66	601	BEX1	12		2901	BEX2	681	9035	2	D
2													2
ROWS													ROWS

0'

< - 28 ROWS - >

112 FT.

PLOT SIZE: 2 ROWS x 45 FT.
NO. OF REPETITIONS: 3
ROW SPACING: 48 IN.
PLANT SPACING: 18 IN.
ALLEY LENGTH: 10 FT.
ACREAGE: 112 FT. x 155 FT. = **0.40 ACRE**

2011 OFFICIAL VARIETY TEST ON BURLEY TOBACCO (O.V.T.)
UPPER PIEDMONT RESEARCH STATION – REIDSVILLE, N.C.
NORTH CAROLINA STATE UNIVERSITY CROP SCIENCE DEPARTMENT

LOREN FISHER SANDY STEWART SCOTT WHITLEY JOE PRIEST

119'

REP. 3

G	301	302	303	304	305	306	307	308	309	310	311	312	313	314	G
U	13	10	2	7	3	1	12	6	4	8	14	9	5	11	U
A															A
R	R 630	TN 97	NC 6	KT 209	NC 7	NC 5	R 610	KT 206	KT 200	KT 210	CC 812	TN 90	KT 204	HB 3307	R
D	LC	LC	LC	LC	LC	LC	LC	LC	LC	LC	G	LC	LC	LC	D
2 ROWS															2 ROWS

36'

76'

REP. 2

G	201	202	203	204	205	206	207	208	209	210	211	212	213	214	G
U	3	7	6	13	2	9	10	5	11	12	1	8	14	4	U
A															A
R	NC 7	KT 209	KT 206	R 630	NC 6	TN 90	TN 97	KT 204	HB 3307	R 610	NC 5	KT 210	CC 812	KT 200	R
D	LC	LC	LC	LC	LC	LC	LC	LC	LC	LC	LC	LC	G	LC	D
2 ROWS															2 ROWS

43'

33'

REP. 1

G	101	102	103	104	105	106	107	108	109	110	111	112	113	114	G
U	1	2	3	4	5	6	7	8	9	10	11	12	13	14	U
A															A
R	NC 5	NC 6	NC 7	KT 200	KT 204	KT 206	KT 209	KT 210	TN 90	TN 97	HB 3307	R 610	R 630	CC 812	R
D	LC	LC	LC	LC	LC	LC	LC	LC	LC	LC	LC	LC	LC	G	D
2 ROWS															2 ROWS

0'

< - 32 ROWS - >
128 FT.

45'

PLOT SIZE:	2 ROWS x 33 FT.	**PLANT SPACING:**	18 IN.
NO. OF REPETITIONS:	3	**ALLEY LENGTH:**	10 FT.
ROW SPACING:	48 IN.	**ACREAGE:**	32 ROWS (128 FT.) x 119 FT. = **0.35 ACRE**

N.C.S.U. CROP SCIENCE DEPARTMENT

LOREN FISHER SANDY STEWART JOE PRIEST SCOTT WHITLEY

162'

REP. 4

401	402	403	404	405	406	407	408	409	410	411	412
10	11	12	7	8	9	4	5	6	1	2	3
PM	PM	PM	NL	NL	NL	MD	MD	MD	TN	TN	TN
154	154	154	MDL	MDL	MDL	609	609	609	90	90	90
90 LBS. N	135 LBS. N	180 LBS. N	110 LBS. N	170 LBS. N	225 LBS. N	45 LBS. N	68 LBS. N	90 LBS. N	110 LBS. N	170 LBS. N	225 LBS. N

129'

119'

REP. 3

301	302	303	304	305	306	307	308	309	310	311	312
4	5	6	1	2	3	7	8	9	10	11	12
MD	MD	MD	TN	TN	TN	NL	NL	NL	PM	PM	PM
609	609	609	90	90	90	MDL	MDL	MDL	154	154	154
45 LBS. N	68 LBS. N	90 LBS. N	110 LBS. N	170 LBS. N	225 LBS. N	110 LBS. N	170 LBS. N	225 LBS. N	90 LBS. N	135 LBS. N	180 LBS. N

86'

76'

REP. 2

201	202	203	204	205	206	207	208	209	210	211	212
7	8	9	10	11	12	1	2	3	4	5	6
NL	NL	NL	PM	PM	PM	TN	TN	TN	MD	MD	MD
MDL	MDL	MDL	154	154	154	90	90	90	609	609	609
110 LBS. N	170 LBS. N	225 LBS. N	90 LBS. N	135 LBS. N	180 LBS. N	110 LBS. N	170 LBS. N	225 LBS. N	45 LBS. N	68 LBS. N	90 LBS. N

43'

33'

REP. 1

101	102	103	104	105	106	107	108	109	110	111	112
1	2	3	4	5	6	7	8	9	10	11	12
TN	TN	TN	MD	MD	MD	NL	NL	NL	PM	PM	PM
90	90	90	609	609	609	MDL	MDL	MDL	154	154	154
110 LBS. N	170 LBS. N	225 LBS. N	45 LBS. N	68 LBS. N	90 LBS. N	110 LBS. N	170 LBS. N	225 LBS. N	90 LBS. N	135 LBS. N	180 LBS. N

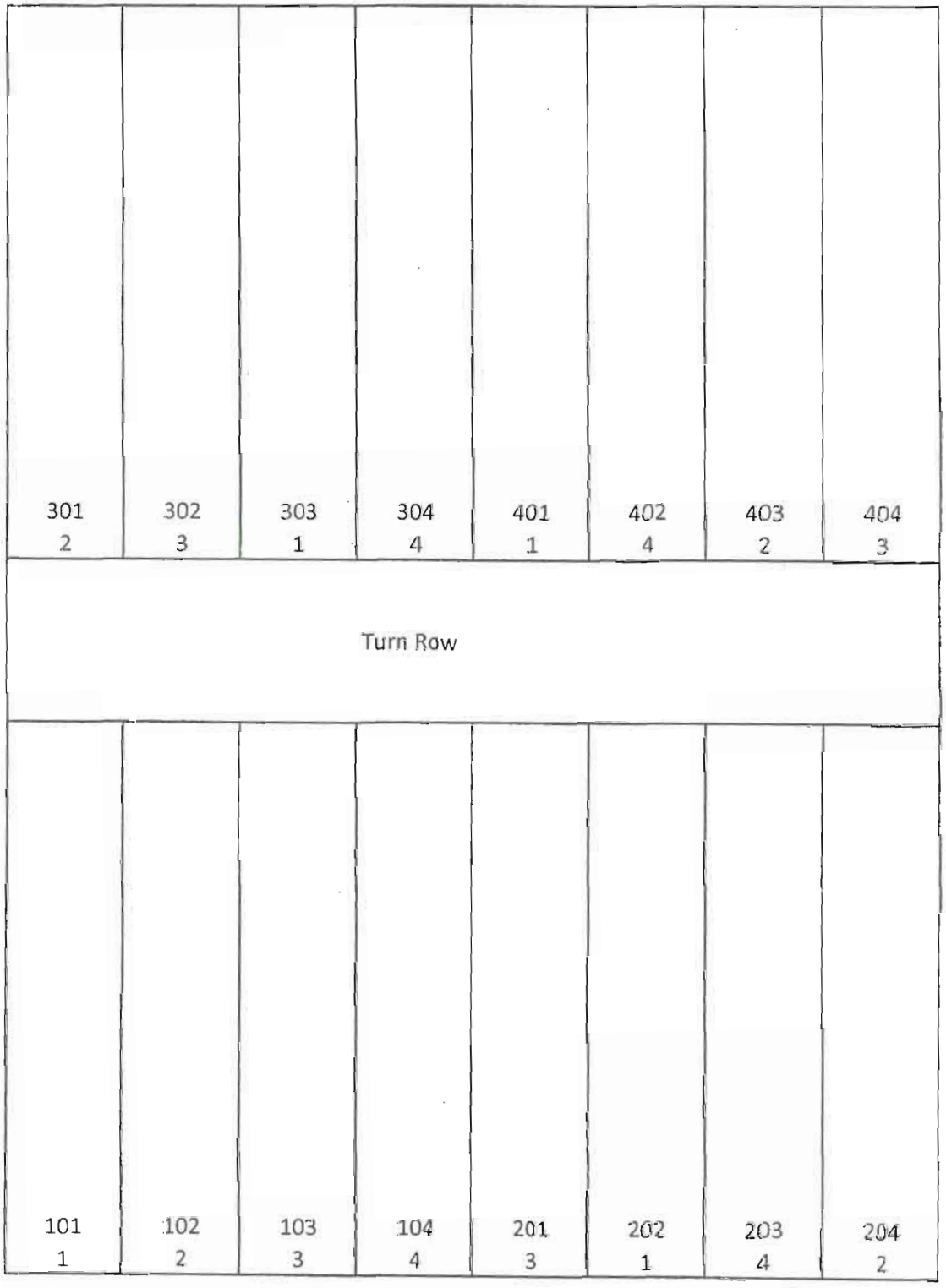
0'

< - 48 ROWS - >

192 FT.

PLOT SIZE:	4 ROWS x 33 FEET (HARVEST CENTER 2 ROWS)
NO. OF REPETITIONS:	4
ROW SPACING:	48 IN.
PLANT SPACING:	18 IN.
ALLEY LENGTH:	10 FT.
TOTAL ACREAGE:	48 ROWS (192 FT.) x 162 FT. = **0.71 ACRE**
NOTE:	STATION WILL APPLY A BASE FERTILIZER RATE OF 20-30 LBS. OF NITROGEN. WE WILL SIDRESS THE REMAINING WITH LIQUID N (30 %) TO BRING IT UP TO THE TOTAL OF EACH TREATMENT. THERE WILL BE FOUR TRAYS FOR EACH TOBACCO TYPE TO BE PLACED OVER THE 4 REPLICATIONS (NO TRANSPLANT BAGS).

The Effects of Various Tillage Methods on Soil Moisture and Structure in Piedmont Soils



4 Row Plots

Treatment Number & Description

1-(Check) Traditional Spring Bedding (Disc & Drag)

2-Rotovator

3-Two Row Bed Shaper

4-Fall Bed with Small Grain Cover

TRAFFIC MANAGERS

Art Bradley, Extension Director, Edgecombe County

Norman Harrell, Extension Agent, Wilson County

Mitch Smith, Extension Director, Pitt County

Bryant Spivey, Extension Director, Johnston County

Charlie Tyson, Extension Director, Nash County

2012 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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