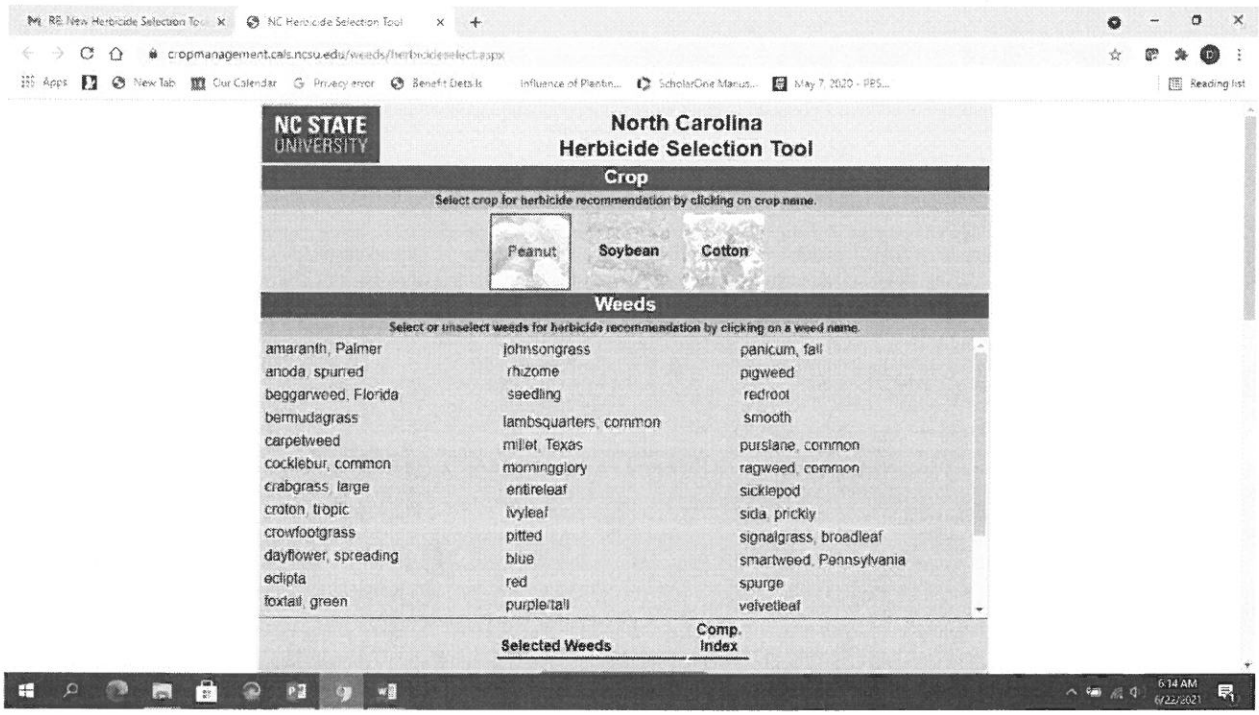
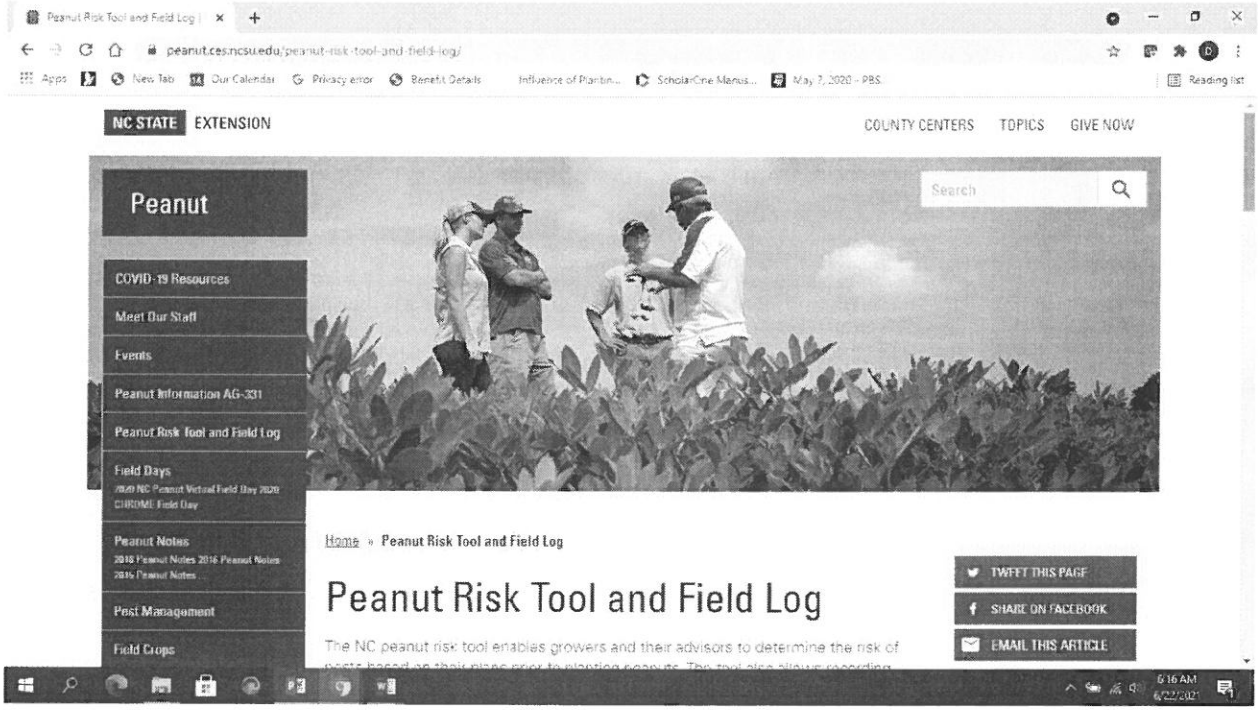
Table 9-1. Schedule for management of biotic and abiotic stresses in peanut. *Shaded months indicate a time when a stress is often addressed in peanut.*

STRESSES	APRIL	MAY	JUNE	JULY	AUG	SEPT
Weeds						
Broadleaf						
Sedge						
Grass						
Arthropods						
Thrips						
Corn rootworm						
Corn earworm						
Fall armyworm						
Tobacco budworm						
Beet armyworm						
Spider mites						
Diseases						
Botrytis						
Cylindrocladium black rot (CBR)						
Pythium						
Aspergillus crown rot						
Early leaf spot						
Late leaf spot						
Rhizoctonia limb rot						
Sclerotinia blight						
Spotted wilt virus						
Stem rot						
Web blotch						
Nematodes						
Nutrient and Vine Management						
Boron						
Bradyrhizobia						
Calcium						
Manganese						
Prohexadione calcium						


RE: New Herbicide Selection Tool
NC Herbicide Selection Tool
cropmanagement.cals.ncsu.edu/weeds/herbicideselect.aspx
NC STATE UNIVERSITY
North Carolina
Herbicide Selection Tool
Crop
Select crop for herbicide recommendation by clicking on crop name.
Peanut
Soybean
Cotton
Weeds
Select or unselect weeds for herbicide recommendation by clicking on a weed name.
amaranth, Palmer
anoda, spurred
beggarweed, Florida
bermudagrass
carpetweed
cocklebur, common
crabgrass, large
croton, tropic
crowfootgrass
dayflower, spreading
eclipta
foxtail, green
johnsongrass
rhizome
seedling
lambsquarters, common
millet, Texas
morningglory
entireleaf
ivyleaf
pitted
blue
red
purple/tall
panicum, fall
pigweed
redroot
smooth
purslane, common
ragweed, common
sicklepod
sida, prickly
signalgrass, broadleaf
smartweed, Pennsylvania
spurge
velvetleaf
Selected Weeds
Comp. Index
6:14 AM
6/22/2021


Peanut Risk Tool and Field Log
peanut.ces.ncsu.edu/peanut-risk-tool-and-field-log/
NC STATE EXTENSION
COUNTY CENTERS
TOPICS
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Field Days
Peanut Notes
Pest Management
Field Crops
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Peanut Risk Tool and Field Log
The NC peanut risk tool enables growers and their advisors to determine the risk of
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6:16 AM
6/22/2021

PeanutRisk-NC (29) - Excel

Crop Practices	
Cultivar	Bailey II
Plant Density	3 to 4 plants/row ft
Planting Date	May 15
Row Pattern	Single (32 to 38 inches)
Field	
Borders Early Season	Clean
Borders Late Season	Mowed
Irrigation	Non-Irrigated
Previous Weed Control	Good
Seedbed	Conventional
Weeds	C. Ragweed and Palmer A. (ALS and PPO Resistant)
Field Crop History	
1 Year Ago	Cotton
2 Years Ago	Sweetpotato
3 Years Ago	Sorghum
4 Years ago	Soybean
Field Soil	
Drainage Class	Moderately Well
pH	6.2
Texture	Loam
Leaf Spot Management	
Chlorothalonil Application	3 or more
Fungicide Resistance	None Identified
Spray Schedule	Advisory throughout season
Nematode History	
Northern Rootknot	Very Low (NCDA Index < 20)
Peanut Rootknot	Very Low (NCDA Index < 20)
Sting	Very Low (NCDA Index < 20)
Pest	
Host Crops	Field Corn
Pest History	
Cylindrocladium Black Rot	No History
Leaf Spot	A problem even with good fungicide program
Sclerotinia	Present and requires 1 spray per year
Southern Corn Rootworm	No History

Arthropod	Index	Low	Med	High
Southern Corn Rootworm	55			
Spider Mites	85			
Thrips	40			
Disease (Foliar)	**Index**	**Low**	**Med**	**High**
Early/Late Leaf Spot	103			
Tomato Spotted Wilt Virus	80			
Disease (Soil Borne)	**Index**	**Low**	**Med**	**High**
Cylindrocladium Black Rot	50			
Sclerotinia	150			
Southern Stem Rot	50			
Foliar-feeding Insects	**Index**	**Low**	**Med**	**High**
Caterpillars and Worms	35			
Nematode	**Index**	**Low**	**Med**	**High**
Northern Rootknot	25			
Peanut Rootknot	25			
Sting	98			
Plant	**Index**	**Low**	**Med**	**High**
Weeds	275			

Red Dots - Change practices to eliminate.
Yellow Dots - Consider adjusting practices to reduce risk.
Green Dots - Risk is acceptable for selected practices.

Estimated Cost: $695/ac

Create Production Log

Risk

Ready

6:17 AM
6/22/2021

Weed control in mid-July and percent of maximum yield for cotton and soybean with PRE herbicides and combinations of Liberty ad Enlist Duo applied POST.								
Treatment	Crop	PRE	EPOST	LPOST	Grass	Morningglory	Palmer amaranth	Percent of maximum yield
1	Cotton	-	-	-	0 e	0 e	0 d	5 f
2	Cotton	Reflex plus Warrant	-	-	24 d	3 e	25 c	3 f
3	Cotton	Reflex plus Warrant	Liberty	-	87 b	88 b	79 b	73 b
4	Cotton	Reflex plus Warrant	-	Enlist Duo	98 a	99 a	96 a	62 c
5	Cotton	Reflex plus Warrant	Liberty	Enlist Duo	98 a	99 a	97 a	86 a
6	Cotton	-	Liberty	Enlist Duo	98 a	100 a	98 a	62 c
7	Soybean	-	-	-	29 d	8 d	24 c	16 e
8	Soybean	Reflex plus Warrant	-	-	64 c	32 c	74 b	50 d
9	Soybean	Reflex plus Warrant	Liberty	-	96 a	90 b	100 a	76 ab
10	Soybean	Reflex plus Warrant	-	Enlist Duo	100 a	100 a	100 a	86 a
11	Soybean	Reflex plus Warrant	Liberty	Enlist Duo	99 a	100 a	100 a	80 ab
12	Soybean	-	Liberty	Enlist Duo	99 a	100 a	100 a	86 a
No. trials					4	3	3	4

Four trials total (3 with Palmer amaranth and one with morningglory)

Data are pooled over trials (a more comprehensive analyses will be performed at a later date)

Locations: Three fields at RM with Palmer amaranth, morniglories, and annual grass and one field at LW with annual grass and morningglory

RM planted in 36-inch row cotton and drilled soybean

LE planted in 36-inch row cotton and twin row soybean on 36-inch centers

Warrant and Reflex applied PRE (32-48 oz and 9-12 oz, respectively)

Liberty at 28 oz/acre 2-3 weeks after planting

Enlist Duo at 4.75 pints/acre 4-5 weeks after planting

Ratings 7-8 weeks after planting

Some variation was noted for yield, as expected, and that is why there is no treatment that gives 100% of maximum yield (I used the highest yielding plot in the test for a crop but should go back and do this on a rep basis)

NC STATE UNIVERSITY

Nematode Suppression and Peanut Yield Response to Velum Total in Different Rotation Sequences in North Carolina

D.L. Jordan*, B.B. Shew, R.L. Brandenburg, and A. Gorny, North Carolina State University, Raleigh, NC, and W. Ye, North Carolina Department of Agriculture and Consumer Services, Raleigh, NC.

INTRODUCTION

Plant parasitic nematodes can have a negative impact on peanut (*Arachis hypogaea* L.) yield. Cropping sequence can have a major impact on nematode populations and is an important cultural practice to suppress populations. While fumigation can reduce populations, this approach is expensive and requires addition certification and training beyond application of most pesticides used in peanut. Velum Total (imidacloprid plus fluopyram) is currently registered for in-furrow application in peanut. Research is limited in North Carolina relative to efficacy of this insecticide-nematicide combination. Therefore, research was conducted at two locations to determine if these in-furrow treatments impacted canopy health, nematode density in soil, and peanut yield when applied to peanut with a wide range of previous crop sequences in the rotation.

MATERIALS AND METHODS

Crop rotation experiments were established in 1997 at two locations in North Carolina and have been maintained since then to determine the impact of rotation sequence on peanut yield and pest reaction. Approximately every 6 years peanut is planted in all plots and various cultural or pesticide inputs are compared across all rotations. In 2019 the entire experimental area was planted in peanut with the cultivar Bailey. Imidacloprid and imidacloprid plus fluopyram was applied in the seed furrow at planting at 9 and 18 oz/acre in 8 gal/acre. Nematode density in soil and peanut yield were determined in mid-September at both locations. An assessment of peanut canopy was determined prior within 1 week prior to harvest on a scale of 0 = yellow peanuts to 5 = deep green peanuts (referred to as plant condition).

Data for plant condition, nematode density in soil, and pod yield were subjected to ANOVA for a 10 (rotation sequence) by 2 (in-furrow treatment) factorial arrangement of treatments using a split plot design with rotation sequence serving as while plots and in-furrow treatment serving as subplots. Means of significant main effects and interactions were separated using Fisher's Protected LSD test at $p < 0.05$.

Table 1. Pod yield, root knot nematode (RKN) density in soil, and canopy health following various rotation sequences at Lewiston-Woodville. Means in a row followed by the same letter are not significantly different at $p < 0.05$. Data are pooled over levels of in-furrow treatments.

Year	1	2	3	4	5	6	7	8	9	10
2014	Corn	Cotton	Cotton	Cotton	Soybean	Soybean	Corn	Corn	Cotton	Peanut
2015	Peanut	Peanut	Corn	Cotton	Corn	Cotton	Corn	Corn	Cotton	Peanut
2016	Corn	Cotton	Peanut	Peanut	Peanut	Peanut	Corn	Peanut	Cotton	Peanut
2017	Peanut	Peanut	Cotton	Cotton	Soybean	Soybean	Corn	Corn	Cotton	Peanut
2018	Corn	Cotton	Corn	Cotton	Corn	Cotton	Corn	Corn	Cotton	Peanut
2019	Peanut	Peanut	Peanut	Peanut	Peanut	Peanut	Peanut	Peanut	Peanut	Peanut
Peanut yield (lbs/A)	**4620 d**	**5180 c**	**5980 a**	**5960 a**	**5200 c**	**5360 bc**	**5860 a**	**5700 ab**	**6050 a**	**4150 e**
RKN (No./500 cm^3)	**2826 a**	**1698 abc**	**19 def**	**3 f**	**1013 cde**	**2617 ab**	**3 f**	**20 ef**	**5 f**	**2428 bcd**
Plant condition (0-5)	**3.9 b**	**4.1 b**	**4.8 a**	**4.6 a**	**4.7 a**	**4.3 ab**	**4.7 a**	**4.7 a**	**4.9 a**	**3.8 b**

Table 1. Pod yield, root knot nematode (RKN) density in soil, and canopy health following various rotation sequences at Rocky Mount. Means in a row followed by the same letter are not significantly different at $p < 0.05$. Data are pooled over levels of in-furrow treatments.

Year	1	2	3	4	5	6	7	8	9	10
2014	Cotton	Cotton	Corn	Soybean	Corn	Cotton	Cotton	Cotton	Cotton	Soybean
2015	Cotton	Soybean	Cotton	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean	Soybean
2016	Cotton	Cotton	Corn	Cotton	Cotton	Soybean	Soybean	Soybean	Corn	Soybean
2017	Cotton	Cotton	Cotton	Cotton	Soybean	Soybean	Soybean	Cotton	Soybean	Soybean
2018	Cotton	Cotton	Corn	Cotton	Corn	Cotton	Soybean	Cotton	Cotton	Soybean
2019	Peanut	Peanut	Peanut	Peanut	Peanut	Peanut	Peanut	Peanut	Peanut	Peanut
Peanut yield (lbs/A)	**6010 a**	**5670 ab**	**5560 abc**	**5520 abc**	**5220 bc**	**5030 cd**	**4440 d**	**5500 abc**	**5780 ab**	**5220 bc**
RKN (No./500 cm^3)	**2826 a**	**1698 ab**	**19 b**	**3 b**	**1013 ab**	**2617 a**	**3 b**	**21 b**	**5 b**	**2428 a**
Plant condition (0-5)	**4.6 abc**	**4.6 abc**	**4.9 a**	**4.6 abc**	**4.8 ab**	**4.6 abc**	**4.8 ab**	**4.4 c**	**4.4 c**	**4.5 ab**

RESULTS

Images of the experimental area at Lewiston-Woodville within two weeks prior to digging (Figure 1), one week after digging (Figure 2), peanuts following continuous peanuts (Figure 3), peanuts following continuous corn (Figure 4), two cycles of soybean-corn-peanuts (Figure 5), and two cycles of corn-corn-peanuts (Figure 6) are provided. Depending on cropping sequence, root-knot nematode populations in soil collected in mid-September 2019 after peanut ranged from almost no detectable nematodes to just over 2,800 nematodes/500 cm^3 (Tables 1 and 2). Cropping sequence had a major impact on plant condition, nematode populations in soil, and peanut yield. However, nematicide treatment did not affect plant condition, nematode populations in soil, or peanut yield regardless of rotation sequence (data not shown in tables). These results were unexpected based on other research demonstrating suppression of nematodes by fluopyram. However, soil moisture was limited in these trials after planting in early May through early June and may have affected ability of fluopyram to move into soil solution and protect seedlings from infection by nematodes. Research will be conducted to compare these treatments in cotton (2020) and peanut (2021) to determine if lack of a response to fluopyram was associated with weather conditions present in 2019.

ACKNOWLDEGEMENTS

The North Carolina Peanut Growers Association and the National Peanut Board provided partial funding for these trials.

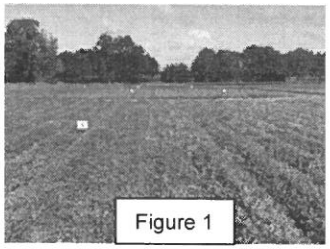
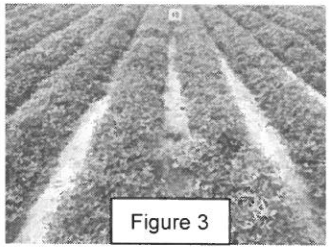


Figure 1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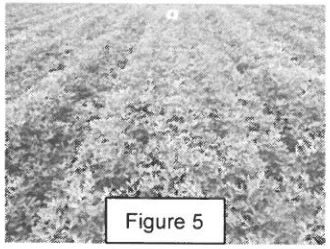
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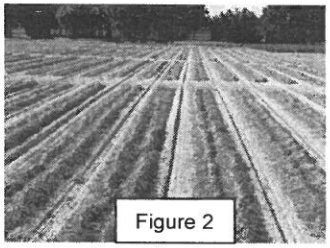
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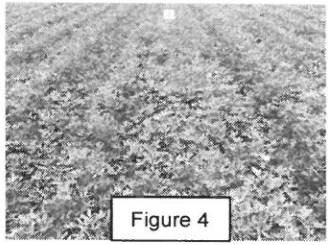
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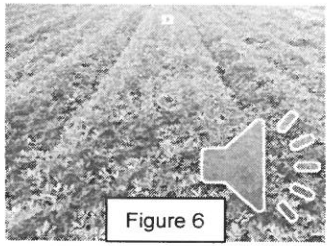
Figure 6

Time Out!

Billy Griffin
Richard Rhoads
Mike Carroll
You?

Gene Sullivan

Sam Esposito

Reserved for: Craig Ellison

Reserved for: Paul Smith