Peanut Production and Pest Management

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Topics

Zinc
Soil pH
Tillage
Varieties
Digging
Insects
Weeds
Sclerotinia Blight


None


Low

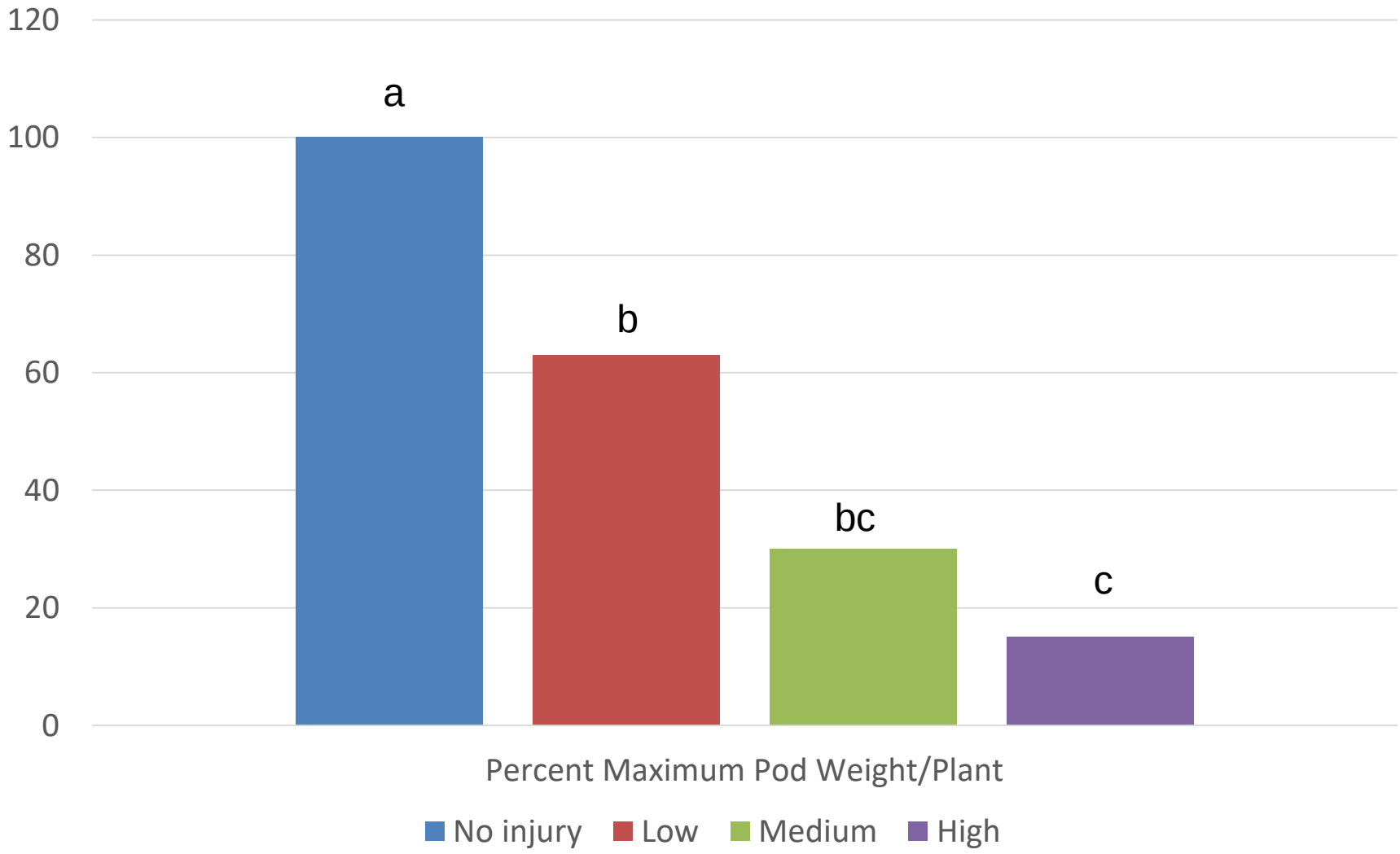

Medium


High


Very High

Percent of Maximum Pod Weight per Plant at Various Injury Levels

Pooled over 3 trials



Level of Peanut Injury Represented by Chlorosis, Necrosis and Plant Stunting										
	None		*Low*		*Medium*		*High*		*Very high*	
Location	*Zinc*	*pH*	*Zinc*	*pH*	*Zinc*	*pH*	*Zinc*	*pH*	*Zinc*	*pH*
PBRSDJ	758	6.2	671	5.3	560	5.3	577	5.1	738	5.1
NHDJ	1471	7.0	4078	6.7	1825	5.9	859	5.5	1067	5.5
HA1DJ	619	6.2	714	5.8	759	5.7	806	5.6	2408	5.6
HA2DJ	1255	6.4	992	5.9	964	5.8	748	5.5	508	5.4
EDDJ	158	5.7	200	5.5	285	5.9	167	5.6	213	5.4
BEBB	465	5.8	500	5.8	439	5.5	391	5.5	373	5.4
NHCE	126	5.9	973	6.4	823	5.7	1732	6.8		
NHCE	128	5.9	1232	6.3	1305	6.0	1723	6.2		
NHCE	114	5.9	2420	6.8	1661	5.9	2193	6.3		
NHCE			3315	6.9						
NHCE			590	5.9						

*In a trial at PBRS, no injury was observed when pH ranged from 6.2-6.5 at indices of 27 to 988 (5 plots).

Current Recommendation

Avoid fields with a Zinc Index of 250 regardless of soil pH

Possible Recommendation

If pH is 6.0 or higher, do not plant peanuts if Zinc Index exceeds 1,000

If pH is less than 6.0, do not plant peanuts if Zinc Index exceeds 250

Assumes pH uniformity across the field

Interactions of Soil pH, Inoculant, Gypsum with Varieties

Long history of no peanuts

Soil pH of ~ 5 versus ~ 6

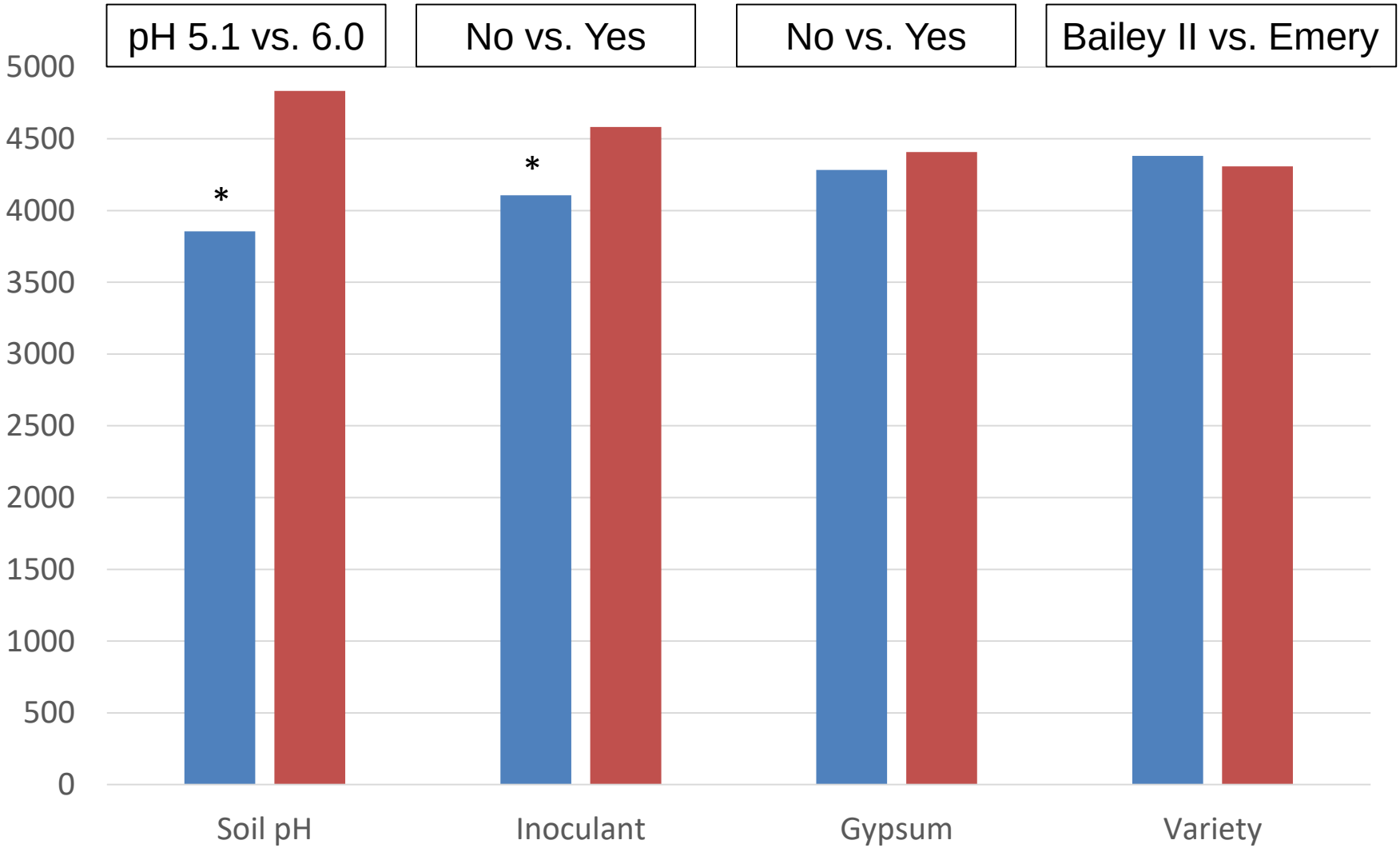
No inoculant versus in-furrow inoculant

No gypsum versus 1,250 pounds/acre gypsum

Bailey II versus Emery

Peanut Yield (pounds per acre) Based on Soil pH, Inoculant, Gypsum and Variety

Interactions were not significant



Tillage Practices in Peanut in North Carolina

Percentage of farmers listing a practice on at least a portion of their acreage

Tillage	1998	2004	2009	2014	2019
Disk	90	78	71	75	79
Chisel	25	23	27	12	21
Moldboard plow	58	17	7	5	6
Field cultivate	75	55	42	44	53
Rip and Bed	49	39	40	55	48
Bed	44	35	32	25	35
Reduced till	10	23	41	20	31

Background

Rotation and tillage trials were initiated at Lewiston-Woodville (1999) and Rocky Mount (2000) and are currently being maintained

Soil at Lewiston-Woodville is a combination of Norfolk and Goldsboro soil series

Soil at Rocky Mount is a combination of Goldsboro, Lynchburg, and Raines soil series

Trials were established primarily to compare the effects of rotation and tillage on peanut yield

Sequences of rotation had peanut in all plots around every 5 years

Impacts of rotation on corn and cotton were confounded in some cases based on rotation sequence relative to peanut

Crop Yield Response to Continuous Conventional and Strip Tillage

The rotation × tillage interaction was often not significant
Peanut yields reflect average of long and short rotations
Data are pooled over rotations and years

	Lewiston-Woodville (1999-2022) Norfolk and Goldsboro series	
Crop	**Conventional till**	**Strip till**
Corn (bu/acre)	119	124 * (n = 12)
Cotton (lbs lint/acre)	823	816 (n = 15)
Peanut (lbs/acre)	3917	3899 (n = 9)

	Rocky Mount (2000-2022) Lynchburg, Raines, and Goldsboro series	
Crop	**Conventional till**	**Strip till**
Corn (bu/acre)	147	150 (n = 6)
Cotton (lbs lint/acre)	904	901 (n = 11)
Peanut (lbs/acre)	3871	3147 * (n = 9)

Summary

Rotation and tillage affected crop yield independently in most years

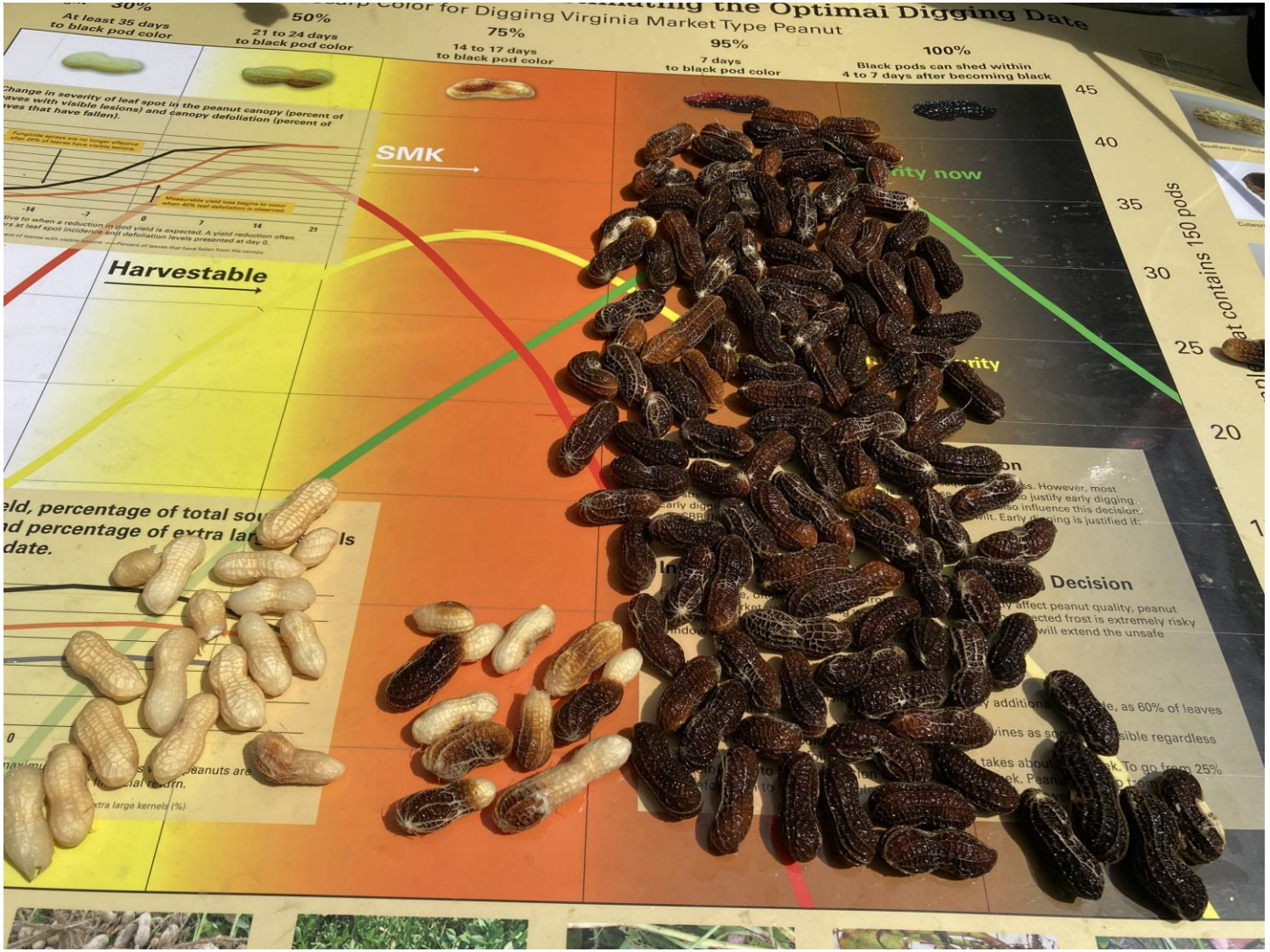
Rotation had a major impact on peanut yield but had only modest effects on corn and cotton yield

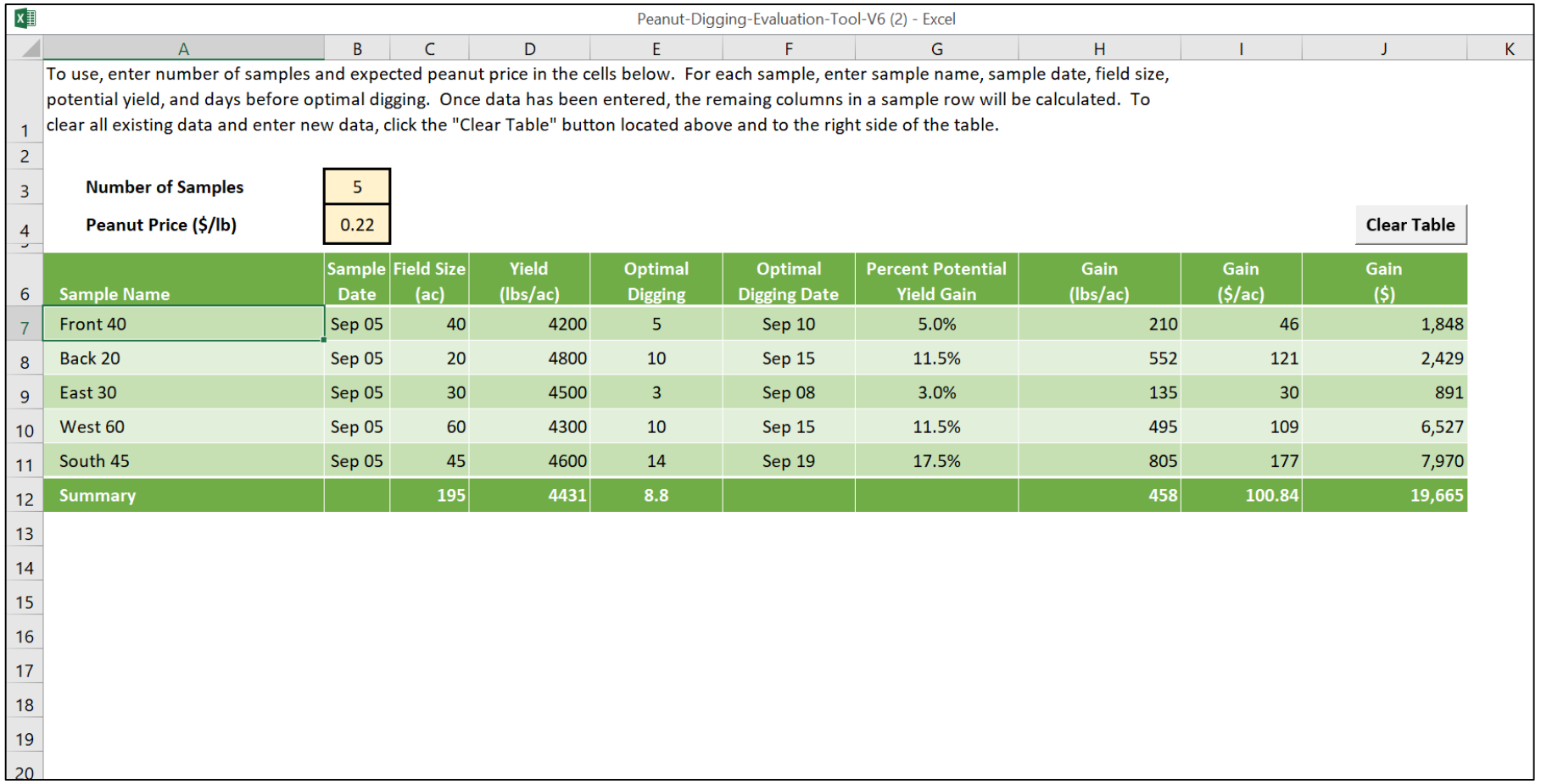
Peanut yield was lower in strip tillage compared with conventional tillage on fine-textured soils

Peanut yield was similar on coarse-textured soils for both tillage systems

Corn yield was greater in strip tillage compared with conventional tillage on coarse-textured soils but was similar in both tillage systems on fine-textured soils

Cotton yield was similar in strip tillage and conventional tillage on both soils


Color for Digging Virginia Market Type Peanut
50%
21 to 24 days
to black pod color
75%
14 to 17 days
to black pod color
95%
7 days
to black pod color
100%
Black pods can shed within
4 to 7 days after becoming black
At least 35 days
to black pod color
SMK
Harvestable
Decision
45
40
35
30
25
20
150 pods



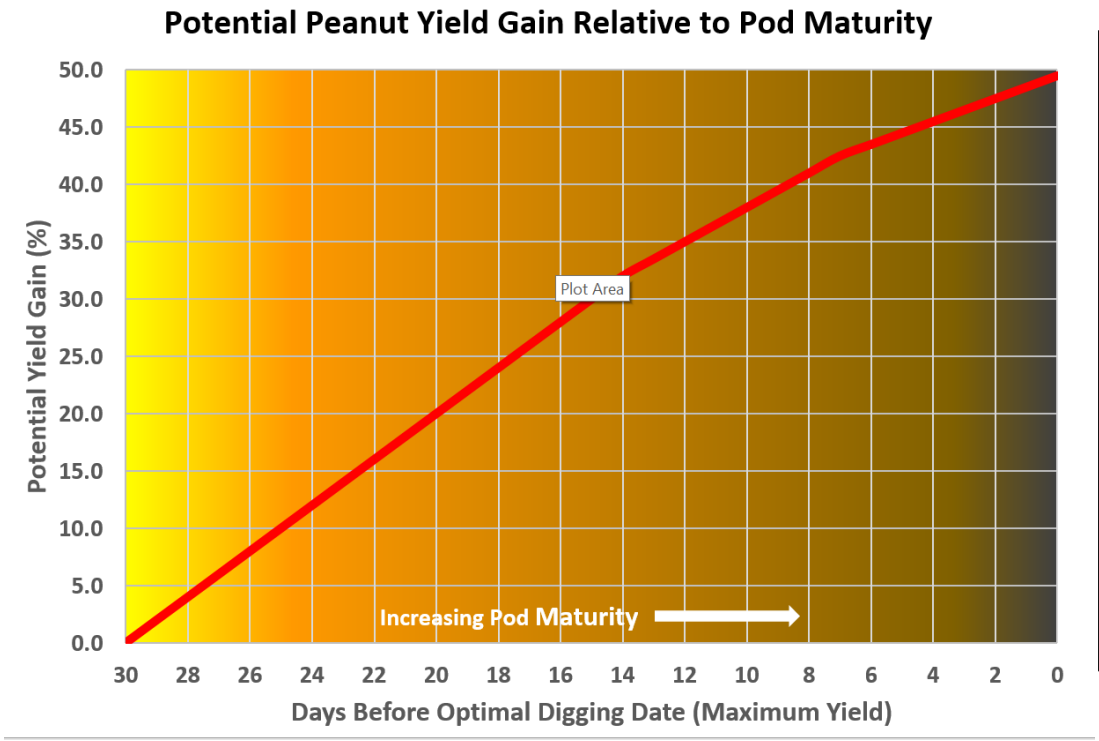
Peanut-Digging-Evaluation-Tool-V6 (2) - Excel

To use, enter number of samples and expected peanut price in the cells below. For each sample, enter sample name, sample date, field size, potential yield, and days before optimal digging. Once data has been entered, the remaing columns in a sample row will be calculated. To clear all existing data and enter new data, click the "Clear Table" button located above and to the right side of the table.

Number of Samples	5
Peanut Price ($/lb)	0.22

Clear Table

Sample Name	Sample Date	Field Size (ac)	Yield (lbs/ac)	Optimal Digging	Optimal Digging Date	Percent Potential Yield Gain	Gain (lbs/ac)	Gain ($/ac)	Gain ($)
Front 40	Sep 05	40	4200	5	Sep 10	5.0%	210	46	1,848
Back 20	Sep 05	20	4800	10	Sep 15	11.5%	552	121	2,429
East 30	Sep 05	30	4500	3	Sep 08	3.0%	135	30	891
West 60	Sep 05	60	4300	10	Sep 15	11.5%	495	109	6,527
South 45	Sep 05	45	4600	14	Sep 19	17.5%	805	177	7,970
Summary		**195**	**4431**	**8.8**			**458**	**100.84**	**19,665**



Response if digging is delayed after optimum maturity

Disease

Freeze

Wet or dry soil

Variety

PGR

Freeze damage before and after digging

Significant number of data sets demonstrate no value in trying to control adults to prevent damage from southern corn rootworm

Vydate suppresses thrips and is a good alternative to imidacloprid where resistance to imidacloprid is present and in-furrow liquid application is prefered

In the absence of PPO resistance (Palmer amaranth and common ragweed), the value of Brake is marginal at the current cost

Single application of Miravis plus Elatus decreased Sclerotinia Blight by 20%

Sequential applications 3 weeks apart decreased Sclerotinia Blight by 75%

Three or more sprays of chlorothalonil increased Sclerotinia Blight by 22%


NC STATE UNIVERSITY
Wide turns only!
Check bolts on tongue before transport!
Keep eye on hydraulic lines and basket!
Make sure weigh cells are protected during transport in the field and on the road!
Make sure stands are all the way up and the basket all the way down before unhooking from tractor!
NORTH CAROLINA PEANUTS
NUTRITIOUS & FLAVORFUL