

# **Leaf Spot Control and Peanut Yield in Tillage Systems using Sulfur**

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# Reasons for the Trial

Cereal rye suppresses weeds, thrips and tomato spotted wilt

While yield response to tillage systems have been evaluated in North Carolina, information on cover crops is limited

Resistance to SDHI and DMI fungicides is present in leaf spot in North Carolina

Concern over development of resistance in leaf spot to other fungicide chemistry exists

Concern over ability to use chlorothalonil exists (registration in the US and prohibition in export markets)

Chlorothalonil plays a critical role in resistance management and is cost-effective

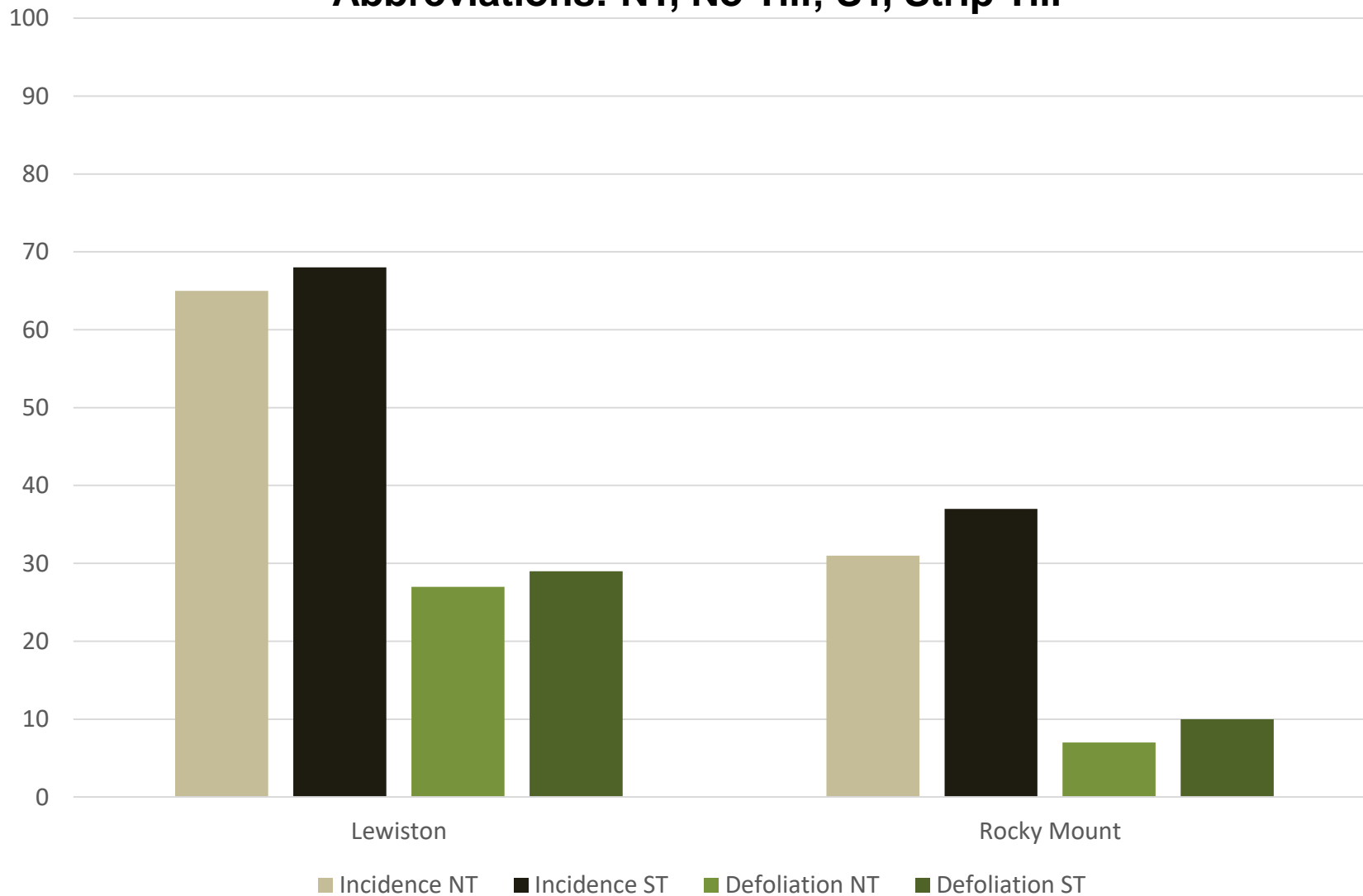
Fungicide options that do not possess high risk for leaf spot resistance are limited

How does sulfur fit as a replacement for chlorothalonil?

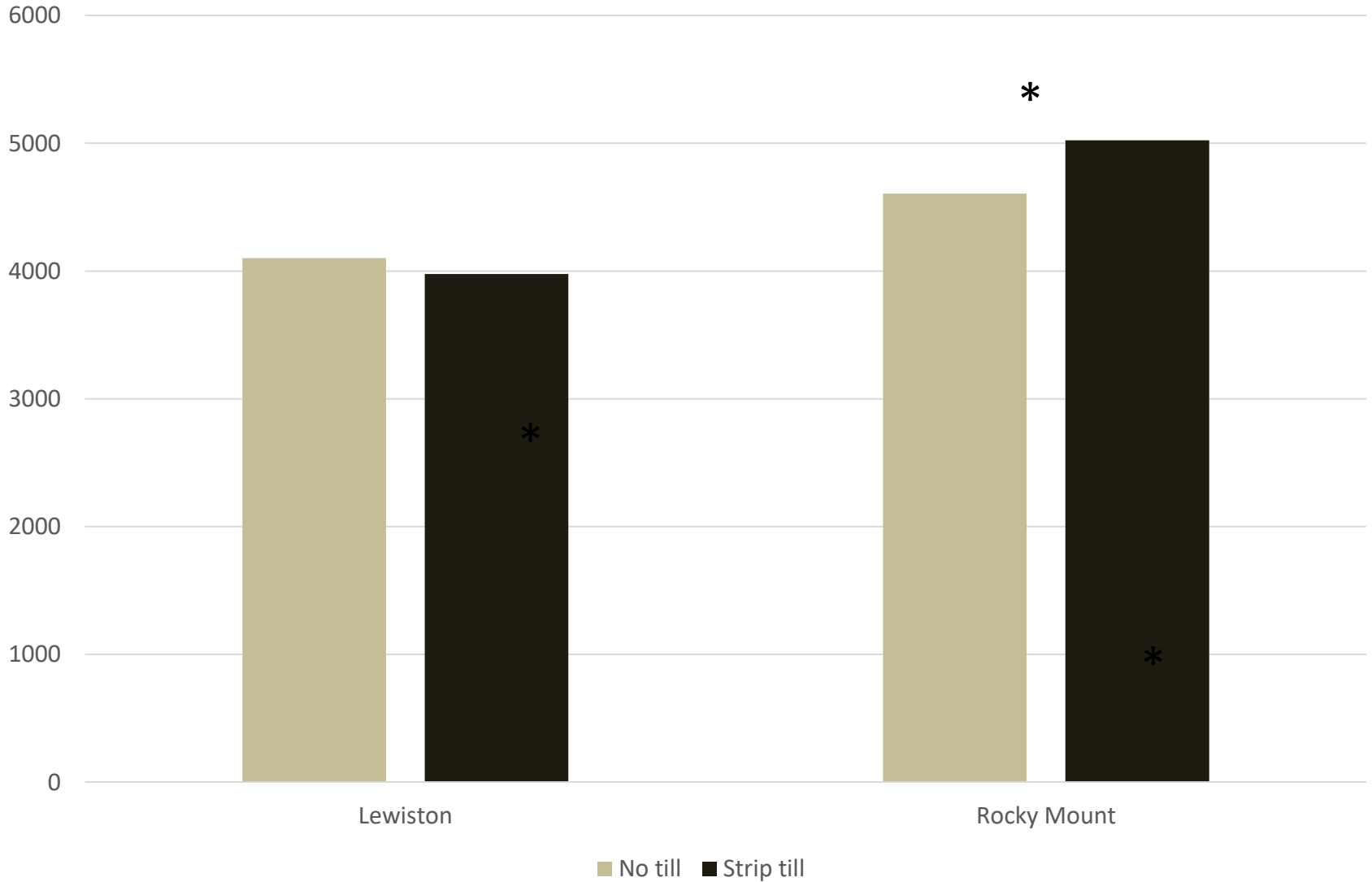
Is a cereal cover crop and use of sulfur serve as a reasonable alternative to traditional tillage systems and extensive use of chlorothalonil?

# Leaf Spot Incidence and Canopy Defoliation as Influenced by Tillage Pooled over Cereal Rye and Fungicide Treatments

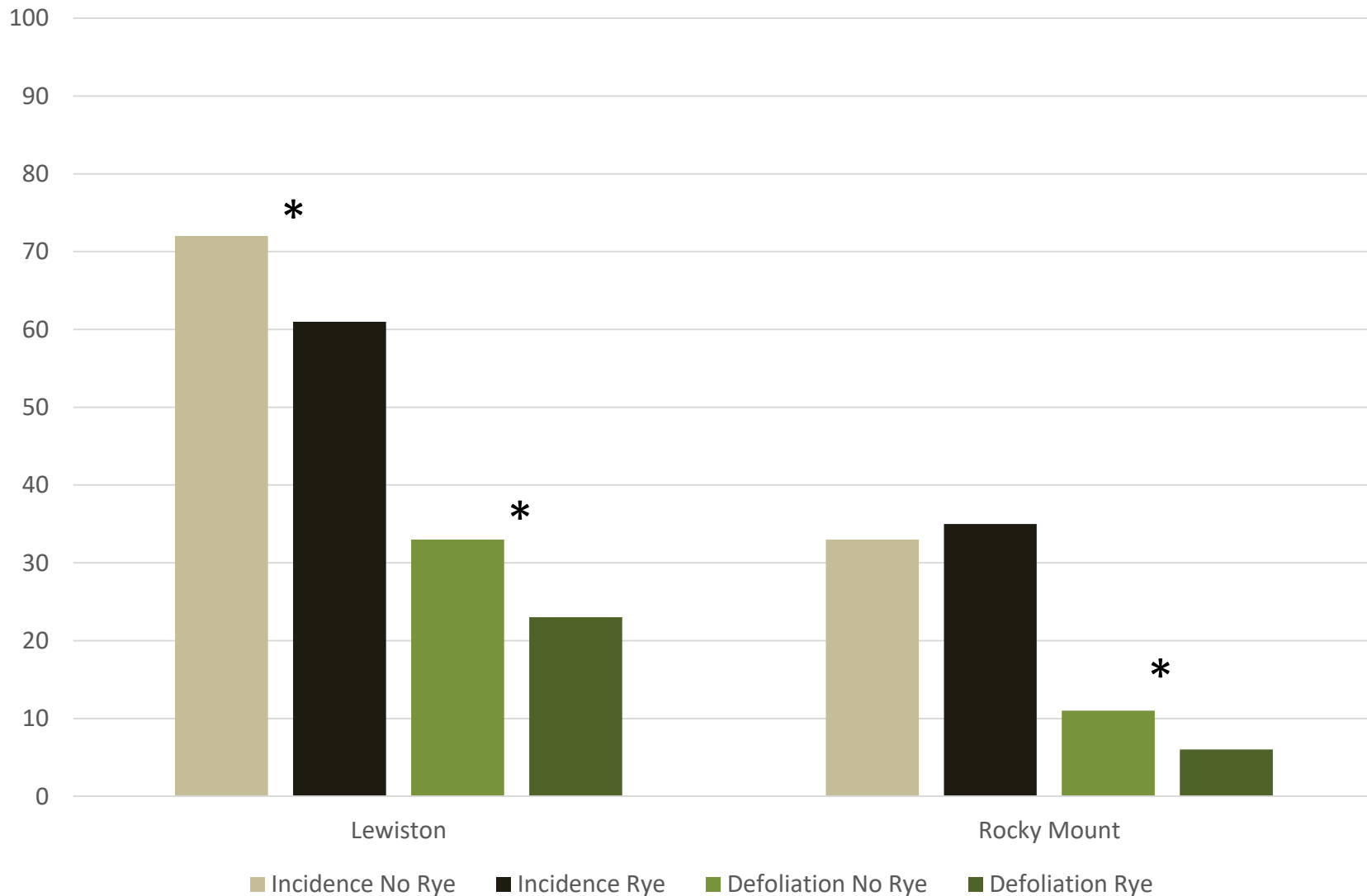
Abbreviations: NT, No Till; ST, Strip Till



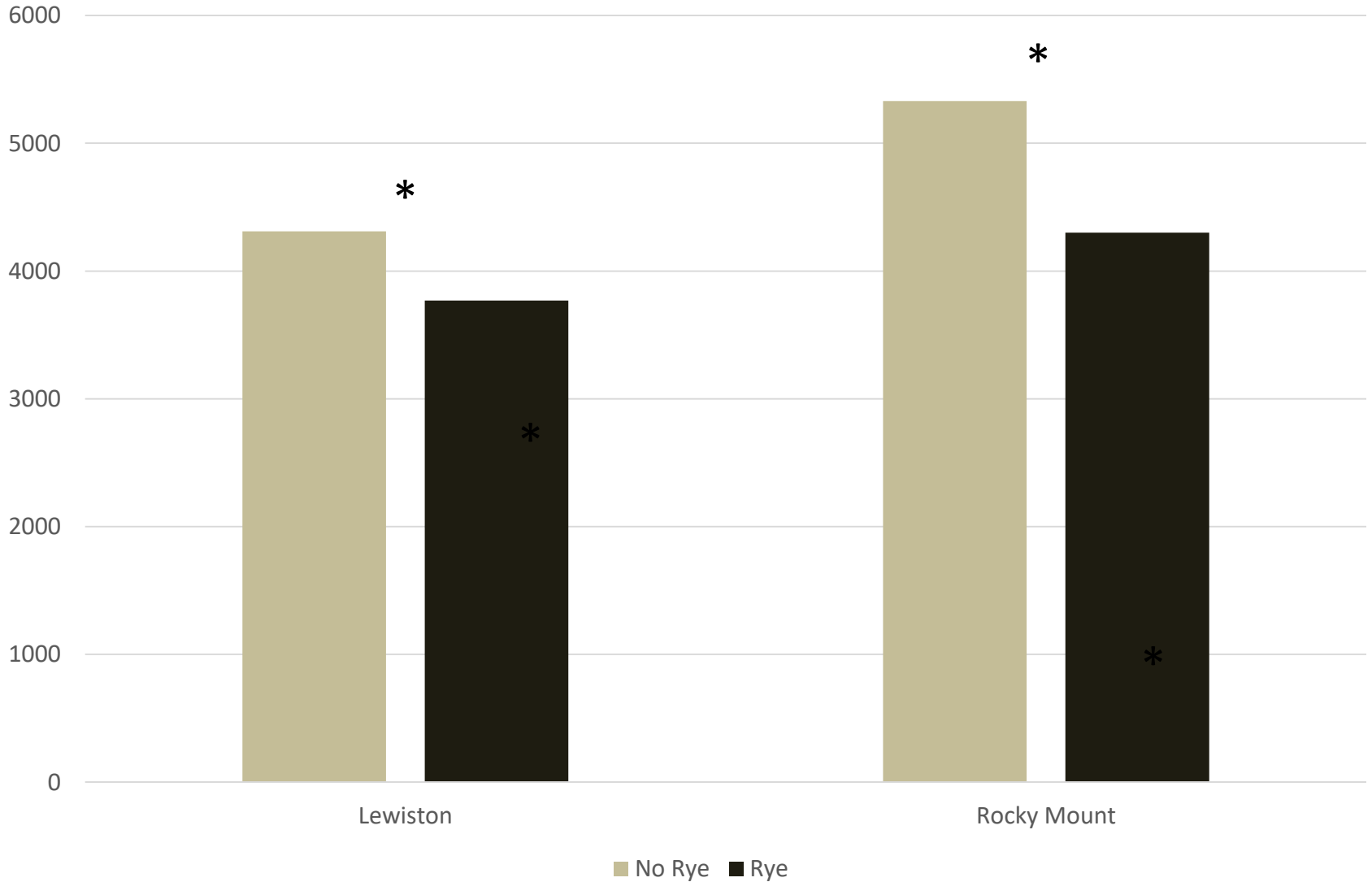
## Peanut Yield as Influenced by Tillage Pooled over Cereal Rye and Fungicide Treatments



# Leaf Spot Incidence and Canopy Defoliation as Influenced by Cereal Rye Pooled over Tillage and Fungicide Treatments



## Peanut Yield as Influenced by Cereal Rye Pooled over Tillage and Fungicide Treatments



**Influence of Fungicide Program on Leaf Spot Incidence, Canopy Defoliation and Peanut Yield. Pooled over tillage and cover crop treatments. Lewiston.<sup>a</sup>**

<b>Fungicides</b>	<b>Incidence</b>	<b>Defoliation</b>	<b>Yield</b>
	————— % —————	—————	<b>pounds/acre</b>
None	99 a	62 a	3700 a
S-ST-S	83 b	38 b	4170 a
C-CT-C	82 b	35 b	3930 a
S-ST-ST-ST-S	63 c	18 c	3980 a
C-CT-CT-CT-CT	48 d	14 c	4180 a
S-PV-RT-LU-S	42 d	16 c	4190 a
C-PV-RT-LU-C	51 cd	12 c	4120 a

<sup>a</sup>Abbreviations: C, chlorothalonil; PV, Provost Silver; RT, Revytek; LU, Lucento; S, Sulfur; T, Tebuconazole.

**Influence of Fungicide Program on Leaf Spot Incidence, Canopy Defoliation and Peanut Yield. Pooled over tillage and cover crop treatments. Rocky Mount.<sup>a</sup>**

<b>Fungicides</b>	<b>Incidence</b>	<b>Defoliation</b>	<b>Yield</b>
	————— % —————	—————	<b>pounds/acre</b>
None	92 a	41 a	4421 c
S-ST-S	81 a	9 b	5030 ab
C-CT-C	59 b	6 bc	4910 ab
S-ST-ST-ST-S	1 c	1 c	4570 bc
C-CT-CT-CT-CT	0 c	0 c	4780 abc
S-PV-RT-LU-S	5 c	2 c	5130 a
C-PV-RT-LU-C	0 c	1 c	4870 abc

<sup>a</sup>Abbreviations: C, chlorothalonil; PV, Provost Silver; RT, Revytek; LU, Lucento; S, Sulfur; T, Tebuconazole.



\*\*The previous slides present data pooled over other treatment factors. However, that approach can mask some differences that are important. This slide reveals what is likely to happen in a typical peanut production field without no till and without a rye cover crop. These data are for peanuts that were strip tilled into stale seedbeds, a practice that is very similar to conventional tillage.

**Influence of Fungicide Program on Leaf Spot Incidence, Canopy Defoliation and Peanut Yield. Strip Tillage without Cereal Rye. Pooled over locations.<sup>a</sup>**

<b>Fungicides</b>	<b>Incidence</b>	<b>Defoliation</b>	<b>Yield</b>
	————— % —————		<b>pounds/acre</b>
None	98 a	68 a	4094 c
S-ST-S	94 a	35 b	4904 a
C-CT-C	72 b	25 c	4341 bc
S-ST-ST-ST-S	36 c	12 d	4365 bc
C-CT-CT-CT-CT	23 d	6 d	4739 ab
S-PV-RT-LU-S	35 c	10 d	4852 a
C-PV-RT-LU-C	31 cd	8 d	4724 ab

<sup>a</sup>Abbreviations: C, chlorothalonil; PV, Provost Silver; RT, Revytek; LU, Lucento; S, Sulfur; T, Tebuconazole.

# Summary

While main effects were often significant, interactions among tillage, cereal rye, and fungicide treatments were generally not significant

Tillage did not affect leaf spot incidence or canopy defoliation regardless of fungicide program or cover crop

Yield was lower at Rocky Mount in no till compared to strip till, while yield was similar for both tillage systems at Lewiston (we expected these results due to soil characteristics)

Cereal rye had lower leaf spot incidence and canopy defoliation than the no-cereal rye treatment, however, yield was lower with cereal rye regardless of tillage or fungicide program at both locations

Differences in leaf spot (incidence and defoliation) and yield were noted when comparing fungicide programs with either chlorothalonil or sulfur as the only leaf spot component (results were variable, but chlorothalonil generally provided greater protection)

When applied as the first and last spray in a 5-spray program, leaf spot incidence, canopy defoliation and yield were similar with chlorothalonil or sulfur