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TTI-XRC-TDXL NOZZLE TYPES FOR PEST CONTROL IN PEANUT

Trial ID: NZ-01-19 Study Dir.: BILL TYSON/GREG SIKES
Location: BULLOCH Investigator: Eric P. Prostko

Reps: 4 Plots: 6 by 25 feet
Appl. Amount: 15 GAL/AC Mix Size: 1.5 L (total for 4 plots; minimum=0.782 L)

Trt No.	Treatment Name	Amt Product to Measure	Diluent	Rep 1	2	3	4
1	TTI-11004-VP-CE		-	101	202	301	402
2	XRC-11004-VP		-	102	201	302	401
3	TDXL-11004-D		-	103	203	303	403

Sort Order: Treatment

Trial Comments

JD 4630 SPRAYER
90' BOOM LENGTH
15" NOZZLE SPACING
72 NOZZLES
12 MPH
12 GPA
28 PSI
BOOM HEIGHT: 24"-40"-45" (36" AVG.)

ALL NOZZLES WERE IN THE RANGE OF 327-361 MLS/15 SECS PRIOR TO APPLICATIONS (+/- 5%)

MARCH 21,2019 (SPRAY CARD TEST)
11 AM
62 F
41% RH
5-9 MPH WIND (NW)

PLANTING DATE: MAY 17, 2019
VARIETY: GA-06G
CROP ROTATION: COTTON - COTTON - PEANUT
STRIP-TILLED INTO WHEAT STUBBLE

MAY 20: VALOR @ 2 OZ/A + 0.225 OZ/A STRONGARM
JUNE 26: CADRE @ 4 OZ/A + DUAL MAGNUM @ 16 OZ/A + 2,4-DB @ 12 OZ/A + ELATUS @ 7.3 OZ/A
JULY 15: ELATUS @ 7.3 OZ/A + 2,4-DB @12.8 OZ/A + PEG POWER @ 16 OZ/A + BORON @ 16 OZ/A
AUGUST 6: ELATUS @ 7.3 OZ/A + DIMILIN @ 4 OZ/A + PEG POWER @ 16 OZ/A + BORON @ 16 OZ/A
AUGUST 21: APPROACH PRIMA @ 6.8 OZ/A + TEBUSOL @ 9 OZ/A + DIMILIN @ 2.5 OZ/A
SEPTEMBER 6: CONVOY @ 16 OZ/A + EQUUS 720 @ 16 OZ/A + DIMILIN @ 3.5 OZ/A

DIGGING DATE: OCTOBER 3
HARVEST DATE: OCTOBER 8
HARVEST MOISTURE: 14.3%
YIELDS ADJUSTED TO 10%
HARVEST PLOT SIZE WAS 6 ROWS (18') x 1156'-1993' (0.48-0.82 ACRES)

SUMMARY:

1) SPRAY CARD ANALYSIS (DEPOSIT SCAN) BASED UPON 21 KROMEKOTE CARDS INDICATED THE FOLLOWING:

A) TTI (VMD_{50} = 456 MICRONS) > TDXL (VMD_{50} = 411 MICRONS) > XRC (VMD_{50} = 182 MICRONS).

B) TTI (11.8% COVERAGE) AND TDXL (12.0% COVERAGE) HAD BETTER COVERAGE THAN XRC (8.1% COVERAGE)

2) DISEASE, WEED, AND INSECT RATINGS OBTAINED ON SEPTEMBER 9 INDICATED THE FOLLOWING:

A) NO DIFFERENCE IN LEAF SPOT CONTROL BETWEEN NOZZLES.
B) NO DIFFERENCE IN WEED COUNTS (TOTAL #/M^2) BETWEEN NOZZLES.
C) NO DIFFERENCE IN INSECTS COUNTS (#/15 SWEEPS) BETWEEN NOZZLES.

3) WHITE MOLD RATINGS OBTAINED ON OCTOBER 3 INDICATED THAT THERE WERE NO DIFFERENCES BETWEEN NOZZLE

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TYPE.

4) NO DIFFERENCES IN PEANUT YIELD WERE OBSERVED BETWEEN NOZZLE TYPES (P=0.7624, CV = 7.03).

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Weed Code Crop Code	DROPLET	CARD	LEAF SPOT	TOTAL WEEDS	TOTAL WEEDS	TOTAL WEEDS	TOTAL WEEDS	VELVET BEAN	SOYBEAN LOOPER
Part Rated	VMD50 -			1 -	2 -	2 -			
Rating Data Type		COVERAGE					AVERAGE	CATERPIL	
Rating Unit	MICRONS	PERCENT	1-10	1 M2	1 M2	1 M2	1 M2	#/15 SWP	#15 SWP
Rating Date	Mar-21-19	Mar-21-19	Sep-9-19	Sep-9-19	Sep-9-19	Sep-9-19	Sep-9-19	Sep-9-19	Sep-9-19
PRM Data Type									
# Subsamples, Dec.	7 -	- 2							
Trt Treatment No. Name	1	2	3	4	5	6	7	8	9
1 TTI-11004-VP-CE	456.1 a	11.76 a	1.0 -	0.0 -	0.0 -	0.0 -	0.0 -	1.3 -	1.5 -
2 XRC-11004-VP	182.3 c	8.05 b	1.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.5 -	4.3 -
3 TDXL-11004-D	411.4 b	12.04 a	1.0 -	0.0 -	0.0 -	0.0 -	0.0 -	1.0 -	5.3 -
LSD P=.10	39.45	1.924	.	.	.	.	.	1.23	3.20
Standard Deviation	22.67	1.105	0.00	0.00	0.00	0.00	0.00	0.90	2.33
CV	6.48	10.41	0.0	0.0	0.0	0.0	0.0	97.91	63.47
Grand Mean	349.94	10.619	1.00	0.00	0.00	0.00	0.00	0.92	3.67
Bartlett's X2	5.168	1.136	0.00	0.00	0.00	0.00	0.00	3.185	2.176
P(Bartlett's X2)	0.075	0.567	.	.	.	.	.	0.203	0.337

Means followed by same letter or symbol do not significantly differ (P=.10, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Could not calculate LSD (% mean diff) for columns 3,4,5,6,7 because error mean square = 0.

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Weed Code	ALL	3CAH	3 CAH	TOTAL	-----	-----	-----
Crop Code	CATERPLI	ADULTS	NYMPHS	INSECTS	WHITE	ARAHY	ARAHY
Part Rated						WET -	YIELD -
Rating Data Type					MOLD	YIELD	10% m
Rating Unit	# 15 SWP	#/15 SWP	#/15 SPS	#/15 SWP	PERCENT	LBS/A	LBS/A
Rating Date	Sep-9-19	Sep-9-19	Sep-9-19	Sep-9-19	Oct-3-19	Oct-8-19	Oct-8-19
PRM Data Type				T1			T2
# Subsamples, Dec.				- 1			- 0
Trt Treatment No. Name	10	11	12	13	14	15	16
1 TTI-11004-VP-CE	4.0 -	3.5 -	0.5 -	8.0 -	7.25 -	4528.3 -	4312 -
2 XRC-11004-VP	5.8 -	3.5 -	0.8 -	10.0 -	8.88 -	4555.5 -	4338 -
3 TDXL-11004-D	7.0 -	2.8 -	0.0 -	9.8 -	7.08 -	4398.0 -	4188 -
LSD P=.10	5.72	2.92	1.39	5.72	4.729	434.14	413.4
Standard Deviation	4.16	2.13	1.01	4.16	3.442	315.96	300.9
CV	74.51	65.47	243.31	44.97	44.51	7.03	7.03
Grand Mean	5.58	3.25	0.42	9.25	7.733	4493.92	4279.2
Bartlett's X2	0.255	1.658	2.272	0.306	3.283	0.003	0.003
P(Bartlett's X2)	0.88	0.436	0.132	0.858	0.194	0.999	0.999

Means followed by same letter or symbol do not significantly differ (P=.10, LSD).
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Could not calculate LSD (% mean diff) for columns 3,4,5,6,7 because error mean square = 0.

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Randomized Complete Block (RCB) AOV For DROPLET VMD50 MICRONS Mar-21-19 7 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	8	131699.515873			
Replicate	2	186.612623	93.306311	0.182	0.8404
Treatment	2	129457.780423	64728.890212	125.985	0.0002
Error	4	2055.122827	513.780707		

Randomized Complete Block (RCB) AOV For CARD COVERAGE PERCENT Mar-21-19 2 (Data Column 2)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	8	34.930012			
Replicate	2	0.280831	0.140415	0.115	0.8942
Treatment	2	29.763938	14.881969	12.185	0.0199
Error	4	4.885243	1.221311		

Randomized Complete Block (RCB) AOV For LEAF SPOT 1-10 Sep-9-19 (Data Column 3)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	0.000000000000			
Replicate	3	0.000000000000	0.000000000000	0.000	1.0000
Treatment	2	0.000000000000	0.000000000000	0.000	1.0000
Error	6	0.000000000000	0.000000000000		

Randomized Complete Block (RCB) AOV For TOTAL WEEDS 1 1 M2 Sep-9-19 (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	0.000000000000			
Replicate	3	0.000000000000	0.000000000000	0.000	1.0000
Treatment	2	0.000000000000	0.000000000000	0.000	1.0000
Error	6	0.000000000000	0.000000000000		

Randomized Complete Block (RCB) AOV For TOTAL WEEDS 2 1 M2 Sep-9-19 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	0.000000000000			
Replicate	3	0.000000000000	0.000000000000	0.000	1.0000
Treatment	2	0.000000000000	0.000000000000	0.000	1.0000
Error	6	0.000000000000	0.000000000000		

Randomized Complete Block (RCB) AOV For TOTAL WEEDS 2 1 M2 Sep-9-19 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	0.000000000000			
Replicate	3	0.000000000000	0.000000000000	0.000	1.0000
Treatment	2	0.000000000000	0.000000000000	0.000	1.0000
Error	6	0.000000000000	0.000000000000		

Randomized Complete Block (RCB) AOV For TOTAL WEEDS AVERAGE 1 M2 Sep-9-19 (Data Column 7)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	0.000000000000			
Replicate	3	0.000000000000	0.000000000000	0.000	1.0000
Treatment	2	0.000000000000	0.000000000000	0.000	1.0000
Error	6	0.000000000000	0.000000000000		

Randomized Complete Block (RCB) AOV For VELVET BEAN CATERPIL #/15 SWP Sep-9-19 (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	18.916667			
Replicate	3	12.916667	4.305556	5.345	0.0394
Treatment	2	1.166667	0.583333	0.724	0.5227
Error	6	4.833333	0.805556		

Randomized Complete Block (RCB) AOV For SOYBEAN LOOPER #15 SWP Sep-9-19 (Data Column 9)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	98.666667			
Replicate	3	36.000000	12.000000	2.215	0.1871
Treatment	2	30.166667	15.083333	2.785	0.1395
Error	6	32.500000	5.416667		

Randomized Complete Block (RCB) AOV For ALL CATERPLI # 15 SWP Sep-9-19 (Data Column 10)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	176.916667			
Replicate	3	54.916667	18.305556	1.058	0.4337
Treatment	2	18.166667	9.083333	0.525	0.6165
Error	6	103.833333	17.305556		

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Randomized Complete Block (RCB) AOV For 3CAH ADULTS #/15 SWP Sep-9-19 (Data Column 11)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	34.250000			
Replicate	3	5.583333	1.861111	0.411	0.7512
Treatment	2	1.500000	0.750000	0.166	0.8511
Error	6	27.166667	4.527778		

Randomized Complete Block (RCB) AOV For 3 CAH NYMPHS #/15 SPS Sep-9-19 (Data Column 12)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	8.916667			
Replicate	3	1.583333	0.527778	0.514	0.6878
Treatment	2	1.166667	0.583333	0.568	0.5946
Error	6	6.166667	1.027778		

Randomized Complete Block (RCB) AOV For TOTAL INSECTS #/15 SWP Sep-9-19 T1 1 (Data Column 13)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	218.250000			
Replicate	3	104.916667	34.972222	2.021	0.2126
Treatment	2	9.500000	4.750000	0.274	0.7690
Error	6	103.833333	17.305556		

Randomized Complete Block (RCB) AOV For ----- WHITE MOLD PERCENT Oct-3-19 (Data Column 14)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	110.786667			
Replicate	3	31.826667	10.608889	0.896	0.4959
Treatment	2	7.881667	3.940833	0.333	0.7294
Error	6	71.078333	11.846389		

Randomized Complete Block (RCB) AOV For ----- ARAHY WET YIELD LBS/A Oct-8-19 (Data Column 15)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	972156.916667			
Replicate	3	316499.583333	105499.861111	1.057	0.4341
Treatment	2	56685.166667	28342.583333	0.284	0.7624
Error	6	598972.166667	99828.694444		

Randomized Complete Block (RCB) AOV For ----- ARAHY YIELD 10% m LBS/A Oct-8-19 T2 0 (Data Column 16)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	11	881481.080604			
Replicate	3	286978.768493	95659.589498	1.057	0.4341
Treatment	2	51397.980214	25698.990107	0.284	0.7624
Error	6	543104.331897	90517.388649		

PRM Data Type
T1 = [10]+[11]+[12]
T2 = (([15]*0.857)/0.90)

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Weed Code Crop Code Part Rated Rating Data Type Rating Unit Rating Date PRM Data Type # Subsamples, Dec.		DROPLET VMD50 - MICRONS Mar-21-19 7 -	CARD COVERAGE PERCENT Mar-21-19 - 2	LEAF SPOT 1-10 Sep-9-19	TOTAL WEEDS 1 - 1 M2 Sep-9-19	TOTAL WEEDS 2 - 1 M2 Sep-9-19	TOTAL WEEDS 2 - 1 M2 Sep-9-19	TOTAL WEEDS AVERAGE 1 M2 Sep-9-19	VELVET BEAN CATERPIL #/15 SWP Sep-9-19	SOYBEAN LOOPER #15 SWP Sep-9-19
Trt Treatment No. Name	Plot	1	2	3	4	5	6	7	8	9
1 TTI-11004-VP-CE	101	477.7	11.65	1.0	0.0	0.0	0.0	0.0	0.0	3.0
	202	469.5	12.53	1.0	0.0	0.0	0.0	0.0	0.0	0.0
	301	421.1	11.11	1.0	0.0	0.0	0.0	0.0	4.0	3.0
	402			1.0	0.0	0.0	0.0	0.0	1.0	0.0
	Mean =	456.1	11.76	1.0	0.0	0.0	0.0	0.0	1.3	1.5
2 XRC-11004-VP	102	179.3	6.71	1.0	0.0	0.0	0.0	0.0	0.0	6.0
	201	180.6	8.14	1.0	0.0	0.0	0.0	0.0	1.0	6.0
	302	187.0	9.30	1.0	0.0	0.0	0.0	0.0	1.0	3.0
	401			1.0	0.0	0.0	0.0	0.0	0.0	2.0
	Mean =	182.3	8.05	1.0	0.0	0.0	0.0	0.0	0.5	4.3
3 TDXL-11004-D	103	409.7	12.74	1.0	0.0	0.0	0.0	0.0	0.0	7.0
	203	399.3	11.57	1.0	0.0	0.0	0.0	0.0	0.0	10.0
	303	425.2	11.81	1.0	0.0	0.0	0.0	0.0	3.0	2.0
	403			1.0	0.0	0.0	0.0	0.0	1.0	2.0
	Mean =	411.4	12.04	1.0	0.0	0.0	0.0	0.0	1.0	5.3

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Weed Code Crop Code Part Rated Rating Data Type Rating Unit Rating Date PRM Data Type # Subsamples, Dec.		ALL CATERPLI # 15 SWP Sep-9-19	3CAH ADULTS #/15 SWP Sep-9-19	3 CAH NYMPHS #/15 SPS Sep-9-19	TOTAL INSECTS #/15 SWP Sep-9-19 T1 - 1	----- WHITE MOLD PERCENT Oct-3-19	----- ARAHY WET - YIELD LBS/A Oct-8-19	----- ARAHY YIELD - 10% m LBS/A Oct-8-19 T2 - 0
Trt Treatment No. Name	Plot	10	11	12	13	14	15	16
1 TTI-11004-VP-CE	101	6.0	3.0	0.0	9.0	7.00	4925.0	4690
	202	0.0	5.0	1.0	6.0	7.50	4498.0	4283
	301	9.0	4.0	0.0	13.0	11.50	4150.0	3952
	402	1.0	2.0	1.0	4.0	3.00	4540.0	4323
	Mean =	4.0	3.5	0.5	8.0	7.25	4528.3	4312
2 XRC-11004-VP	102	7.0	6.0	3.0	16.0	6.00	4810.0	4580
	201	10.0	3.0	0.0	13.0	15.00	4103.0	3907
	302	4.0	0.0	0.0	4.0	5.00	4770.0	4542
	401	2.0	5.0	0.0	7.0	9.50	4539.0	4322
	Mean =	5.8	3.5	0.8	10.0	8.88	4555.5	4338
3 TDXL-11004-D	103	10.0	4.0	0.0	14.0	7.50	4555.0	4337
	203	12.0	2.0	0.0	14.0	8.80	4618.0	4397
	303	2.0	4.0	0.0	6.0	6.00	4487.0	4273
	403	4.0	1.0	0.0	5.0	6.00	3932.0	3744
	Mean =	7.0	2.8	0.0	9.8	7.08	4398.0	4188

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PRM Data Type
T1 = [10]+[11]+[12]
T2 = (([15]*0.857)/0.90)