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

Trial ID: NZ-02B-19 Study Dir.: SCOTT CARLSON/BRYCE SUTHERLAND
Location: WORTH 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-11006-VP-CE		-	101	202	301	402
2	XRC-11006-VP		-	102	201	302	401

Sort Order: Treatment

Trial Comments

STEVE AND GENE PATTERSON FARMS
BLAKE (TRACTOR OPERATOR)

TRACTOR: JD 4730

BOOM LENGTH: 90' (54 NOZZLES) - 30 rows

NOZZLE SPACING: 20"

SPEED: 12.5 MPH

GPA: 20

PSI: 42 (TTI); 57 (XRC)

BOOM HEIGHT: 36"

APRIL 4, 2109
3:28 PM
75 F
41% RH
8 MPH SE WIND

21 KROMEKOTE CARDS SPRAYED (3 REPS OF 7 CARDS/REP) -

DropletScan was used for spray card analysis

Variety: GA-06G
Planting Date: MAY 9
Crop Rotation: P-CT-P-CT-P(2019)
IRRIGATED
TWIN ROW
CONVENTIONAL TILLAGE: COVER CROP BURNDOWN, HARROW 2X, BEDDED, PLANTED

PESTICIDE APPLICATIONS:

June 4: Gramoxone + Dual Magnum + Basagran + Warrant
June 18: Cadre + Orthene + Dual Magnum + Headline
July 5: Topsin + Tebuconazole + Boron + Manganese + Ascend + Dimilin
July 23: Convoy @ 26 oz/A + Chlorthalinol @ 24 oz/A + Dimilin @ 4 oz/A + Ascend @ 40 oz/A + Mn @ 24 oz/A + B @ 16 oz/A
August 9: Convoy + Bravo + Dimilin
August 29: Tebuconazole + Topsin

Digging date: September 21
Harvest date: September 24
Harvest moisture: 11.3%
Yields adjusted to 10%.
HARVESTED PLOT AREA: 6 ROWS (18') x 437'-1239' (0.18 ACRES TO 0.51 ACRES)

SUMMARY:

1) SPRAY CARD DROPLET ANALYSIS INDICATED THE FOLLOWING:

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A) TTI NOZZLES VMD_{50} WAS GREATER THAN XRC NOZZLES (481 MICRONS VS. 348 MICRONS).

B) NO DIFFERENCE IN SPRAY COVERAGE (%) BETWEEN NOZZLES.

2) DISEASE, WEED, AND INSECT DATA COLLECTED ON SEPTEMBER 4 INDICATED THE FOLLOWING:

A) NO DIFFERENCES IN LEAF SPOT BETWEEN NOZZLES.

B) NO DIFFERENCES IN WEED COUNTS BETWEEN NOZZLES (#/M^2).

C) NO DIFFERENCES IN INSECT COUNTS BETWEEN NOZZLES.

3) WHITE MOLD (I.E. SOUTHERN STEM ROT) RATINGS OBTAINED ON SEPTEMBER 21 INDICATED NO DIFFERENCES BETWEEN NOZZLE TYPES.

4) NO DIFFERENCES IN PEANUT YIELD WERE OBSERVED BETWEEN NOZZLE TYPES (P=0.9823).

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Weed Code Crop Code Part Rated Rating Data Type Rating Unit Rating Date PRM Data Type # Subsamples, Dec.	VMD50 - MICRONS Apr-4-19 7 1	COVERAGE PERCENT Apr-4-19 7 1	Catepill #/6 ft Jul-8-19 1 -	early leaf spot - 1-10 Sep-4-19 - 1	total weeds #/m2 Sep-4-19	corn earworm #15 swps Sep-4-19	velvetbe caterpil #15 swps Sep-4-19	soybean looper #15 swps Sep-4-19	total caterpil #15 swps Sep-4-19	3cah adults #15 swps Sep-4-19
Trt Treatment No. Name	1	2	3	4	5	6	7	8	9	10
1 TTI-11006-VP-CE	481.3 a	10.0 -	4.5 -	1.2 -	0.0 -	0.0 -	0.0 -	0.8 -	0.8 -	10.8 -
2 XRC-11006-VP	347.9 b	7.4 -	4.8 -	1.1 -	0.0 -	0.3 -	0.0 -	0.5 -	0.8 -	13.0 -
LSD P=.10	31.31	2.95	2.61	0.18	.	0.59	.	2.23	1.66	9.77
Standard Deviation	13.13	1.24	1.57	0.11	0.00	0.35	0.00	1.34	1.00	5.87
CV	3.17	14.22	33.9	9.53	0.0	282.84	0.0	214.17	133.33	49.43
Grand Mean	414.56	8.71	4.63	1.11	0.00	0.13	0.00	0.63	0.75	11.88
Bartlett's X2	4.572	3.066	1.893	1.836	0.00	0.00	0.00	2.214	2.829	1.56
P(Bartlett's X2)	0.033*	0.08	0.169	0.175	.	.	.	0.137	0.093	0.212

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 5,7 because error mean square = 0.

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Weed Code Crop Code Part Rated Rating Data Type Rating Unit Rating Date PRM Data Type # Subsamples, Dec.	3 cah nymphs #15 swps Sep-4-19	stinkbug adult #15 swps Sep-4-19	stinkbug nymph #15 swps Sep-4-19	garden fleahopp #15 swps Sep-4-19	cucumber beetle #15 swps Sep-4-19	bigeyed bug #15 swps Sep-4-19	total bugs #15 swps Sep-4-19 T1 - 1	white mold percent Sep-21-19	----- ARAHY PLOT - YIELD LBS/A Sep-24-19	----- ARAHY PLOT - YIELD LBS/A Sep-24-19 T2 Tn - 0
Trt Treatment No. Name	11	12	13	14	15	16	17	18	19	20
1 TTI-11006-VP-CE	0.0 -	0.3 -	0.5 -	9.3 -	0.3 -	1.0 -	22.8 -	8.688 -	6684.5 -	6588 -
2 XRC-11006-VP	0.3 -	0.0 -	0.0 -	3.5 -	1.0 -	1.5 -	20.0 -	6.875 -	6677.3 -	6581 -
LSD P=.10	0.59	0.59	1.18	8.98	1.13	1.18	17.57	5.0117	707.32	697.1
Standard Deviation	0.35	0.35	0.71	5.40	0.68	0.71	10.56	3.0117	425.05	418.9
CV	282.84	282.84	282.84	84.66	108.32	56.57	49.39	38.7	6.36	6.36
Grand Mean	0.13	0.13	0.25	6.38	0.63	1.25	21.38	7.7813	6680.88	6584.4
Bartlett's X2	0.00	0.00	0.00	4.127	1.748	0.326	0.129	0.06	0.346	0.346
P(Bartlett's X2)	.	.	.	0.042*	0.186	0.568	0.72	0.807	0.556	0.556

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 5,7 because error mean square = 0.

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Randomized Complete Block (RCB) AOV For VMD50 MICRONS Apr-4-19 7 1 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	5	27626.903516			
Replicate	2	582.037920	291.018960	1.687	0.3722
Treatment	1	26699.851588	26699.851588	154.775	0.0064
Error	2	345.014008	172.507004		

Randomized Complete Block (RCB) AOV For COVERAGE PERCENT Apr-4-19 7 1 (Data Column 2)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	5	15.497247			
Replicate	2	2.363179	1.181590	0.770	0.5650
Treatment	1	10.064617	10.064617	6.558	0.1246
Error	2	3.069451	1.534726		

Randomized Complete Block (RCB) AOV For Catepill #/6 ft Jul-8-19 1 (Data Column 3)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	33.875000			
Replicate	3	26.375000	8.791667	3.576	0.1616
Treatment	1	0.125000	0.125000	0.051	0.8361
Error	3	7.375000	2.458333		

Randomized Complete Block (RCB) AOV For early leaf spot 1-10 Sep-4-19 1 (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	0.228750			
Replicate	3	0.163750	0.054583	4.852	0.1136
Treatment	1	0.031250	0.031250	2.778	0.1942
Error	3	0.033750	0.011250		

Randomized Complete Block (RCB) AOV For total weeds #/m2 Sep-4-19 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	0.000000000000			
Replicate	3	0.000000000000	0.000000000000	0.000	1.0000
Treatment	1	0.000000000000	0.000000000000	0.000	1.0000
Error	3	0.000000000000	0.000000000000		

Randomized Complete Block (RCB) AOV For corn earworm #15 swps Sep-4-19 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	0.875000			
Replicate	3	0.375000	0.125000	1.000	0.5000
Treatment	1	0.125000	0.125000	1.000	0.3910
Error	3	0.375000	0.125000		

Randomized Complete Block (RCB) AOV For velvetbe caterpil #15 swps Sep-4-19 (Data Column 7)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	0.000000000000			
Replicate	3	0.000000000000	0.000000000000	0.000	1.0000
Treatment	1	0.000000000000	0.000000000000	0.000	1.0000
Error	3	0.000000000000	0.000000000000		

Randomized Complete Block (RCB) AOV For soybean looper #15 swps Sep-4-19 (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	7.875000			
Replicate	3	2.375000	0.791667	0.442	0.7401
Treatment	1	0.125000	0.125000	0.070	0.8088
Error	3	5.375000	1.791667		

Randomized Complete Block (RCB) AOV For total caterpil #15 swps Sep-4-19 (Data Column 9)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	7.500000			
Replicate	3	4.500000	1.500000	1.500	0.3735
Treatment	1	0.000000	0.000000	0.000	1.0000
Error	3	3.000000	1.000000		

Randomized Complete Block (RCB) AOV For 3cah adults #15 swps Sep-4-19 (Data Column 10)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	258.875000			
Replicate	3	145.375000	48.458333	1.406	0.3930
Treatment	1	10.125000	10.125000	0.294	0.6254
Error	3	103.375000	34.458333		

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Randomized Complete Block (RCB) AOV For 3 cah nymphs #15 swps Sep-4-19 (Data Column 11)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	0.875000			
Replicate	3	0.375000	0.125000	1.000	0.5000
Treatment	1	0.125000	0.125000	1.000	0.3910
Error	3	0.375000	0.125000		

Randomized Complete Block (RCB) AOV For stinkbug adult #15 swps Sep-4-19 (Data Column 12)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	0.875000			
Replicate	3	0.375000	0.125000	1.000	0.5000
Treatment	1	0.125000	0.125000	1.000	0.3910
Error	3	0.375000	0.125000		

Randomized Complete Block (RCB) AOV For stinkbug nymph #15 swps Sep-4-19 (Data Column 13)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	3.500000			
Replicate	3	1.500000	0.500000	1.000	0.5000
Treatment	1	0.500000	0.500000	1.000	0.3910
Error	3	1.500000	0.500000		

Randomized Complete Block (RCB) AOV For garden fleahopp #15 swps Sep-4-19 (Data Column 14)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	349.875000			
Replicate	3	196.375000	65.458333	2.247	0.2616
Treatment	1	66.125000	66.125000	2.270	0.2290
Error	3	87.375000	29.125000		

Randomized Complete Block (RCB) AOV For cucumber beetle #15 swps Sep-4-19 (Data Column 15)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	5.875000			
Replicate	3	3.375000	1.125000	2.455	0.2401
Treatment	1	1.125000	1.125000	2.455	0.2152
Error	3	1.375000	0.458333		

Randomized Complete Block (RCB) AOV For bigeyed bug #15 swps Sep-4-19 (Data Column 16)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	3.500000			
Replicate	3	1.500000	0.500000	1.000	0.5000
Treatment	1	0.500000	0.500000	1.000	0.3910
Error	3	1.500000	0.500000		

Randomized Complete Block (RCB) AOV For total bugs #15 swps Sep-4-19 T1 1 (Data Column 17)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	487.875000			
Replicate	3	138.375000	46.125000	0.414	0.7562
Treatment	1	15.125000	15.125000	0.136	0.7371
Error	3	334.375000	111.458333		

Randomized Complete Block (RCB) AOV For white mold percent Sep-21-19 (Data Column 18)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	56.179688			
Replicate	3	22.398438	7.466146	0.823	0.5617
Treatment	1	6.570313	6.570313	0.724	0.4573
Error	3	27.210938	9.070313		

Randomized Complete Block (RCB) AOV For ----- ARAHY PLOT YIELD LBS/A Sep-24-19 (Data Column 19)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	9291834.875000			
Replicate	3	8749720.375000	2916573.458333	16.143	0.0235
Treatment	1	105.125000	105.125000	0.001	0.9823
Error	3	542009.375000	180669.791667		

Randomized Complete Block (RCB) AOV For ----- ARAHY PLOT YIELD LBS/A Sep-24-19 T2 Tn 0 (Data Column 20)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	9025342.756505			
Replicate	3	8498776.234220	2832925.411407	16.143	0.0235
Treatment	1	102.109989	102.109989	0.001	0.9823
Error	3	526464.412296	175488.137432		

PRM Data Type
Tn = n
T1 = [6]+[7]+[8]+[10]+[11] + [12]+[13]+[14]+[15]+ [16]
T2 = (([19]*0.887)/0.9)

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Trt No.	Treatment Name	Plot	1	2	3	4	5	6	7	8	9
	Weed Code				Catepill	early leaf spot -	total weeds	corn earworm	velvetbe caterpil	soybean looper	total caterpil
	Crop Code										
	Part Rated		VMD50 -								
	Rating Data Type			COVERAGE							
	Rating Unit		MICRONS	PERCENT	#/6 ft	1-10	#/m2	#15 swps	#15 swps	#15 swps	#15 swps
	Rating Date		Apr-4-19	Apr-4-19	Jul-8-19	Sep-4-19	Sep-4-19	Sep-4-19	Sep-4-19	Sep-4-19	Sep-4-19
	PRM Data Type										
	# Subsamples, Dec.		7 1	7 1	1 -	- 1					
1	TTI-11006-VP-CE	101	490.0	9.5	4.0	1.0	0.0	0.0	0.0	0.0	0.0
		202	496.8	8.7	3.0	1.0	0.0	0.0	0.0	0.0	0.0
		301	457.0	11.8	6.0	1.2	0.0	0.0	0.0	0.0	0.0
		402			5.0	1.5	0.0	0.0	0.0	3.0	3.0
		Mean =	481.3	10.0	4.5	1.2	0.0	0.0	0.0	0.8	0.8
2	XRC-11006-VP	102	350.2	7.1	5.0	1.0	0.0	0.0	0.0	1.0	1.0
		201	348.9	7.8	2.0	1.0	0.0	0.0	0.0	1.0	1.0
		302	344.5	7.4	9.0	1.0	0.0	0.0	0.0	0.0	0.0
		401			3.0	1.2	0.0	1.0	0.0	0.0	1.0
		Mean =	347.9	7.4	4.8	1.1	0.0	0.3	0.0	0.5	0.8

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Weed Code		3cah	3 cah	stinkbug	stinkbug	garden	cucumber	bigeyed	total	white
Crop Code		adults	nymphs	adult	nymph	fleahopp	beetle	bug	bugs	mold
Part Rated										
Rating Data Type										
Rating Unit		#15 swps	#15 swps	#15 swps	#15 swps	#15 swps	#15 swps	#15 swps	#15 swps	percent
Rating Date		Sep-4-19	Sep-4-19	Sep-4-19	Sep-4-19	Sep-4-19	Sep-4-19	Sep-4-19	Sep-4-19	Sep-21-19
PRM Data Type									T1	
# Subsamples, Dec.									- 1	
Trt No.	Treatment Name	Plot	10	11	12	13	14	15	16	17	18
1	TTI-11006-VP-CE	101	16.0	0.0	0.0	0.0	0.0	0.0	1.0	17.0	7.500
		202	8.0	0.0	0.0	0.0	5.0	0.0	1.0	14.0	13.250
		301	11.0	0.0	1.0	2.0	10.0	0.0	0.0	24.0	7.500
		402	8.0	0.0	0.0	0.0	22.0	1.0	2.0	36.0	6.500
		Mean =	10.8	0.0	0.3	0.5	9.3	0.3	1.0	22.8	8.688
2	XRC-11006-VP	102	19.0	0.0	0.0	0.0	3.0	0.0	1.0	24.0	7.000
		201	21.0	0.0	0.0	0.0	2.0	2.0	1.0	27.0	7.000
		302	4.0	1.0	0.0	0.0	2.0	0.0	2.0	9.0	3.500
		401	8.0	0.0	0.0	0.0	7.0	2.0	2.0	20.0	10.000
		Mean =	13.0	0.3	0.0	0.0	3.5	1.0	1.5	20.0	6.875

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Weed Code		-----	-----
Crop Code		ARAHY	ARAHY
Part Rated		PLOT -	PLOT -
Rating Data Type		YIELD	YIELD
Rating Unit		LBS/A	LBS/A
Rating Date		Sep-24-19	Sep-24-19
PRM Data Type			T2 Tn
# Subsamples, Dec.			- 0
Trt No.	Treatment Name	Plot	19	20
1	TTI-11006-VP-CE	101	6380.0	6288
		202	7686.0	7575
		301	5410.0	5332
		402	7262.0	7157
		Mean =	6684.5	6588
2	XRC-11006-VP	102	6428.0	6335
		201	7472.0	7364
		302	4762.0	4693
		401	8047.0	7931
		Mean =	6677.3	6581

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PRM Data Type
Tn = n
T1 = [6]+[7]+[8]+[10]+[11] + [12]+[13]+[14]+[15]+ [16]
T2 = (([19]*0.887)/0.9)