

# University of Georgia

TTI-XR NOZZLE TYPES FOR PEST CONTROL IN PEANUT - III

Trial ID: NZ-03-19 Study Dir.: JAMES JACOBS/JIM WATERS  
 Location: PIERCE 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-C		-	102	201	302	401
2	XR-11006-VP		-	101	202	301	402

Sort Order: Treatment

## Trial Comments

JD4730  
 BOOM LENGTH = 100'  
 NOZZLE SPACING = 15"  
 79 NOZZLES  
 MPH = 11.6  
 GPA = 15  
 PSI = 18-20  
 BOOM HEIGHT = 36"

MARCH 26, 2019  
 11 AM  
 64 F  
 74% RH  
 5 mph NNW WIND  
 21 KROMEKOTE CARDS SPRAYED (3 REPS OF 7) - DEPOSITSCAN

CROP ROTATION: COTTON (2017) - COTTON (2018) - PEANUT (2019)  
 VARIETY: GA-06G  
 PLANTING DATE: MAY 18  
 SINGLE ROW  
 DRYLAND  
 CONVENTIONAL TILLAGE (HARROW-2X, RIP/BED))

DIGGING DATE: OCTOBER 1  
 HARVEST DATE: OCTOBER 5  
 HARVEST MOISTURE: 9.25%  
 YIELDS ADJUSTED TO 10% MOISTURE  
 HARVESTED PLOT AREA = 12 ROWS (36') x 1151'-1294' (0.95 ACRES TO 1.07 ACRES)

### PESTICIDE APPLICATIONS:

PRE: VALOR (3 OZ/A) + DUAL MAGNUM (16 OZ/A)  
 JULY 5: CADRE (4 OZ/A) + BRAVO (24 OZ/A) + 2,4-DB (24 OZ/A)  
 JULY 11: PRIAXOR (8 OZ/A) + BORON (32 OZ/A)  
 JULY 26: PROVOST SILVER (10 OZ/A) + DIMILIN (6 OZ/A)  
 AUGUST 21: TEBUCONAZOLE (7.4 OZ/A) + CHLOROTHALONIL (24 OZ/A)  
 SEPTEMBER 19: TEBUCONAZOLE (7.4 OZ/A) + CHLOROTHALONIL (24 OZ/A)

### SUMMARY:

1) SPRAY CARD ANALYSIS INDICATED THE FOLLOWING:

- A) TTI VMD<sub>50</sub> WAS GREATER THAN XR VMD<sub>50</sub> (381 MICRONS VS. 196 MICRONS).  
 B) TTI COVERAGE WAS GREATER THAN XR COVERAGE (5.35% VS. 3.42%)

2) DISEASE, WEED AND INSECT DATA COLLECTED ON SEPTEMBER 5 INDICATED THE FOLLOWING:

- A) NO DIFFERENCES IN LEAF SPOT, WEED COUNTS, OR INSECT COUNTS WERE OBSERVED BETWEEN NOZZLE TYPES.

3) WHITE MOLD (I.E. SOUTHERN STEM ROT) CONTROL RATINGS OBTAINED ON OCTOBER 1 INDICATED NO DIFFERENCES BETWEEN NOZZLE TYPES.

4) NO YIELD DIFFERENCES WERE OBSERVED BETWEEN NOZZLE TYPES (P=0.7596)

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Weed Code Crop Code Part Rated Rating Data Type	VMD50 - MICRONS	COVERAGE	----- leaf spot - 1-10	----- weeds	CORN EARWORM	VELVET BEAN CATERPIL	SOYBEAN LOOPER	TOTAL CATERPIL	3CAH ADULTS
Rating Unit		PERCENT		#/m2	#/15 SWP	#/15 SWP	#/15 SWP	#/15 SWP	#/15 SWP
Rating Date	Mar-26-19	Mar-26-19	Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19
PRM Data Type # Subsamples, Dec.	7 -	7 2							
Trt Treatment No. Name	1	2	3	4	5	6	7	8	9
1 TTI-11006-VP-C	381.4 a	5.35 a	1.0 -	1.408 -	0.0 -	1.8 -	1.3 -	3.0 -	2.3 -
2 XR-11006-VP	196.3 b	3.42 b	1.0 -	0.168 -	0.3 -	0.5 -	1.5 -	2.3 -	2.0 -
LSD P=.10	40.71	0.628	.	1.4178	0.59	1.77	2.78	4.44	2.01
Standard Deviation	17.07	0.263	0.00	0.8520	0.35	1.06	1.67	2.67	1.21
CV	5.91	6.01	0.0	108.19	282.84	94.28	121.51	101.69	56.83
Grand Mean	288.88	4.386	1.00	0.7875	0.13	1.13	1.38	2.63	2.13
Bartlett's X2	6.237	1.463	0.00	3.388	0.00	0.145	3.23	0.348	0.149
P(Bartlett's X2)	0.013*	0.226	.	0.066	.	0.703	0.072	0.555	0.699

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 3,10,14 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.	3CAH NYMPHS #/15 SWP Sep-5-19	STINKBUG ADULT #/15 SWP Sep-5-19	STINKBUG NYMPHS #/15 SWP Sep-5-19	GARDEN FLEA HOPPER #/15 SWP Sep-5-19	CUCUMBER BEETLE #/15 SWP Sep-5-19	BIGEYED BUG #/15 SWP Sep-5-19	TOTAL BUGS #/15 SWP Sep-5-19 T1 - 1	----- WHITE MOLD - PERCENT Oct-1-19	----- ARAHY PLOT - YIELD LBS/A Oct-5-19
Trt Treatment No. Name	10	11	12	13	14	15	16	17	18
1 TTI-11006-VP-C	0.0 -	0.3 -	0.0 -	0.8 -	0.0 -	1.5 -	7.8 -	4.13 -	4995.3 -
2 XR-11006-VP	0.0 -	0.5 -	0.8 -	1.0 -	0.0 -	1.3 -	7.8 -	5.25 -	4952.5 -
LSD P=.10	.	0.59	1.77	1.13	.	1.13	5.76	3.639	300.20
Standard Deviation	0.00	0.35	1.06	0.68	0.00	0.68	3.46	2.187	180.40
CV	0.0	94.28	282.84	77.37	0.0	49.24	44.7	46.65	3.63
Grand Mean	0.00	0.38	0.38	0.88	0.00	1.38	7.75	4.688	4973.88
Bartlett's X2	0.00	0.057	0.00	0.411	0.00	0.002	9.17	0.001	0.253
P(Bartlett's X2)	.	0.811	.	0.521	.	0.966	0.002*	0.971	0.615

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 3,10,14 because error mean square = 0.

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Weed Code	-----
Crop Code	ARAHY
Part Rated	PLOT -
Rating Data Type	ADJYIELD
Rating Unit	LBS/A
Rating Date	Oct-5-19
PRM Data Type	T2
# Subsamples, Dec.	
Trt Treatment No. Name	19
1 TTI-11006-VP-C	5036.877587021040 -
2 XR-11006-VP	4993.771332710420 -
LSD P=.10	302.6967781267280
Standard Deviation	181.9004589699120
CV	3.63
Grand Mean	5015.3244598657300
Bartlett's X2	0.253
P(Bartlett's X2)	0.615

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 3,10,14 because error mean square = 0.

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**Randomized Complete Block (RCB) AOV For VMD50 MICRONS Mar-26-19 7 (Data Column 1)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	5	52415.366610			
Replicate	2	430.536122	215.268061	0.738	0.5752
Treatment	1	51401.829664	51401.829664	176.335	0.0056
Error	2	583.000824	291.500412		

**Randomized Complete Block (RCB) AOV For COVERAGE PERCENT Mar-26-19 7 2 (Data Column 2)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	5	6.118528			
Replicate	2	0.427867	0.213933	3.082	0.2450
Treatment	1	5.551839	5.551839	79.985	0.0123
Error	2	0.138821	0.069411		

**Randomized Complete Block (RCB) AOV For ----- leaf spot 1-10 Sep-5-19 (Data Column 3)**

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 ----- weeds #/m2 Sep-5-19 (Data Column 4)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	7.286550			
Replicate	3	2.033650	0.677883	0.934	0.5218
Treatment	1	3.075200	3.075200	4.236	0.1317
Error	3	2.177700	0.725900		

**Randomized Complete Block (RCB) AOV For CORN EARWORM #/15 SWP Sep-5-19 (Data Column 5)**

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 VELVET BEAN CATERPIL #/15 SWP Sep-5-19 (Data Column 6)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	10.875000			
Replicate	3	4.375000	1.458333	1.296	0.4181
Treatment	1	3.125000	3.125000	2.778	0.1942
Error	3	3.375000	1.125000		

**Randomized Complete Block (RCB) AOV For SOYBEAN LOOPER #/15 SWP Sep-5-19 (Data Column 7)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	11.875000			
Replicate	3	3.375000	1.125000	0.403	0.7625
Treatment	1	0.125000	0.125000	0.045	0.8460
Error	3	8.375000	2.791667		

**Randomized Complete Block (RCB) AOV For TOTAL CATERPIL #/15 SWP Sep-5-19 (Data Column 8)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	33.875000			
Replicate	3	11.375000	3.791667	0.532	0.6913
Treatment	1	1.125000	1.125000	0.158	0.7177
Error	3	21.375000	7.125000		

**Randomized Complete Block (RCB) AOV For 3CAH ADULTS #/15 SWP Sep-5-19 (Data Column 9)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	20.875000			
Replicate	3	16.375000	5.458333	3.743	0.1535
Treatment	1	0.125000	0.125000	0.086	0.7888
Error	3	4.375000	1.458333		

**Randomized Complete Block (RCB) AOV For 3CAH NYMPHS #/15 SWP Sep-5-19 (Data Column 10)**

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		

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**Randomized Complete Block (RCB) AOV For STINKBUG ADULT #/15 SWP Sep-5-19 (Data Column 11)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	1.875000			
Replicate	3	1.375000	0.458333	3.667	0.1571
Treatment	1	0.125000	0.125000	1.000	0.3910
Error	3	0.375000	0.125000		

**Randomized Complete Block (RCB) AOV For STINKBUG NYMPHS #/15 SWP Sep-5-19 (Data Column 12)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	7.875000			
Replicate	3	3.375000	1.125000	1.000	0.5000
Treatment	1	1.125000	1.125000	1.000	0.3910
Error	3	3.375000	1.125000		

**Randomized Complete Block (RCB) AOV For GARDEN FLEA HOPPER #/15 SWP Sep-5-19 (Data Column 13)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	8.875000			
Replicate	3	7.375000	2.458333	5.364	0.1006
Treatment	1	0.125000	0.125000	0.273	0.6376
Error	3	1.375000	0.458333		

**Randomized Complete Block (RCB) AOV For CUCUMBER BEETLE #/15 SWP Sep-5-19 (Data Column 14)**

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 BIGEYED BUG #/15 SWP Sep-5-19 (Data Column 15)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	9.875000			
Replicate	3	8.375000	2.791667	6.091	0.0860
Treatment	1	0.125000	0.125000	0.273	0.6376
Error	3	1.375000	0.458333		

**Randomized Complete Block (RCB) AOV For TOTAL BUGS #/15 SWP Sep-5-19 T1 1 (Data Column 16)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	81.500000			
Replicate	3	45.500000	15.166667	1.264	0.4260
Treatment	1	0.000000	0.000000	0.000	1.0000
Error	3	36.000000	12.000000		

**Randomized Complete Block (RCB) AOV For ----- WHITE MOLD PERCENT Oct-1-19 (Data Column 17)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	28.468750			
Replicate	3	11.593750	3.864583	0.808	0.5674
Treatment	1	2.531250	2.531250	0.529	0.5195
Error	3	14.343750	4.781250		

**Randomized Complete Block (RCB) AOV For ----- ARAHY PLOT YIELD LBS/A Oct-5-19 (Data Column 18)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	179580.875000			
Replicate	3	78296.375000	26098.791667	0.802	0.5698
Treatment	1	3655.125000	3655.125000	0.112	0.7596
Error	3	97629.375000	32543.125000		

**Randomized Complete Block (RCB) AOV For ----- ARAHY PLOT ADJYIELD LBS/A Oct-5-19 T2 (Data Column 19)**

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	7	182586.360477			
Replicate	3	79606.751832	26535.583944	0.802	0.5698
Treatment	1	3716.297578	3716.297578	0.112	0.7596
Error	3	99263.311068	33087.770356		

**PRM Data Type**

T1 = [5]+[6]+[7]+[9]+[10]+[11]+[12]+[13]+[14]+[15]  
 T2 = (([18]\*0.9075)/0.90)

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Weed Code			----- leaf	----- weeds	CORN EARWORM	VELVET BEAN	SOYBEAN LOOPER	TOTAL CATERPIL
Crop Code	VMD50 -	COVERAGE	spot -	#/m2	#/15 SWP	CATERPIL	#/15 SWP	#/15 SWP
Part Rated	MICRONS	PERCENT	1-10		Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19
Rating Data Type	Mar-26-19	Mar-26-19	Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19
Rating Unit								
Rating Date								
PRM Data Type								
# Subsamples, Dec.	7 -	7 2						
Trt Treatment								
No. Name Plot	1	2	3	4	5	6	7	8
1 TTI-11006-VP-C 102	369.9	5.46	1.0	1.300	0.0	2.0	0.0	2.0
201	407.3	5.78	1.0	1.000	0.0	0.0	1.0	1.0
302	367.2	4.81	1.0	3.000	0.0	3.0	4.0	7.0
401			1.0	0.330	0.0	2.0	0.0	2.0
Mean =	381.4	5.35	1.0	1.408	0.0	1.8	1.3	3.0
2 XR-11006-VP 101	196.2	3.59	1.0	0.670	0.0	0.0	2.0	2.0
202	194.4	3.46	1.0	0.000	0.0	0.0	1.0	1.0
301	198.3	3.22	1.0	0.000	0.0	0.0	1.0	1.0
402			1.0	0.000	1.0	2.0	2.0	5.0
Mean =	196.3	3.42	1.0	0.168	0.3	0.5	1.5	2.3

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Weed Code	3CAH ADULTS	3CAH NYMPHS	STINKBUG ADULT	STINKBUG NYMPHS	GARDEN FLEA	CUCUMBER BEETLE	BIGEYED BUG	TOTAL	
Crop Code									
Part Rated									
Rating Data Type					HOPPER			BUGS	
Rating Unit	#/15 SWP	#/15 SWP	#/15 SWP	#/15 SWP	#/15 SWP	#/15 SWP	#/15 SWP	#/15 SWP	
Rating Date	Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19	Sep-5-19	
PRM Data Type								T1	
# Subsamples, Dec.								- 1	
Trt Treatment									
No. Name	Plot	9	10	11	12	13	14	15	16
1 TTI-11006-VP-C	102	2.0	0.0	0.0	0.0	1.0	0.0	2.0	7.0
	201	2.0	0.0	0.0	0.0	2.0	0.0	3.0	8.0
	302	0.0	0.0	0.0	0.0	0.0	0.0	1.0	8.0
	401	5.0	0.0	1.0	0.0	0.0	0.0	0.0	8.0
	Mean =	2.3	0.0	0.3	0.0	0.8	0.0	1.5	7.8
2 XR-11006-VP	101	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.0
	202	2.0	0.0	1.0	0.0	3.0	0.0	3.0	10.0
	301	2.0	0.0	0.0	0.0	1.0	0.0	0.0	4.0
	402	4.0	0.0	1.0	3.0	0.0	0.0	1.0	14.0
	Mean =	2.0	0.0	0.5	0.8	1.0	0.0	1.3	7.8

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Weed Code	-----	-----	-----
Crop Code	WHITE	ARAHY	ARAHY
Part Rated	MOLD -	PLOT -	PLOT -
Rating Data Type		YIELD	ADJYIELD
Rating Unit	PERCENT	LBS/A	LBS/A
Rating Date	Oct-1-19	Oct-5-19	Oct-5-19
PRM Data Type			T2
# Subsamples, Dec.			
Trt Treatment			
No. Name Plot	17	18	19
1 TTI-11006-VP-C 102	1.50	4763.0	4802.692146935840
201	4.00	5124.0	5166.700516670000
302	6.50	5185.0	5228.208856154160
401	4.50	4909.0	4949.908828324160
Mean =	4.13	4995.3	5036.877587021040
2 XR-11006-VP 101	6.00	5017.0	5058.808839214160
202	2.50	5124.0	5166.700516670000
301	5.00	4818.0	4858.150485815000
402	7.50	4851.0	4891.425489142500
Mean =	5.25	4952.5	4993.771332710420

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PRM Data Type

T1 = [5]+[6]+[7]+[9]+[10]+[11]+[12]+[13]+[14]+[15]  
T2 = (([18]\*0.9075)/0.90)