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INSECTICIDE EFFICACY TRIAL ON COTTON FOR CREONTIADES IN THE UPPER COASTAL BEND OF TEXAS

Hunt Farm, Matagorda County, Texas, 2009

Clyde R. Crumley, Stephen Biles and Brent M. Batchelor
Extension Agent – IPM's, and County Extension Agent, respectively

SUMMARY: *Creontiades signatus* (Distant) is a plant bug, in the mirid family, that has become more common in this area of southeastern Texas. Damage from *Creontiades* species in cotton can be square and small boll loss. Squares and small bolls may suffer damage ranging from just surface feeding and boll malformation to complete fruit loss. Leverage® 3.8 oz/acre, Leverage® 5.0 oz/acre, Temprid® 3.2 oz/acre, Endigo® 4 oz/acre, Orthene® 0.75 lbs/acre, Centric® 1.5 oz/acre, and Vydate® 10.7 oz/acre all had significantly lower (nymph, adult + nymph) populations of *Creontiades signatus* when compared to the untreated check at 2 and 7 DAT (days after treatment).

OBJECTIVES: *Creontiades signatus* (Distant) is a plant bug that has become more common in the lower Rio Grande Valley as well as our area of southeastern Texas. Adults are ¼ inch long, narrow-bodied and light green. The insect goes through several molts or instars (nymphs). Differences between *Creontiades* and cotton fleahoppers make identification between these two pests easier. *Creontiades* is generally bigger than a cotton fleahopper, with the smallest *Creontiades* nymph about the size of a large cotton fleahopper nymph. The antennae of nymph and adult *Creontiades* are longer than the length of their body, while the antennae of nymph and adult fleahoppers are approximately half the length of the insect body. Nymph and adult *Creontiades* are light to dark green, while nymph and adult fleahoppers are grayish green-colored insects. Both *Creontiades* and fleahopper nymphs have red eyes. Young nymphs of *Creontiades* have a red stippling on the antennae, but this usually is not observed after the third instar. In addition, adults of *Creontiades* have a reddish band on the pronotum (segment behind the head). Damage from *Creontiades* species in cotton can be square and small boll loss. A characteristic clear yellow liquid (frass) is often left on the fruiting structure where *Creontiades* have fed. Squares and small bolls may suffer damage ranging from just surface feeding and boll malformation to complete fruit loss. While insecticides have been used extensively used for this pest many have not been fully evaluated. The purpose of this study is to compare insecticide foliar treatments for control of *Creontiades signatus* in cotton in the upper coastal bend of Texas.

MATERIALS/METHODS: Phytogen 375 WRF® with Centric® treated seed at 4 oz/acre was planted on 40" centers to this field on April 3, 2009 on the Paul Hunt Farm in Matagorda County

located at 28°45'0.08"N and 96°18'46.05"W. Following planting, the herbicides Cotoran® (1.5 pints/acre) + Staple® (0.5oz/acre) were broadcast across the field. The field had been planted in corn the previous season.

After field populations of *Creontiades signatus* were determined to be well established, field plots were laid out in 6 rows by 40 feet long in a complete randomized block design and replicated four times. Populations of *Creontiades* nymphs and adults were determined by using a white beat sheet laid on the ground and sampling the center 2 rows of 6 row feet per plot on all sampling dates. Pretreatment counts were conducted on June 30, 2009 with the treatments being applied immediately afterwards. The insecticide treatments were Leverage® 3.8 oz/acre, Leverage® 5.0 oz/acre, Temprid® 3.2 oz/acre, Endigo® 4 oz/acre, Orthene® 0.75 lbs/acre, Centric® 1.5 oz/acre, Vydate® 10.7 oz/acre and were compared to an untreated check. Treatments were applied by a Lee Spider® at 7 gallons per minute with TX VS 4 Conjet® nozzles at 3.5 miles per hour with the entire plot being treated. Post-treatment sampling was conduct on July 2, 2009 (2 DAT) and on July 9, 2009 (7 DAT) using the same methodology as describe above.

AGSTATS 02 software was used to conduct analysis of variance (ANOVA). Means were separated by least significant difference (LSD) for ease of presentation.

RESULTS/DISCUSSION: Pretreatment counts were conducted on June 30, 2009 and no significant differences were observed in any treatments in either nymphs, adults or in the combination of the two life forms (Table 1 and Chart 1). On July 2, 2009 (2 DAT), Leverage® 3.8 oz/acre, Leverage® 5.0 oz/acre, Temprid® 3.2 oz/acre, Endigo® 4 oz/acre, Orthene® 0.75 lbs/acre, Centric® 1.5 oz/acre, Vydate® 10.7 oz/acre all had significantly lower numbers of nymphs and the combination of nymphs and adults but no significant differences were observed in adults due to low populations (Table 1 and Chart 2). Similarly, on July 7, 2009 (7 DAT), Leverage® 3.8 oz/acre, Leverage® 5.0 oz/acre, Temprid® 3.2 oz/acre, Endigo® 4 oz/acre, Orthene® 0.75 lbs/acre, Centric® 1.5 oz/acre, Vydate® 10.7 oz/acre all had significantly lower numbers of nymphs and the combination of nymphs and adults but no significant differences were observed in adults due to low populations (Table 1 and Chart 3).

In summary, Leverage® 3.8 oz/acre, Leverage® 5.0 oz/acre, Temprid® 3.2 oz/acre, Endigo® 4 oz/acre, Orthene® 0.75 lbs/acre, Centric® 1.5 oz/acre, and Vydate® 10.7 oz/acre all had significantly lower (nymph, adult + nymph) populations of *Creontiades signatus* when compared to the untreated check at 2 and 7 DAT.

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Table 1. Number of *Creontiades signatus* nymphs, adults and totals, pretreatment, 2 DAT (days after treatment) and 7 DAT using a beat sheet and measuring 6 row feet on cotton treated with foliar insecticides, Hunt Farm, Matagorda County, Texas, 2009.

				Creo Ad		Creo Ny		Creo Tot		Creo Ad		Creo Ny		Creo Tot		Creo Ad		Creo Ny		Creo Tot	
Trt	Treatment		Rate	/btSheet		/btSheet		/btSheet		/btSheet		/btSheet		/btSheet		/btSheet		/btSheet		/btSheet	
No.	Name	Rate	Unit	Jun-30-09		Jun-30-09		Jun-30-09		Jul-2-09		Jul-2-09		Jul-2-09		Jul-7-09		Jul-7-09		Jul-7-09	
				PRE		PRE		PRE		2 DAT		2 DAT		2 DAT		7 DAT		7 DAT		7 DAT	
1	UTC			1.25	a	6.25	a	7.5	a	0.25	a	6.25	b	6.5	b	0.5	a	3.75	b	4.25	b
2	LEVERAGE®	3.8	OZ/A	0.25	a	13.5	a	13.75	a	0	a	1.5	a	1.5	a	0	a	0.5	a	0.5	a
3	LEVERAGE®	5	OZ/A	1.5	a	10	a	11.5	a	0.25	a	0.25	a	0.5	a	0	a	0	a	0	a
4	TEMPRID®	3.2	OZ/A	0.25	a	8.75	a	9	a	0.25	a	0.5	a	0.75	a	0	a	1	a	1	a
5	ENDIGO®	4	OZ/A	1	a	9.25	a	10.25	a	0.25	a	0.25	a	0.5	a	0	a	0	a	0	a
6	ORTHENE®	0.75	LBS/AC	0.25	a	7.5	a	7.75	a	0.25	a	0	a	0.25	a	0.25	a	1	a	1.25	a
7	CENTRIC®	1.5	OZ/A	0.5	a	6.75	a	7.25	a	1.25	a	0.75	a	2	a	0	a	1	a	1	a
8	VYDATE®	10.7	OZ/A	0.25	a	5.5	a	5.75	a	0.25	a	1.5	a	1.75	a	0.75	a	0.25	a	1	a
Means followed by same letter do not significantly differ (P=.05, LSD)																					

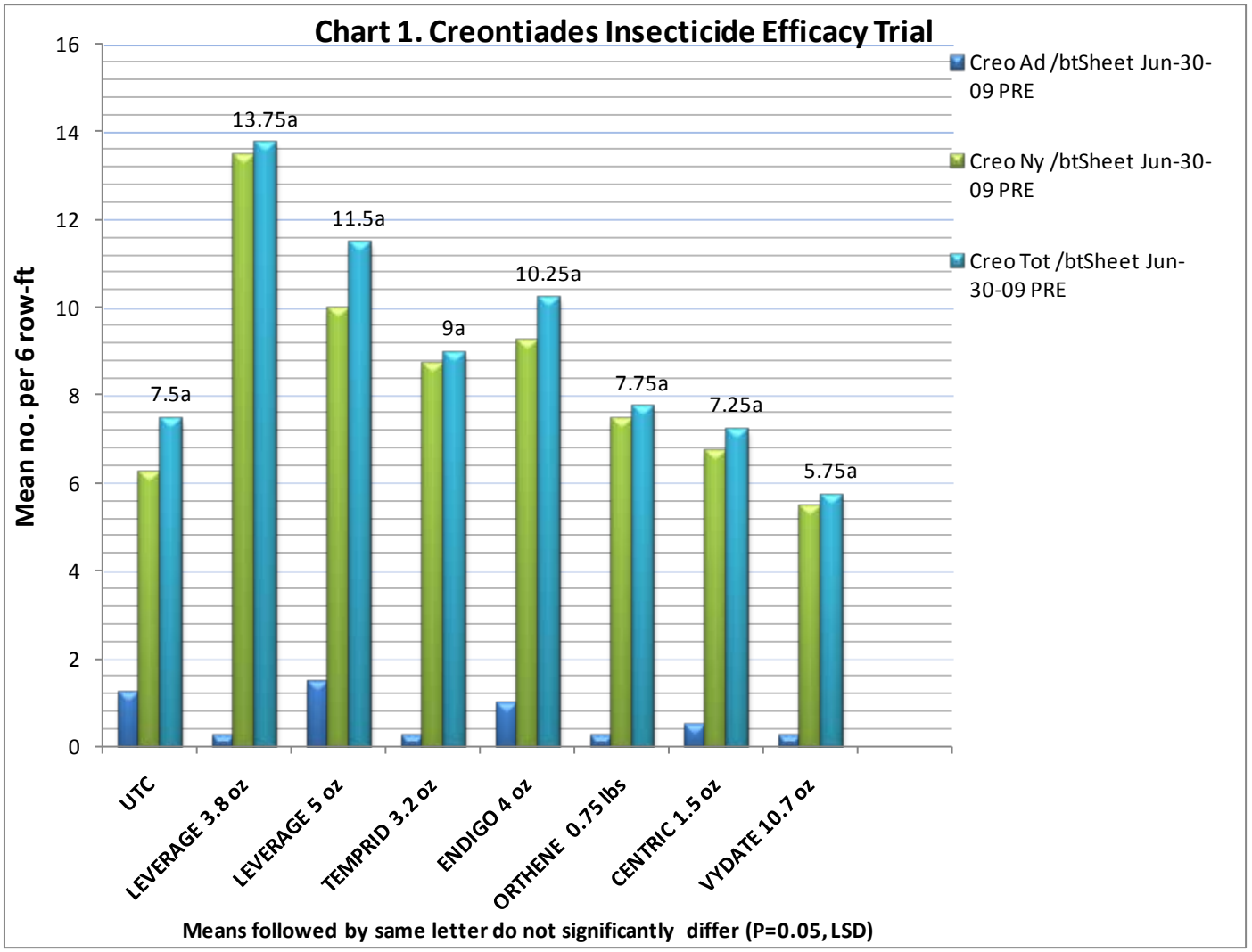
Chart 1. Creontiades Insecticide Efficacy Trial
Mean no. per 6 row-ft
16
14
12
10
8
6
4
2
0
7.5a
13.75a
11.5a
9a
10.25a
7.75a
7.25a
5.75a
UTC
LEVERAGE 3.8 oz
LEVERAGE 5 oz
TEMPRID 3.2 oz
ENDIGO 4 oz
ORTHENE 0.75 lbs
CENTRIC 1.5 oz
VYDATE 10.7 oz
Creo Ad /btSheet Jun-30-09 PRE
Creo Ny /btSheet Jun-30-09 PRE
Creo Tot /btSheet Jun-30-09 PRE
Means followed by same letter do not significantly differ (P=0.05, LSD)

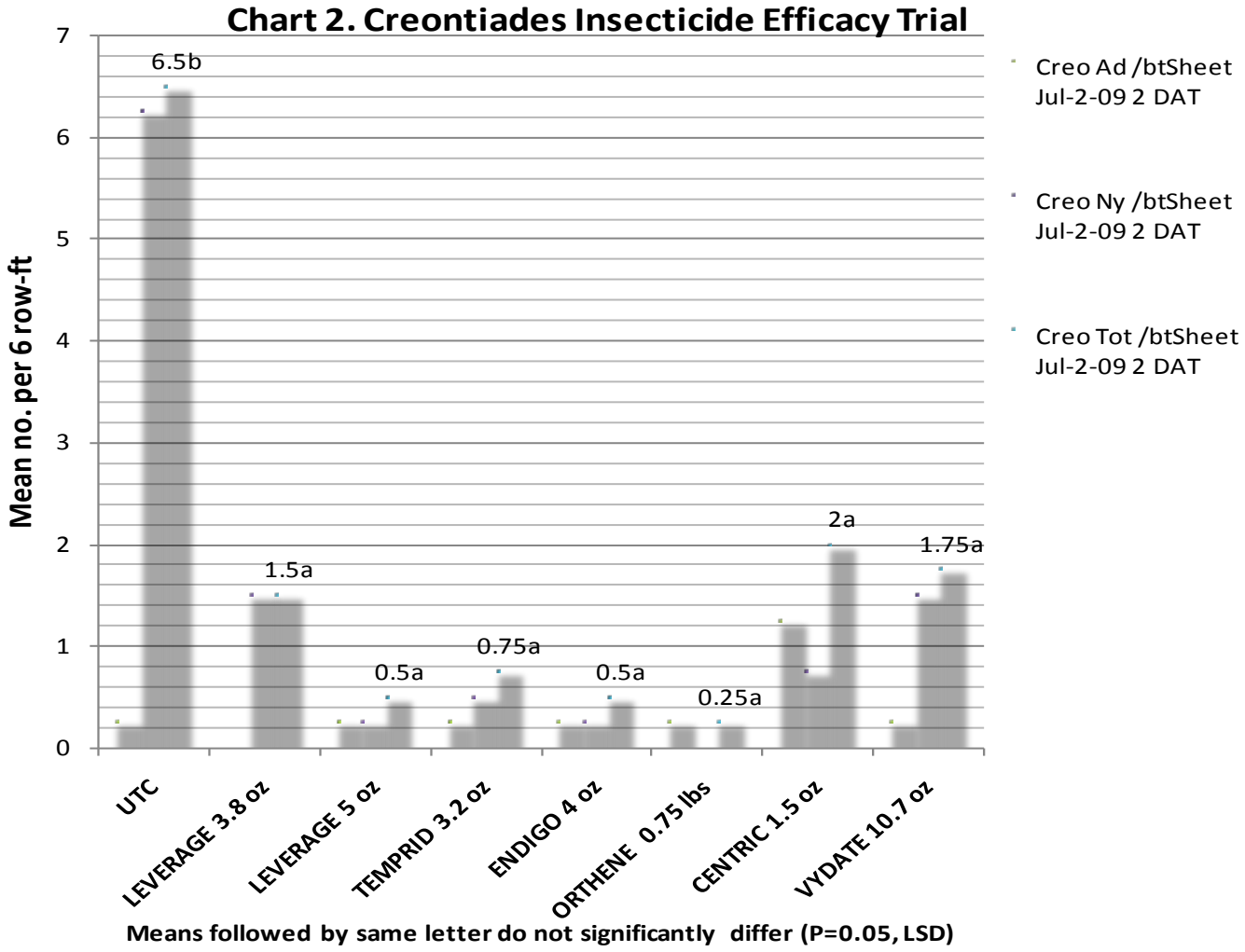
Chart 2. Creontiades Insecticide Efficacy Trial
Mean no. per 6 row-ft
0
1
2
3
4
5
6
7
6.5b
1.5a
0.5a
0.75a
0.5a
0.25a
2a
1.75a
UTC
LEVERAGE 3.8 oz
LEVERAGE 5 oz
TEMPRID 3.2 oz
ENDIGO 4 oz
ORTHENE 0.75 lbs
CENTRIC 1.5 oz
VYDATE 10.7 oz
Means followed by same letter do not significantly differ (P=0.05, LSD)
Creo Ad /btSheet Jul-2-09 2 DAT
Creo Ny /btSheet Jul-2-09 2 DAT
Creo Tot /btSheet Jul-2-09 2 DAT

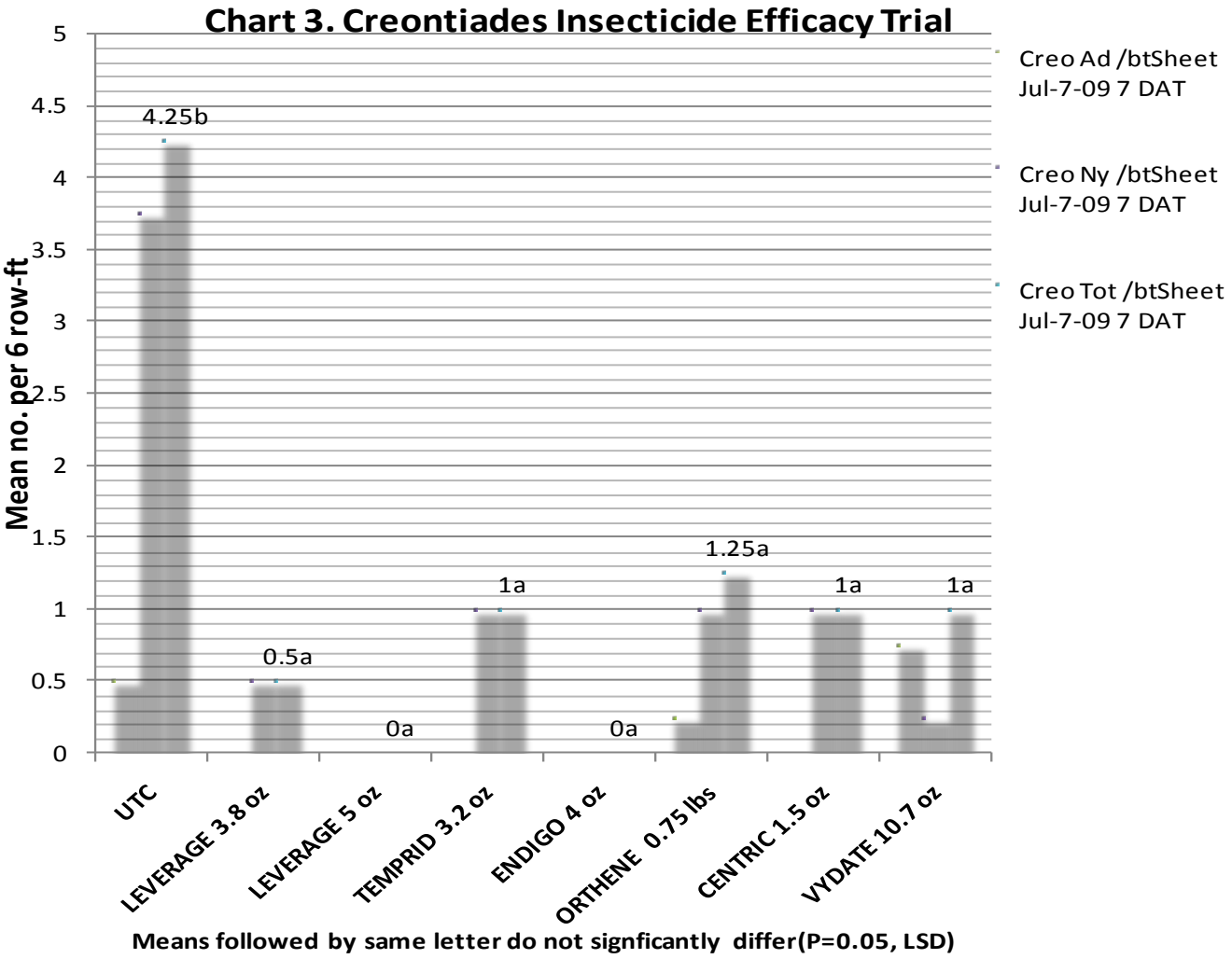
Chart 3. Creontiades Insecticide Efficacy Trial
Mean no. per 6 row-ft
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
4.25b
0.5a
0a
1a
0a
1.25a
1a
1a
UTC
LEVERAGE 3.8 oz
LEVERAGE 5 oz
TEMPRID 3.2 oz
ENDIGO 4 oz
ORTHENE 0.75 lbs
CENTRIC 1.5 oz
VYDATE 10.7 oz
Creo Ad /btSheet Jul-7-09 7 DAT
Creo Ny /btSheet Jul-7-09 7 DAT
Creo Tot /btSheet Jul-7-09 7 DAT
Means followed by same letter do not signficantly differ(P=0.05, LSD)