

Evaluation of Additional Selected Insecticides for Control of Insect Pests of MGVII Soybeans. Beaumont, TX. 2003

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Introduction

Registration of new insect management tools for Texas soybean farmers requires a continual evaluation of novel insecticides for efficacy against soybean insect pests. The purpose of this experiment was to evaluate novel and standard insecticides for activity against the large array of insects attacking MGVII soybeans on the Texas Upper Gulf Coast.

Materials and Methods

This additional soybean insecticide experiment was conducted at the TAMU Agricultural Research and Extension Center at Beaumont in 2003. DP 7220 RR soybeans (Maturity Group VII) were planted into Levac soil on a 30 in. row width at 8-10 seeds per foot of row on 18 Jun. On the following day (19 Jun), First Rate @ 0.75 oz/A and Dual Magnum @ 2.5 pt/A were applied preemergence with a ground rig for early season weed control. Soybeans emerged to a good stand on 24 Jun. Plots were designated into four row blocks and trimmed to 40 ft. long (0.009 acres). The experimental design was a randomized complete block with six treatments (see tables for insecticides and rates) and four replications. Early season weed control was excellent and neither cultivation nor irrigation was required for the remainder of the growing season.

On 8 Oct, pretreatment insect samples were collected from each plot using a 3 ft. wide vertical beat sheet (VBS). Soybeans in a 3 ft. section of row were beat against the VBS 10 times, insects were collected in a trough at the bottom of the VBS and transferred to a plastic bag. This process was repeated three times (for a total of 9 ft. of row) at random locations within a 40 ft. row in each plot. Contents of the plastic bags were frozen and later thawed, identified and counted. Insecticide treatments were applied to the two middle rows of each plot later on the same day with a CO₂-pressurized two row spray boom (two cone nozzles, 50 mesh screens, 5 ft. spray swath, 23 gpa). Soybeans were at late R6 growth stage. Plots received a significant rainfall 24 hours after treatment. VBS samples were again collected on 10, 20 and 29 Oct (2, 12 and 21 days after treatment). Samples were frozen and later thawed, identified and counted to determine efficacy of the treatments. On 10 Nov, the two middle rows (40 ft. long) of each plot were harvested with an Almaco SPC20 plot combine. Yields were determined (adjusted to 13% moisture and 60 lb/bu) and seed quality assessed for each plot. Arthropod counts were transformed using $\sqrt{x+0.5}$ and all data analyzed by ANOVA and LSD.

Results

Pressure from lepidopterous larvae was lower than normal during the experiment; thus no meaningful Lepidoptera data were collected (Tables 1-4). Although a significant rainfall of 5.8 in. occurred 24 hours after treatment applications, considerable stink bug control was evident for some of the treatments (Tables 5-14). At 12 days after application, both Mustang MAX and Karate Z treatments gave good control of southern green stink bug (SGSB), *Nezara viridula*, adults (Table 6). Again, these same treatments appeared to provide some control of green stink bug (GSB), *Acrosternum hilare*, but differences in control were not significant compared to the untreated (Tables 8-10). Brown stink bug (BSB), *Euschistus servus*, populations were relatively high in the experiment (Tables 11-13). At 12 days after application, the high rate of Mustang MAX performed better than the low rate for control of BSB (Table 13). When all phytophagous stink bugs are considered, the high rate of Mustang MAX performed better than all other treatments, but differences in performance were not significant compared to the low rate of Mustang MAX and Karate Z (Table 14). Diamond at the low rate gave about 50% control of all phytophagous stink bugs.

All other populations of arthropods, except assassin bugs, were too low for meaningful evaluation (Tables 15-20). However, at 2 days after treatment applications, significantly more assassin bugs were found in plots treated with the high rate of Diamond compared to the other insecticides (Table 21). Assassin bugs are common natural predators in soybean fields.

Yield and seed quality of all insecticide treated plots were relatively high but, surprisingly, not significantly different compared to the untreated plots (Tables 22 and 23). As mentioned previously, stink bug populations were high during the experiment. Usually, high populations of stink bugs reduce yield and seed quality dramatically. Perhaps variety DP 7220 RR is somewhat tolerant to stink bug damage. This possibility needs to be investigated.

Table 1. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	Pre ^b	O no. soybean looper/9 ft. of row ^a		
			Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	1.0	0.3	0	0
Mustang MAX	0.025 lb(AI)/acre	6.5	0.3	0	0
Karate Z	0.03 lb(AI)/acre	1.5	0.5	0	0
Diamond	6 oz/acre	0.5	0.8	0	0
Diamond	8 oz/acre	1.0	0.3	0	0
Untreated	---	<u>3.3</u>	<u>0.3</u>	<u>0</u>	<u>0</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 2. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	Pre ^b	O no. green cloverworm/9 ft. of row ^a		
			Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	1.0	0.3	0	0
Mustang MAX	0.025 lb(AI)/acre	0.3	0	0	0
Karate Z	0.03 lb(AI)/acre	1.0	0	0	0
Diamond	6 oz/acre	1.0	0	0	0
Diamond	8 oz/acre	1.3	0	0	0
Untreated	---	<u>0.3</u>	<u>0.3</u>	<u>0</u>	<u>0</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly different (NS) at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 3. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. velvetbean caterpillar/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	1.5	0	0	0
Mustang MAX	0.025 lb(AI)/acre	3.3	0	0	0
Karate Z	0.03 lb(AI)/acre	1.5	0.3	0	0
Diamond	6 oz/acre	4.5	0.3	0.5	0
Diamond	8 oz/acre	2.3	0.3	0.3	0
Untreated	---	<u>0.5</u>	<u>0</u>	<u>0</u>	<u>0</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 4. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. lepidopterous larvae/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	3.5	0.5	0	0
Mustang MAX	0.025 lb(AI)/acre	10.0	0.3	0	0
Karate Z	0.03 lb(AI)/acre	4.0	0.8	0	0
Diamond	6 oz/acre	6.0	1.0	0.5	0
Diamond	8 oz/acre	4.5	0.5	0.3	0
Untreated	---	<u>4.0</u>	<u>0.5</u>	<u>0</u>	<u>0</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 5. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. southern green stink bug nymphs/9 ft. or row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	14.8	0b	1.8	1.0
Mustang MAX	0.025 lb(AI)/acre	19.8	0.3b	2.5	1.5
Karate Z	0.03 lb(AI)/acre	19.3	0.3b	2.0	0.8
Diamond	6 oz/acre	16.5	4.8a	1.8	0.8
Diamond	8 oz/acre	13.5	3.8a	4.3	0.8
Untreated	---	<u>13.0</u>	2.5ab	<u>5.0</u>	<u>0.5</u>
		NS		NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 6. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. southern green stink bug adults/9 ft. or row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	1.0	0	0.3c	0.5
Mustang MAX	0.025 lb(AI)/acre	0.8	0	0.3c	1.8
Karate Z	0.03 lb(AI)/acre	0.8	0	1.3bc	0
Diamond	6 oz/acre	0	0	2.8ab	0.5
Diamond	8 oz/acre	0	0	2.8ab	1.0
Untreated	---	<u>0</u>	<u>0</u>	4.3a	<u>1.5</u>
		NS	NS		NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 7. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. southern green stink bug (nymphs + adults)/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	15.8	0b	2.0	1.5
Mustang MAX	0.025 lb(AI)/acre	20.5	0.3b	2.8	3.3
Karate Z	0.03 lb(AI)/acre	20.0	0.3b	3.3	0.8
Diamond	6 oz/acre	16.5	4.8a	4.5	1.3
Diamond	8 oz/acre	13.5	3.8a	7.0	1.8
Untreated	---	<u>13.0</u>	2.5ab	<u>9.3</u>	<u>2.0</u>
		NS		NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 8. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. green stink bug nymphs/9 ft. or row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	5.5	1.5	0.5	0
Mustang MAX	0.025 lb(AI)/acre	6.3	1.0	0.8	0
Karate Z	0.03 lb(AI)/acre	5.5	1.0	0.8	0
Diamond	6 oz/acre	3.8	0	1.8	0
Diamond	8 oz/acre	6.0	2.8	3.3	0
Untreated	---	<u>5.5</u>	<u>4.0</u>	<u>3.8</u>	<u>0</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 9. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. green stink bug adults/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	0.3	0.3	0	0.5
Mustang MAX	0.025 lb(AI)/acre	0.5	0	0	0.3
Karate Z	0.03 lb(AI)/acre	0.8	0.3	0	0.5
Diamond	6 oz/acre	0.3	1.0	0	0.5
Diamond	8 oz/acre	0.5	0	0.3	1.8
Untreated	---	<u>0.5</u>	<u>0</u>	<u>0.3</u>	<u>0</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 10. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. green stink bug (nymphs + adults)/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	5.8	1.8	0.5	0.5
Mustang MAX	0.025 lb(AI)/acre	6.8	1.0	0.8	0.3
Karate Z	0.03 lb(AI)/acre	6.3	1.3	0.8	0.5
Diamond	6 oz/acre	4.0	1.0	1.8	0.5
Diamond	8 oz/acre	6.5	2.8	3.5	1.8
Untreated	---	<u>6.0</u>	<u>4.0</u>	<u>4.0</u>	<u>0</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 11. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. brown stink bug nymphs/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	7.0	4.5	2.5ab	0.3
Mustang MAX	0.025 lb(AI)/acre	6.8	5.0	0.3c	0
Karate Z	0.03 lb(AI)/acre	5.0	1.5	1.0bc	0.3
Diamond	6 oz/acre	5.3	5.8	1.8bc	0.3
Diamond	8 oz/acre	6.5	8.0	2.8ab	0.3
Untreated	---	<u>4.8</u>	<u>9.8</u>	4.0a	<u>0.8</u>
		NS	NS		NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 12. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. brown stink bug adults/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	3.5	5.0	15.5b	3.8
Mustang MAX	0.025 lb(AI)/acre	4.5	4.0	7.8d	12.8
Karate Z	0.03 lb(AI)/acre	5.0	4.3	9.0cd	5.8
Diamond	6 oz/acre	6.8	2.8	14.5bc	9.8
Diamond	8 oz/acre	4.8	6.8	19.8ab	6.5
Untreated	---	<u>3.8</u>	<u>6.0</u>	25.0a	<u>7.3</u>
		NS	NS		NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 13. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. brown stink bug (nymphs + adults)/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	10.5	9.5	18.0b	4.0
Mustang MAX	0.025 lb(AI)/acre	11.3	9.0	8.0d	12.8
Karate Z	0.03 lb(AI)/acre	10.0	5.8	10.0cd	6.0
Diamond	6 oz/acre	12.0	8.5	16.3bc	10.0
Diamond	8 oz/acre	11.3	14.8	22.5ab	6.8
Untreated	---	<u>8.5</u>	<u>15.8</u>	29.0a	<u>8.0</u>
		NS	NS		NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 14. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. phytophagous stink bugs (nymphs + adults)/9 ft. or row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	32.0	11.3	20.5cd	6.0
Mustang MAX	0.025 lb(AI)/acre	38.5	10.3	11.5d	16.3
Karate Z	0.03 lb(AI)/acre	36.3	7.3	14.0cd	7.3
Diamond	6 oz/acre	32.5	14.3	22.5bc	11.8
Diamond	8 oz/acre	31.3	21.3	33.0ab	10.3
Untreated	---	<u>27.5</u>	<u>22.3</u>	42.3a	<u>10.0</u>
		NS	NS		NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 15. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. threecornered alfalfa hopper nymphs/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	4.0	1.5	0.5	0
Mustang MAX	0.025 lb(AI)/acre	0.5	0	0	0
Karate Z	0.03 lb(AI)/acre	3.0	1.0	0.5	0
Diamond	6 oz/acre	2.0	0.3	0.8	0
Diamond	8 oz/acre	0.3	2.3	1.3	0
Untreated	---	<u>1.3</u>	<u>0.5</u>	<u>1.3</u>	<u>0</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 16. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. threecornered alfalfa hopper adults/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	6.0	0	0.3	0
Mustang MAX	0.025 lb(AI)/acre	7.0	0	1.3	0
Karate Z	0.03 lb(AI)/acre	9.3	0.3	1.3	0
Diamond	6 oz/acre	2.0	0.8	1.5	0
Diamond	8 oz/acre	10.5	2.0	1.5	0
Untreated	---	<u>2.0</u>	<u>0.3</u>	<u>0.5</u>	<u>0.3</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 17. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. threecornered alfalfa hopper (nymphs + adults)/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	10.0	1.5	0.8	0
Mustang MAX	0.025 lb(AI)/acre	7.5	0	1.3	0
Karate Z	0.03 lb(AI)/acre	12.3	1.3	1.8	0
Diamond	6 oz/acre	4.0	1.0	2.3	0
Diamond	8 oz/acre	10.8	4.3	2.8	0
Untreated	---	<u>3.3</u>	<u>0.8</u>	<u>1.8</u>	<u>0.3</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 18. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. grasshoppers (nymphs + adults)/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	0	0	0	0.5
Mustang MAX	0.025 lb(AI)/acre	0	0.5	0.5	0
Karate Z	0.03 lb(AI)/acre	0	0	0.5	0
Diamond	6 oz/acre	0.3	0	0.3	0.3
Diamond	8 oz/acre	0	0	0.3	0
Untreated	---	<u>0</u>	<u>0.3</u>	<u>0</u>	<u>0</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 19. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. leafhoppers (nymphs + adults)/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	0	0	0	0
Mustang MAX	0.025 lb(AI)/acre	0	0	0	0
Karate Z	0.03 lb(AI)/acre	0	0	0	0
Diamond	6 oz/acre	0	0	0	0
Diamond	8 oz/acre	0	0.5	0	0
Untreated	---	<u>0</u>	<u>0.3</u>	<u>0</u>	<u>0</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 20. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. spiders/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	2.5	2.8	1.5	0
Mustang MAX	0.025 lb(AI)/acre	2.5	1.5	2.0	0.3
Karate Z	0.03 lb(AI)/acre	3.8	1.0	0.3	0.5
Diamond	6 oz/acre	2.8	1.5	3.8	1.3
Diamond	8 oz/acre	2.5	3.5	3.8	1.0
Untreated	---	<u>1.8</u>	<u>2.8</u>	<u>3.3</u>	<u>0.8</u>
		NS	NS	NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 21. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	O no. assassin bugs (nymphs + adults)/9 ft. of row ^a			
		Pre ^b	Days after application		
			2	12	21
Mustang MAX	0.018 lb(AI)/acre	0.3	2.0b	0.5	0
Mustang MAX	0.025 lb(AI)/acre	0	0.3b	0.3	0.3
Karate Z	0.03 lb(AI)/acre	0.8	0.8b	0	0
Diamond	6 oz/acre	0.3	2.0b	0.8	0
Diamond	8 oz/acre	0.8	5.3a	1.0	0
Untreated	---	<u>1.0</u>	2.3ab	<u>1.0</u>	<u>0</u>
		NS		NS	NS

^aMeans in a column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

^bPretreatment samples collected 2 hours prior to insecticide applications.

Table 22. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	Yield (bu/A) ^a				
		I	II	III	IV	O ^b
Mustang MAX	0.018 lb(AI)/acre	38.5	36.9	38.6	37.2	37.8
Mustang MAX	0.025 lb(AI)/acre	30.9	40.8	38.4	39.6	37.4
Karate Z	0.03 lb(AI)/acre	39.3	39.2	38.9	39.7	39.3
Diamond	6 oz/acre	35.2	38.4	40.3	40.8	38.7
Diamond	8 oz/acre	39.6	40.0	40.5	37.0	39.3
Untreated	---	37.0	41.2	38.0	41.5	<u>39.4</u>
						NS

^aYield (bu/A) adjusted to 13% moisture and 60 lb/bu.

^bMeans in this column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).

Table 23. MGVII soybean insecticide evaluations. Beaumont, TX. 2003

Treatment	Rate	Seed quality (1-5) ^a				
		I	II	III	IV	O ^b
Mustang MAX	0.018 lb(AI)/acre	3.0	3.0	3.0	2.5	2.9
Mustang MAX	0.025 lb(AI)/acre	3.0	2.5	3.0	2.5	2.8
Karate Z	0.03 lb(AI)/acre	2.5	2.5	3.0	2.5	2.6
Diamond	6 oz/acre	3.0	2.5	3.0	3.0	2.9
Diamond	8 oz/acre	2.5	2.5	3.0	3.0	2.8
Untreated	---	3.0	3.0	3.0	2.5	<u>2.9</u>
						NS

^aSeed quality: visual estimate (1 = excellent, 5 = very poor).

^bMeans in this column followed by the same or no letter are not significantly (NS) different at the 5% level (ANOVA, LSD).