

Table 1. Iowa insecticide test information.

Target Pest and Test Location	Type of Test	Entries/ Test ¹	Experimental Unit Size	
			Row Length (ft)	# Reps
Corn Rootworms ²				
Ames	YieldGard Rootworm	5	100	12
Crawfordsville	Experimental	23	50	4
	YieldGard Rootworm	4	100	4
Kanawaha	Experimental	23	50	4
	YieldGard Rootworm	4	200	4
Nashua	Yield	16	100	4
	YieldGard Rootworm	4	200	8
Sutherland	Yield	16	100	4
Seedcorn Maggot ³				
Ames	Seedcorn Maggot	19	20	4
White Grub ⁴				
Kimballton	White Grub	20	50	4
Williams	White Grub	20	50	4
Wireworm				
Ames	Wireworm	24	50	4
Carlisle	Wireworm/White Grub	24	50	4

¹Two randomized check rows in rootworm-experimental and wireworm tests.

²*Diabrotica virgifera virgifera* and *D. barberi*

³*Delia platura*

⁴*Phyllophaga* spp.

Table 2. Average root-injury and product consistency for planting-time insecticide treatments. YieldGard Rootworm test, Ames, IA. 2003¹

Insecticide	Place. ²	Node-Injury ^{3,4,5}	Product Consistency ^{3,5,6}	Percent Lodging ⁷	Stand Count ^{8,9}	Yield (bu/a) ^{9,10}
YieldGard RW	----	0.002 a	100 a	0	27.625	156
Aztec 2.1G	T-band	0.024 a	100 a	0	27.542	145
Force 3G	T-band	0.040 a	99 a	0	27.583	152
Poncho 1250	ST	0.098 a	93 a	0	28.042	154
CHECK	----	0.461 b	59 b	0	26.958	148

¹ Planted May 23 (4-row treatments, 100 long x 12 replications); node-injury evaluated July 16; stand counts June 16; lodging counts October 9; yield October 29, 2003.

² T-band = insecticide applied at planting time.

³ Means based on 120 observations (center 2-rows evaluated x 5 roots/row x 12 replications).

⁴ Iowa State Node-Injury Scale (0-3). Number of full or partial nodes completely eaten.

⁵ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁶ Product consistency = percentage of times nodal injury was 0.25 ($\frac{1}{4}$ node eaten) or less.

⁷ Means based on 24 observations (percentage of plants lodged in 17.5 row-ft x center 2-rows x 12 replications).

⁸ Means based on 24 observations (number of plants in 17.5 row-ft x center 2-rows x 12 replications).

⁹ No significant differences between means (ANOVA, $P \leq 0.05$).

¹⁰ Means based on 12 observations (90 ft from center 2-rows machine harvested x 12 replications).

Table 3. Average root-injury and product consistency for planting-time insecticide treatments. Experimental test, Crawfordsville, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Node-Injury ^{4,5,6}	Product Consistency ^{6,7}
YieldGard RW	Trans.	----	----	0.16 a	85 ab
Counter	20CR	1.2	T-band	0.25 a	90 a
Fortress	2.5G	0.185	Furrow	0.25 a	85 ab
F4644	2EC/4F	0.074/0.92	T/B'cast	0.27 a	80 ab
Aztec	4.67G	0.14	Furrow SB	0.28 a	75 abc
Aztec	2.1G	0.14	Furrow	0.32 a	65 abcd
Fortress	5G	0.15	Furrow SB	0.36 a	70 abc
Aztec	4.67G	0.14	T-band SB	0.37 ab	67 abcd
Force	3G	0.12	T-band	0.38 ab	55 abcde
Fortress	5G	0.185	Furrow SB	0.48 abc	65 abcd
Lorsban	15G	1.2	T-band	0.49 abc	65 abcd
Force	3G	0.12	Furrow	0.50 abc	40 abcdef
Counter	20CR	1.2	Furrow	0.51 abc	30 cdef
Aztec	2.1G	0.14	T-band	0.58 abcd	35 bcdef
HM0117	1.15G	0.092	Furrow	1.02 bcde	20 def
HM0117	1.15G	0.092	T-band	1.04 cde	15 ef
Cruiser	5FS	1.25 mg	ST	1.15 de	5 f
Capture ⁸	2EC	0.074	T-band	1.31 e	0 f
Poncho 1250	600FS	1.25 mg	ST	1.45 e	0 f
CHECK	----	----	----	2.14 f	5 f

¹ Planted May 14, 2003; evaluated July 30, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; T/B'cast = T-band application at planting time and a postemergence broadcast treatment June 12, 2003; SB = SmartBox application; ST = seed treatment.

⁴ Chemical and check means based on 20 observations (5 roots/row x 4 replications).

⁵ Iowa State Node-Injury Scale (0-3). Number of full or partial nodes completely eaten.

⁶ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁷ Product consistency = percentage of times nodal injury was 0.25 ($\frac{1}{4}$ node eaten) or less.

⁸ Five gallons finished spray per 17,424 row-ft.

Table 4. Average stand counts for planting-time insecticide treatments.
Experimental test, Crawfordsville, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Stand Count ^{4,5}
Fortress	2.5G	0.185	Furrow	29.75
Capture ⁸	2EC	0.074	T-band	29.50
Lorsban	15G	1.2	T-band	29.50
HM0117	1.15G	0.092	T-band	29.00
Cruiser	5FS	1.25 mg	ST	29.00
Aztec	4.67G	0.14	Furrow SB	28.25
HM0117	1.15G	0.092	Furrow	28.25
Aztec	2.1G	0.14	T-band	28.25
Counter	20CR	1.2	Furrow	28.00
Force	3G	0.12	T-band	28.00
F4644	2EC/4F	0.074/0.92	T/B'cast	28.00
Poncho 1250	600FS	1.25 mg	ST	27.75
YieldGard RW	Transgenic	----	----	27.75
Aztec	4.67G	0.14	T-band SB	27.50
Fortress	5G	0.15	Furrow SB	27.50
Fortress	5G	0.185	Furrow SB	27.25
CHECK	----	----	----	27.25
Force	3G	0.12	Furrow	26.75
Counter	20CR	1.2	T-band	26.75
Aztec	2.1G	0.14	Furrow	26.50

¹ Planted May 14, 2003; evaluated June 12, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; T/B'cast = T-band application at planting time and a postemergence broadcast treatment June 12, 2003; SB = SmartBox application; ST = seed treatment.

⁴ Means based on 4 observations (17.5 row-ft/treatment x 4 replications).

⁵ No significant differences between means (ANOVA, $P \leq 0.05$).

⁶ Five gallons finished spray per 17,424 row-ft.

Table 5. Average percent lodging for planting-time insecticide treatments.
Experimental test, Crawfordsville, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	% Lodging ^{4,5}
Aztec	4.67G	0.14	Furrow SB	0 a
Aztec	4.67G	0.14	T-band SB	0 a
Aztec	2.1G	0.14	Furrow	0 a
Aztec	2.1G	0.14	T-band	0 a
Counter	20CR	1.2	Furrow	0 a
Counter	20CR	1.2	T-band	0 a
F4644	2EC/4F	0.074/0.92	T/B'cast	0 a
Force	3G	0.12	T-band	0 a
Force	3G	0.12	Furrow	0 a
Fortress	2.5G	0.185	Furrow	0 a
Fortress	5G	0.15	Furrow SB	0 a
Fortress	5G	0.185	Furrow SB	0 a
Lorsban	15G	1.2	T-band	0 a
YieldGard RW	Transgenic	----	----	0 a
HM0117	1.15G	0.092	T-band	1 a
Poncho 1250	600FS	1.25 mg	ST	2 a
Cruiser	5FS	1.25 mg	ST	5 a
HM0117	1.15G	0.092	Furrow	5 a
Capture ⁶	2EC	0.074	T-band	16 a
CHECK	----	----	----	32 b

¹ Planted May 14, 2003; evaluated September 30, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; T/B'cast = T-band application at planting time and a postemergence broadcast treatment June 12, 2003; SB = SmartBox application; ST = seed treatment.

⁴ Means based on 4 observations (lodged plants/17.5 row-ft x 4 replications).

⁵ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁶ Five gallons finished spray per 17,424 row-ft.

Table 6. Average yield for planting-time insecticide treatments. Experimental test (non-registered treatments deleted), Crawfordsville, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Bushels/ Acre ^{4,5}
YieldGard RW	Transgenic	----	----	144 a
Cruiser	5FS	1.25 mg	ST	134 ab
Force	3G	0.12	T-band	120 abc
Fortress	2.5G	0.185	Furrow	120 abc
Force	3G	0.12	Furrow	118 abc
Aztec	2.1G	0.14	Furrow	115 bc
Aztec	4.67G	0.14	T-band SB	114 bc
Fortress	5G	0.185	Furrow SB	110 bc
Aztec	2.1G	0.14	T-band	109 bc
Poncho 1250	600FS	1.25 mg	ST	105 bc
Lorsban	15G	1.2	T-band	104 bc
Aztec	4.67G	0.14	Furrow SB	103 c
CHECK	----	----	----	100 c
Counter	20CR	1.2	Furrow	99 c
Counter	20CR	1.2	T-band	98 c
Capture ⁶	2EC	0.074	T-band	90 c

¹ Planted May 14, 2003; evaluated September 30, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; SB = SmartBox application; ST = seed treatment.

⁴ Means based on 4 observations (hand harvested 17.5 row-ft/treatment x 4 replications).

⁵ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁶ Five gallons finished spray per 17,424 row-ft.

Table 7. Average root-injury and product consistency for planting-time insecticide treatments. YieldGard Rootworm test, Crawfordsville, IA. 2003¹

Insecticide	Place. ²	Node-Injury ^{3,4,5}	Product Consistency ^{3,5,6}	Percent Lodging ^{5,7}	Stand Count ^{8,9}	Yield (bu/a) ^{5,10}
YieldGard RW	----	0.04 a	100 a	0 a	28.125	149 a
Force 3G	T-band	0.39 a	58 b	0 a	28.500	109 b
Aztec 2.1G	T-band	0.39 a	63 b	0 a	27.625	92 c
CHECK	----	2.36 b	0 c	47 b	27.875	93 c

¹ Planted May 14 (4-row treatments, 100 long x 4 replications); node-injury evaluated July 30; stand and lodging September 30; yield October 6, 2003.

² T-band = insecticide applied at planting time.

³ Means based on 40 observations (center 2-rows evaluated x 5 roots/row x 4 replications).

⁴ Iowa State Node-Injury Scale (0-3). Number of full or partial nodes completely eaten.

⁵ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁶ Product consistency = percentage of times nodal injury was 0.25 ($\frac{1}{4}$ node eaten) or less.

⁷ Means based on 8 observations (percentage of plants lodged in 17.5 row-ft x center 2-rows x 4 replications).

⁸ Means based on 8 observations (number of plants in 17.5 row-ft x center 2-rows x 4 replications).

⁹ No significant differences between means (ANOVA, $P \leq 0.05$).

¹⁰ Means based on 4 observations (89 ft from center 2-rows machine harvested x 4 replications).

Table 8. Average root-injury and product consistency for planting-time insecticide treatments. Experimental test, Kanawha, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Node-Injury ^{4,5,6}	Product Consistency ^{7,8}
Aztec	4.67G	0.14	Furrow SB	0.000 a	100
Aztec	4.67G	0.14	T-band SB	0.000 a	100
Fortress	5G	0.185	Furrow SB	0.000 a	100
Counter	20CR	1.2	Furrow	0.000 a	100
F4644	2EC/4F	0.074/0.92	T/B'cast	0.000 a	100
YieldGard RW	Trans.	----	----	0.000 a	100
Fortress	5G	0.15	Furrow SB	0.001 a	100
Force	3G	0.12	T-band	0.001 a	100
Aztec	2.1G	0.14	Furrow	0.001 a	100
Counter	20CR	1.2	T-band	0.002 a	100
HM0117	1.15G	0.09	Furrow	0.003 a	100
Capture ⁹	2EC	0.074	T-band	0.003 a	100
Force	3G	0.12	Furrow	0.004 a	100
Aztec	2.1G	0.14	T-band	0.004 a	100
Lorsban	15G	1.2	T-band	0.004 a	100
Fortress	2.5G	0.185	Furrow	0.007 a	100
Poncho 1250	600FS	1.25 mg	ST	0.007 a	100
HM0117	1.15G	0.09	T-band	0.009 a	100
Cruiser	5FS	1.25 mg	ST	0.013 a	100
CHECK	----	----	----	0.082 b	95

¹ Planted April 28, 2003; evaluated July 10, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; T/B'cast = T-band application at planting time and a postemergence broadcast treatment June 4, 2003; SB = SmartBox application; ST = seed treatment.

⁴ Chemical and check means based on 40 observations (2-row treatments x 5 roots/row x 4 replications).

⁵ Iowa State Node-Injury Scale (0-3). Number of full or partial nodes completely eaten.

⁶ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁷ Product consistency = percentage of times nodal injury was 0.25 ($\frac{1}{4}$ node eaten) or less.

⁸ No significant differences between means (ANOVA, $P \leq 0.05$).

⁹ Five gallons finished spray per 17,424 row-ft.

Table 9. Average stand counts for planting-time insecticide treatments.
Experimental Test, Kanawha, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Stand Count ^{4,5}
Force	3G	0.12	Furrow	30.50
Aztec	4.67G	0.14	Furrow SB	29.75
HM0117	1.15G	0.09	T-band	29.75
Force	3G	0.12	T-band	29.50
Aztec	2.1G	0.14	T-band	29.50
Aztec	4.67G	0.14	T-band SB	28.75
HM0117	1.15G	0.09	Furrow	28.75
Capture ⁶	2EC	0.074	T-band	28.75
Poncho 1250	600FS	1.25 mg	ST	28.75
Counter	20CR	1.2	Furrow	28.50
Aztec	2.1G	0.14	Furrow	28.50
Cruiser	5FS	1.25 mg	ST	28.50
Lorsban	15G	1.2	T-band	28.50
CHECK	----	----	----	28.38
F4644	2EC/4F	0.074/0.92	T/B'cast	28.25
Counter	20CR	1.2	T-band	28.25
Fortress	5G	0.185	Furrow SB	28.00
Fortress	2.5G	0.185	Furrow	28.00
YieldGard RW	Trans.	----	----	28.00
Fortress	5G	0.15	Furrow SB	27.50

¹ Planted April 28, 2003; evaluated June 4, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; T/B'cast = T-band application at planting time and a postemergence broadcast treatment June 4, 2003; SB = SmartBox application; ST = seed treatment.

⁴ Means based on 4 observations (17.5 row- ft/treatment x 4 replications).

⁵ No significant differences between means (ANOVA, $P \leq 0.05$).

⁶ Five gallons finished spray per 17,424 row-ft.

Table 10. Average root-injury and product consistency for planting-time insecticide treatments. YieldGard Rootworm test, Kanawha, IA. 2003¹

Insecticide	Place. ²	Node-Injury ^{3,4,5}	Product Consistency ^{3,5,6}	Percent Lodging ^{7,8}	Stand Count ^{5,9}	Yield (bu/a) ^{5,10}
YieldGard RW	----	0.01 a	100 a	0	30.125 a	184 b
Force 3G	T-band	0.03 a	100 a	0	30.000 a	195 a
Aztec 2.1G	T-band	0.07 a	95 a	0	28.000 b	194 a
CHECK	----	0.37 b	55 b	0	29.125 ab	190 ab

¹ Planted April 28 (4-row treatments, 200 long x 4 replications); node-injury evaluated July 10; stand and lodging August 6; yield October 9, 2003.

² T-band = insecticide applied at planting time.

³ Means based on 40 observations (center 2-rows evaluated x 5 roots/row x 4 replications).

⁴ Iowa State Node-Injury Scale (0-3). Number of full or partial nodes completely eaten.

⁵ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁶ Product consistency = percentage of times nodal injury was 0.25 ($\frac{1}{4}$ node eaten) or less.

⁷ Means based on 8 observations (percentage of plants lodged in 17.5 row-ft x center 2-rows x 4 replications).

⁸ No significant differences between means (ANOVA, $P \leq 0.05$).

⁹ Means based on 8 observations (number of plants in 17.5 row-ft x center 2-rows x 4 replications).

¹⁰ Means based on 4 observations (190 ft from center 2-rows machine harvested x 4 replications).

Table 11. Average root-injury and product consistency for planting-time insecticide treatments. Yield test, Nashua, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Node-Injury ^{4,5,6}	Product Consistency ^{6,7}
YieldGard RW	Trans.	----	----	0.03 a	100 a
Aztec	2.1G	0.14	Furrow	0.23 ab	80 a
Aztec	4.67G	0.14	Furrow SB	0.30 abc	73 ab
Force	3G	0.12	Furrow	0.31 abc	78 a
Aztec	4.67G	0.14	T-band SB	0.38 abcd	73 ab
Force	3G	0.12	T-band	0.39 abcd	70 ab
Aztec	2.1G	0.14	T-band	0.59 bcde	29 c
Fortress	2.5G	0.185	Furrow	0.62 bcde	41 bc
Counter	20CR	1.2	Furrow	0.78 cdef	25 c
Counter	20CR	1.2	T-band	0.86 def	33 c
Fortress	5G	0.185	Furrow SB	0.91 ef	30 c
Poncho 1250	600FS	1.25 mg	ST	1.07 ef	23 c
Capture ⁸	2EC	0.074	T-band	1.16 f	10 c
Lorsban	15G	1.2	T-band	1.23 f	14 c
Cruiser	5FS	1.25 mg	ST	1.84 g	8 c
CHECK	----	----	----	2.46 h	0 d

¹ Planted April 26, 2003; evaluated July 17, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; SB= SmartBox application; ST = seed treatment.

⁴ Chemical and check means based on 40 observations (2-row treatments x 5 roots/row x 4 replications).

⁵ Iowa State Node-Injury Scale (0-3). Number of full or partial nodes completely eaten.

⁶ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁷ Product consistency = percentage of times nodal injury was 0.25 (¼ node eaten) or less.

⁸ Five gallons finished spray per 17,424 row-ft.

Table 12. Average stand counts for planting-time insecticide treatments.
Yield test, Nashua, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Stand Count ^{4,5}
Aztec	2.1G	0.14	Furrow	27.75
Aztec	4.67G	0.14	Furrow SB	27.63
Aztec	2.1G	0.14	T-band	27.63
Aztec	4.67G	0.14	T-band SB	27.38
Fortress	5G	0.185	Furrow SB	27.25
Capture ⁶	2EC	0.074	T-band	27.25
Counter	20CR	1.2	Furrow	27.13
CHECK	----	----	----	27.00
Counter	20CR	1.2	T-band	27.00
Fortress	2.5G	0.185	Furrow	26.75
YieldGard RW	Trans.	----	----	26.63
Force	3G	0.12	Furrow	26.50
Lorsban	15G	1.2	T-band	26.38
Cruiser	5FS	1.25 mg	ST	25.88
Force	3G	0.12	T-band	25.50
Poncho 1250	600FS	1.25 mg	ST	25.25

¹ Planted April 26, 2003; evaluated June 3, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; SB= SmartBox application; ST = seed treatment.

⁴ Means based on 8 observations (2-row treatments x 17.5 row-ft/treatment x 4 replications).

⁵ No significant differences between means (ANOVA, $P \leq 0.05$).

⁶ Five gallons finished spray per 17,424 row-ft.

Table 13. Average percent lodging for planting-time insecticide treatments.
Yield test, Nashua, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	% Lodging ^{4,5}
Aztec	2.1G	0.14	Furrow	0 a
Aztec	2.1G	0.14	T-band	0 a
Aztec	4.67G	0.14	Furrow SB	0 a
Aztec	4.67G	0.14	T-band SB	0 a
Capture ⁶	2EC	0.074	T-band	0 a
Counter	20CR	1.2	Furrow	0 a
Force	3G	0.12	Furrow	0 a
Force	3G	0.12	T-band	0 a
Fortress	5G	0.185	Furrow SB	0 a
Poncho 1250	600FS	1.25 mg	ST	0 a
YieldGard RW	Trans.	----	----	0 a
Fortress	2.5G	0.185	Furrow	1 a
Counter	20CR	1.2	T-band	1 a
Lorsban	15G	1.2	T-band	3 a
Cruiser	5FS	1.25 mg	ST	33 b
CHECK	----	----	----	34 b

¹ Planted April 26, 2003; evaluated September 22, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; SB = SmartBox application; ST = seed treatment.

⁴ Means based on 8 observations (lodged plants/17.5 row-ft x 2-row trt x 4 replications).

⁵ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁶ Five gallons finished spray per 17,424 row-ft.

Table 14. Average yield for planting-time insecticide treatments. Yield test, Nashua, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Bushels/ Acre ^{4,5}
YieldGard RW	Trans.	----	----	133 a
Force	3G	0.12	T-band	128 ab
Poncho 1250	600FS	1.25 mg	ST	126 abc
Cruiser	5FS	1.25 mg	ST	121 abc
Force	3G	0.12	Furrow	121 abc
Aztec	2.1G	0.14	Furrow	120 abc
Capture ⁶	2EC	0.074	T-band	119 abc
Aztec	4.67G	0.14	Furrow SB	117 abc
Fortress	2.5G	0.185	Furrow	116 abc
Counter	20CR	1.2	T-band	114 abc
Fortress	5G	0.185	Furrow SB	114 abc
Counter	20CR	1.2	Furrow	111 bc
Aztec	4.67G	0.14	T-band SB	111 bc
Aztec	2.1G	0.14	T-band	110 bc
Lorsban	15G	1.2	T-band	107 bc
CHECK	----	----	----	106 c

¹ Planted April 26, 2003; machine harvested October 21, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; SB = SmartBox application; ST = seed treatment.

⁴ Means based on 4 observations (87 ft x 2-row treatment x 4 replications).

⁵ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁶ Five gallons finished spray per 17,424 row-ft.

Table 15. Average root-injury and product consistency for planting-time insecticide treatments. YieldGard Rootworm test, Nashua, IA. 2003¹

Insecticide	Place. ²	Node-Injury ^{3,4,5}	Product Consistency ^{3,5,6}	Percent Lodging ⁷	Stand Count ^{5,8}	Yield (bu/a) ^{9,10}
YieldGard RW	----	0.003 a	100 a	0	27.563 a	112
Aztec 2.1G	T-band	0.134 a	95 a	0	27.625 a	117
Force 3G	T-band	0.154 a	97 a	0	27.500 a	120
CHECK	----	0.809 b	34 b	0	25.938 b	121

¹ Planted April 26 (4-row treatments, 200 long x 8 replications); node-injury evaluated July 17; stand and lodging September 22; yield October 21, 2003.

² T-band = insecticide applied at planting time.

³ Means based on 80 observations (center 2-rows evaluated x 5 roots/row x 8 replications).

⁴ Iowa State Node-Injury Scale (0-3). Number of full or partial nodes completely eaten.

⁵ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁶ Product consistency = percentage of times nodal injury was 0.25 ($\frac{1}{4}$ node eaten) or less.

⁷ Means based on 16 observations (percentage of plants lodged in 17.5 row-ft x center 2-rows x 8 replications).

⁸ Means based on 16 observations (number of plants in 17.5 row-ft x center 2-rows x 8 replications).

⁹ No significant differences between means (ANOVA, $P \leq 0.05$).

¹⁰ Means based on 8 observations (190 ft from center 2-rows machine harvested x 8 replications).

Table 16. Average root-injury and product consistency for planting-time insecticide treatments. Yield test, Sutherland, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Node-Injury ^{4,5,6}	Product Consistency ^{6,7}
YieldGard RW	Trans.	----	----	0.01 a	100 a
Counter	20CR	1.2	T-band	0.04 a	100 a
Counter	20CR	1.2	Furrow	0.05 a	100 a
Force	3G	0.12	T-band	0.08 a	100 a
Aztec	4.67G	0.14	T-band SB	0.10 ab	100 a
Force	3G	0.12	Furrow	0.11 ab	100 a
Fortress	5G	0.185	Furrow SB	0.11 ab	100 a
Aztec	2.1G	0.14	T-band	0.12 ab	100 a
Fortress	2.5G	0.185	Furrow	0.13 ab	95 ab
Aztec	2.1G	0.14	Furrow	0.14 ab	98 a
Aztec	4.67G	0.14	Furrow SB	0.16 ab	95 ab
Lorsban	15G	1.2	T-band	0.19 ab	88 ab
Capture ⁸	2EC	0.074	T-band	0.45 bc	70 b
Poncho 1250	600FS	1.25 mg	ST	0.58 c	38 c
Cruiser	5FS	1.25 mg	ST	1.07 d	15 cd
CHECK	----	----	----	1.24 d	8 d

¹ Planted May 2, 2003; evaluated July 22, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; SB= SmartBox application; ST = seed treatment.

⁴ Chemical and check means based on 40 observations (2-row treatments x 5 roots/row x 4 replications).

⁵ Iowa State Node-Injury Scale (0-3). Number of full or partial nodes completely eaten.

⁶ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁷ Product consistency = percentage of times nodal injury was 0.25 ($\frac{1}{4}$ node eaten) or less.

⁸ Five gallons finished spray per 17,424 row-ft.

Table 17. Average stand counts for planting-time insecticide treatments. Yield test, Sutherland, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Stand Count ^{4,5}
Cruiser	5FS	1.25 mg	ST	28.63
Aztec	4.67G	0.14	Furrow SB	28.50
Aztec	2.1G	0.14	Furrow	28.50
Force	3G	0.12	T-band	28.13
Lorsban	15G	1.2	T-band	28.13
Fortress	2.5G	0.185	Furrow	28.00
YieldGard RW	Trans.	----	----	28.00
Force	3G	0.12	Furrow	27.88
Counter	20CR	1.2	T-band	27.88
Poncho 1250	600FS	1.25 mg	ST	27.75
Aztec	2.1G	0.14	T-band	27.38
Aztec	4.67G	0.14	T-band SB	27.13
Fortress	5G	0.185	Furrow SB	29.88
CHECK	----	----	----	26.88
Capture ⁶	2EC	0.074	T-band	26.63
Counter	20CR	1.2	Furrow	26.25

¹ Planted May 2, 2003; evaluated June 9, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; SB= SmartBox application; ST = seed treatment.

⁴ Means based on 8 observations (2-row treatments x 17.5 row- ft/treatment x 4 replications).

⁵ No significant differences between means (ANOVA, $P \leq 0.05$).

⁶ Five gallons of finished spray per 17,424 row-ft.

Table 18. Average percent lodging for planting-time insecticide treatments.
Yield test, Sutherland, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	% Lodging ^{4,5}
Aztec	4.67G	0.14	Furrow SB	0 a
Aztec	4.67G	0.14	T-band SB	0 a
Aztec	2.1G	0.14	Furrow	0 a
Aztec	2.1G	0.14	T-band	0 a
Capture ⁶	2EC	0.074	T-band	0 a
Counter	20CR	1.2	Furrow	0 a
Counter	20CR	1.2	T-band	0 a
Cruiser	5FS	1.25 mg	ST	0 a
Force	3G	0.12	Furrow	0 a
Force	3G	0.12	T-band	0 a
Fortress	5G	0.185	Furrow SB	0 a
Fortress	2.5G	0.185	Furrow	0 a
Lorsban	15G	1.2	T-band	0 a
Poncho 1250	600FS	1.25 mg	ST	0 a
YieldGard RW	Trans.	----	----	0 a
CHECK	----	----	----	1 b

¹ Planted May 2, 2003; evaluated October 8, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; SB = SmartBox application; ST = seed treatment.

⁴ Means based on 8 observations (lodged plants/17.5 row-ft x 2-row trt x 4 replications).

⁵ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁶ Five gallons finished spray per 17,424 row-ft.

Table 19. Average yield for planting-time insecticide treatments. Yield test, Sutherland, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Bushels/ Acre ^{4,5}
Fortress	5G	0.185	Furrow SB	211 a
Poncho 1250	600FS	1.25 mg	ST	208 ab
Aztec	2.1G	0.14	Furrow	202 ab
Capture ⁶	2EC	0.074	T-band	201 ab
Force	3G	0.12	Furrow	201 ab
Aztec	4.67G	0.14	Furrow SB	199 ab
Cruiser	5FS	1.25 mg	ST	199 ab
Counter	20CR	1.2	Furrow	198 ab
YieldGard RW	Trans.	----	----	197 ab
Force	3G	0.12	T-band	196 ab
Aztec	4.67G	0.14	T-band SB	196 ab
Fortress	2.5G	0.185	Furrow	196 ab
Lorsban	15G	1.2	T-band	193 ab
CHECK	----	----	----	191 ab
Aztec	2.1G	0.14	T-band	191 ab
Counter	20CR	1.2	T-band	188 b

¹ Planted May 2, 2003; machine harvested October 20, 2003.

² Ounces a.i. per 1,000 row-ft; Cruiser and Poncho ST listed as a.i. per seed.

³ T-band & Furrow = insecticide applied at planting time; SB = SmartBox application; ST = seed treatment.

⁴ Means based on 4 observations (87 ft x 2-row treatment x 4 replications).

⁵ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁶ Five gallons finished spray per 17,424 row-ft.

Table 20. Summary of 2003 YieldGard Rootworm tests. Node-injury and yield examined under light and moderate-to-heavy corn rootworm feeding pressures.

	CHECK < 1.00 Node ¹		CHECK > 1.00 Node ²	
	Node-Injury ^{3,4,5}	Yield (bu/a) ^{6,7}	Node-Injury ^{3,5,8}	Yield (bu/a) ^{5,9}
YGRW	0.003 a	146.2	0.03 a	159.3 a
Insecticides ¹⁰	0.074 b	145.8	0.33 b	137.5 b
CHECK	0.563 c	145.7	2.02 c	130.1 b

¹ Large-Scale YGRW tests at Ames, Kanawha, and Nashua (moisture stress at Nashua).

² Large-Scale YGRW test at Crawfordsville; regular yield tests at Nashua and Sutherland (moisture stress at Crawfordsville and Nashua).

³ Iowa State Node-Injury Scale (0-3). Number of full or partial nodes completely eaten.

⁴ Means based on 240 observations (2-row treatment x 5 roots/row x 24 replications).

⁵ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁶ Means based on 24 observations (2-row treatment x 24 replications).

⁷ No significant differences between means (ANOVA, $P \leq 0.05$).

⁸ Means based on 120 observations (2-row treatment x 5 roots/row x 12 replications).

⁹ Means based on 12 observations (2-row treatment x 12 replications).

¹⁰ Averages of Aztec 2.1G and Force 3G insecticide treatments applied T-band at planting.

Table 21. Average stand counts for planting-time insecticide treatments.
Seedcorn maggot test, Ames, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Stand Count ^{4,5}
Fortress	2.5G	0.15	Furrow	23.00
UNBAITED CHECK	----	----	----	22.75
Aztec	2.1G	0.14	Furrow	22.75
Lorsban	15G	1.2	Furrow	22.75
Cruiser	5FS	0.5mg/seed	ST	22.25
Poncho 250	600FS	0.25mg/seed	ST	22.25
Agrox Premiere	ST	1.5 oz/42# seed	ST	22.00
Counter	20CR	1.2	Furrow	21.75
Cruiser	5FS	0.25mg/seed	ST	21.25
Gaicho	600FS	0.16 mg/seed	ST	21.25
BAITED CHECK	----	----	----	20.75
Force	3G	0.15	Furrow	20.75
Cruiser/Force	5FS/3G	0.125mg/0.09	ST/Furrow	20.25
Force	3G	0.09	Furrow	20.25
AGST 02002	ST	1.5 oz/42# seed	ST	20.25
Cruiser	5FS	50g/100Kg	ST	20.00
AGST 03001	ST	1.5 oz/42# seed	ST	20.00
Cruiser	5FS	0.125mg/seed	ST	19.75

¹ Row furrows baited April 23, 2003; re-baited May 1, 2003; hand planted and insecticide treatments applied May 3, 2003; stand counts taken on May 23, 2003.

² Granular formulations as ounces a.i. per 1,000 row-ft.

³ ST = seed treatment; Furrow = insecticide applied at planting time.

⁴ Means based on 4 observations (15 row-ft/treatment x 4 replications).

⁵ No significant differences between means (ANOVA, $P \leq 0.05$).

Table 22. Average percentage of damaged seeds/seedlings and damage ratings for planting-time insecticide treatments. Seedcorn maggot test, Ames, IA. 2003¹

Insecticide	Form.	Rate ²	Place. ³	% Damage ^{4,5}	Damage Rating ^{4,5,6}
Lorsban	15G	1.2	Furrow	3 a	1.03 a
Counter	20CR	1.2	Furrow	5 a	1.05 a
Agrox Premiere	ST	1.5 oz/42# seed	ST	5 a	1.05 a
UNBAITED CHECK	----	----	----	8 a	1.13 ab
Fortress	2.5G	0.15	Furrow	10 ab	1.10 ab
Aztec	2.1G	0.14	Furrow	13 abc	1.13 ab
AGST 02002	ST	1.5 oz/42# seed	ST	13 abc	1.15 ab
Poncho 250	600FS	0.25 mg/seed	ST	28 abcd	1.35 abc
Cruiser	5FS	0.5 mg/seed	ST	38 abcde	1.43 abcd
Cruiser	5FS	0.25 mg/seed	ST	55 bcdef	1.65 abcde
Gaucho	600FS	0.16 mg/seed	ST	58 cdef	1.60 abcde
Force	3G	0.15	Furrow	60 def	1.98 cde
Cruiser	5FS	0.125 mg/seed	ST	60 def	1.98 cde
Cruiser	5FS	50g/100Kg	ST	63 def	1.83 bcde
AGST 03001	ST	1.5 oz/41#seed	ST	73 def	2.10 de
BAITED CHECK	----	----	----	83 ef	2.03 cde
Cruiser/Force	5FS/3G	0.125mg/0.09	ST/Furrow	85 f	2.28 e
Force	3G	0.09	Furrow	92 f	2.20 e

¹ Row furrows baited April 23, 2003; re-baited May 1, 2003; hand planted and insecticide treatments applied May 3, 2003; evaluated for damage on May 23, 2003.

² Granular formulations expressed as ounces a.i. per 1,000 row-ft.

³ ST = seed treatment; Furrow = insecticide applied at planting time.

⁴ Means based on 8 observations (two 5-plant evaluations/treatment x 4 replications).

⁵ Means sharing a common letter do not differ significantly according to Ryan's Q Test ($P \leq 0.05$).

⁶ Rating scale: (1) seed/seedling undamaged, (2) seed/seedling damaged but plant established, (3) seed/seedling damaged, plant showing some signs of stress, (4) seed/seedling damaged, no plant or questionable establishment.

Table 23. Average stand counts for planting-time insecticide treatments. White grub test, Kimballton, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Stand Count ^{4,5}
Cruiser/Force	5FS/3G	0.125mg/0.09	ST/Furrow	31.25
Force	3G	0.09	Furrow	31.25
AGST 02002	ST	1.5 oz/42# seed	ST	30.50
Cruiser	5FS	0.5mg/seed	ST	30.25
CHECK	----	----	----	30.25
Gaucho	600FS	0.16 mg/seed	ST	30.25
Fortress	5G	0.15	Furrow SB	30.00
Fortress	2.5G	0.15	Furrow	30.00
Aztec	2.1G	0.14	Furrow	30.00
L1282-A1	ST	1.5 oz/42# seed	ST	30.00
Capture ⁶	2EC	0.0368	Furrow	29.50
Aztec	4.67G	0.14	Furrow SB	29.25
Cruiser	5FS	0.125mg/seed	ST	29.00
Cruiser	5FS	50g/100Kg	ST	29.00
AGST 03001	ST	1.5 oz/42# seed	ST	28.25
Poncho 250	600FS	0.25 mg/seed	ST	27.75
Counter	20CR	1.2	Furrow	27.75
Lorsban	15G	1.2	Furrow	27.50
Cruiser	5FS	0.25mg/seed	ST	27.00
Agrox Premiere	ST	1.5 oz/42# seed	ST	26.75

¹ Field planted May 21, 2003; evaluated June 18, 2003.

² Granular and liquid formulations expressed as ounces a.i. per 1,000 row-ft.

³ ST = seed treatment; Furrow = insecticide applied at planting time; SB = SmartBox.

⁴ Means based on 4 observations (17.5 row-ft/treatment x 4 replications).

⁵ No significant differences between means (ANOVA, $P \leq 0.05$).

⁶ Five gallons of finished spray per 17,424 row-ft.

Table 24. Average percentage of damaged seeds/seedlings and damage ratings for planting-time insecticide treatments. White grub test, Kimballton, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	% Dam. ^{4,5}	Damage Rating ^{4,5,6}
Gaucho	600FS	0.16 mg/seed	ST	3	1.03
AGST 02002	ST	1.5 oz/42# seed	ST	5	1.05
AGST 03001	ST	1.5 oz/42# seed	ST	5	1.10
Fortress	2.5G	0.15	Furrow	8	1.08
Cruiser	5FS	0.5mg/seed	ST	8	1.08
Cruiser/Force	5FS/3G	0.125mg/0.09	ST/Furrow	8	1.08
Force	3G	0.09	Furrow	8	1.10
Cruiser	5FS	0.25mg/seed	ST	10	1.10
Aztec	2.1G	0.14	Furrow	10	1.10
CHECK	----	----	----	13	1.13
Lorsban	15G	1.2	Furrow	13	1.13
Fortress	5G	0.15	Furrow SB	13	1.20
Agrox Premiere	ST	1.5 oz/42# seed	ST	13	1.15
Poncho 250	600FS	0.25 mg/seed	ST	15	1.18
Counter	20CR	1.2	Furrow	15	1.18
L1282-A1	ST	1.5 oz/42# seed	ST	15	1.23
Cruiser	5FS	50g/100Kg	ST	20	1.28
Cruiser	5FS	0.125mg/seed	ST	23	1.35
Aztec	4.67G	0.14	Furrow SB	28	1.33
Capture ⁷	2EC	0.0368	Furrow	28	1.33

¹ Field planted May 21, 2003; evaluated June 18, 2003.

² Granular and liquid formulations expressed as ounces a.i. per 1,000 row-ft.

³ ST = seed treatment; Furrow = insecticide applied at planting time; SB = SmartBox.

⁴ Means based on 8 observations (two 5-plant evaluations/treatment x 4 replications).

⁵ No significant differences between means (ANOVA, $P \leq 0.05$).

⁶ Rating scale: (1) seed/seedling undamaged, (2) seed/seedling damaged but plant established, (3) seed/seedling damaged, plant showing some signs of stress, (4) seed/seedling damaged, no plant or questionable establishment.

⁷ Five gallons of finished spray per 17,424 row-ft.

Table 25. Average stand counts for planting-time insecticide treatments.
White grub test, Williams, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Stand Count ^{4,5}
Fortress	2.5G	0.15	Furrow	30.33
Poncho 250	600FS	0.25 mg/seed	ST	30.00
Aztec	4.67G	0.14	Furrow SB	29.67
Cruiser	5FS	0.125mg/seed	ST	29.67
Cruiser	5FS	0.25mg/seed	ST	29.67
AGST 02002	ST	1.5 oz/42# seed	ST	29.67
Agrox Premiere	ST	1.5 oz/42# seed	ST	29.67
AGST 03001	ST	1.5 oz/42# seed	ST	29.33
CHECK	----	----	----	29.00
Counter	20CR	1.2	Furrow	29.00
Cruiser	5FS	50g/100Kg	ST	28.67
Lorsban	15G	1.2	Furrow	28.67
Cruiser	5FS	0.5mg/seed	ST	28.33
Cruiser/Force	5FS/3G	0.125mg/0.09	ST/Furrow	28.33
Force	3G	0.09	Furrow	28.33
Aztec	2.1G	0.14	Furrow	28.33
Capture ⁶	2EC	0.0368	Furrow	28.33
L1282-A1	ST	1.5 oz/42# seed	ST	28.33
Fortress	5G	0.15	Furrow SB	27.67
Gaicho	600FS	0.16 mg/seed	ST	27.33

¹ Field planted May 13, 2003; evaluated June 5, 2003.

² Granular and liquid formulations expressed as ounces a.i. per 1,000 row-ft.

³ ST = seed treatment; Furrow = insecticide applied at planting time; SB = SmartBox.

⁴ Means based on 3 observations (17.5 row-ft/treatment x 3 replications).

⁵ No significant differences between means (ANOVA, $P \leq 0.05$).

⁶ Five gallons of finished spray per 17,424 row-ft.

Table 26. Average percentage of damaged seeds/seedlings and damage ratings for planting-time insecticide treatments. White gub test, Williams, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	% Dam. ^{4,5}	Damage Rating ^{4,5,6}
Agrox Premiere	ST	1.5 oz/42# seed	ST	0	1.00
AGST 02002	ST	1.5 oz/42# seed	ST	0	1.00
Counter	20CR	1.2	Furrow	0	1.00
Cruiser	5FS	0.25mg/sd	ST	0	1.00
Cruiser/Force	5FS/3G	0.125mg/0.09	ST/Furrow	0	1.00
Force	3G	0.09	Furrow	0	1.00
Gaucho	600FS	0.16 mg/seed	ST	0	1.00
L1282-A1	ST	1.5 oz/42# seed	ST	0	1.00
Fortress	5G	0.15	Furrow SB	3	1.03
Fortress	2.5G	0.15	Furrow	3	1.03
Aztec	4.67G	0.14	Furrow SB	3	1.03
Cruiser	5FS	0.5mg/seed	ST	3	1.03
Poncho 250	600FS	0.25 mg/seed	ST	3	1.03
AGST 03001	ST	1.5 oz/42# seed	ST	3	1.03
Lorsban	15G	1.2	Furrow	3	1.03
Cruiser	5FS	0.125mg/sd	ST	7	1.10
CHECK	----	----	----	7	1.07
Aztec	2.1G	0.14	Furrow	7	1.07
Capture ⁷	2EC	0.0368	Furrow	7	1.07
Cruiser	5FS	50g/100Kg	ST	10	1.10

¹ Field planted May 13, 2003; evaluated June 5, 2003.

² Granular and liquid formulations expressed as ounces a.i. per 1,000 row-ft.

³ ST = seed treatment; Furrow = insecticide applied at planting time; SB = SmartBox.

⁴ Means based on 6 observations (two 5-plant evaluations/treatment x 3 replications).

⁵ No significant differences between means (ANOVA, $P \leq 0.05$).

⁶ Rating scale: (1) seed/seedling undamaged, (2) seed/seedling damaged but plant established, (3) seed/seedling damaged, plant showing some signs of stress, (4) seed/seedling damaged, no plant or questionable establishment.

⁷ Five gallons of finished spray per 17,424 row-ft.

Table 27. Average percentage of damaged seeds/seedlings and damage ratings for planting-time insecticide treatments. Wireworm test, Ames, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	% Dam. ^{4,5}	Damage Rating ^{4,5,6}
Kernel Guard	ST	1.5 oz/42# seed	ST	0	1.00
L1311-A1	ST	1.5 oz/42# seed	ST	0	1.00
Force	3G	0.09	Furrow	2	1.02
Aztec	4.67G	0.14	Furrow SB	4	1.04
Poncho 250	600FS	0.25 mg/seed	ST	4	1.06
Lorsban	15G	1.2	Furrow	4	1.04
Fortress	2.5G	0.15	Furrow	4	1.04
Agrox Premiere	ST	1.5 oz/42# seed	ST	5	1.05
Cruiser/Force	5FS/3G	0.125mg/0.09	ST/Furrow	7	1.10
Counter	20CR	1.2	Furrow	8	1.08
Cruiser	5FS	0.5mg/seed	ST	9	1.09
AGST 02002	ST	1.5 oz/42# seed	ST	9	1.09
AGST 03001	ST	1.5 oz/42# seed	ST	10	1.10
L1282-A1	ST	1.5 oz/42# seed	ST	10	1.10
Capture ⁷	2EC	0.0368	Furrow	11	1.11
Gaucho	600FS	0.16 mg/seed	ST	13	1.13
Aztec	2.1G	0.14	Furrow	13	1.13
Kernel Guard Supreme	ST	1.5 oz/42# seed	ST	13	1.13
Cruiser	5FS	0.125mg/sd	ST	14	1.13
CHECK	----	----	----	16	1.19
Fortress	5G	0.15	Furrow SB	18	1.19
Cruiser	5FS	50g/100Kg	ST	19	1.19
Cruiser	5FS	0.25mg/sd	ST	21	1.23

¹ Planted April 23, 2003; evaluated for damage on May 12 & May 22.

² Granular and liquid formulations expressed as ounces a.i. per 1,000 row-ft.

³ ST = seed treatment; Furrow = insecticide applied at planting time; SB = SmartBox.

⁴ Insecticide means based on 7 observations (8-plants evaluated/trt x 4 replications on May 12 and 5-plants evaluated/trt x 3 replications on May 22, 2003).

⁵ No significant differences between means (ANOVA, $P \leq 0.05$).

⁶ Rating scale: (1) seed/seedling undamaged, (2) seed/seedling damaged but plant established, (3) seed/seedling damaged, plant showing some signs of stress, (4) seed/seedling damaged, no plant or questionable establishment.

⁷ Five gallons of finished spray per 17,424 row-ft.

Table 28. Average stand counts for planting-time insecticide treatments.
Wireworm/Grub test, Carlisle, IA. 2003¹

Insecticide	Form.	Rate ²	Placement ³	Stand Count ^{4,5}
Poncho 250	600FS	0.25 mg/seed	ST	29.75
Gaucho	600FS	0.16 mg/seed	ST	29.50
Aztec	2.1G	0.14	Furrow	29.00
Cruiser	5FS	0.5mg/sd	ST	28.75
Cruiser	5FS	50g/100Kg	ST	28.25
Aztec	4.67G	0.14	Furrow SB	28.25
Force	3G	0.09	Furrow	28.25
Agrox Premiere	ST	1.5 oz/42# seed	ST	28.25
Fortress	5G	0.15	Furrow SB	28.00
Cruiser/Force	5FS/3G	0.125mg/0.09	ST/Furrow	28.00
Capture ⁶	2EC	0.0368	Furrow	28.00
AGST 02002	ST	1.5 oz/42# seed	ST	27.75
Kernel Guard Supreme	ST	1.5 oz/42# seed	ST	27.75
L1311-A1	ST	1.5 oz/42# seed	ST	27.50
Lorsban	15G	1.2	Furrow	27.50
Kernel Guard	ST	1.5 oz/42# seed	ST	27.25
Cruiser	5FS	0.125mg/sd	ST	27.00
AGST 03001	ST	1.5 oz/42# seed	ST	26.75
Counter	20CR	1.2	Furrow	26.50
L1282-A1	ST	1.5 oz/42# seed	ST	26.25
CHECK	----	----	----	26.13
Cruiser	5FS	0.25mg/seed	ST	26.00
Fortress	2.5G	0.15	Furrow	25.00

¹ Field replanted May 22, 2003; evaluated June 20, 2003.

² Granular and liquid formulations expressed as ounces a.i. per 1,000 row-ft.

³ ST = seed treatment; Furrow = insecticide applied at planting time; SB = SmartBox.

⁴ Insecticide means based on 4 observations (17.5 row-ft/treatment x 4 replications); check means based on 8 observations (20 row-ft/treatment x 2 random check rows x 4 replications).

⁵ No significant differences between means (ANOVA, $P \leq 0.05$).

⁶ Five gallons of finished spray per 17,424 row-ft.

Table 29. Average percentage of damaged seeds/seedlings and damage ratings for planting-time insecticide treatments. Wireworm/grub test, Carlisle, IA. 2003¹

Insecticide	Form.	Rate ²	Place. ³	% Dam. ^{4,5}	Damage Rating ^{4,5,6}
Aztec	2.1G	0.14	Furrow	3	1.03
Cruiser	5FS	50g/100Kg	ST	6	1.09
Fortress	5G	0.15	Furrow SB	6	1.06
Fortress	2.5G	0.15	Furrow	6	1.06
Gaucho	600FS	0.16 mg/seed	ST	6	1.06
Counter	20CR	1.2	Furrow	6	1.06
Lorsban	15G	1.2	Furrow	6	1.06
Aztec	4.67G	0.14	Furrow SB	9	1.09
Cruiser/Force	5FS/3G	0.125mg/0.09	ST/Furrow	9	1.09
Poncho 250	600FS	0.25 mg/seed	ST	9	1.13
Agrox Premiere	ST	1.5 oz/42# seed	ST	9	1.09
L1311-A1	ST	1.5 oz/42# seed	ST	9	1.09
Cruiser	5FS	0.25mg/seed	ST	9	1.09
CHECK	----	----	----	11	1.14
Capture ⁷	2EC	0.0368	Furrow	13	1.13
Cruiser	5FS	0.125mg/sd	ST	13	1.19
Cruiser	5FS	0.5mg/sd	ST	16	1.19
AGST 03001	ST	1.5 oz/42# seed	ST	16	1.16
Force	3G	0.09	Furrow	19	1.19
Kernel Guard Supreme	ST	1.5 oz/42# seed	ST	19	1.22
L1282-A1	ST	1.5 oz/42# seed	ST	22	1.25
AGST 02002	ST	1.5 oz/42# seed	ST	25	1.25
Kernel Guard	ST	1.5 oz/42# seed	ST	25	1.28

¹ Field replanted May 22, 2003; evaluated June 20, 2003.

² Granular and liquid formulations expressed as ounces a.i. per 1,000 row-ft.

³ ST = seed treatment; Furrow = insecticide applied at planting time; SB = SmartBox.

⁴ Means based on 8 observations (two 4-plant evaluations/treatment x 4 replications); check means based on 16 observations (two 4-plant evaluations/treatment x 2 random check rows x 4 replications).

⁵ No significant differences between means (ANOVA, $P \leq 0.05$).

⁶ Rating scale: (1) seed/seedling undamaged, (2) seed/seedling damaged but plant established, (3) seed/seedling damaged, plant showing some signs of stress, (4) seed/seedling damaged, no plant or questionable establishment.

⁷ Five gallons of finished spray per 17,424 row-ft.