

INCREASING PROFITABILITY OF CORN AND GRAIN SORGHUM THROUGH EARLY SEASON INSECT MANAGEMENT

Year One Report - 2005

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Trials were planted in early May in all three locations, Keiser, Marianna and Rowher, to increase chances of insect pressure. Ratings on insect damage were taken including root damage ratings, foliar thrips damage, and cutworm damage. Birds caused significant damage to corn seedlings at Keiser and bird damage counts were made at Keiser and Marianna to determine any repellent effects treatments may have had. Root and thrips damage ratings were based on a 0-5 scale with 0= no damage and 5= severe damage.

Corn Trials

There were no differences in plant stands between treatments (Table 1). Significant root damage was measured only at the Marianna location with Cruiser, Poncho, Gaucho, Lorsban and Force having significantly reduced root damage compared to the untreated check (Table 2). Aztec and Counter did have significant root damage (Table 2). Cutworm pressure was light across all three locations (Table 3). The granular treatments (Lorsban, Aztec, Force and Counter) did not give any thrips control while the seed treatments (Cruiser, Gaucho and Poncho) performed very well (Table 4). Bird damage was highest at the Keiser location (Table 5).

Yield increases varied from a low of 3.8 bushels/acre from Counter to a high of 21.8 bushels/acre with Poncho when averaged across all three locations. Profit/loss was determined by using a \$2.30 per bushel cost for corn. All treatments resulted a net gain after subtracting insecticide costs with the exception of Counter which had a net loss of \$3.26/acre (Table 6).

Table 1. Number of plants per 10 row feet

Treatment	Rate	Keiser		Marianna		Rowher	
Untreated		9.75	ab	15.75	a	27.37	a
Cruiser	1.25 mg ai/seed	8.00	ab	15.75	a	26.62	a
Gaucho	1.34 mg ai/seed	13.25	a	14.25	a	26.12	a
Poncho	1.25 mg ai/seed	11.00	ab	16.50	a	28.37	a
Lorsban 15G	8 oz/1000 ft	5.25	b	15.25	a	28.25	a
Aztec 2.1G	6.7 oz/1000 ft	5.25	b	16.00	a	27.75	a
Force 3G	5 oz/1000 ft	8.00	ab	14.75	a	28.00	a
Counter 20G	6 oz/1000 ft	7.00	ab	17.00	a	28.87	a

Table 2. Root damage ratings (0-5 scale)

Treatment	Rate	Keiser	Marianna	Rowher
Untreated		0.50 a	2.75 a	0.50 a
Cruiser	1.25 mg ai/seed	0.00 a	1.00 b	0.00 a
Gaicho	1.34 mg ai/seed	0.00 a	1.00 b	0.50 a
Poncho	1.25 mg ai/seed	0.00 a	0.63 b	0.00 a
Lorsban 15G	8 oz/1000 ft	0.00 a	1.13 b	0.00 a
Aztec 2.1G	6.7 oz/1000 ft	0.00 a	1.75 ab	0.00 a
Force 3G	5 oz/1000 ft	0.00 a	1.13 b	0.00 a
Counter 20G	6 oz/1000 ft	0.00 a	1.75 ab	0.30 a

Table 3. Number of Cutworm Damaged plants per 10 row feet

Treatment	Rate	Keiser	Marianna	Rowher
Untreated		0.25 a	0.00 a	1.00 a
Cruiser	1.25 mg ai/seed	0.00 a	0.00 a	0.00 b
Gaicho	1.34 mg ai/seed	0.25 a	0.00 a	0.00 b
Poncho	1.25 mg ai/seed	0.25 a	0.00 a	0.00 b
Lorsban 15G	8 oz/1000 ft	0.75 a	0.00 a	0.00 b
Aztec 2.1G	6.7 oz/1000 ft	0.25 a	0.00 a	0.00 b
Force 3G	5 oz/1000 ft	0.25 a	0.00 a	0.00 b
Counter 20G	6 oz/1000 ft	0.50 a	0.00 a	0.00 b

Table 4. Thrips Damage Ratings (0-5 scale)

Treatment	Rate	Keiser	Marianna	Rowher
Untreated		1.50 a	3.00 a	0.00 a
Cruiser	1.25 mg ai/seed	0.50 b	0.25 b	0.00 a
Gaicho	1.34 mg ai/seed	0.50 b	0.75 b	0.00 a
Poncho	1.25 mg ai/seed	0.25 b	0.50 b	0.00 a
Lorsban 15G	8 oz/1000 ft	0.75 ab	2.75 a	0.00 a
Aztec 2.1G	6.7 oz/1000 ft	1.00 ab	2.75 a	0.00 a
Force 3G	5 oz/1000 ft	1.00 ab	2.75 a	0.00 a
Counter 20G	6 oz/1000 ft	0.75 ab	2.25 a	0.00 a

Table 5. Number of bird damaged plants per 10 row feet

Treatment	Rate	Keiser	Marianna	Rowher
Untreated		1.75 ab	0.50 a	0.00 a
Cruiser	1.25 mg ai/seed	2.50 ab	0.00 a	0.00 a
Gaicho	1.34 mg ai/seed	1.00 b	0.00 a	0.00 a
Poncho	1.25 mg ai/seed	2.00 ab	0.00 a	0.00 a
Lorsban 15G	8 oz/1000 ft	3.75 a	0.00 a	0.00 a
Aztec 2.1G	6.7 oz/1000 ft	3.75 a	0.25 a	0.00 a
Force 3G	5 oz/1000 ft	3.50 a	0.00 a	0.00 a
Counter 20G	6 oz/1000 ft	2.25 ab	0.00 a	0.00 a

Table 6. Yield (Bushels/acre) and Profit estimates for all Three Locations

Treatment	Rate	Keiser	Marianna	Rowher	Ave. Yield	Yield Increase	Net gain
Untreated		107.3	155.5	138.3	133.7		
Cruiser	1.25 mg ai/seed	122.4	159.8	172.7	151.6	17.9	\$36.17
Gaucho	1.34 mg ai/seed	135.1	146.5	155.4	145.7	12.0	\$22.50
Poncho	1.25 mg ai/seed	168.3	160.4	137.8	155.5	21.8	\$42.00
Lorsban 15G	8 oz/ 1000 ft	101.9	159.0	177.5	146.1	12.4	\$16.28
Aztec 2.1G	6.7 oz/ 1000 ft	138.4	161.5	151.3	150.4	16.7	\$15.41
Force 3G	5 oz/ 1000 ft	144.0	155.8	150.1	150.0	16.3	\$25.49
Counter 20G	6 oz/ 1000 ft	117.7	155.9	138.8	137.5	3.8	(\$3.26)

Grain Sorghum

Insect pressure early season was almost non-existent for the grain sorghum trials. However, there was an average of 200 – 250 lb/acre increase in yield with the seed treatments. Temik did not significantly increase yield (Table 7). Note that Poncho seed treatment is not currently labeled for use in grain sorghum.

Table 7. Grain Sorghum Yields Averaged Across Locations.

Treatment	Rate	Yield (lbs/acre)
Untreated		5554
Gaucho	8 oz/cwt	5813
Cruiser	5.1 oz/cwt	5750
Poncho	5.1 oz/cwt	5819
Temik	0.5 lb ai/acre	5605