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Section F: Field & Cereal Crops

SOYBEAN: *Glycine max* L. (Merr.), 'Asgrow 46X6'

Impact of Selected Insecticide Seed Treatments on Soybean Stand Establishment and Yield 1, 2019

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Soybean | *Glycine max*

Southern corn rootworm | *Diabrotica undecimpunctata howardi* Barber

Pea leaf weevil | *Sitona lineatus* (L.)

The impact of selected insecticide seed treatments on soybean stand establishment and yield was evaluated at the Delta Research and Extension Center (Washington County). The soybean variety Asgrow 46X6 was utilized in this trial, and all seeds were treated with Apron XL 3FS 0.105 fl oz/cwt and Maxim 4FS 0.115 fl oz/cwt. The trial was planted on 23 Apr. The soil was a Commerce silty clay loam soil, and the seeding rate was 117,612 seed/acre. Emergence date for the trial was 30 Apr. Plot size was four rows (40 in centers) by 40 feet. Treatments were replicated four times in an RCB. In-furrow spray treatments were applied using a CO_2 charged spray system that utilized 2501 flat fan tips (1 per row) mounted in front of the closing wheels on the planter. Nozzles were oriented to spray directly into the open seed furrow, with an application volume of 5 gpa. Plant density was determined at 34 days after emergence (DAE) by counting all plants on the two center rows of each plot. On 6 May, plants expressing damage symptomology were excavated to determine which insect(s) were present. Southern corn rootworm was the primary insect observed. Some pea leaf weevil adults and feeding were observed, but were not quantified. Yield was determined by harvesting the center two rows of each plot with a small plot combine on 17 Sep. Yields were adjusted to 13% moisture content and converted to bu/acre. Data were subjected to ANOVA and means separated according to Fisher's Protected Least Significant Difference.

All of the insecticide seed treatments resulted in higher plant populations than the untreated check at 34 DAE (Table 1). Brigade applied in-furrow resulted in lower plant populations compared to all of the other insecticide treatments except Dermacor. For soybean yield, all of the insecticide treatments, except Brigade in-furrow, resulted in higher yields compared to the untreated check.[1]

Table 1.

Treatment	Rate	Plants per acre 34 DAE[e]	Yield bu/acre
Untreated check	-	27,729d	35.3c
Gaucho 5FS	2.5[b]	55,294ab	51.0a
Poncho 5FS	0.11[c]	54,396ab	51.7a
Fortenza 5FS	0.25[c]	61,134a	54.3a
Dermacor 5.21FS	0.25[c]	44,921bc	48.7ab
Brigade 2EC[a]	5.12[d]	34,671cd	42.2bc
P>F		<0.01	<0.01

Means within columns followed by a common letter are not significantly different (FPLSD, $P = 0.05$).
[a]Brigade applied as an in-furrow spray at-planting.
[b]fl oz per cwt.
[c]mg A.I. per seed.
[d]fl oz per acre.
[e]DAE = days after emergence.

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