

SOYBEAN: *Glycine max* L. ‘Pioneer 93M12 RR ‘

FOLIAGE TREATMENTS AGAINST SOYBEAN APHID IN SOYBEAN, 2005

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Soybean Aphid (SA): *Aphis glycines* Matsumura

Seventeen foliage insecticides along with various adjuvants were tested against SA at the OARDC near Wooster, OH. Soybeans were planted on 7 Jun. Because of the large number of treatments, the entire study was split into two separate trials, done over a 24 hr period. Each trial was designed as a RCB with 20 treatments (18 insecticide and/or adjuvants and two check plots) and 4 replications. Plot size was 10 ft (4 rows on 30 in centers) by 45 ft. Insecticides were applied using a bicycle sprayer with a 10 ft boom with 8 spray nozzles on 9 and 10 Aug, respectively for the two trials. Spray nozzles were TeeJet TX-8 with two nozzles directed at the upper canopy per row; spray pressure at 40 psi and spray output at 32.2 gpa. Soybeans were in growth stage R4 (pod growth) at treatment. Pre-treatment sampling indicated approximately 100-125 SA per plant across the plots. Post-treatment samples were taken at 2, 7, and 14 DAT by estimating the number of aphids on 3 plants per plot; plants achieved growth stage R5 by the 14 DAT sample. Observations were also taken on the level of honeydew and sooty mold, two symptoms of the presence of SA. SA data were transformed prior to analyses by $\log_{10}(x + 1.0)$. Data, analyzed separately for each trial, were analyzed with ANOVA and means separated using LSD; pretransformed data are presented. Yield data were taken by harvesting a section 5 ft (2 rows) by 45 ft from the middle of each plot.

It should be noted that the SA population was not very high, being below threshold at and following treatment. No sooty mold or honey dew was observed on the plants. However, sufficient numbers were present to obtain meaningful data. Generally, all insecticides and/or adjuvants reduced the numbers of SA per plant on all sampling dates. However, in the first trial (Table A), the treatments with Pounce and/or adjuvants were not efficacious as the other treatments. In the second trial (Table B), Venom and V10170 50 WDG provided very little control. In these treatments, aphids were found over the entire plant on all sampling dates. In the other treatments that provided good control, the majority of the live aphids were only found on the lower leaves where the spray had not been directed; upper leaves were free of aphids. In those treatments with Lorsban alone or in combination with another insecticide, the plants were basically free of aphids. This near total lack of aphids is believed due to the so-called “fumig” action of Lorsban. There were no statistical differences in yield.

Table A

Treatment	Rate oz/acre	Soybean aphids per plant			Yield
		2 DAT	7 DAT	14 DAT	
Asana XL	6.4	15.0 cde	15.8 c	14.2 de	57.2 a
Asana XL + Lorsban	6.4 + 8.0	0.0 f	3.8 d	0.8 g	55.6 a
Lorsban	16.0	0.0 f	5.0 d	0.0 h	52.1 a
ProAxis	3.84	14.2 cde	17.5 bc	10.8 f	53.8 a
Pounce	4.0	15.0 cde	30.0 bc	32.1 c	52.7 a
Pounce + AB-600	4.0 + 0.125% v/v	20.4 cd	17.1 bc	42.5 bc	51.6 a
Pounce + AB-600	4.0 + 0.250% v/v	16.7 cde	35.4 b	40.8 bc	54.3 a
Pounce + AB-650	4.0 + 0.125% v/v	15.0 cde	37.1 b	46.3 b	51.2 a
Pounce + AB-650	4.0 + 0.250% v/v	14.2 e	30.0 bc	33.8 c	53.1 a
Trimax	1.5	15.0 cde	18.8 bc	17.1 d	54.2 a
AE F 106464 - SC41	1.0	15.4 cde	18.8 bc	17.9 d	53.8 a
AE F 106464 - SC41	1.5	15.4 cde	17.1 bc	18.3 d	55.2 a
Baythroid	2.0	34.2 bc	18.3 bc	19.2 d	52.3 a
Baythroid	2.8	12.9 de	17.1 bc	10.8 f	55.5 a
Baythroid + Lorsban	2.0 + 8	0.0 f	5.4 d	0.4 hg	54.1 a
Decis	1.5	14.6 cde	15.4 c	14.4 d	53.3 a
Decis	1.9	13.4 cde	17.5 bc	17.9 d	53.8 a
Leverage	3.76	10.4 de	17.1 bc	10.8 ef	55.3 a
Check	--	58.3 b	115.8 a	112.9 a	51.5 a
Check	--	87.5 a	116.3 a	113.8 a	53.5 a

Data were transformed prior to analyses by $\log_{10}(x + 1.0)$; pretransformed data are presented. Means in a column followed by the same letter are not significantly different (LSD, $P = 0.05$).

Table B

Treatment	Rate oz/acre	Soybean aphid per plant			Yield
		2 DAT	7 DAT	14 DAT	
Warrior	2.56	16.3 ef	15.0 d	10.0 bc	57.5 a
Mustang + Headline + Folicur	4.0 + 4.5 + 3.1	17.5 ef	17.9 cd	10.4 bc	60.9 a
Mustang	4.0	17.1 ef	15.8 cd	9.6 bc	56.3 a
Capture	2.1	17.9 ef	16.3 cd	8.8 bc	55.6 a
Orthene	8.0	20.8 de	17.9 cd	15.0 b	54.3 a
Orthene	10.0	19.2 ef	15.8 cd	11.7 bc	53.3 a
Orthene	12.0	15.4 ef	18.8 c	12.9 b	54.5 a
Orthene + Lorsban	8.0 + 8	0.0 g	0.0 e	2.9 d	54.9 a
Orthene + Lorsban	12.0 + 4	0.0 g	0.0 e	0.5 d	53.3 a
Orthene + Warrior	12.0 + 1.0	18.3 ef	15.4 cd	8.3 bc	54.1 a
Venom (V10112) 75 SG	60 gm ai/A	30.8 cd	37.5 b	73.8 a	55.9 a
V10170 50 WDG	20 gm ai/A	35.0 c	42.1 b	67.5 a	57.5 a
Taiga	2.56	18.8 ef	17.5 cd	14.2 b	54.6 a
Taiga + AG05017	2.56 + 2.0	15.0 ef	16.3 cd	10.0 bc	56.3 a
Taiga + AG05017 + Pref	2.56 + 2.0 + 0.25% v/v	18.3 ef	16.3 cd	10.4 bc	55.2 a
Taiga + AG05017 + Pref + MaxIn	2.56 + 2.0 + 0.25% v/v + 1 qt	15.0 f	17.9 cd	8.3 c	54.8 a
Taiga + AG05017	2.56 + 4.0	19.6 ef	17.1 cd	10.4 bc	56.1 a
Taiga + AG05017 + Pref	2.56 + 4.0 + 0.25% v/v	16.3 ef	15.8 cd	13.3 b	55.2 a
Check	--	73.3 b	93.8 a	100.0 a	55.6 a
Check	--	96.7 a	86.3 a	96.7 a	54.8 a

Data were transformed prior to analyses by $\log_{10}(x + 1.0)$; pretransformed data are presented. Means in a column followed by the same letter are not significantly different (LSD, $P = 0.05$).