

SEED TREATMENTS IN SOYBEAN, 2002

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Three seed treatments were tested against soybean foliage insects in two plots, one near Wooster, OH, and the other at the Northwest Branch of the OARDC near Custar, OH. The tests were initially established for seed treatment efficacy against the soybean aphid (SA). Tests were designed as a RCB with 6 treatments, each treated with SoyGard (0.32 oz/cwt), a fungicide, and two check plots, one with SoyGard and the other without, and 4 replications. Plot size was 20 ft (8 rows) x 30 ft or 80 ft (30-inch space between rows) at Wooster or Custar, respectively. Seed treatments were commercially applied. Soybean was planted on 28 May and 11 June at Wooster and Custar, respectively. The treatments were 2 rates each of Gaucho, clothianidin, and Cruiser. Stand counts were taken following emergence by counting the number of plants in 5 ft in 2 locations per plot. Foliage insects were sampled numerous times during the summer by taking 10 sweeps per sample. Insect data were transformed prior to analyses by square root of ($x + 0.5$). All data were analyzed with ANOVA and means separated using LSD. Yield data were obtained only for the Wooster site where there was a stand reduction.

A stand reduction was observed at the Wooster location, but not at the Custar site. Stands were significantly higher with all seed treatments. The least stand was obtained with the check without any insecticide seed treatment or SoyGard. It is believed that the stand reduction observed in the check plots at Wooster was partially due to seedcorn maggot (SCM) feeding. The plots had considerable vegetative matter growing when plowed and disked, and we believe that this action attracted female SCM for oviposition. While a slight improvement in stand was observed with SoyGard alone (3.8 plants), most likely due to control of seed pathogens, we saw a much greater improvement with the addition of the various insecticide seed treatments (8 to 10 plants). The only significant difference obtained with foliage insects was for potato leafhopper (PLH) on 10 July at Wooster, and then only at the 10% level. No further significance was obtained on other dates at that location, nor at the Custar location, with any insects (no other data are presented). Soybean aphid did not occur at either site (nor at any other location in Ohio based on widespread sampling by this laboratory and other people within the state). A significant difference was obtained in yield at Wooster, partially due to the reduction in stand. However, a considerable twospotted spider mite infestation occurred in the plots at Wooster because of the severe drought occurring in the state. A decision was made to allow the mite infestation to progress naturally to determine possible differences among treatments (albeit none existed). Yields in certain portions of the field, which had considerable mite populations, had much lower yields than did other locations. Thus, the yield data were skewed. The untreated check w/o SoyGard had a significantly lower yield than all other treatments (which was expected) except for Cruiser at 1.3 oz/cwt which had the second lowest yield, albeit not significantly different than the other seed treatments. However, we do accept this low yield for this rate of Cruiser as an accurate representation for two reasons: 1) this treatment had numerically the highest plant stand of all treatments and thus, should have had a much higher yield, and 2) two of the replications of this treatment were in locations where the mite infestation was the most severe and both had extremely low yields. Of interest, one of the locations of the check w/ SoyGard (replicate 4) had the highest yield obtained although its overall stand was low. In summary, we do not believe the yield data is considered acceptable because of the severe drought and mite infestation that occurred.

Treatment ^a	Rate fl oz/cwt	Plants at Wooster		Yield gm/30 ft	7/10/02	Plants
		per/5 ft	per/acre		PLH Wooster	Custar per 5 ft
Gaicho 480	2.0	45.5a	158,558.4	2129.6ab	1.0b	51.8a
Gaicho 480	3.0	44.4a	154,725.1	2382.5a	0.8b	47.9a
Clothianidin	1.2	47.0a	163,785.6	2241.7ab	0.3b	51.9a
Clothianidin	1.6	47.1a	164,134.1	2192.2ab	1.5ab	49.5a
Cruiser	0.8	47.1a	164,134.1	2334.5a	1.3ab	54.0a
Cruiser	1.3	47.2a	164,482.6	1855.2bc	1.0b	50.0a
Check w SoyGard	--	36.7b	127,892.2	2191.5ab	2.3ab	54.3a
Check w/o SoyGard	--	32.9c	114,649.9	1640.5c	4.0a	60.0a

Means in a column followed by the same letter are not significantly different (LSD, P = 0.05 for plants and yield and P = 0.10 for PLH)

^a all seed treatments had SoyGard applied at 0.32 oz/cwt