

Foliar insecticide treatment for control of insect pests of soybean: 2003  
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## Methods & Procedures

Plots of Asgrow Ag3703 (“roundup ready”) soybeans were planted on the University of Kentucky, Research and Education Center on 30, May 2003 using a John Deere MaxEmerge 2 no-till planter, calibrated to deliver nine seeds per row foot. Plots were 4, 30” rows by 25’ long. The study was planted as a randomized complete block design (Steel and Tory 1960) with four treatments and five replications. Treatments were randomly assigned using SAS “Proc Plan” (SAS 2000).

Insecticide treatments were applied using a CO<sub>2</sub> powered, back-pack sprayer, calibrated to deliver twenty gallons per acre at 45 PSI pressure and four miles per hour, through four 8004 nozzles on 18” spacing. Insecticides were applied on 01, August 03 at the R1-R2 stage. Four untreated rows were planted around the complete circumference of the test. The treatments are as follows:

Untreated  
Baythroid 2 at 1.2 fl.oz / A  
Baythroid 2 at 2.4 fl.oz / A  
Warrior at 3.84 fl. oz. / A

Stand Counts were made on 20, June, 03 during the “completely unrolled unifoliate” (VC -V1) stage (Fehr and Caviness 1977). Averaging four sub-samples, two from each of the two center rows, made each plot estimate. The location of the sub-samples was established in the central 2/3 (lengthwise) of the plots by selecting a set of four random numbers representing the distance from the end of the plot to the sub-sample location. Each plot was then sampled using the same locations. Plant stand was estimated by counting plants in one-row foot sub-samples.

During the course of the growing season Japanese beetles, green cloverworms and green stink bugs were active. However, very few were present in the plots. At no time did defoliation of the soybeans ever exceed 10%.

At harvest time plots were trimmed to a length of twenty feet. On 03, October 03, the two center rows of each plot were harvested using a Hege 125c “small plot” combine. Plot yields were standardized to bushels per acre at 60 pounds per bushel and 13 percent moisture.

## Results & Discussion

Results of the stand count, yield and test weight analyses are show in Table 1. It is perhaps

obvious that there are no significant differences among the data for each of these measures by treatment. However, to insure correctness, the data were subject to analysis of variance. In addition, the “Dunnnett’s” test was used to compare the mean of each insecticide treatment individually with the mean of the untreated. Both tests were run using SAS “Proc GLM” (SAS 2000).

Table 1. Mean  $\pm$  Standard Error of Stand Counts, Yields and Test Weights of soybean plots treated with foliar applied insecticides. (P=0.05)

| Insecticidal Treatment       | Mean Plants /<br>row-foot $\pm$ S.E. | Mean Yield $\pm$ S.E.<br>(Bushels / Acre) | Test Weight $\pm$ S.E. |
|------------------------------|--------------------------------------|---|------------------------|
| Untreated                    | 7.8 $\pm$ 0.3                        | 35.3 $\pm$ 1.2                            | 56.0 $\pm$ 0.4         |
| Baythroid 2 at 1.2 fl.oz / A | 8.2 $\pm$ 0.4                        | 39.6 $\pm$ 2.2                            | 56.4 $\pm$ 0.2         |
| Baythroid 2 at 2.4 fl.oz / A | 8.1 $\pm$ 0.4                        | 39.5 $\pm$ 1.2                            | 56.2 $\pm$ 0.3         |
| Warrior 3.84 fl. oz. / A     | 8.3 $\pm$ 0.5                        | 37.5 $\pm$ 1.6                            | 55.9 $\pm$ 0.2         |
| F(7,12) Value                | 1.74                                 | 1.19                                      | 0.46                   |
| Pr > F                       | 0.19                                 | 0.15                                      | 0.85                   |

As expected, the ANOVA found no difference in any measure due to treatment or replication. Further, Dunnnett’s test did not find any insecticide treatment means significantly different from the means of the “untreated” treatment for any of these measures.

Unfortunately, there was very little insect activity in these plots. Adjacent tests of seed and foliar applied insecticides for control of foliar insect pests also failed to produce differences among treatments.

## References

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