

## DATA ANALYSIS FOR 2019 MICHIGAN STATE UNIVERSITY CABBAGE MAGGOT TRIAL IN TURNIPS

Data were analyzed as a two-factor, split-plot ANOVA with randomized complete blocks. There were three whole-plot treatments arranged in  $n=5$  blocks, and three post-plant treatments applied to split plots within each whole-plot. The response variable was the proportion of turnips damaged by cabbage maggot. An ANOVA (Table 1) was followed by pairwise comparisons between treatment means (Table 2).

**Table 1.** An ANOVA-table for the 2019 turnip insecticide trial.

Variable	SS	MS	DF (num, den)	F-value	P-value
Block	0.49	0.12	4,8	6.2	0.01
At-plant insecticide	0.22	0.11	2,8	5.5	0.03
Post-plant insecticide	0.53	0.26	2,24	13.1	0.0001
At plant X post-plant	0.04	0.01	4,24	0.5	0.7

**Table 2.** Pairwise comparisons for at-plant and post-plant insecticide treatments. Left-tailed  $P$ -values are Bonferroni-adjusted to maintain  $\alpha < 0.05$  for the entire family of contrasts.

Contrast	t-value	df	$P$ -value
<i>At-plant treatments vs. control</i>			
Sepresto vs. at-plant control	-2.521	8	0.09
Chlorpyrifos vs. at-plant control	-3.145	8	0.03
<i>Post-plant treatments</i>			
Mustang @ emergence vs post-plant control	-5.073	24	0.0001
Mustang @ peak vs. post-plant control	-1.893	24	0.18
Mustang @ emergence vs Mustang @ peak	-3.180	24	0.01