Building a Biomonitor: Bean Beetle Larvae as a Model for Detecting Intestinal Bacteria Pollution in Water

Sample Data

Table 1. The percentage of killed cells found using trypan blue on bean beetle larval cells exposed to control and endotoxin treatments. Cell counts were done on specimens in which the bean cells were removed leaving behind only bean beetle larval cells. These data were collected by students in ENVR 1401 at Lone Star College, Kingwood, TX.

Endotoxin Cytotoxicity Study Data - Bean Beetle Larval Cells

Field Count % Cells Killed (Field of 50 cells)

	Tria1 1		Trial 2	
	Control	Endotoxin	Control	Endotoxin
Group 1	10	56	6	44
Group 2	4	25	5	23
Group 3	8	40	7	31
Group 4	6	28	8	30
Group 5	12	60	9	45
Group 6	6	30	12	56
Group 7	3	22	5	25
Group 8	8	36	9	38
Sum	57	297	61	292
Mean	7.125	37.125	7.625	36.5

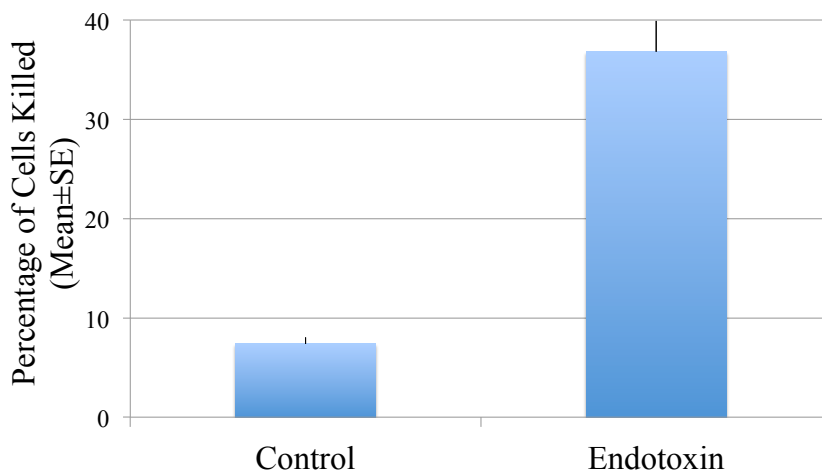Mean Cytotoxicity of Control and Endotoxin Treatments

Figure 1.   The mean percentage (mean±SE) of killed bean beetle larval cells exposed to *E. coli* endotoxins were greater than those exposed to a control treatment of sterile pond water. There is a significant difference between the number of cells killed in the control compared to the endotoxin treatment (N=16 for each treatment, X^2=154.7 df=1, p<0.0001).

This experiment was written by Ms. Betsy Morgan and Dr. Brian R. Shmaefsky, 2014 (www.beanbeetles.org).