



University of Guam Coconut Rhinoceros Beetle Biological Control Project

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<https://github.com/aubreymoore/rearing3>

Bioassay Report: V23B_perOSIN

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https://github.com/aubreymoore/rearing3/raw/master/bioassay-V23B%5C_perOSIN.pdf

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1 Summary

Table 1: Bioassay summary.

	bioassay_name	date_start_bioassay	date_end_bioassay	bioassay_treatment	N
0	V23B_perOSIN-1	2019-03-05	None	control	6
1	V23B_perOSIN-1	2019-03-05	None	heat-inactivated	5
2	V23B_perOSIN-1	2019-03-05	None	virus	5

Fifteen adult beetles maintained for more than 2 weeks to observe possible contamination from green muscardine fungus infection were employed in a preliminary test to determine the susceptibility of adult beetle to infection by virus V23B isolate (Solomon Islands). Each of 15 beetles (5/virus isolate) were injected with 1 - 2 ul of virus preparation with a sterile 1 ml pipette w/ 30cc needle tip. Adults were then placed individually in clean glass mason jars (bleached-treated) , sphagnum moss and with a piece of banana added for food. Beetles were incubated at 300C and 80

2 Mortality

Table 2: Mortality summary.

	bioassay_treatment	ntotal	ndead	mortality	adjusted_mortality	significance
0	control	6	0.0	0.0	0.0	1.000000
1	heat-inactivated	5	0.0	0.0	0.0	1.000000
2	virus	5	3.0	0.6	0.6	0.060606

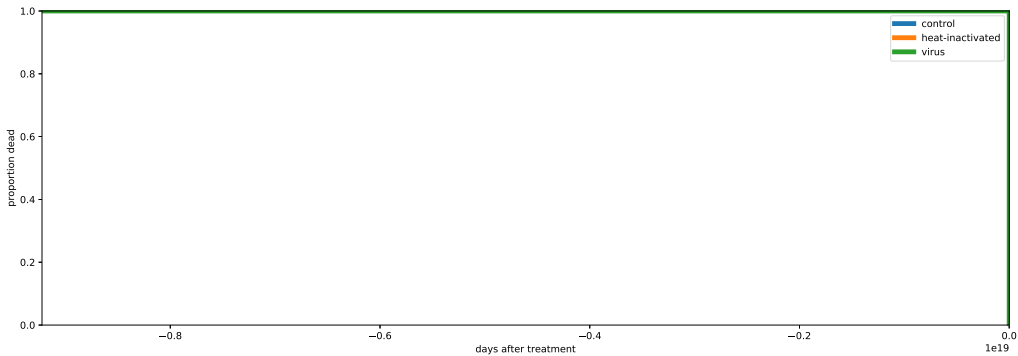


Table 3: Pairwise differences among mortality curves.

		test_statistic	p
control	heat-inactivated	0.0	1.0
	virus	0.0	1.0
heat-inactivated	virus	0.0	1.0

3 Change in Mass

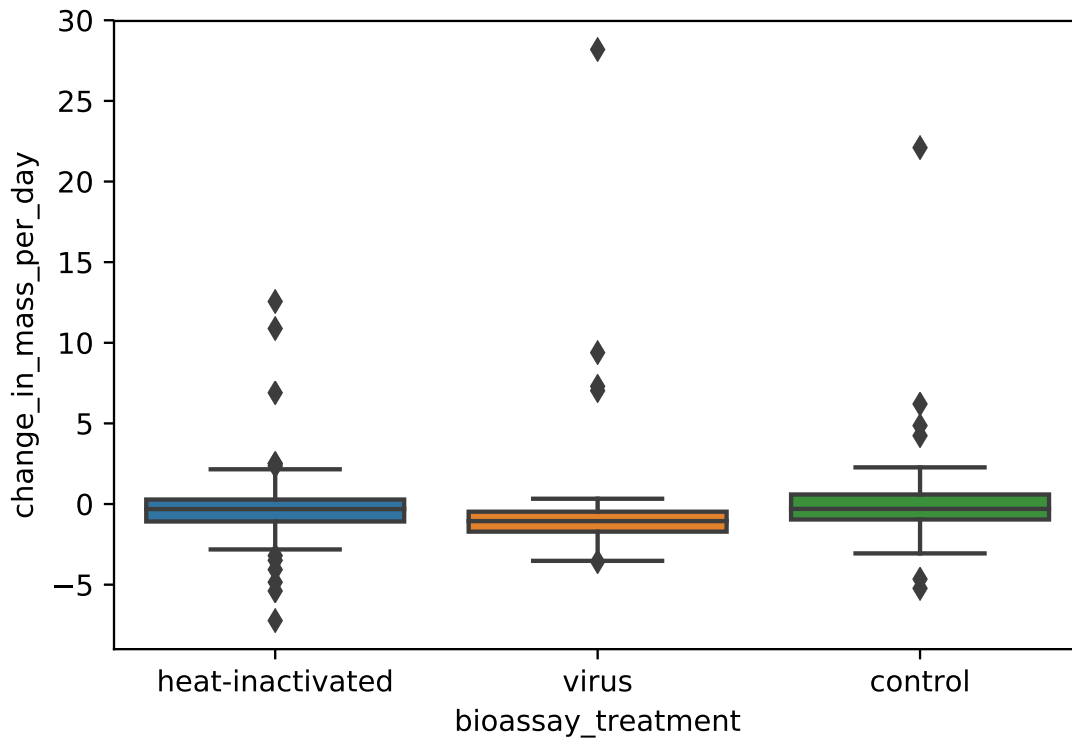


Table 4: Results of pairwise significance tests for differences in change in mass.

	control	heat-inactivated	virus
control	-1.000000	0.416988	0.001454
heat-inactivated	0.416988	-1.000000	0.013173
virus	0.001454	0.013173	-1.000000

4 Post Mortem Images

4.1 heat-inactivated



Figure 1: Bioassay: V23B_perOSIN-1; Treatment: heat-inactivated; Beetle ID: 1469



Figure 2: Bioassay: V23B_perOSIN-1; Treatment: heat-inactivated; Beetle ID: 1475



Figure 3: Bioassay: V23B_perOSIN-1; Treatment: heat-inactivated; Beetle ID: 1480



Figure 4: Bioassay: V23B_perOSIN-1; Treatment: heat-inactivated; Beetle ID: 1485

4.2 virus



Figure 5: Bioassay: V23B_perOSIN-1; Treatment: virus; Beetle ID: 1471



Figure 6: Bioassay: V23B_perOSIN-1; Treatment: virus; Beetle ID: 1473



Figure 7: Bioassay: V23B_perOSIN-1; Treatment: virus; Beetle ID: 1481



Figure 8: Bioassay: V23B_perOSIN-1; Treatment: virus; Beetle ID: 1490

4.3 control



Figure 9: Bioassay: V23B_perOSIN-1; Treatment: control; Beetle ID: 1472



Figure 10: Bioassay: V23B_perOSIN-1; Treatment: control; Beetle ID: 1474



Figure 11: Bioassay: V23B_perOSIN-1; Treatment: control; Beetle ID: 1477



Figure 12: Bioassay: V23B_perOSIN-1; Treatment: control; Beetle ID: 1487



Figure 13: Bioassay: V23B_perOSIN-1; Treatment: control; Beetle ID: 1491