University of Guam Coconut Rhinoceros Beetle Biological Control Project
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https://github.com/aubreymoore/rearing3

Bioassay Report: MALBperOS

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https://github.com/aubreymoore/rearing3/raw/master/bioassay-MALBperOS.pdf

Contents

1 Summary

Table 1: Bioassay summary.

	bioassay_name	date_start_bioassay	date_end_bioassay	bioassay_treatment	N
0	MALBperOS-1	2019-05-10	2019-06-05	control	4
1	MALBperOS-1	2019-05-10	2019-06-05	heat-inactivated	5
2	MALBperOS-1	2019-05-10	2019-06-05	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 Mal B isolate (Malaysia). Each of 10 beetles were fed with 1 - 2 microlitres of virus while another 10 beetles were fed filtered sterile water as negative controls. Adults were then placed individually in clean glass mason jars (bleached-treated) with a sphagnum moss, and a piece of banana added for food. Beetles were incubated at 30C and 80% RH in a Percival incubator. All beetles will be monitored daily to observe any possible signs of infection.

2 Mortality

Table 2: Mortality summary.

	bioassay_treatment	ntotal	ndead	mortality	adjusted_mortality	significance
0	control	4	3	0.75	0.0	1.0
1	heat-inactivated	5	4	0.80	0.2	1.0
2	virus	5	3	0.60	-0.6	1.0

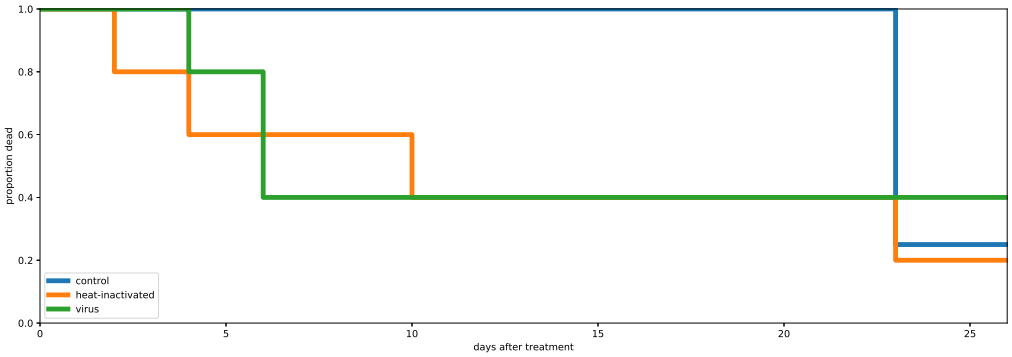

Table 3: Pairwise differences among mortality curves.

		test_statistic	p
control	heat-inactivated	1.274323	0.258957
	virus	0.183667	0.668241
heat-inactivated	virus	0.270635	0.602906

3 Change in Mass

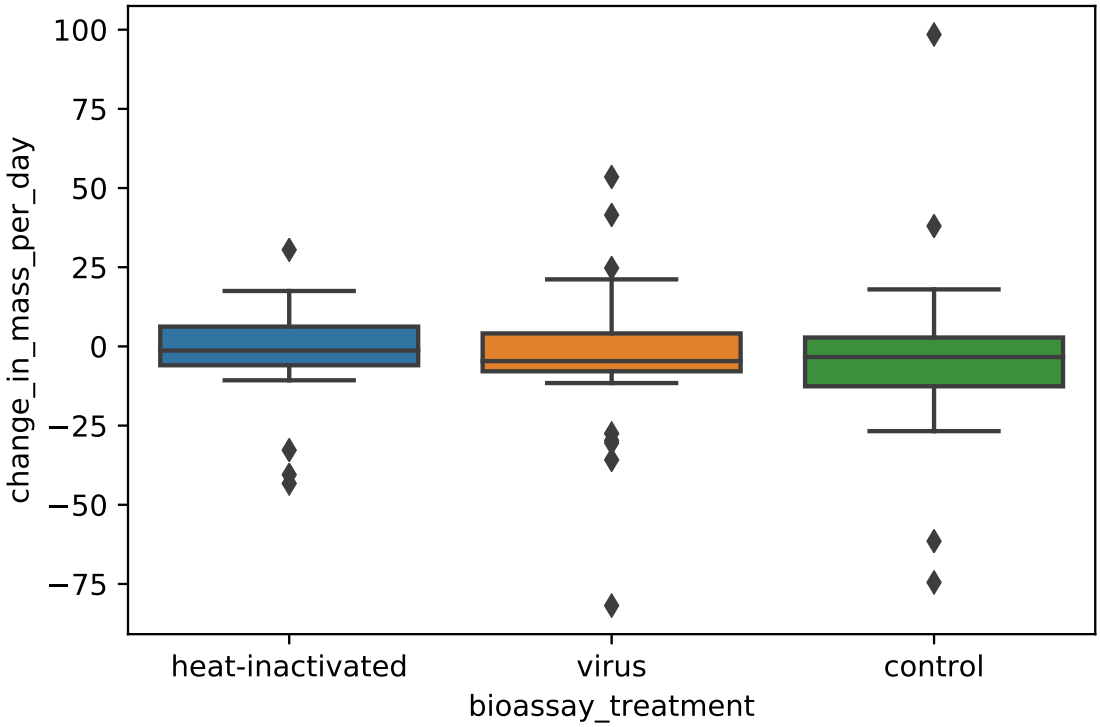

Table 4: Results of pairwise significance tests for differences in change in mass.

	control	heat-inactivated	virus
control	-1.0	1.0	1.0
heat-inactivated	1.0	-1.0	1.0
virus	1.0	1.0	-1.0