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

Bioassay Report: V23BperOS

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October 30, 2019

https://github.com/aubreymoore/rearing3/raw/master/bioassay-V23BperOS.pdf

Contents

OrNV isolate	**bioassay**	**method**	**beetles**	**replicates**	**virus mortality**	**p**	**heat inactivated virus mortality**	**p**
DUG42	DUG42	injection	30	2	40%	0.65	40%	0.65
MALB	MALB	injection	30	2	50%	0.37	0%	1.00
	MALBperOS	per os	13	1	-60%	1.00	20%	1.00
PNG	PNG	injection	81	4	**90%**	**0.00**	5%	1.00
	PNGperOS	per os	21	1	0%	1.00	0%	1.00
V23B	V23B	injection	66	4	**88%**	**0.00**	0%	1.00
	V23BperOS	per os	32	2	80%	0.07	20%	0.69
	V23-large_bioassay	per os	53	1	**42%**	**0.00**	-	-
	V23_perOSIN	per os	16	1	60%	0.06	-	-

1 Summary

Table 1: Bioassay summary.

	bioassay_name	date_start_bioassay	date_end_bioassay	bioassay_treatment	N
0	V23BperOS-1	2019-03-05	2019-04-05	control	6
1	V23BperOS-1	2019-03-05	2019-04-05	heat inactivated	5
2	V23BperOS-1	2019-03-05	2019-04-05	virus	5
3	V23BperOS-2	2019-04-12	2019-05-10	control	6
4	V23BperOS-2	2019-04-12	2019-05-10	heat inactivated	5
5	V23BperOS-2	2019-04-12	2019-05-10	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 **V23 B** isolate (Solomon Islands). Each of 5 beetles (5/treatment) were orally fed 10 µl of a virus + 30% sucrose mixture with a sterile pipette tip. Adults were then placed in clean glass mason jars (bleach-treated) with a piece of banana added for food. Beetles were incubated at 30℃ 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	12	6	0.5	0.0	1.000000
1	heat inactivated	10	4	0.4	-0.2	0.691355
2	virus	10	9	0.9	0.8	0.074303

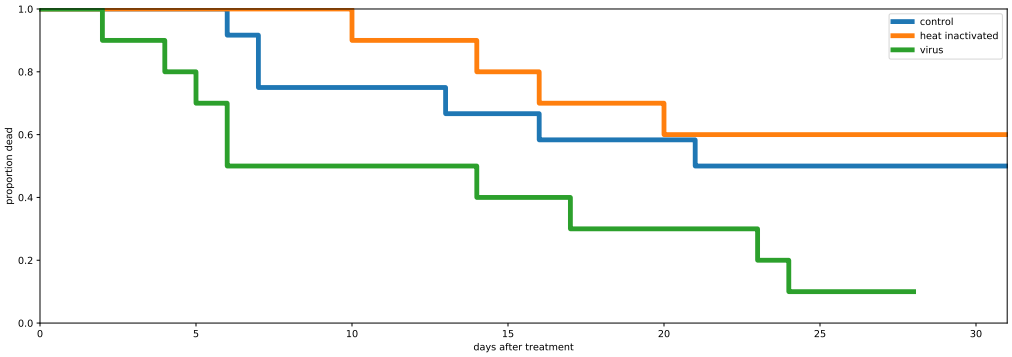

Table 3: Pairwise differences among mortality curves.

		test_statistic	p
control	heat inactivated	0.350703	0.553716
	virus	4.076804	0.043476
heat inactivated	virus	5.842978	0.015639

3 Change in Mass

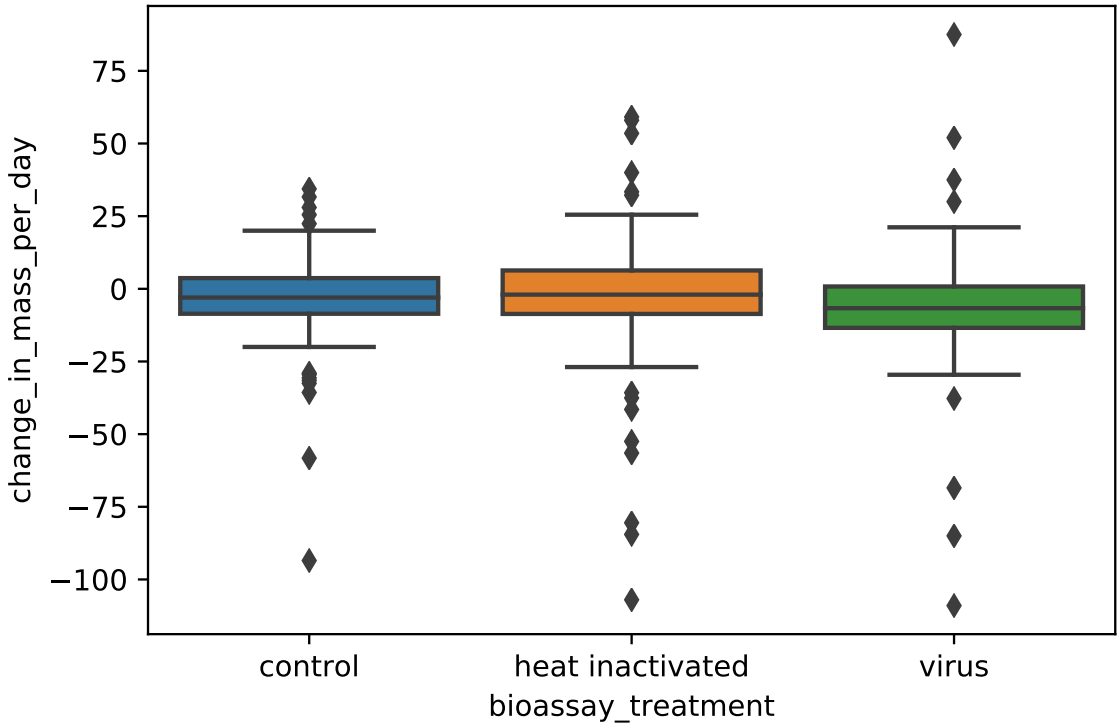

Table 4: Results of pairwise significance tests for differences in change in mass.

	control	heat inactivated	virus
control	-1.000000	0.740696	0.245085
heat inactivated	0.740696	-1.000000	0.157019
virus	0.245085	0.157019	-1.000000