UNIVERSITY OF HAWAIʻI SYSTEM
Legislative Testimony

Testimony Presented Before the
Senate Committee on Higher Education
and
Senate Committee on Agriculture and Environment
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By
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DEAN
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HB 474 HD1 – RELATING TO RAT LUNGWORM DISEASE

Chairs Kahele and Gabbard, Vice Chairs Kim and Riviere, and members of the committees:

My name is Carolyn Ma, and I am the Dean for the UH Hilo Daniel K. Inouye College of Pharmacy (DKICP). As designated lead for the UH Hilo and on behalf of Interim Chancellor Marcia Sakai, the University of Hawaiʻi at Hilo fully supports this bill that will address the control and treatment of Rat Lung Worm (RLW) Disease.

UH Hilo's DKICP has both a basic science researcher and a pharmacy practice (pharmacist) faculty on the RLW Working Group.

A most recent study (in publication) has shown that Hawaiʻi Island has the highest *Angiostrongylus cantonensis* infection rates in rats (94%) and in mollusks (*Parmarion martensi*, semi-slugs 77%) in the country and the increase in human infection appears linked to the arrival of semi-slugs. A baseline recent study was conducted on Kauai between March-May 2017 and tested for the presence of *Angiostrongylus cantonensis* (Rat Lungworm), of which 17.2% of semi-slugs tested positive. Our basic science researcher has been active in conducting valuable research.

1. Jarvi lab has developed a 'death assay' to distinguish live from dead larvae. Continued study in this area will help complete studies determine how effective commercially available vegetable washes or other solutions are at killing infective RLW larvae.

2. Simulated catchment water systems have been initially conducted to test two different size filters in an attempt to filter out infective larvae. However, tests have shown that larvae can still travel or move around certain size filters. Continued evaluation of the possibility of RLW transmission in water is necessary by conducting laboratory and household catchment studies to optimize maintenance

and treatment design that prevents RLW larvae entering household and agricultural water supplies.

3. A pilot study has been completed to determine if a blood-based test can help to diagnose RLW, rather than the current diagnosed procedure of a spinal tap. Continued study of protein isolates from infected rats will help to evaluate the reliability and validity of such a test.

4. The lab continues to develop ways of reducing larval burdens in rats. Vaccination study was unsuccessful under given conditions. Further study in possibly deworming rats may be a more appropriate strategy.

Our Pharmacy Practice faculty has been working with Dr. John Martell in performing a retrospective chart review to better understand the treatment scheme and outcomes of the 70+ cases of RLW that have occurred in Hawai‘i. Funding would help to continue this investigation and further study to determine the trial effective medical treatment for the various stages of RLW in humans, domesticated animals and farm livestock.

UH Hilo supports this bill if the passage does not replace or adversely impact priorities as indicated in our University of Hawai‘i BOR Approved Supplemental Budget.