



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
House Committee on Health & Human Services
February 8, 2018 at 9:00 a.m.

By
Carolyn Ma, PharmD, BCOP
DEAN
UH Hilo - Daniel K. Inouye College of Pharmacy

HB 2104 – RELATING TO RAT LUNGWORM DISEASE

Chair Mizuno, Vice Chair Kobayashi, and members of the committee:

My name is Carolyn Ma, and I am the Dean for the UH Hilo Daniel K. Inouye College of Pharmacy (DKICP). University of Hawai'i at Hilo fully supports the intent of this bill that will address the eradication 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 Hawai'i 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 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 to 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 from 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.

UHH DKICP 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. Legislative funding would help to continue this investigation and further study to determine the most effective medical treatment for the various stages of RLW in humans, domesticated animals and farm livestock.

UH Hilo supports this bill provided that its passage does not replace or adversely impact priorities as indicated in our University of Hawai'i BOR Approved Supplemental Budget.

Thank you for the opportunity to provide testimony on HB 2104.

DAVID Y. IGE
GOVERNOR OF
HAWAII



**STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES**

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

**Testimony of
SUZANNE D. CASE
Chairperson**

**Before the House Committee on
HEALTH AND HUMAN SERVICES**

**Thursday, February 8, 2018
9:00 AM
State Capitol, Conference Room 329**

**In consideration of
HOUSE BILL 2104
RELATING TO RAT LUNGWORM DISEASE**

House Bill 2104 proposes to appropriate funds to the University of Hawaii at Hilo for programs, studies, and activities related to the prevention and eradication of rat lungworm disease. **The Department of Land and Natural Resources (Department) supports this bill, provided that its passage does not replace or adversely impact priorities indicated in the Executive Supplemental Budget request.**

The Department is a collaborator on biosecurity issues with the University of Hawaii and the Hawaii Department of Health, as described in the Hawaii Interagency Biosecurity Plan. Rat lungworm disease is recognized in the Biosecurity Plan as a serious threat to human health and agriculture in Hawaii, vectored by invasive snails and rodents. While the Hawaii Invasive Species Council (HISC), which is administered by the Department, has received funding requests from the University of Hawaii at Hilo to conduct research and education on this important issue, sufficient funding has not been available via HISC to support the broad level of education, research, and control activities needed to mitigate this threat.

Providing funds to conduct education on rat lungworm disease, and increasing capacity to work on prevention and control issues, are recommended action items in the Hawaii Interagency Biosecurity Plan, specifically border and postborder infrastructure action items BorTifs1.5 and PosTifs1.5. The Biosecurity Plan also recommends in action item PwsPro1.7 increased education and public awareness of human health issues relating to invasive species, including rat lungworm.

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

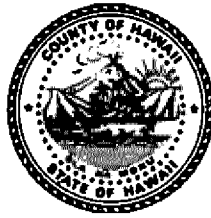
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Passing this measure would directly support implementation of the Hawaii Interagency Biosecurity Plan. The full Biosecurity Plan is available for review at <http://dlnr.hawaii.gov/hisc/plans/hibp/>.

The Department suggests utilizing the term "control" in place of "eradication," as rat lungworm disease is widespread throughout the state and is likely not possible to completely eradicate at the island or state level.

Thank you for the opportunity to comment on this measure.

Harry Kim
Mayor



Wil Okabe
Managing Director

Barbara J. Kossow
Deputy Managing Director

County of Hawai'i
Office of the Mayor

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February 6, 2018

Representative John M. Mizuno, Chair
Committee on Health & Human Services
Hawai'i State Capitol, Room 329
Honolulu, HI 96813

Dear Chair Mizuno and Committee Members:

Re: HB 2104 Relating to Rat Lungworm Disease
Hearing Date: 02/08/18 – 9:00 am; Conference Room 329

Thank you for this opportunity to testify in support of funding for activities aimed at the prevention and eradication of rat lungworm disease. Until those worthy goals have been achieved, a third aim could also be better treatment for those who fall victim to this illness.

The Daniel K. Inouye College of Pharmacy at the University of Hawai'i at Hilo established the Hawai'i Island rat lungworm disease working group. It has been conducting research and educational outreach on the disease for the past four years, and it is my understanding that it has been doing very valuable work.

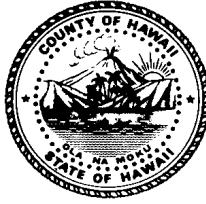
Apparently the impact of this disease has been different in Hawai'i than on the mainland, with unusually severe consequences reported for Hawai'i victims. Therefore, the funding of local research is uniquely important.

Please support HB 2104.

Respectfully submitted,

Harry Kim
Mayor, County of Hawai'i

From the office of -
Council Member
District 3



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SUSAN L.K. LEE LOY

25 Aupuni Street, Hilo, Hawai'i 96720

February 7, 2018

The Honorable John M. Mizuno, Chair; and
Members of the Committee on Health and Human Services

Dear Chair Mizuno and Committee Members,

I thank you for the opportunity to provide testimony in support House Bill 2104, which will fund the Hawai'i Island rat lungworm disease working group's efforts to prevent and eradicate rat lungworm disease at the Daniel K. Inouye College of Pharmacy.

Last December, I and five of my colleagues on the Hawai'i County Council provided a combined \$16,500 in district contingency relief funds to assist Dr. Susan Jarvi's research on the parasite that causes rat lungworm disease, with a focus on the effectiveness of treatments to kill or remove the larvae from food crops. It is unusual move for County funds to fund a State research project, but the Council agreed that it was warranted given the urgent need to protect the health and safety of this island's residents and visitors.

The research we funded will provide definitive science-based recommendations for a public outreach campaign and form a basis for ongoing needed research in the future.

Rat lungworm disease has the potential to cripple the agricultural industry in Hawai'i, and threatens the long term health of anyone living on catchment water systems. As with any other invasive species, it can easily be spread across the state, although it is most prevalent in East Hawai'i Island.

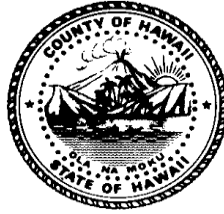
Again, I thank you for the opportunity to provide testimony in support of HB 2104, and I ask for your approval.

Aloha Piha,

A handwritten signature in black ink, appearing to read "Sue Lee Loy".

Sue Lee Loy
Council Member, District 3

Eileen O'Hara
Council Member
Council District 4



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Chair: Environmental
Management Committee

Vice Chair: Planning Committee and
Agriculture, Water & Energy
Sustainability Committee

County of Hawaii
Hawaii County Council

25 Aupuni Street, Suite 1402 • Hilo, Hawai'i 96720

Representative John M. Mizuno
Chair, House Committee on Health and Human Services
Hawai'i State House of Representatives

February 6, 2018

Re: In Support of House Bill 2104, from Hawai'i County Council District 4
To be heard by HHS on 02-08-18 9:00AM in House conference room 329

Aloha Chair Mizuno and Committee Members:

I'm writing to express my support for House Bill 2104, which appropriates funds to the University of Hawai'i at Hilo for programs, studies, and activities related to the prevention and eradication of rat lungworm disease.

Further research, treatment, prevention, and education efforts are desperately needed for all of those living with, or at risk of, contracting this devastating disease. Since the disease has come to Hawai'i from Asia, its effects have become more virulent and severe. The disease has also been found in Florida and a case was recently diagnosed in Tennessee. Without aggressive research, there is potential for rat lungworm to spread to other mainland locations.

Local institutions like the University of Hawai'i at Hilo, College of Pharmacy, are already equipped to conduct the necessary research to gather critical information about this disease. Incidences of it are grossly understated, and this research could provide more rapid diagnoses that would allow us to provide acute care in the early onset and prevent serious permanent disabilities. Diligent and effective treatment at this phase would save a tremendous amount of tax payer money required to provide long term care for individuals who have been affected by the disease.

I do not hesitate to support any measure to research and prevent rat lungworm. Please consider the important impacts that passing this bill will have on our economy and health, and contact me if you have any questions about my support or knowledge of the subject.

Sincerely,

Eileen O'Hara
Council Member
Council District 4



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February 8, 2018

HEARING BEFORE THE
HOUSE COMMITTEE ON HEALTH & HUMAN SERVICES

TESTIMONY ON HB 2104
RELATING TO RAT LUNGWORM DISEASE

Room 329
9:00 AM

Aloha Chair Mizuno, Vice Chair Kobayashi, and Members of the Committee:

I am Randy Cabral, President of the Hawaii Farm Bureau (HFB). Organized since 1948, the HFB is comprised of 1,900 farm family members statewide, and serves as Hawaii's voice of agriculture to protect, advocate and advance the social, economic and educational interests of our diverse agricultural community.

The Hawaii Farm Bureau supports HB 2104, which appropriates funds to the University of Hawaii at Hilo for programs, studies, and activities related to the prevention and eradication of rat lungworm disease.

Providing safe and wholesome food is a priority for the Farm Bureau and its members. Unfortunately, not enough is currently known about Rat Lungworm Disease, or angiostrongyliasis, to fully protect the public. For example, although we know that people in Hawaii can get the disease by eating food contaminated by the larval stage of *A. cantonensis* worms found in raw or undercooked snails or slugs, and we know that people have also become infected by eating raw produce that contains a small infected snail or slug, or part of one, it is *not* known whether even just the slime left by infected snails and slugs is able to cause infection.

This is critical information since the disease can cause a rare type of meningitis (eosinophilic meningitis) that is extremely painful, debilitating, and can be deadly. Because there is no specific treatment for the disease, patients are only given supportive therapy and pain medication.

As more people are encouraged to grow their own food in backyard gardens, and school gardens are becoming more prevalent, the risk of being infected with this disease increases. Nutritionists advise the public to eat plenty of fresh leafy vegetables. However, without knowing enough about the transmission of rat lungworm

disease, this advice may be risky in areas infested by snails and slugs, unless proper preventative measures are taken. The public needs to know what pre-consumption measures will prevent transmission. Backyard gardeners and others who may not practice pest management to effectively control snails and slugs, or those who purchase greens from these sources, may be particularly at risk.

HFB supports funding of the University of Hawaii at Hilo for the prevention and eradication of rat lungworm disease.

Thank you for the opportunity to provide testimony on this measure.