

DAVID Y. IGE
Governor

SHAN S. TSUTSUI
Lt. Governor



State of Hawaii
DEPARTMENT OF AGRICULTURE
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SCOTT E. ENRIGHT
Chairperson, Board of Agriculture

PHYLLIS SHIMABUKURO-GEISER
Deputy to the Chairperson

**TESTIMONY OF SCOTT E. ENRIGHT
CHAIRPERSON, BOARD OF AGRICULTURE**

BEFORE THE HOUSE COMMITTEE ON AGRICULTURE

**JANUARY 27, 2017
8:30 A.M.**

**HOUSE BILL NO. 474
RELATING TO RAT LUNGWORM DISEASE**

Chairperson Creagan and Members of the Committee:

Thank for the opportunity to testify on House Bill No. 474, relating to rat lungworm disease. The Department supports the intent of this measure provided it does not impact the Department's priorities submitted in the Executive Budget.

Rat lungworm disease is a serious and relatively new pathogen to plague the consumption of fresh produce grown in the islands. There is a great need to conduct research into the biology of the carriers of the disease, the ways in which it can be spread, outreach to the public in understanding the condition, and methods that can be employed to control and/or contain it.

The department supports the intent of HB474 provided it is funded at a level in which research can be conducted and carried out to achieve implementation of prevention measures. It is especially critical that Integrated Pest Management practices can be identified that minimize the use of chemicals and employ a variety of management techniques that will provide long term control of the pathogen. Outreach is an especially critical component of any IPM tactics. The more that the public understands the hazards of the disease, the less of a public health issue it will become. As noted in the bill, the medical expenses associated with contracting the disease can run into the millions. Research dollars spent in developing long term and effective



Page 2

management programs are minor compared to the expected medical bill associated with those who contract the illness.

Thank you for the opportunity to testify on this measure.

DAVID Y. IGE
GOVERNOR OF
HAWAII



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

KEKOA KALUHIWA
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

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
AGRICULTURE

Friday, January 27, 2017
8:30 AM
State Capitol, Conference Room 312

In consideration of
HOUSE BILL 474
RELATING TO RAT LUNGWORM DISEASE

House Bill 474 proposes to appropriate funds to support research, control, and outreach activities relating to rat lungworm disease. **The Department of Land and Natural Resources (Department) supports this measure provided that its passage does not replace or adversely impact priorities indicated in the Executive Budget request.**

The Department recognizes the threat of rat lungworm disease and the lack of information on statewide distribution of the parasite *Angiostrongylus cantonensis* and its hosts. The Department also notes that the Hawaii Invasive Species Council (HISC), which is administered by the Department, received proposals for research and education regarding this disease in Fiscal Year (FY)16 and FY17 but was unable to identify adequate resources to support all of these efforts. In FY17 the HISC is providing partial funding support to a project developing outreach programs and materials regarding rat lungworm disease under the direction of the University of Hawaii at Hilo. Additional funding support for a more comprehensive research, control, and outreach program, as described in this measure, would be strongly beneficial. The Department supports this measure, provided that the appropriations described therein do not impact appropriations to the HISC or other priorities indicated in the Executive Budget request.

The Department appreciates the opportunity to provide these comments.



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
House Committee on Agriculture
January 27, 2017 at 8:30 am
by
Donald O. Straney
Chancellor, University of Hawai'i at Hilo

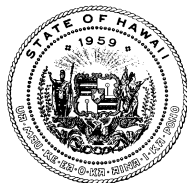
HB 474 - RELATING TO RAT LUNGWORM DISEASE

Chair Creagan, Vice Chair DeCoite and Members of the Committee:

My name is Donald Straney, Chancellor of the University of Hawai'i at Hilo and I support the intent of HB 474 to fund programs, studies and activities to prevent and eradicate rat lungworm disease.

UH Hilo views the proposal as a positive solution to address a critical health issue in the state.

Thank you for the opportunity to testify on HB 474. Aloha.



STATE OF HAWAII
DEPARTMENT OF HEALTH

P. O. Box 3378
Honolulu, HI 96801-3378
doh.testimony@doh.hawaii.gov

LATE

**Testimony COMMENTING on HB 474
RELATING TO RAT LUNGWORM DISEASE
REPRESENTATIVE RICHARD P. CREAGAN, CHAIR
HOUSE COMMITTEE ON AGRICULTURE**

Hearing Date: January 27, 2017

Room Number: 312

1 **Fiscal Implications:** The Department of Health appreciates the intent of HB474 but defers to
2 the priorities set forth in the Executive Biennium Budget. We anticipate that additional
3 resources would be necessary to fulfill the requirements of this measure.

4 **Department Testimony:** This measure seeks to appropriate funds to the University of Hawaii at
5 Hilo, the Department of Health, Department of Land and Natural Resources, and the Department
6 of Agriculture for programs, studies, and activities related to rat lungworm disease. The
7 Department recognizes public concern over Angiostrongyliasis (or rat lungworm), one of several
8 emerging diseases of public health concern. At the Governor's request, DOH and the
9 Governor's office initiated a Joint Rat Lungworm Task Force in 2016, which also includes
10 membership from the Department of Tropical Medicine, John A. Burns School of Medicine
11 (JABSOM), University of Hawaii at Hilo, University of Hawaii at Manoa, State Department of
12 Agriculture, U.S. Department of Agriculture, County of Hawaii, and clinicians. The Department
13 of Health concurs with and supports the consensus of the Joint Rat Lungworm Task Force, which
14 is that outreach and education are essential priorities in addressing the risk of Angiostrongyliasis
15 in Hawaii's communities.

16 DOH educational efforts, in conjunction with partners, have included statewide school garden
17 food safety workshops and the distribution of flyers to at-risk communities as well as
18 commercial food establishments. We welcome the opportunity to continue our work with
19 partners to improve public health education and planning regarding this important concern.

20 Thank you for the opportunity to testify.



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January 27, 2016

HEARING BEFORE THE
HOUSE COMMITTEE ON AGRICULTURE

TESTIMONY ON HB 474
RELATING TO RAT LUNGWORM DISEASE

Room 312
8:30 AM

Aloha Chair Creagan, Vice Chair DeCoite, 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.

Hawaii Farm Bureau supports HB 474 relating to 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 are 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.

HFB supports funding of the University and the appropriate state agencies to help learn more about the disease and to prevent the spread of it and other food-borne diseases, especially to children through school garden projects.

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

From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 12:31 PM
To: AGRtestimony
Cc: steffani@myhappilife.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Steffani LeFevour	Individual	Comments Only	No

Comments: A friend of mine got sick from a parasite and it has debilitated her life. She does a lot of good for a lot of people and now can barely move. It's tragic and heartbreaking. I'm really concerned this could happen to more people. PLEASE I urge you to do what you can to bring more awareness to this. Thank you. Life is too precious

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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Testimony in Support of HB 474
Relating to Rat Lungworm Disease
January 27, 2017

Chair Creagan and Vice Chair DeCoite and members of the committee:

My name is Dr. Susan Jarvi and I am the Professor of the Department of Pharmaceutical Sciences at the University of Hawaii at Hilo Daniel K. Inouye College of Pharmacy.

I am speaking as a concerned individual in strong support of HB 474 Relating to Rat Lungworm Disease (RLWD).

Hawaii is the epicenter for rat lungworm disease (angiostrongyliasis) in the United States, and is among the most serious threats to human health of all diseases carried by wildlife in Hawaii. Most infections are presumed to be due to the ingestion of infected slugs or snails on fresh produce or from unfiltered water. The nematode reproduces in rats and develops in slugs and snails. Although most human cases have originated in East Hawaii, there have been cases reported on all of the Hawaiian Islands. Why so many cases originate on Hawaii Island is unclear. Thus, funding is needed to address this grave issue.

Rat lungworm is a preventable disease, but only if one is informed about it. A significant component of this bill is geared toward prevention through education. My lab has been the first to develop and implement curriculum to educate our keiki, who can then educate their `ohana on how to best prevent RLWD. While this RLWD curriculum currently only involves 5 schools on Hawaii Island, funding is needed to develop this into a statewide program available for all keiki (especially those in schools with school garden programs). Funding is needed for tracking the spread of highly infected slugs throughout the islands and pinpoint areas of high transmission. In these areas we could run experiments necessary to evaluate the possibility of using rat baits containing anti-parasitic drugs to deworm rats and break the disease cycle.

Funding is also needed to determine which approved vegetable washes are most effective at killing larvae so people can better wash their produce, and continue to eat local and fresh produce safely. East Hawaii has the highest use of catchment water in the state. We need to know the best practices for treating catchment water as RLW larvae can live in rainwater for many weeks.

RLWD has already caused multiple deaths; many victims suffer long-term disability.

RLWD impacts the people of Hawaii and its visitors, it impacts public health as a global emerging infectious disease, it impacts agriculture through the loss of public confidence in locally grown produce, and it puts food self-sufficiency and food security for all of Hawaii at risk.

The state of Hawaii needs to take immediate action. Please support HB 474 with full, necessary funding.

From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 10:43 AM
To: AGRtestimony
Cc: mendezj@hawaii.edu
Subject: *Submitted testimony for HB474 on Jan 27, 2017 08:30AM*

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Javier Mendez-Alvarez	Individual	Support	No

Comments:

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From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 8:23 AM
To: AGRtestimony
Cc: kerri_fay@hotmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Kerri Fay	Individual	Support	No

Comments: My name is Kerri Fay and I'm writing as a private citizen asking that you please support funding for HB474 for the Rat Lungworm research team to continue and expand their efforts at understanding, diagnosing and preventing the spread of this very dangerous parasite. Thank goodness there are researchers out there that are trying to figure out ways to prevent the spread of Rat Lungworm Disease and to provide educational outreach to the people of Hawai'i. We should not have to wait until more people become sick with this parasite before action is taken. Thank you, Kerri Fay, Kula HI, kerri_fay@hotmail.com

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From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 8:12 AM
To: AGRtestimony
Cc: richkoob@kalani.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Richard Koob	Individual	Support	No

Comments: Please support, as this is very important for the health of our community, our keiki and 'ohana. I've friends who have suffered from rat lung disease, and one has been in a como for years.

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From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 8:00 AM
To: AGRtestimony
Cc: robert.welsch@verizon.net
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Robert Welsch	Individual	Comments Only	No

Comments: Aloha, I live in lower Puna and have a catchment tank, which is maintained and cleaned regularly. I'm also a landscape designer and small scale farmer and am well aware of the dangers posed by Rat Lung Worm and the potential devastating effects. I fear for not only me and my family, but for my workers as well. I also shop at Makuu and Uncle Robert's Famers markets for vegetables and produce. I feel strongly that the State of Hawaii should support efforts to figure out ways to prevent the spread of Rat Lungworm Disease (RLWD), measure what is really going on and provide educational outreach to the people of Hawai'i. All of these together are very important to the safety and wellbeing of Puna and other district residents. I am asking our legislators and their aides to add their own support to HR 474. Thank you! Robert Welsch

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Hello, my name is Stefano Quarta and I am a Hawaiian resident. I have been living in Kapoho for more than 2 years, I filed taxes in Hawai'i for 2015 and will do so for this fiscal year, I have a Hawaiian driver's license, I was married in the city of Hilo at Rainbow Falls and I am an expecting father. I plan to enroll my child into Hawaiian schools and plan on buying land so I can invite my parents to move to Hawai'i where they can live with us and share with them the beauty I get to experience everyday here on the Big Island of Hawai'i. I call Hawai'i my home. I like to consider my situation a representation of upcoming Hawaiian families that migrated from the mainland. I want to see Hawai'i flourish.

To be clear, this testimony is not on behalf of the university but of my own person. Since January 2015 I have been assisting Dr. Susan Jarvi in studying Rat Lungworm Disease (RLWD) at the University of Hawaii at Hilo, Daniel K. Inouye College of Pharmacy. I started as a volunteer and soon was hired as a research assistant part-time. Dr. Jarvi entrusted me with carrying out a study that would use a reliable and specific blood test to determine how many people have been exposed to *Angiostrongylus cantonensis*, the parasite that causes RLWD. I have witnessed, firsthand, the outcome of our test on every blood sample that was donated, including horse serum. I was responsible for organizing the data and helped developed some very useful conclusion from doing so. A formal publication in scientific, peer-reviewed journals is around the corner. We have presented the results of his study locally and internationally, at public lectures and scientific conferences. I am very appreciative to Dr. Jarvi for choosing me to work with her and I have grown in my dynamism as scientific investigator.

My elected Hawaiian Legislators, there are two things wrong with the picture that I see. The first, Hawai'i's workforce for investigating rat lungworm (RLW) exposure consists of a primary investigator, a part-time research assistant and about half a dozen volunteers. It is obvious that this disease is not being taken seriously. Second, in order to keep up with the demands of this project I am regularly volunteering extra hours beyond my 19 paid hours a week. The reality is that I consistently need to extend myself further to meet all the unexpected circumstances that come with doing this important research. I do it because I want to bring to light that Hawai'i needs full-time scientists that can dedicate full working weeks. I can say to you that it is highly unlikely I will be receiving money granted by this bill since I plan on pursuing a PhD. next year, so my invested interest in this bill is as a Hawaiian resident and not as a potential employee. I want the peace of mind knowing that while I go to school or raise my family, I am living in a conscious and healthy Hawai'i, one that acknowledges and takes action against this disease.

I read that the department of health has reported 70 cases of RLWD from 2001-2014 and many more in 2015. When I think about the number of people I personally know that have been affected by this disease and when I witnessed how many people donated blood that resulted positive for specific antibodies against the parasite, (where more than half of the positive donors didn't think they were ever exposed), I feel extremely alarmed and angry because I'm needing safety and care for the people and pets (Horses, dogs, etc) of Puna and Hilo. I also need our future to matter to the state, for it is much easier to prevent the disease than treat it.

I wish I was not so swamped with work so that I could have had more time today to write a fully comprehensive list of observations without judgment and have it verified by doctors, lawyers and scientists. I wish I were not writing this testimony at midnight because I was informed with an 18 hour notice of the timeline of this bill, because priority infrastructure for the next RLWD effort is being established under its own set of deadlines and requirements which I am already racing to meet. I simply don't have the time to write a testimony on all the issues I have experienced regarding rat lungworm disease. Right now, I am feeling overwhelmed and need support and I want to know that there are

going to be more scientists that are tackling this issue just as aggressively as me with twice the time. I urge you to support HB474 and appropriate multiple full-time Hawaiian scientific jobs for the research of RLWD using state dollars as soon as possible! It affects us all. When you think about eating a salad at a Hilo restaurant, isn't there a part of you that hesitates for a moment and feels scared? The population, including tourists, of the East side of the Big Island of Hawai'i need your help.

From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 6:45 AM
To: AGRtestimony
Cc: edwardwels@yahoo.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Edward Wels	Individual	Support	No

Comments: Aloha thoughtful Legislators, I am a concerned citizen who believes that the State should take this issue seriously- and should support the research, education, awareness and diagnostic tools that is needed across our state. It can prevent so many others from getting this devastating disease. We shouldn't have to wait until there is a massive outbreak at a school. This is an illness that can be prevented and needs education around even to doctors and specialists so they can treat it early so that it doesn't have such devastating effects. This is a very important issue. Please vote for this. Thank-you, Edward

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Thomas Lee Travis
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Incline Village, Nv 89451
email: ttravis12@mac.com
mobile: (757) 639-7364

Thursday, January 26, 2017

Richard P. Creagan
Chairman of the House Committee on Agriculture
Lynn DeCoite
Vice Chairman

Re: Testimony in support of HB 474 (Relating to Rat Lung Worm (RLW)) for the hearing scheduled at 8:30 am on January 27.

Aloha,

This letter is in strong support of HB 474.

I am writing for myself and my wife Laura. I am a retired Navy captain that served as Commanding Officer of both a Submarine and a Submarine Squadron and Laura is a retired registered nurse. At the time Laura contacted Rat Lungworm Disease, we owned a small farm on Papaya Farms Road in Lower Puna. Since she has had the disease, we have had to move from our retirement home in Hawaii, both to avoid reinfection with RLW and to reduce medical costs in dealing with RLW complications.

Summary of Lessons Learned:

- **Diagnosis of RLW is difficult and often delayed, causing risk and hardship for the patient. Often the main symptom is extreme headache with no or low fever. It is possible the underlying cause of the headache can cause death.**
- **Costs to treat RLW are similar to other major diseases.**
- **Determining the cause of infection is often difficult and despite claims by the Department of Health, no one other than the UH School of Pharmacy under Dr. Susan Jarvi is looking at each case.**
- **The career of a RLW patient suffering a moderate form of the disease will be interrupted or permanently ended.**
- **The close family or friend who cares for someone experiencing a moderate case will be unable to continue a career for some months to years. Lives will be permanently changed.**
- **Some patients experience moderate to severe pain from one to several years after having the disease.**

- **Semi slugs, an invasive species, apparently are enabling more rapid spread of the disease.**
- **Animals other than humans also suffer from this parasite.**
- **UH School of Pharmacy has led the charge in research and understanding the disease, including establishing a post-hospitalization survivor network and including managing survivor expectations.**

Background:

My wife Laura developed what experts at Hilo Medical Center classified as a “moderate” case of RLW. Her symptoms began on September 19, 2015 and she was diagnosed on October, 2015.¹

Diagnosis of RLW followed three visits to the Emergency Room, one visit to urgent care, and three visits to a primary care physician. Hospitalization lasted about two weeks, post-hospitalization emergency room visits totaled five, health care specialists referred to numbered seven, and contact with primary care providers was daily to weekly for several months. The current health care cost (paid by our medical insurance) is over 300,000 dollars.

When we permanently retired to a farm on Papaya Farms Road in lower Puna. I personally designed the catchment and water delivery system to prevent RLW (among other dangers). Laura studied and took precautions to prevent RLW. Our precautions included thoroughly washing vegetables and carefully handling fruit. Our drinking water passed through one, ten, and thirty micron filters, as well as an ultra-violet filter. The system was also treated with chlorine. Because we did take precautions, we do not know how she contacted the parasites.

Although the Department of Health has said they investigate each case to help the survivor determine the cause, we have never been contacted.

After our own careful reconstruction and study, Laura probably got the disease from eating greens in a restaurant or from cleaning filters on the water catchment system. Many experts do not believe RLW can be spread through skin contact, but many anecdotes lead me to believe it is possible.

It appears that dozens of people have RLW and are not diagnosed. The cases diagnosed are more likely to include severe or moderate cases. Research has not established whether the severity of a RLW case is predominately a result of the number of parasites that enter the body or predominately a function of the individual body’s response to the invasion of parasites. Although the number of parasites that invade may be important, it is possible—and in my mind likely—that the severity is determined

¹ Laura’s symptoms during the duration of the disease included headaches, itchiness, extreme skin sensitivity and burning pain, nerve pain, double vision, loss of balance, impaired short term memory, difficulty in urination. earaches, neck pain, and hair loss.

by the response of the body after the parasites invade. If so, those that develop RLW must take extraordinary precautions to prevent additional contact with the parasites.

Laura's case of RLW has upset and redirected our lives. Personally I have had to resign or suspend support for three community groups and Laura has had to resign from the Puna Medical Center Hospital Board, I have had to spend over 20,000 dollars of personal funds for temporary lodging and travel to Honolulu to support medical care and testing, Subsequently, Laura and I have had to sell our retirement home in Hawaii and move to the Mainland.

Laura still experiences considerable nerve pain as a consequence of the disease. After a year from onset of the disease, she was able to stop use of opioid pain relievers but still requires medication.

In short, this is an awful disease with profound consequences for even those that develop "moderate" cases. I seriously doubt the accuracy of the Department of Health data on the number of cases, I believe there is a strong increase in the numbers as a dangerous invasive species (semi-slugs) spreads the disease over an ever-increasing area. Based on discussions with horse owners, I think some horses may have been killed or ruined by the disease.

Laura and I have found only two reliable sources of information on RLW on the Island of Hawaii. One is Dr. Martel at Hilo Medical Center and the other is Dr. Susan Jarvi and her team at the UH School of Pharmacy.

The time to act is now. Thank you.

Thomas Lee Traut
Laura A. Jarvi

My name is Dr. Alex Smolak. I am a research scientist with the Infectious Disease Epidemiology Group at Weill Cornell Medical, which is Cornell University's school of medicine. I also have a farm and residence in Kapoho, HI.

I support HB474. I think it will further understanding of Rat Lungworm Disease (RLWD) in Hawaii. A greater understanding of RLWD could be a positive step forward for rural health and underserved populations, and potentially decrease health care costs. I have personally witnessed more than a dozen cases of what appears to be RLWD among humans in Kapoho. Furthermore, I have personally stopped eating any leafy greens grown in Hawaii, and have implemented an aggressive program of rat and slug control at my residence. I believe the threat of transmission of RLWD to be reason for serious concern.

Thank you for the opportunity to submit testimony.

Rheam Mansour PT #3601; Testimony in support of HB474

I am a resident in Kapoho on the Big Island. I have been affected by Rat Lungworm as a physical therapist practicing on the island and personally as a pet owner.

I have worked with patients who have been infected with Rat Lungworm disease in the hospital-acute care setting, sub-acute care setting and long term care setting. I have seen cases of the parasite causing irreparable brain and nerve damage permanently affecting patient's ability to breathe, eat, urinate/defecate, walk, move, feel, speak, and think. I have worked with patient's with the Rat Lungworm Disease who are in such severe pain that they cannot even tolerate a sheet covering their body due to the sensory symptoms caused by the disease. Some of the cases I have seen have died shortly after developing symptoms however other cases have survived with severe, permanent disability requiring long term skilled nursing/medical/rehabilitative care at high expense. From my experience, I have seen that the average cost of a day in skilled nursing facility in Hilo is between \$300-\$400/day; the cost increases for any specialty care like wound care or IV antibiotic treatment.

As a pet owner, I recently woke to find my pet pit-bull paralyzed, without injury. We later learned the cause of his symptoms were due to Rat Lungworm ingestion. He is in severe pain. A light touch or even a breeze passing over him sends his paralyzed body into painful spasm. We feed him, turn and position his body, wash him and manually expel his bladder. He is developing pressure ulcers and has been treated for skin infections related to the skin breakdown associated with paralysis. His symptoms are similar to some of the human cases that I have seen. There is a lack of evidence based research for the diagnosis, prevention and treatment of Rat Lungworm disease and healthcare outcomes are affected by this.

Hawai'i Farm to School and School Garden Hui

Coordinated through The Kohala Center



TESTIMONY
House Committee on Agriculture
January 27, 2017, 8:30 a.m.

Island Networks & Organizations

Farm to Keiki (Preschool)
FoodCorps Hawai'i
Grow Some Good
Hawai'i Island School Garden
Network/The Kohala Center
Tolani School
Kānehameha Schools
Kauai School Garden Network/
Malama Kauai
Kōkua Hawai'i Foundation
(ĀINA In Schools)
Maui School Garden Network
Moloka'i School Garden Network/
Sustainable Moloka'i
O'ahu Farm to School Network
Pacific Resources for Education and
Learning (PREL)

State Agencies

Hawai'i Department of Agriculture:
Farm to School Program
Hawai'i Department of Education:
Hawai'i Child Nutrition Programs
Hawai'i Department of Education:
School Food Services Branch
Hawai'i Department of Health:
Healthy Hawai'i Initiative
UH CTAHR O'ahu Master Gardeners

HB474: RELATING TO RAT LUNGWORM DISEASE

Chair Creagan, Vice Chair DeCoite, and Members of the Committee,

The Hawai'i Farm to School and School Garden Hui **strongly supports HB474.**

Rat Lungworm Disease (RLWD) is an issue that can no longer be kept in the dark in Hawai'i. There is a desperate need for funding, research, monitoring/control, and educational outreach dedicated to this disastrously debilitating disease, so that there are ZERO cases going forward.

The Hawai'i Farm to School and School Garden Hui stands ready to assist with educational outreach to Hawai'i's students and schools.

We have created a School Garden Safety Manual, which includes information on RLWD, and are holding workshops around the state to bring this information to educators. The manual is available online via The Kohala Center's website under Farm to School Resources (link to School Garden Safety Manual: https://drive.google.com/file/d/0B_Qw59RHMj_QR3dZQ3o5UXYxWWc/view).

Formed in 2010, the Hawai'i Farm to School and School Garden Hui is a statewide network comprised of five island-level networks, active organizations, and representatives of the Hawai'i Departments of Agriculture, Education, and Health. Our mission is to strengthen Hawai'i's statewide farm to school and school garden movement.

Please pass this bill to enable the ERADICATION of RLWD in Hawai'i.

Thank you very much.

Sincerely,

Lydi Morgan Bernal
Coordinator
Hawai'i Farm to School and School Garden Hui
schoolgardenhui@kohalacenter.org
www.hawaiischoolgardenhui.org

From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 5:05 AM
To: AGRtestimony
Cc: lisagrafos@mac.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Lisa Grafos	Individual	Support	No

Comments: Dear Sirs/Madams, Over the past couple of years, I have watched my beautiful, loving, and previously vibrant friend Rebekah struggle with this illness. She almost died. She lost use of her legs/body, suffered excruciating, almost unbearable pain daily, so much that she actually wished for death. It's a very very slow road to recovery for this woman, who is an earth angel who otherwise would be devoting her life to serving others. It has absolutely devastated her financially and has drained all of her financial resources. Had this bill already been in existence, perhaps my friend could have been diagnosed earlier and not face the long recovery she currently faces. I support this bill entirely, and urge you to consider passing it. If this situation is not controlled, it could impact many more lives, as well as hurt Hawaii's tourism.
Respectfully, Lisa Grafos

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From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 4:29 AM
To: AGRtestimony
Cc: lydibernal@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Lydi Morgan Bernal	Individual	Support	No

Comments: Aloha Kakou Thank you very much for hearing this bill. I am writing in strong support of HB474, Relating to Rat Lungworm Disease. I have THREE friends who contracted Rat Lungworm Disease (RLWD) within the past 1.5 years, all ages 30-40 years old. Their lives were almost completely destroyed by this disease and they now live with serious physical disabilities because of it. Two friends were a husband and wife couple living in Hilo who contracted RLWD from an under-washed head of lettuce purchased from Hilo farmers market. Another friend lives on Maui and contracted RLWD from a salad eaten at a restaurant. How did this happen? UNINFORMED food producers, food service workers, consumers, and health care providers. It's time for Hawaii to shine the light on this issue so that there are ZERO cases going forward. Please pass this bill to enable the ERADICATION of RLWD. Thank you very much!

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From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 3:48 AM
To: AGRtestimony
Cc: andreaHenkart@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
andrea henkart	Individual	Support	No

Comments: An example: My name is _____ and I'm writing as a private citizen asking that you please support funding for HB474 for the Rat Lungworm research team to continue and expand their efforts at understanding, diagnosing and preventing the spread of this very dangerous parasite. Thank goodness there are researchers out there that are trying to figure out ways to prevent the spread of Rat Lungworm Disease and to provide educational outreach to the people of Hawai'i. We should not have to wait until more people become sick with this parasite before action is taken. Thank you. Andrea Frank Henkart Novato, CA Andreahenkart@gmail.com

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From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 1:44 AM
To: AGRtestimony
Cc: natashabohm@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
natasha bohms	Bevolve LLC	Support	No

Comments: Aloha, To whom this may concern, I believe that additional funding is necessary for research for Rat Lung Worm disease. Many people are still unaware about how to manage dealing with this issue and need knowledge and awareness. Thank you for your support! Mahalo nui!

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From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 1:40 AM
To: AGRtestimony
Cc: ben.lillibridge@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
ben lillibridge	Individual	Support	No

Comments: As a small business owner in Hawaii, I find the lurking danger of this unstudied disease rather alarming for my and my customers health. Let's give this fine group some more resources to really figure out what's happening.

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Testimony; HB474

Aloha Hawai'i Legislature;

Mahalo nui for your undivided attention to this most important Bill, HB474.

Rat Lungworm disease is a powerful and real entity in our precious communities of Hawai'i.

I was exposed to RLWD IN 2012.

After \$1,000.00's of dollars and multiple cure options, I am still being treated.

Initially I was under observation in the Hilo Emergency Center and was released for having a mis-diagnosed 'extreme case of the flu.'

Being an active Educator on the island of Hawai'i, I am extremely sensitive to the realities of informing our Keiki and the Ohana of this disease.

The University of Hawai'i at Hilo, through the leadership of Dr. Jarvi has relentlessly researched and documented this phenomenon. They need assistance and funding.

Please review;

YouTube.com

'Beyond the fear; a documentary about

Rat Lungworm Disease'

1,928 views

Thank you kindly for your time and attention.

I am available at any time to talk about this situation.

Lee Michael Walczuk

My name is Cristina Urioste, and I'm writing as a private citizen asking that you please support funding for HB474 for the Rat Lungworm research team to continue and expand their efforts at understanding, diagnosing and preventing the spread of this very dangerous parasite.

Thank goodness there are researchers out there that are trying to figure out ways to prevent the spread of Rat Lungworm Disease and to provide educational outreach to the people of Hawai'i.

We should not have to wait until more people become sick with this parasite before action is taken. A dear friend of mine has been struggling with the Rat Lungworm parasite for over 2 years, and is in constant pain, has lost the ability to walk. She was a perfectly healthy woman before contracting this parasite.

Thank you,
Cristina Urioste,
cristina@thedolab.com
310.804.9914

Aloha,

I know that this bill may seem like one that you have no interest in. Likely you haven't gone through this disease nor do you know anyone who has contracted this illness. But for a moment I'd like to ask you to imagine your child, or your mother... your sister or grandparent and imagine that they simply ate a salad or drank some water and suddenly they are sicker than you've ever seen them before.

It seems like the flu, they have vomiting and fever and you hope that within a few days they will be okay. A week passes and their fevers skyrocket and symptoms worsen. Headaches and neck pain to an excruciating degree... nerve pain so intense they scream if you simply place a blanket on them. you decide to take them to the hospital. They run tests and send you guys home saying it's probably just a flu and they give you antibiotics in case it's leptospirosis. " It should clear up. Bring them back in if they aren't better in 5 days"

5 days go by, and they are getting worse. 3 more visits to the hospital. More tests. More bloodwork. Watching your loved one in excruciating pain and they have a high pain tolerance. What could it be? Why are there no answers? The only clear thing is a high eosinophil count... meningitis symptoms... still no clear answers. Soon they lose feeling in their limbs. Cannot control urination. Start having seizures. Or worst case go into a coma.

And so little answers. You feel totally lost navigating through this alone. What do you do? Where do you go?

This happened for 2 and a half months on Maui before my boyfriend decided to take me off the island to go see specialists in Oregon and California which, gratefully, saved my life. It has now been 2 years of my life gone to this illness. More than \$70,000 spent on medical treatments. I've had to leave my home, my community, my work, and my dreams and ambitions because of this illness. It has been the most painful, depressing, and humbling experience of my life.

If this was Ebola or West Nile or some other name perhaps it would get recognition and the support that it deserves. Trust me, I wish it had another name, I cringe each time I hear it. But this is a disgusting disease with a disgusting name and I don't wish it on even my worst enemies. Please don't wait until it becomes an epidemic. Don't wait until it becomes relevant to YOUR life before you take action.

Our state should give the support needed to make sure that there is prevention, education, awareness, diagnostics and information easily available so that no one else has to go through this debilitating illness.

My name is Rebekah (Uccellini) Kuby and I am testifying as an individual, though I worked from 2010-2015 with schools across the islands as the Director of Grow the Change Program and educator with the Maui School Garden Network and program manager at Malama Maui Nui.

My entire life has changed forever because of this disease and I'm urging you to please support the amazing people who are trying to keep our children, communities and animals safe from

this fate. Don't risk this happening to you or your loved one before you support it. Trust me, you will want this informed care and support available if ever you or someone you need come down with this illness.

It is essential that adequate funding be allocated for research and education on rat lungworm disease, and I urge you to support this bill.

Sincerely,
Rebekah (Uccellini) Kuby
Grow the Change Program
808-344-7187
PO Box 962
Hana, Hawaii 96822

From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 10:34 PM
To: AGRtestimony
Cc: unity.n@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
TuyNgoc Nguyen	Individual	Comments Only	No

Comments: Aloha State Legislature, I write to you as a health care practitioner on this wonderful island of Hawai'i, in support of funding to study rat lung worm. I am a medical doctor trained at UCSF, public health servant trained at the UC Berkeley School of Public Health, Traditional Chinese Medicine practitioner, and currently a resident physician in the Hawaii Island Family Medicine Residency Program. At the Hilo Medical Center where I currently spend much of my time, we definitely see people with rat lung worm who end up in the Critical Care Unit for many weeks, due to the effects of this meningitic disease on their brains and nervous systems. We see many more suspected cases that are not confirmed by spinal fluid sampling. And the numbers out in the community at large are greater yet. In my Gestalt sense, which includes reports from my communities, the numbers are rising. Across the Pacific basin and south-east Asia, Angilostromyloides cantonensis is the most common cause of eosinophilic meningitis, and as you are aware it is known that the numbers are in fact increasing in epidemic proportion overall. By furthering our understanding of the epidemiology, pathophysiology and treatment of this disease, we will benefit not only Hawai'i's people and animals, but also those in other affected islands and countries. Thank you, TuyNgoc "Unity" Nguyen, MD

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Re: HR 474

10:10pm, January 25, 2017

Aloha,

My name is Manabu “Mark” Kimura. I made a documentary film about rat lungworm disease and interviewed several people who have been affected by the disease (available at youtu.be/r88WNCxAjQ8). I am testifying in support of HR 474 relating to rat lungworm disease. I volunteered to interview rat lungworm survivors and film them because when I was working for the College of Continuing Education at UH Hilo organizing public lectures by faculty members, I was surprised to see how many people showed up at the lecture by Dr. Susan Jarvi, who runs Hawaii Island Rat Lungworm Working Group. I kept track of the turnouts of all lectures for 1.5 years, and no other lecture had a tremendous turnout like the one by Dr. Jarvi—the large lecture room was completely full. There were so many people concerned about the disease. Since I was a well-known figure among the community at that time, I offered my help and we decided to document people’s voices. While we were visiting rat lungworm disease survivors/victims, I directly interacted with them got to hear their stories. In fact, I learned there are a lot more to this disease as a social issue than official records by the department of health. Please consider watching the documentary film to hear what they must say.

In conclusion, I am supporting HR 474 because it is a real and serious social issue throughout the state of Hawaii and it needs to be addressed today.

Sincerely,

Manabu “Mark” Kimura
94-608 Lumiaina St, S201
Waipahu, HI 96797
808-313-0533
mk77@cornell.edu

From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 10:03 PM
To: AGRtestimony
Cc: smileyburrows@aol.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Shannon Burrows	Individual	Support	No

Comments: Aloha,My son Phoenix contracted the Rat Lungworm parasite two years ago.It was the most horrifying illness I have ever witnessed.Fortunately,my son survived .Living in Puna for twenty years,I saw the introduction of the semi-slug and I know over thirty people who contracted this parasite,but they would disappear from public eye,maybe seeing them six months later with a cane,completely debilitated,if they lived.The doctors were clueless and had almost no protocol.My son could not move for months,in severe agony.I got involved with the University to help spread the word to our community about the seriousness of this illness.I took the blood test in the blind study and found I had been exposed to the parasite,but never suffered like my son or even had awareness that I got it.Please,help us and support this measure,it is so important not only for residents,but for tourism as well.People need to be informed and more research is imperative for the safety of Hawaii ,mahalo nui for your support and god bless our health

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 9:59 PM
To: AGRtestimony
Cc: stevenwhy55@yahoo.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Steven Whaley	Individual	Comments Only	No

Comments: I came to the Big Island to live one year ago, and received very little information about Rat Lung Disease or ways to prevent it for months after arriving. After learning about he disease, this has led to fear about eating raw vegetables or fruits, a fear of eating raw salads in restaurants or from vendors at markets, and confusion about ways to prevent Rat Lung Disease. I would like the government to fund research on prevention, and educate everyone coming to the island - both tourists and residents, for their own safety. Thank You. Steven Whaley

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 9:57 PM
To: AGRtestimony
Cc: alohajungleman@yahoo.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Daniel Covington	Individual	Comments Only	No

Comments: As a participant in the Rat Lung study I was surprised to be informed that I had this disease. And did recall having a "strange flu like that took a long while to get over". Over the last 5 months I have been dealing with an blockage in my left eye. I have seen two eye specialist that are baffled and the treatments have not changed. I see only light and shadows in this eye now and continue treatments. I have been through tested for a multitude of disease and only Rat/Lung is positive. I retired from the tourism industry and am concerned not only myself but my ohana and our malahine visitors Uncle Kana (Daniel Covington

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 9:51 PM
To: AGRtestimony
Cc: MaryBailey808@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Mary	Individual	Comments Only	No

Comments: Aloha and thank you for hearing my testimony. I write to you from my heart and beg that you will please please please pass this bill which will help to further studies and education to the Hawaii people about Angiostronglosis Cantonesis. One of our dearest and most hard working community angels was diagnosed last year with this horrific disease. She worked tirelessly for our community to create a wonderful garden program for our public schools, as well as creating a public garden at the homeless shelter on Maui. She has been suffering constantly since this disease has taken over her life. She is in constant pain, seizures and other experiences that nobody should have to go through, much less a true angel who has done so much for the people of our beautiful island home. I urge you to please help other people get the education and the much needed research so more people can be saved the horrors of this disease. We need your help. Sincerely, Mary Bailey

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Sent: Wednesday, January 25, 2017 9:44 PM
To: AGRtestimony
Cc: smileyburrows@aol.com
Subject: *Submitted testimony for HB474 on Jan 27, 2017 08:30AM*

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Shannon Burrows	Individual	Support	No

Comments:

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 9:43 PM
To: AGRtestimony
Cc: zach.mermel@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Zachary Mermel	Individual	Support	No

Comments: I strongly support HB474.

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 9:41 PM
To: AGRtestimony
Cc: suzannewakelin@yahoo.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Suzanne Wakelin	Individual	Support	No

Comments: Please support this bill. Rat lungworm disease is a real threat to residents and visitors of Hawai'i. I know a number of people in my community who contracted the disease and their health has been devastated as well as the lives of their families and friends in dealing with it. As the situation is now, I cannot safely serve my family uncooked greens or salads from my vegetable garden, or be sure that any salad or locally grown produce that I buy at a restaurant is safe to eat. We do not have adequate support systems in place to prevent or treat this disease and this bill will provide some funding to help address this problem. We also need proper ongoing assessment of the occurrence of this disease because by many accounts it is under-reported by HDoH and CDC. There needs to be better outreach and education that includes local doctors and health-care professionals, Emergency Room and Urgent-care facilities for early identification and diagnosis since the prognosis for recovery is extremely dependent on early diagnosis and treatment. Mahalo for your attention and support for this bill.

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 9:26 PM
To: AGRtestimony
Cc: malamapuna@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Paul Kuykendall	Individual	Support	No

Comments: Aloha, I live in lower Puna and have seen the devastating effects of this disease on residents and friends. There have been many more cases of the disease than has been reported by Department of Health. I request that you support this bill and efforts to effectively monitor the number of cases and take real steps to lower them in coming years. Thank you for your consideration.

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Testimonial in support of HB474

In all my time on the Big Island of Hawai'i, I have interacted fairly constantly with rat lungworm disease (RLWD) and its effects. I have known multiple individuals, mostly on the east side of the big island who have been both definitively diagnosed with this disease and those who believe they had it, but were never definitively diagnosed. One of whom was a baby, less than a year old who became infected, got very ill and spent more than a couple of weeks in hospitals on this island and Oahu, who was not diagnosed until more than two weeks after his first doctors visit. He was first discharged from the ER where doctors had evidence from a chest X-ray to believe that it was pneumonia. His condition progressed fairly dramatically and he suffered immense pain and discomfort due to meningitis and still has extreme skin sensitivity which persists long after his treatment was 'completed'. There was also a problem with communication among the doctors, who struggled to collaborate effectively between their practices, and were not reporting cases to contribute to clinical statistics. After mom and baby returned to the Big Island, they chose to leave Hawai'i out of fear for their safety.

My husband works as a research assistant on a Rat Lungworm lungworm research team, so I have a rudimentary understanding of the rat lungworm (RLW) situation in Hawai'i. Very often I experience people reaching out to my husband for advice and support if they believe that they themselves or those close to them might be affected by RLW. He is not a doctor, he is a scientific investigator, and people are turning to him for help because there is a widespread understanding, or fear, that doctors can't help. In these instances I hear people saying that they fear how long it might take for a doctor to diagnose them, that they might have to have a spinal tap, or worse, that they might be improperly diagnosed and eventually suffer lifelong neurological damage...

I judge it to be very dramatic, and I feel very scared when I think about the possibility that I might ever be exposed to it, and how long it might take to get a definitive diagnosis so that I can begin treatment, as I understand the progression of the disease to be very dangerous.

I consider Hawai'i to be my home, and I live in Puna, which appears to be somewhat of an epicenter for this disease. I live a very natural lifestyle and spend a lot of time outdoors: interacting with the natural world, organizing and delegating tasks for building small houses and watching over children playing in the grass and within the jungle. I spend very much time communicating with anyone who comes to visit me about precautions to take and to be very aware of what they are ingesting, because often they do not know of the specifics of this disease or how to protect themselves against it.

When I think about continuing to live on this island, which is something that I want to do very much, I also feel scared because I need health and safety for myself and my family. As a pregnant woman, I feel very serious about this and never take the situation of RLW lightly. I feel very scared when I think about the possibility that I might ever be exposed to it, especially during pregnancy. According to the CDC, I understand there is little to nothing doctors can do, I would simply have to let the disease take its course

within me and my baby before the baby is at least 6 months old. As an expecting mother, I understand how vigilant I have to be to prevent myself or my baby from being exposed, but I fear there are still so many that do not understand the gravity of this situation, and that if another expectant mother is infected, that both she and her baby would be gravely at risk.

I think of all our pregnant Hawaiian mothers in the East Big Island area, Hilo and Puna, and of all our future infants and babies and feel desperate to experience a reality where this problem is being addressed and understood, because prevention is all we have during these vulnerable months of life.

I believe that this bill will fund extremely important research, and I look forward to the day that this disease is openly acknowledged as a Hawaiian problem, is easily diagnosed, is being actively prevented and is treatable within the state of Hawaii. I have an absolute and resounding "Yes!" to Hawai'i state dollars supporting this Hawaiian problem that can be prevented.

From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 8:41 PM
To: AGRtestimony
Cc: avery.mcchristian@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Brian McChristian	Individual	Support	No

Comments: Aloha, My name is Brian McChristian, and I am testifying in support of HR 474 as the need for funding for research and education in Hawaii for rat lungworm disease is essential. Over the past 15-years cases of rat lungworm disease in Hawaii have been increasing in number and severity, costing people their lives, livelihoods, savings, health, and well-being. Research and education for rat lungworm disease, a food-borne illness, is crucial to Hawaii's efforts to become food secure. I am in support of HR 474 because rat lungworm disease must be addressed in order to ensure that the health and mental well being of Hawaii's residents and visitors are protected. Ignoring this important problem has and will continue to hurt our farmers, our residents and visitors, and Hawaii's reputation as a tropical vacation paradise.

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 8:41 PM
To: AGRtestimony
Cc: katelyn.thomson@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Katelyn Thomson	Individual	Support	No

Comments: Aloha, My name is Katelyn Thomson and I am testifying in support of HR 474 as the need for funding for research and education in Hawaii for rat lungworm disease is essential. Over the past 15-years, cases of rat lungworm disease in Hawaii have been increasing in number and severity, costing people their lives, livelihoods, savings, health, and well-being. Research and education for rat lungworm disease, a food-borne illness, is crucial to Hawaii's efforts to become food secure. I am in support of HR 474 because rat lungworm disease must be addressed in order to ensure that the health and mental well being of Hawaii's residents and visitors are protected. Ignoring this important problem has and will continue to hurt our farmers, our residents and visitors, and Hawaii's reputation as a tropical vacation paradise.

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My name is Kayuri Kadoya and I am with Dr. Jarvi and Miss Howe at the University of Hawaii at Hilo College of Pharmacy. I am testifying in support of HR 474 as the need for funding for research and education in Hawaii for rat lungworm disease is essential. Over the past 15-years cases of rat lungworm disease in Hawaii have been increasing in number and severity, costing people their lives, livelihoods, savings, health, and well-being. Research and education for rat lungworm disease, a food-borne illness, is crucial to Hawaii's efforts to become food secure. I am in support of HR 474 because rat lungworm disease must be addressed in order to ensure that the health and mental well being of Hawaii's residents and visitors are protected. Ignoring this important problem has and will continue to hurt our farmers, our residents and visitors, and Hawaii's reputation as a tropical vacation paradise.

From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 8:14 PM
To: AGRtestimony
Cc: vickiv@hawaii.rr.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Vicki Vierra	Individual	Comments Only	No

Comments: As a resident of Puna, I am constantly concerned about Rat Lung Worm Disease. We need more research into this disease, and we need it now. The problem will only grow and spread, and I urge you to provide funds for the ongoing research that is needed for the safety of residents and visitors alike.

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 7:31 PM
To: AGRtestimony
Cc: doran_vaughan@yahoo.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Doran Vaughan	Individual	Support	No

Comments: Please vote "yes" on HB 474. Rat lungworm disease threatens the health of Hawaii's agriculture, local community, tourism, and the state economy as a whole. We are money ahead to support research and prevention. Mahalo.

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 6:57 PM
To: AGRtestimony
Cc: skolar@hawaii.edu
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Shawn Kolar	Individual	Support	No

Comments: With the ability of rat lung worm being able to be transmitted through slugs, and the great prevalence of slugs with each rainfall here on the west side of the Big Island, it is imperative to keeping young children and elderly from ingesting larvae of rat lungworm in foods from restaurants, home prepared meals and while out enjoying the beauty of the land. Additionally, it is imperative that the state eradicate this to prevent tourists from exposure and to keep this parasite from evolving. The research being conducted and needing to be conducted is not just important for residents of Hawaii but for all people who come to visit Hawaii and to prevent a global health problem.

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 6:40 PM
To: AGRtestimony
Cc: steven_jacquier@hotmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Steven Jacquier	Individual	Support	No

Comments: Hawaii needs HB 474 to pass. An ounce of prevention is worth a pound of cure in terms of cost and by every other measure. If we are serious about both remaining a popular tourist destination and building long term food production self-reliance in the Hawaiian islands, then HB 474 will receive support. Mahalo.

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From: mailinglist@capitol.hawaii.gov
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To: AGRtestimony
Cc: agrector@hawaii.edu
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Andrew Rector	Individual	Support	No

Comments: Over the past year, I have volunteered at different event educating the general public on the importance of cleaning their food and water, and familiarizing them with what Rat lung worm is. My involvement with these activities has shown me, by way of the public's response, that more research and education is necessary to actively protect our community from this parasite and its potentially fatal, life long effects.

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Sent: Wednesday, January 25, 2017 6:31 PM
To: AGRtestimony
Cc: hamamiller@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Hannah Miller	Individual	Comments Only	No

Comments: As an occupational therapist and healthcare professional at the largest hospital on Big Island, I work closely with those who have been affected by Rat Lung Worm Disease. I've heard of patients who were dared to put a 'rat in their mouth' or decided to 'eat a slug' just because it was there or otherwise received the parasite through their home catchment water. There is no demographic as to whom this disease can affect, symptoms are very diverse and prognosis is much greater when treated early. Therefore, it is especially important to provide education to the entire community in regards to prevention, symptom awareness and what treatment entails. Providing funds to enable and support research for Rat Lung Worm Disease will benefit all Hawaiian families and their communities.

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Aloha, I am writing this as a testimonial that my partner Matthew Farrow and I contracted Ratlungworm on the Big Island of Hawaii. Although we are not exactly certain where we contracted it, we strongly believe it was when we were camping at Ho'okenna Park at the end of August. We camped along the rocks there and noticed lots of large African snails were crawling all over our stuff including our three gallon water jug. I even mentioned it to Matt that I saw one there and he kicked it off. I believe that there was still slime on the jug and when he poured the water into our individual water bottles, he touched the slime and then the top of our bottles.

Two days later after we got back from our camping trip Matt complained of head and neck ache. It started in the neck and moved into a full major what felt like a migraine headache (which he has never had before). We went to the health clinic in Pahoehoe and they did not diagnose it. He waited for another week and was still having the headache and it was getting worse. We thought maybe he had a neck injury. I had not begun to feel the symptoms yet. As it kept getting worse for him his symptoms included unbearable headache, light sensitivity, confusion, paranoia, limbs and tongue going numb overall combativeness, some vomiting and intermittent confusion. I suspected at that point that he had Ratlungworm. We met with some friends in Puna who had had it and were still dealing with the symptoms. We utilized advice from several different people on what to do including using a horse wormer called Ivermectin to kill the parasite. In the appropriate amount for humans it supposedly kills the parasite. Once this is done, the toxins from the parasites actually make the disease worse and I took Matt to Hilo Medical for the first time. They took blood and checked him out and noticed that his eosinophilic level was high. Matt does not like needles so he refused to get the spinal tap that day.

I brought him home and his condition worsened over several more days and I brought him back to Hilo Medical about a week later and Matt was so combative and confused that they had to tie him down to the bed and give him anesthesia. Once they did that they were able to give him the spinal tap and diagnose him with Ratlungworm. They pumped him with a very large dose combo of steroids and antibiotics. He was in the hospital for 3 1/2 days and for the first 24 hours he was sedated. Once he woke up his headache was gone.

We were able to take him home after that with oral steroids to make sure the swelling didn't come back. He needed good food and sleep and wasn't getting those things in the hospital. While he was in the hospital I started feeling symptoms and was well aware of what the symptoms are from seeing him go through it. I decided to take the ivermectin and caught it early. I've heard it can take anywhere from a couple of days to a couple of weeks to feel symptoms depending on one's metabolism.

Once I took the ivermectin (two doses) I started getting numb and a terrible headache. I did not get the meningitis through. I did let them do a spinal tap but my eosinophils

weren't high enough to diagnose me. I do know that I did have it and still do feel some symptoms.

We had a very bad case for the month of September. Both of our heads were clogged and we could barely hear and had visuals for about a month. We both play West African drums and have studied the music. By playing these rhythms we feel that they helped us heal. We use a large portion of our brains because we play drums so we were able to utilize that as a healing tool.

We also moved ourselves to Kona for Nov and December. Once we left the wet Puna region any residual symptoms subsided for the most part.

We moved back over to Puna for January and we have felt some mild symptoms come back because of the dampness. We will be moving back to the Kona side in February.

I believe that the body is somewhat always going to be affected by this disease and we will continue to take Chaga mushrooms as a DNA repair and antioxidant. We also keep our bodies alkaline so that it is not as conducive to be a host for the parasite.

I believe this disease is getting worse on the island because of so many people growing greens here and not everyone being aware of the parasite. Some other ways it is being spread is through children playing outside where the slug and snail slime is, people gardening and eating raw greens and people drinking non UV filtered rain catchment water.

Many tourists know nothing about this disease. Matt and I have been on the island since end of March 2016 and contracted the disease in early September. We were aware of the disease before we came but did not understand the magnitude as to how many people are affected by it. I read that the parasite originally came from China and Southeast Asia. The wood rats came on the ships with the disease to the Hawaiian Islands and has specifically thrived on the Big Island and in Puna.

I believe not only should more research be done on this disease but there needs to be awareness for people that visit the island so that they don't contract the disease and bring it back to the mainland with them.

Overall it is very dangerous and was a near death experience especially for Matt. We are grateful to be alive! Thank you for listening, Stephanie Kusmer and Matthew Farrow.

From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 5:27 PM
To: AGRtestimony
Cc: alohajuggler@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Graham Ellis	Cirque Ohana	Support	No

Comments: I urge you to support this bill which seeks collaboration between several Hawai'i state organizations to prevent the spread of Rat Lungworm Disease (RLWD). My wife suffered horrifically from this illness a few years ago and I have witnessed many others many of whom never appear on any health statistics. There needs to be a measure of what is really going on and also to provide educational outreach to the people of Hawai'i. The department of health has reported 70 cases of RLWD from 2001-2014 and many more in 2015. This disease is definitely spreading. I was a resident of Puna for 31 years prior to 2014 and have watched the increase in numbers of people affected and the alarming growth of the snails that spread the disease. If tourists get told about the seriousness of this disease we would see a tremendous impact. A far better outcome is for the Dept. of Health to be funded and empowered to attack this problem.

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1/25/17

Dear Representatives:

I want to assert my strong concern that funding for Rat lungworm disease (RLWD) continues to get funding, and indeed receives **additional** funding for research and public education. In the last five years I personally have witnessed the DIRE health results and ramifications of three people who were affected by RLWD in Hawaii County. These three people have **permanent** physical disabilities from this terrible disease. We **MUST** continue research so more people are not affected. We must increase public awareness and educate people so everyone (young and old) are conversant in understanding this terrible disease cycle so we can eliminate the medical problems.

Thank you for your support of this research and funding.

Elizabeth Hansen

PO Box 139 Hakalau HI 96710

Physical address- 31-370 Old Mamalahoa Highway, Hakalau 96710

Lizhansen222@gmail.com; 808-747-4665

My name is Kathleen Howe and I am a member of the Hawaii Island Rat Lungworm Working Group at the University of Hawaii at Hilo. I am testifying in support of HR 474 as the need for funding for research and education in Hawaii for rat lungworm disease is essential. Annual cases of rat lungworm disease continue to be reported and serious cases have resulted in deaths and permanent disability in Hawaii. In the past year two toddlers were infected and sent to Honolulu for treatment. In December of 2014 and March of 2015 two people of more advanced age were infected and both succumbed. We can no longer ignore this serious health problem.

At the 59th annual meeting of the American Society of Tropical Medicine and Hygiene in Atlanta, Georgia, information was presented on the results of the Center for Disease Control (CDC), Hawaii Department of Health (DOH), and the United States Department of Agriculture (USDA)/Pacific Basin Agriculture Research Center (PBARC) study on Hawaii Island in 2005- 200. Investigators showed the infection rate in mollusks (slugs and snails) ranged from 24 to 78%, depending on species analyzed, and they confirmed that 57% (n=37) of the rats were positive by examination, having active infection with worms found in the heart and lungs, and 100% were positive by examination of lung tissue sample using realtime PCR, providing DNA evidence of current or past infection. Of the rats tested by PCR, 32% (n=9) had very high infection levels, which corresponded to more than 100 larvae in ~25mg of tissue. The presenters remarked at the conference that “the severe cases of eosinophilic meningitis being reported could be due to overexposure of humans to highly infected mollusks: there are no

measures in place in Hawaii to control the spread of *A. cantonensis*.” The authors concluded “angiostrongyliasis may be a more serious public health issue in Hawaii than currently estimated and measures to control its spread in mollusks and rodents may be warranted” (Bandeia et al. 2010).

To this day, some nine years after the 2007 CDC and DOH study was conducted in Hawaii, there has been no concerted effort made by any county, state or federal agency to control the spread of *A. cantonensis* in mollusks and rats, nor has there been a public education campaign to encourage residents to control these hosts. It is important to remember that the hosts of *A. cantonensis* are also agricultural pests, some of which are listed among the top 100 worst invasive species in the world and include the rat (*Rattus rattus*) the flatworm, *Platydemous manokwari*, and the snails *Achatina fulica* and *Euglandina rosea*. Without control efforts in place, the rat lungworm parasite and its hosts could pose a direct threat to agricultural production, food safety, and food security in Hawaii.

The State of Hawaii estimates it imports 85-90% of its food, making it vulnerable to natural disasters and world events should there be a disruption in the shipping and the food supply. The public has shown avid interest in supporting local food production and proof of support can be seen in the growing number of farmers’ markets, grocery stores, and restaurants selling locally grown produce and products. As the interest in the local food movement has grown so has the support for school garden projects. Each of the main Hawaiian Islands now has a school garden hui (group) and there are an estimated 200 school and youth gardens in the State of Hawaii, with almost 70 of these located on Hawaii Island. To further promote healthy diets and local agriculture, in 2015 the Hawaii Farm to School Bill, a program intended to introduce students to healthier eating habits by introducing them to new vegetables and fruits that are procured from local farmers,

was signed into law. While public support of the local food movement has grown, efforts to control the spread of the rat lungworm parasite and its hosts, and to educate the general public of risks and disease prevention has not followed a similar trend.

Dr. Jon Martell, a clinician at Hilo Medical Center in Hilo Hawaii who has treated many cases of rat lungworm disease now reports that this is a mainstream disease and we should all be concerned. People who are aware of the situation with rat lungworm disease and take precautions to prevent the disease are still contracting the illness, and therefore it is essential to continue to define potential transmission routes and share this information with the public. Rat lungworm disease is a foodborne disease, can be a waterborne disease, and transmission via skin could be possible. A mouse study provides evidence that this may be possible. Mice were exposed to 3rd stage *A. cantonensis* larvae by various routes including oral, intraperitoneal, sub-cutaneous, mucosa (anal, vaginal, conjunctival), lacerated skin, unabraded skin, foot pad and tail penetration. More worms were recovered from the mice infected by intraperitoneal and subcutaneous inoculation than by stomach intubation. The results showed worm recovery ratio efficiency from lacerated skin infection (40%) was higher than those from the unabraded skin (6%) or the foot pad infections (4%). Anal infection had higher worm recovery (51%) than vaginal (28%) or conjunctival (21%) infections. Mice infected by subcutaneous inoculation had a significantly higher worm burden than those infected orally ($P < 0.05$). The study concluded that skin or mucosa contact with 3rd stage larvae may cause angiostrongyliasis.

The simple act of bathing or washing in inadequately filtered catchment water could theoretically be a source of exposure. At the 4th International Rat

Lungworm Workshop, held in Brisbane Australia in September 2016, the United States Center for Disease Control (CDC) attributed three human cases of RLWD to water transmission during a flood event in Houston Texas in 2015. While it was not described as to how they believe the victims were infected, it does acknowledge that health agencies agree that infection via water does occur. When examining the evidence for potential routes of transmission that may be responsible for the high rates of rat lungworm disease in Hawaii, and keeping in mind the high rate of rainwater catchment usage and the disproportionate number of cases originating from Hawaii Island, it is clear that immediate steps need to be taken to reduce infection. De-worming rats, along with host control may be a way to reduce parasite load in hot spots. In lieu of the continued number of cases occurring annually, the need for funding for research and education in Hawaii for rat lungworm disease is critical. On behalf of the people of Hawaii, and to ensure the health and mental well-being of both residents and visitors alike, I ask you to support HB 474. Mahalo.

From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 4:19 PM
To: AGRtestimony
Cc: ellenb3@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Ellen Bernstein	Individual	Support	No

Comments: my son in-law is a part of the important research into finding a test to diagnose Rat Lung Worm disease. If funding is cut or delayed those who live in Hawaii my daughter, my grandchild due to be born in April 2017 my brilliant son in-law and all who live there will continue to live in uncertainty. rat lung worm disease is more prevalent than anyone can fathom. Do NOT delay this important work.

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To: AGRtestimony
Cc: hiloland@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

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Submitted By	Organization	Testifier Position	Present at Hearing
Jerry Deutsch	Individual	Support	No

Comments: My friends have suffered from this disease. I no longer eat local lettuce or kale because of the chance to contract ratlung worm disease. Please fund this project.

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Sent: Wednesday, January 25, 2017 3:13 PM
To: AGRtestimony
Cc: Hawaii.beth@icloud.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Beth McCormick	Permaculture Foundation of Hawaii	Support	No

Comments: Please fund extensive research on rat lungworm disease. I have seen firsthand many people on the Big Island, especially in Puna, suffer from this disease. Some have had their lives forever changed by permanent nerve damage due to this nematode, which can be ingested on fresh produce, without knowing it. With all the salads served across the island, I wonder how many residents and vacationers might accidentally ingest the nematode, and never be diagnosed. I have personally found slugs in bagged produce from Costco several times, and that could also be dangerous, since the rat lungworm disease is not only in Hawaii. We need more information!

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Sent: Wednesday, January 25, 2017 2:44 PM
To: AGRtestimony
Cc: lori.allaina@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Lori Mikkelson	Individual	Support	No

Comments: Aloha, We have a family friend that has been inflicted with Rat Lungworm. He is 35 years old and until he was infected was a strong health man. He was hospitalized initially in critical condition; since then he has had repeated occurrences and additional stays in the hospital. His suffering as been extreme!!! We are all susceptible, from infants to seniors. I am afraid that someone older might not survive after what he went through. It is extremely important that the legislature invest in research and cure development. Mahalo!!! Lori Mikkelson

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To: AGRtestimony
Cc: sairam2@hawaiiantel.net
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

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Submitted By	Organization	Testifier Position	Present at Hearing
Geoffrey Lasr	Individual	Support	No

Comments: I have known many people who have been infected by this disease It is devastating We need to watch everything we eat and drink here in Puna We need this research and funding to eradicate this thank you

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 2:30 PM
To: AGRtestimony
Cc: aloha@gaiayoga.org
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

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Submitted By	Organization	Testifier Position	Present at Hearing
Ano Hanamana	Individual	Support	No

Comments: Well, when I read that the department of health has reported 70 cases of RLWD from 2001-2014 and many more in 2015 and when I think about the number of people I personally know that have been affected by this disease and when I witnessed how many people donated blood that resulted positive for specific antibodies against the parasite causing RLWD (where more than half didn't even know they were exposed), I feel extremely alarmed and angry because I'm needing safety and care for the people and pets (food and water implied) of Puna and Hilo. I am also needing my community and family to matter, especially as someone who calls Hawai'i their home! Please support this bill and fund Rat Lung Research!

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Sent: Wednesday, January 25, 2017 2:08 PM
To: AGRtestimony
Cc: davenpod1@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

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Submitted By	Organization	Testifier Position	Present at Hearing
David S Davenport	Individual	Comments Only	No

Comments: Aloha, As a Puna offgrid homeowner, I have a catchment tank. I also shop at Makuu and Uncle Robert's Famers markets for vegetables and produce. I know firsthand about the dangers of contracting rat lung disease via our water or produce since I have met and know both Kay Howe and Stefano Quarta. I feel strongly that the State of Hawaii should support efforts to figure out ways to prevent the spread of Rat Lungworm Disease (RLWD), measure what is really going on and provide educational outreach to the people of Hawai'i. All of these together are very important to the safety and wellbeing of Puna and other district residents. I am asking our legislators and their aides to add their own support to HR 474. Mahalo, aloha! David Davenport

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 2:05 PM
To: AGRtestimony
Cc: foleyman389@hotmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Joshua M Stewart	Individual	Support	No

Comments: the effects of this disease are widespread and the unsuspecting friend, family and pets dealing with it deserve care.

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Sent: Wednesday, January 25, 2017 2:05 PM
To: AGRtestimony
Cc: Lesliewingate7@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

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Submitted By	Organization	Testifier Position	Present at Hearing
Leslie Wingate	Individual	Support	No

Comments: This is super important. More people need education to stay healthy

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From: mailinglist@capitol.hawaii.gov
Sent: Wednesday, January 25, 2017 2:01 PM
To: AGRtestimony
Cc: bill@puna.us
Subject: *Submitted testimony for HB474 on Jan 27, 2017 08:30AM*

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Bill Smith	Individual	Support	No

Comments:

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Cc: mblazak@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/25/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Megan Blazak	Individual	Support	No

Comments: Dear Chair Creagan, Vice Chair DeCoite and Members of the Committee, I am writing in STRONG SUPPORT of HB 474 which would appropriate funds to address the Rat Lung Worm disease affecting our communities, especially in the Puna district of Hawaii County. I have witnessed the debilitating effects of this disease on friends and colleagues, and the legislature must take action to research solutions and measures to address this growing threat to public health and food safety. Please vote in support of HB 474. Respectfully, Megan Blazak Constituent of House District 2 Hilo HI

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To: AGRtestimony
Cc: panther_dave@yahoo.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Dave Kisor	Individual	Support	No

Comments: Rat lungworm is a horrible disease and needs very much to be better understood by the general public, as it isn't as popular and fashionable as Zika and Yellow fever. I know someone who is surviving from it and her husband said not to ask how she was, as it's too painful. Don't ask anybody with it how they feel, as their description will probably singe your ears.

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REGARDING: HB 474 RAT LUNGWORM DISEASE

SUBMITTED BY: DARLENE TURNER

66-1678 WAIAKA STREET

KAMUELA, HAWAII 96743

808-936-5355

KONADARLENE@MSN.COM

I became ill on September 28, 2015. I am not one of the statistics as none of the test proved positive.

Attached is my story. And now...

I was unable to work for 8 months, and am now working only part-time because of the fatigue.

I have a mild traumatic brain injury which affects my memory, articulation, sensitivity to light, noise and movement.

I have completely depleted my savings using naturopathic and Chinese medications.

The disease is unbelievable TORTURE!! The Department of Health and the State of Hawaii **MUST DO SOMETHING** to fund research, help Susan Jarvi and Kay Howe with raising awareness, education, eradication and creation of a definitive test.

PLEASE READ MY TESTIMONY!!

MAHALO,



RAT LUNGWORM DISEASE IN KAMUELA, HAWAII

Submitted by Darlene Turner

SYMPTOMS:

On a continual daily basis: My ears would plug up, followed by brain swelling with extreme pressure. It felt like my head was going to explode. Immediately I would experience debilitating short term memory loss. I could not remember a thing I was wanting to do, or why I was doing what I was doing, or where I was going. I would spontaneously and instantaneously start sobbing without control. I soon learned the best course of action was to go back to bed when my brain swelled. Often times, the only relief I could get was to pack my head, face and neck in ice. Extreme fatigue was always a problem. I would take 2 – 3 hour naps a day. I called them "coma naps" because they were so intensely deep. I would get to the point in the afternoon that I literally could not stand up anymore. It felt like I had the flu or mono every day.

Throughout the process of the disease:

- Facial numbness.
- Headaches of varying degrees of intensity, from level 3 – 10+. As the parasite moved (*I surmised*), so did my headaches.
- Blurry Vision and sensitivity to light
- Nausea
- Neck pain
- Skin crawling sensations
- Insomnia
- Sudden eruption of sinuses, with uncontrollable runny nose, ear pain, coughing, teeth and jaw pain, facial pain and my face would get really hot. The coughing spells became worse as the disease progressed.
- Vertigo
- Pain in old injury and surgery locations. My hips, ribs, ankle and the top of my foot would often times be so painful I could not walk. I never knew when it would strike, so I had to keep crutches and canes scattered around my house, just in case.
- Sensation of worms crawling in my left ear and my right eye. (*I surmised*)
- Sensitivity to cold and heat. I would suddenly become freezing cold. In the shower, the water would feel like the perfect temperature on my face and on the front of my body, but it felt scalding hot on my back.
- Sensation of "chills" through my head and down my neck, daily.
- Feet and fingers would go numb.
- Back and kidney pain
- Heart palpitations
- Shortness of breath
- Chest pain
- Lack of feeling hungry and then when eating there was no feeling of satiation.

- Overwhelming sensory overload when around people talking too much or too fast, in crowds, in too much light, or too much noise. It felt like a panic attack. Afterward I would have to sleep.
- Inability to multi-task
- Problems with articulation. Couldn't find the right word.
- Difficulty with reading comprehension.
- Problems with spelling, writing emails, composing a sentence.
- Packing a suitcase was too overwhelming.
- Had to stop driving. I couldn't remember, one time, what red, yellow or green lights meant. Caught myself swerving and not looking both directions.
- Digestive track and Intestinal issues – Acid Reflux, extreme bloating like I was 8 months pregnant. This would be followed by shortness of breath, dry mouth and heart palpitations. Extreme constipation and inability to urinate. Black stool. Painful bowel movements that bled. It felt like I was passing shredded glass. Thousands and thousands of identical 16/100th inch black thread-like particles were being passed. Lower intestine pain.
- And the Grand Finale... On Thanksgiving Day, suddenly it felt like I had been shot by a machine gun down my spine, between my shoulder blades. The pain was indescribable. My eyes became swollen and bloodshot, the headache intense, chest and body pains. *(I surmised)* that this was when the worms were trying to get into my heart.

RAT LUNGWORM DISEASE in KAMUELA, HAWAII

Submitted by Darlene Turner

808-936-5355 / konadarlene@msn.com**THIS IS MY STORY.....**

September 28, 2015: I was feeling ill. It felt like something had gone systemic in my body. I had what I thought was an infected ingrown hair at the time, so I thought that was the problem. I went to my Doctor in Waimea, who lanced it and started me on a regimen of doxycycline. The results from the lab were negative regarding the hair follicle being the culprit. I felt worse and assumed it was a reaction to the antibiotic so I went off of them. I continued to feel sick.

October 6, 2015: VERY suddenly my face got puffy and painful, my eyes became swollen and red, my teeth hurt, and my nose started running uncontrollably. I became quickly exhausted. My ears were plugged and I had pressure in my head. I thought it was a really bad cold so I treated it with cold medicine.

October 7, 2015: My symptoms got worse. I was bedridden with a fever of 101, body aches, really painful headache, neck ache, nausea, horrible sinus symptoms, blurry vision, vertigo, chills, freezing cold. I went to Urgent Care. The doctor gave me Tamiflu and Steroids. She said I tested negative for flu but that the test results are not always right, and that it looked like I was having an allergic reaction to something too, hence the steroids. I felt worse in two days' time but the fever and neck pain had gone away, so I stopped the Tamiflu and the steroids, thinking I was having a reaction to them.

October 13, 2015: Went to the Doctor again. He said that I had the flu and that if I didn't get better in two days, I was to come back and he would schedule a spinal tap. I told him that I clearly did not have the classic symptoms for meningitis so I didn't understand why. (He didn't say at that time, but later he told me he had suspected Rat Lungworm.) I proceeded to go for chiropractic treatments with Dr. Peter Weich D.C. and acupuncture treatments with Melanie Biddle, LAc. Karen McIsaac LAc, treated me with acupuncture and Chinese herbs as well. These treatments helped to lessen some of the symptoms for a short period of time.

October 18, 2015: THANK GOD I WENT TO CHURCH THAT DAY!!! I was feeling horrible but I felt driven to go anyway. Being in the church was making me feel like I was going to pass out...BJT, I stayed and just so happened to speak to my friend Michael. He told me that he had attended a lecture recently in Honokaa given by Kay Howe, whose son Graham had been in a vegetative state at Hilo Medical Center with Rat Lungworm Disease. Traditional medicine had given up on him. She convinced the doctors to put a feeding tube in him. She administered Chinese, Naturopathic and Holistic Medicines AND HE SURVIVED! I went home and googled it, and I knew immediately that I had RLD.

October 19, 2015: Went back to the Doctor, walked in and told him that I was sure I had RLD. I also knew where I got it from. Normally I cook all my kale, but in September, I was on a fresh smoothie kick. I remember washing kale with a small piece of a dead slug on it. I took it off, washed it and put it in my smoothie. I know for a fact that I got the kale from KTA or FOODLAND Waimea. The Doctor sent me to the E.R., and called first to tell them about our suspicions, so I would not simply be sent home with a flu diagnosis. I was checked for "everything" they said. After taking lots of blood samples, a CT scan and an MRI, the diagnosis was that I had nothing wrong with me. I was told that I could be flown to Oahu for a

spinal tap to test the eosinophils in the spinal fluid. I had already learned that the spinal tap does not always show RLD. It is also a potentially dangerous procedure. Sending bloodwork to the CDC to test for antibodies often produces negative results as well. The ER doctor explained that there was no treatment for RLD, and sent me home.

(The blood was taken and the lab forgot to send it to the CDC. Therefore, I wanted it to be taken again and sent to the CDC. I was told that I would have to incur the expense of another E.R. visit for that to happen. Due to the insistence from my Naturopath, Dr. Michaela Martin and her Office Manager Tiffany, I was able to have the blood drawn again. My medical Doctor would not help me. It came back a month later as negative.)

October 21, 2015: I spoke with Kay Howe on the phone at length! What a blessing she is and always will be to my life!! Armed with the information she shared with me about Graham's treatments, I went to my Naturopath Dr. Michaela Martin, N.D. LAc. She immediately began treating me and researching what had been done and could be done to treat RLD. With naturopathic and acupuncture treatments, she began the process of balancing the management of the inflammation with killing the parasite. We knew that traditional medicine had tried experimentally using anti parasitic medications which had resulted in death, coma, and paralysis due to the toxic die-off reaction. They were also using steroids which negatively impact the immune system and damage the body's natural ability to fight off this parasite. Dr. Martin, however, was boosting my immune system with naturopathic medicines, and worked to reduce the inflammation in my brain. She started me on intravenous high dose Vitamin C treatments. I also continued to receive chiropractic treatments from Dr. Peter Welch D.C., additional acupuncture with Melanie Biddle, LAc., and I am now a strong believer in essential oils thanks to doTERRA advocates, Alexis Smith and Rebekah Ellis.

October 21st - Week of November 1st, 2015: The symptoms change (see Symptoms page), move, get worse, seem to improve, get even more excruciating and painful, then something new shows up. Then, my bowels and ability to urinate STOPPED. Because Kay Howe had told me about this symptom with Graham and how he went into a coma right after that happened, I was prepared with lots of fluids, vitamin C, magnesium and laxative tea. *(I was also encouraged by a phone conversation with Graham at this point. He is a remarkably positive young man!)* What I wasn't prepared for, was how horrible and frightening it was. Three days later the pain in using the bathroom began and lasted for two weeks. (See Symptoms page...Digestive track and Intestinal issues)

Week of November 8th, 2015: The coughing, chest pain, shortness of breath and back pain started and lasted for two solid weeks. It lingers still to this day. *(I surmised)* that this was when the parasite was attempting to get into my lungs as they do in the rat.

November 24, 2015: Flew to California to be with my daughter and go to the Whitaker Wellness Center in Newport, California for Vitamin I.V. therapy as this was the one specific treatment that truly gave me relief. Medical insurance will not pay for this treatment, so it is all out of pocket, creating a huge financial hardship.

November 26, 2015: THANKSGIVING! ... Suddenly it felt like I had been shot by a machine gun down my spine and between my shoulder blades. The pain was indescribable. My eyes became swollen and bloodshot, the headache was excruciating and I had chest and body pains. I truly thought I was going to die that day. *(I surmised)* that this was when the worms were trying to get into my heart.

Week of November 29, 2015: Extreme fatigue after the Thanksgiving Day attack. Began with trying to get up for 5 minutes a day. Increased it by 5 minutes a day. By the end of the week, I could walk about 30 yards. Coughing with lots of phlegm, daily. Extreme memory loss and lethargy. Needed a cane that week to walk. Heart palpitations, numbness in my feet, shortness of breath, chest pain, back pain, bloating, dizzy. Began I.V. Vitamin treatments at the Whitaker Wellness Center.

December 11, 2015: Went to Kaiser Orange County. I asked for them to check my lungs and my heart. Although they had never heard of RLD, they were very accommodating. After a chest x-ray and EKG, they said I was fine. Good news.

December 27, 2015: With the Vitamin C. I.V. treatments, I have improved a lot. The symptoms are the same, they are just less severe and debilitating. I flew back home to Hawaii and experienced extreme pain in my ears that I didn't have on the flight out.

December 28, 2015: Met with the Kaiser Neurologist Dr. Gibson (*it took 1 and 1/2 months to get an appointment with him.*) He said I could have a spinal tap but it probably wouldn't show anything. He suggested I see a specialist in Honolulu to undergo a 3 hour test to determine which parts of my brain are damaged so that treatment can be more specific. That appointment is scheduled for February 8th.

The month of January 2016: I am still on T.D.I. disability from P.A. Harris Electric as a Solar Energy Consultant, as I can't work full time yet. I can drive in Waimea now. I drove to Kona on the 13th and went straight to a friend's house to sleep for 2 hours as I have extreme sensitivity to light and get sensory overload very easily. I waited for night fall to drive home to Waimea. On the 20th, I drove to Kona to attend a meeting. The sensory overload was too much once again. My sinuses and my gut are still really messed up. The short term memory loss, articulation challenges, and fatigue are also problematic. I went to the Doctor because the gut pain was getting very painful and radiating to my back. He had not answers for me.

And---

The Doctor walked out of the room and said, "You know we don't know what you have, so there is no diagnosis in your chart."

I am still receiving I.V. Vitamin therapy once a week. I tried to stretch it to every other week, but I was too weak at the end of the 2nd week. I can't work in an office environment anymore as it is too much stimulation. I can't go to a restaurant or be in a group of people talking at the same time for the same reason. This disease has devastated my life as I used to know it.

However....I will improve, and somehow, through my story, I will make a difference.

Alexander Nitze Testimony regarding Bill HB474

I'm writing as a private citizen. I am asking that you support funding for HB474 for the Rat Lungworm research team to continue and expand their efforts at understanding, diagnosing and preventing the spread of this very dangerous parasite.

So many have suffered and it is paramount that further lives aren't affected. Thank goodness researchers out there are trying to figure out ways to prevent the spread of Rat Lungworm Disease and to provide educational outreach to the people of Hawai'i.

Action must be taken, as this is a threat not only to our island and its economy but our food, and people.

Thank you,

Alexander Nitze
808 268 8308
Haiku, HI

LATE

From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 4:57 PM
To: AGRtestimony
Cc: sylviadolena@yahoo.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Sylvia Dolena	Pele Lani Farm, LLc	Support	No

Comments: Please find real solutions to preventing and eradicating the disease and the cause of the disease.

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Cc: jim@landscapesinbloom.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017
Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
james mcmillen	Individual	Comments Only	No

Comments: To whom it may concern, I am unable to attach a file as I am using my mobile device. I would like to add my support to this bill and funding. I have visited Hawaii many time and have many friends there. One of these friends contracted this disease that is becoming more and more known and needs proper research and treatment protocols to be carried out so as to prevent and serve the community and state . Thank you for accepting this support for this bill. James McMillen

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Cc: balancefirstworkshops@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Micah	Individual	Comments Only	No

Comments: Hello, I'm unable to upload a document but I just need to have my voice heard. I recently visited Hawaii from Toronto And I loved my trip. But was terrified when I first heard about RLW. I became dear friends with a strong young Woman battling the condition from Hawaii. She is fighting for her Life and honestly if I had met her before my trip To Hawaii I may have been too afraid to go. More research is essential! Please help save my friend's life and the lives of others. Much love Micah

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Sent: Thursday, January 26, 2017 3:48 PM
To: AGRtestimony
Cc: ariannafeinberg@gmail.com
Subject: Submitted testimony for HB96 on Jan 27, 2017 08:30AM



Categories: Green Category

HB96

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Arianna Feinberg	Individual	Support	No

Comments: I support Hawaii growing hemp!! I am a natural foods broker representing Bob's Red Mill and Nature's Path. Some of our top selling products contain hulled hemp seeds. I believe they buy these from Canada. Let's join the movement and grow hemp locally! This is a hot and growing food trend. Please pass this bill and clear the hurdles for hemp!

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Sent: Friday, January 27, 2017 1:49 AM
To: AGRtestimony
Cc: begoniabarry@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/27/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Barbara Barry	Individual	Comments Only	No

Comments: Aloha Chair and Committee Members, I strongly support this bill and urge you too as well, Mahalo, Ms. Barbara Barry

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To: AGRtestimony
Cc: dawn@pitreart.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM



HB474

Submitted on: 1/27/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Dawn Poiani	Individual	Support	No

Comments: I support this bill as I have seen the devastating effects of this disease. Hawaii needs to eradicate it from the islands and better educate the public and medical professionals about this disease.

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Cc: legechair@gmail.com
Subject: *Submitted testimony for HB474 on Jan 27, 2017 08:30AM*

HB474

Submitted on: 1/26/2017
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Submitted By	Organization	Testifier Position	Present at Hearing
Simon Russell	Hawaii Farmers Union United	Support	No

Comments:

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To: AGRtestimony
Cc: mauifaith@gmail.com
Subject: *Submitted testimony for HB474 on Jan 27, 2017 08:30AM*

HB474

Submitted on: 1/26/2017
Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Faith Chase	Individual	Support	No

Comments:

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To: AGRtestimony
Cc: mauifaith@gmail.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Faith Chase	Individual	Support	No

Comments: This issue is an important one that should be shown due attention. I encourage funding of this rat lungworm issue. The alert of seriousness looks to serve as a means of best practices, thank you for recognizing and supporting.

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Cc: tjsmwjn@msn.com
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017

Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Joni Izumi-Nakamoto	Individual	Comments Only	No

Comments: Aloha, My name is Joni Izumi-Nakamoto and I am a concerned resident on the west side of Hawaii Island. My mother, Irene Izumi, passed in 2014 and suffered needlessly because of the lack of familiarity with rat lungworm disease. Kona Hospital was, and still is not prepared for handling these cases. In short, this disease is islandwide and is not contained to only certain areas! I am testifying in support of scheduling a hearing for SB 2516 in the Senate Ways and Means committee. The need for funding for research, education and vector control in Hawaii for rat lungworm disease is essential. The rat lungworm is a microscopic, parasitic worm that upon infection, resides in your brain and central nervous system. Because of this, the damage this parasite can cause can be devastating. In Hawaii, rat lungworm disease is costing people their lives, livelihoods, savings, health, and well-being. In the past 15-years cases of rat lungworm disease have been increasing in number in Hawaii, particularly on Hawaii Island and Maui. Each year more serious cases arise, some resulting in permanent disability, coma, and even death and suicide. Research and education for rat lungworm disease is crucial to Hawaii's efforts to become food secure, and if we are to support local farmers, school garden projects, and the Farm to School Program. As infection is most often from eating contaminated food, it is essential that everyone involved with food, including farmers, gardeners, food handlers, grocers, and consumers, be educated about the disease and understand the proper measures that must be taken to minimize the risk of contamination. Infection might also occur from ingesting contaminated water. A great number of people on Hawaii Island rely on rainwater catchment for their household water supply, particularly in the Puna, Kau, South Kona, and Hamakua Districts. It is critical for Hawaii Island residents and farmers using catchment for agriculture water to be aware of the importance of maintaining their rainwater catchment systems and filters, as infected slugs and snails can crawl into catchment tanks can contaminate water with the parasites. Please schedule a hearing for SB 2516 Ways and Means Committee. Rat lungworm disease is preventable, and the severity of the disease can be mitigated if diagnosed and treated early. It is essential that adequate funding be allocated for research and education on rat lungworm disease, and a program is developed for the control of the vectors that carry this horrible disease.

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Testimony Regarding Funding for Rat Lung Worm Disease Research

January 26, 2017

By Karen Pellegrin, PhD, MBA

Director of Continuing Education and Strategic Planning

Founding Director of the Center for Rural Health Science

Daniel K. Inouye College of Pharmacy

University of Hawaii at Hilo

LATE

My name is Dr. Karen Pellegrin and I am a senior faculty member and administrator at the UH Hilo College of Pharmacy. I am testifying in **strong support** of HB474 related to rat lung worm disease. I am testifying as a private citizen and not as a representative of UH Hilo.

I support this bill for the following reasons:

- 1) **Significant health risk to Hawaii residents and visitors:** Hawaii is the only state in the US where rat lung worm disease infection in humans is endemic¹. This disease, caused by the *Angiostrongylus cantonensis* parasite, is the most common cause of eosinophilic meningitis in the Pacific and can cause devastating brain damage, other neurological problems, and death². Humans can become infected when they ingest infected snails or slugs or foods contaminated by the slime from infected snails or slugs, though other means of infection are possible³. Much additional research is needed to determine the risk factors, prevention strategies, and treatments.
- 2) **Threat to Hawaii's economy:** The state of Hawaii has made recommendations to increase the amount of locally grown food consumed by Hawaii's residents as this will help improve the state's economy⁴. Yet systems are not in place to protect consumers from rat lungworm risk in locally grown foods. For example, local news reported in 2014 that a snail was found in a Big Island school lunch salad made from locally grown lettuce⁵. Failures to control this disease also jeopardize Hawaii's tourism industry through highly publicized cases of rat lungworm infection in visitors⁶.
- 3) **Dr. Sue Jarvi's expertise and experience:** Dr. Jarvi's lab, located at UH Hilo on the Big Island where rat lungworm disease is most prevalent, is one of the few research labs in the US with extensive experience studying rat lungworm disease. A biologist with expertise on many species and diseases unique to Hawaii, Dr. Jarvi has led her team in conducting important research on rat lung worm disease, including the detection of the rat lungworm parasite in slugs⁷ and rats⁸ and testing a vaccine⁹.

¹ <http://www.ajtmh.org/content/85/4/685.full>

² <http://www.sciencedirect.com/science/article/pii/S0001706X14003143>

³ <http://www.cdc.gov/parasites/angiostrongylus/epi.html>

⁴ http://files.hawaii.gov/dbedt/op/spb/INCREASED_FOOD_SECURITY_AND_FOOD_SELF_SUFFICIENCY_STRATEGY.pdf

⁵ <http://khon2.com/2014/02/05/snail-found-in-big-island-school-lunch/>

⁶ <http://www.nydailynews.com/life-style/health/man-contracts-rat-lungworm-disease-hawaii-paralyzing-ailment-caused-microscopic-parasite-article-1.1009273>

⁷ <http://www.sciencedirect.com/science/article/pii/S0166685112002125>

⁸ <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0123064>

⁹ <http://www.sciencedirect.com/science/article/pii/S0166685112002125>



LATE

23 E. Kawili St, Hilo, HI 96720 • Phone: (808) 933-3340

TESTIMONY OF THE BIG ISLAND INVASIVE SPECIES COMMITTEE
SUPPORTING H.B.474, RELATING TO RAT LUNGWORM DISEASE
HOUSE COMMITTEE ON AGRICULTURE
FRIDAY, JANUARY 27, 2017, 8:30 AM, ROOM 312

The Big Island Invasive Species Committee (BIISC) is a partnership of private citizens and public agencies working to address invasive species issues on the island of Hawaii. Our mission is to prevent, detect, and control the highest risk invasive species threats to the Big Island environment, economy, and way of life.

DEAR CHAIR CREAGAN AND VICE CHAIR DECOITE:

Aloha. BIISC supports HB 474. Funding for research and education on rat lungworm disease is essential in the state of Hawaii. Over the past 15 years cases of rat lungworm disease in Hawaii have been increasing in number and severity, costing people their lives, livelihoods, savings, health, and well-being. Research and education for rat lungworm disease, a food-borne illness, is crucial to Hawaii's efforts to become food secure. The priorities for rat lungworm disease research and education outlined in this bill must be addressed in order to ensure that the health and mental well-being of Hawaii's residents and visitors are protected. Ignoring this important problem has and will continue to hurt our farmers, our residents and visitors, and Hawaii's reputation as a tropical vacation paradise. The research team and working group that have dedicated themselves to increasing public awareness and research into this disease system is of the highest quality and caliber.

Mahalo for your time and consideration.

LATE

From: mailinglist@capitol.hawaii.gov
Sent: Thursday, January 26, 2017 7:29 PM
To: AGRtestimony
Cc: skaye@hawaii.edu
Subject: Submitted testimony for HB474 on Jan 27, 2017 08:30AM

HB474

Submitted on: 1/26/2017
Testimony for AGR on Jan 27, 2017 08:30AM in Conference Room 312

Submitted By	Organization	Testifier Position	Present at Hearing
Springer Kaye	Individual	Support	No

Comments: Aloha, My name is Springer Kaye and my family of five lives in a house with rain water catchment in the S. Hilo district. I am testifying in support of HR 474 as the need for funding for research and education in Hawaii for rat lungworm disease is essential. Over the past 15-years cases of rat lungworm disease in Hawaii have been increasing in number and severity, costing people their lives, livelihoods, savings, health, and well-being. Research and education for rat lungworm disease, a food-borne illness, is crucial to Hawaii's efforts to become food secure. I am in support of HR 474 because rat lungworm disease must be addressed in order to ensure that the health and mental well being of Hawaii's residents and visitors are protected. Ignoring this important problem has and will continue to hurt our farmers, our residents and visitors, and Hawaii's reputation as a tropical vacation paradise. Mahalo for your time and consideration.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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