HOUSE OF REPRESENTATIVES
TWENTY-SEVENTH LEGISLATURE, 2014
STATE OF HAWAII

H.B. NO. 1931

A BILL FOR AN ACT

RELATING TO AGRICULTURE.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The legislature finds that macadamia nuts are among the top five grossing agricultural commodities in Hawaii. According to the United States Department of Agriculture, National Agricultural Statistics Service, Hawaii harvested an estimated 44 million pounds in macadamia nut crop for the 2012-2013 crop year. The estimated farm value of macadamia nuts for that same year is $35,200,000.

In March 2005, the macadamia felted coccid, *Eriococcus ironsidei*, was discovered on macadamia nut trees in South Kona. Originally from Australia, this insect can cause severe damage to macadamia nut trees when uncontrolled. Initially, insecticidal oils researched and recommended by the University of Hawaii's college of tropical agriculture and human resources were effective at controlling the spread of these insects. After successful suppression of the original infestation in 2005, however, infestations of macadamia felted coccid were most recently found in the Pahala area. Although insecticidal oil treatment has been effective in eradicating the insect from

young sapling trees in the Pahala area, this treatment has proven ineffective on older macadamia nut trees because the trees are too large to receive adequate coverage of the insecticidal oil. Because insecticidal oil is proving to be ineffective, farmers must develop new methods to control the infestation of macadamia felted coccid that could devastate the macadamia nut industry in Hawaii.

According to the department of agriculture, to develop new methods to control the macadamia felted coccid, researchers must:

(1) Investigate the role of tree canopy modification and understory plants to encourage the presence of natural enemies to the macadamia felted coccid;

(2) Analyze the potential of alternative pesticides;

(3) Determine the impact of macadamia felted coccid on plant health;

(4) Determine action thresholds for macadamia felted coccid management;

(5) Determine the phenology of macadamia felted coccid in the field; and

(6) Identify and test biological control agents in Australia that could be introduced in Hawaii to control the macadamia felted coccid.

The legislature anticipates that the macadamia felted coccid will spread to other regions and counties of Hawaii if uncontrolled and devastate the macadamia nut industry.

The purpose of this Act is to appropriate funds for research to develop new methods of preventing and treating macadamia felted coccid infestations.

SECTION 2. There is appropriated out of the general revenues of the State of Hawaii the sum of $360,000 or so much thereof as may be necessary for fiscal year 2014-2015 for the department of agriculture to research and develop methods for the prevention and treatment of macadamia felted coccid in cooperation with the University of Hawaii college of tropical agriculture and human resources.

The sum appropriated shall be expended by the department of agriculture for the purposes of this Act.

SECTION 3. There is appropriated out of the general revenues of the State of Hawaii the sum of $735,000 or so much thereof as may be necessary for fiscal year 2014-2015 for the University of Hawaii college of tropical agriculture and human

resources to research and develop methods for the prevention and treatment of macadamia felted coccid in cooperation with the department of agriculture.

The sum appropriated shall be expended by the University of Hawaii for the purposes of this Act.

SECTION 4. The appropriations made pursuant to sections 2 and 3 of this Act shall not lapse at the end of the fiscal biennium for which the appropriations are made; provided that all moneys from the appropriations unencumbered as of June 30, 2017, shall lapse as of that date.

SECTION 5. This Act shall take effect on July 1, 2014.

INTRODUCED BY: _____

JAN 17 2014

H.B. NO. 1931

Report Title:
Macadamia Nut Trees; Macadamia Felted Coccid; Agriculture; Appropriation

Description:
Appropriates funds to the department of agriculture and the University of Hawaii to research and develop methods for the prevention and treatment of macadamia felted coccid.

The summary description of legislation appearing on this page is for informational purposes only and is not legislation or evidence of legislative intent.

UNIVERSITY OF HAWAIʻI SYSTEM
Legislative Testimony

Written Testimony Presented Before the
House Committee on Higher Education
Tuesday, February 11, 2014 at 2:00 pm
by
Maria Gallo, Dean
and
J. Kenneth Grace, Interim Associate Dean
College of Tropical Agriculture and Human Resources
University of Hawaiʻi at Mānoa

HB 1931 – RELATING TO AGRICULTURE

Chair Choy, Vice Chair Ichiyama, and members of the House Committee on Higher Education, thank you for this opportunity to provide testimony on HB 1931, which appropriates funds to the department of agriculture and the University of Hawaiʻi to research and develop methods for the prevention and treatment of macadamia felted coccid.

The University of Hawaiʻi supports this bill provided that its passage does not replace or adversely impact priorities as indicated in the University's Board of Regents Approved Executive Biennium Budget.

Macadamia felted coccid is a severe pest of macadamia, a crop with a $38.2 million farm value in Hawaiʻi in 2012. It was found in South Kona in February 2005, and two attempts to eradicate the insect appeared to be successful at the time. However, subsequent infestations were again found on the Big Island, indicating that the insect had already spread from the initial point of discovery or that additional introductions occurred. At this time, the coccid is distributed throughout the Big Island, although it is not yet found on other islands.

Development of new control methods and appropriate management recommendations are essential for Hawaiʻi's producers to stop this invasive pest. Horticultural and harvest methods used in Hawaiʻi and the large size of trees in our well-established orchard contribute to great difficulties in achieving effective control.

The College of Tropical Agriculture, University of Hawaiʻi at Mānoa, and the Hawaiʻi Department of Agriculture are collaborating in this endeavor, as is indicated in HB 1931, and as permitted by available funding and personnel. Timing is critical, however, and we believe that it is both appropriate and necessary for the Legislature to appropriate funds to accelerate and strengthen this pest management effort, and protect this critical segment of Hawaiʻi agriculture from the severe losses that will result from infestation and continued spread of this invasive insect pest.

NEIL ABERCROMBIE
Governor

SCOTT E. ENRIGHT
Chairperson, Board of Agriculture

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 South King Street
Honolulu, Hawaii 96814-2512
Phone: (808) 973-9600 FAX: (808) 973-9613

TESTIMONY OF SCOTT E. ENRIGHT
CHAIRPERSON, BOARD OF AGRICULTURE

BEFORE THE HOUSE COMMITTEE ON HIGHER EDUCATION
TUESDAY, FEBRUARY 11, 2014
2:00 P.M.
Conference Room 309

HOUSE BILL NO. 1931
RELATING TO AGRICULTURE

Chairperson Choy and Members of the Committee,

Thank you for the opportunity to testify on House Bill 1931. This bill would appropriate funding for research to develop new methods of preventing and treating macadamia felted coccid infestations. The Department is in support of this bill and would defer to the University of Hawaii College of Tropical Agriculture and Human Resources as to the level of funding that is needed.

The macadamia nut industry is a vital part of the agricultural economy here in Hawaii. With an estimated farm value of over $35 million, macadamia nuts are one of the top five agricultural commodities for the State of Hawaii.

The macadamia felted coccid is an insipid pest that can cause severe damage to macadamia nut trees and hurt our macadamia nut industry. It is vital to develop new methods to prevent the spread of this pest and limit the damage that it will have on the macadamia nut industry.

Thank you, again, for the opportunity to testify on this measure.

HOUSE COMMITTEE ON HIGHER EDUCATION
January 27, 2014
2:00 PM
Room 309
Relating to Agriculture
HB 1931

Aloha Chairperson Choy, Vice Chair Ichiyama, and Members of the Committee,

I am Randy Cabral and I have been farming in Hawaii for over 40 years. I am the Senior Vice President of Operations for Royal Hawaiian Orchards LP. We farm 6,000 acres of macadamia on Hawai'i Island. Of these, 3,000 are in the District of Ka'u. We employ 250 full time and seasonal workers. **We strongly support this bill**.

I am testifying today to request funding to prevent a dire situation from becoming even worse. Hawai'i is the 3rd largest producer of macadamia nuts in the world (570 farms, operating on 17,000 acres), after Australia and South Africa. Production in 2011-2012 totaled 58 million pounds; the net farm value was $38 million.

The problem ---the Macadamia Felted Coccid

Already, three of our largest growers, along with many smaller growers, have found a devastating pest, the macadamia felted coccid (MFC) in their orchards. These farms produce over 80% of the state's macadamia kernels.

The strangely named pest is a small Australian insect that covers and feeds on leaves, nuts, branches, and trunks of the macadamia tree. It even thrives in drought conditions, such as those in Ka'u, and can spread easily by wind.

The MFC threatens the entire macadamia nut industry in Hawaii by causing severe tree dieback and then death. Even mature trees can be killed by this small insect. If not controlled, we believe the MFC will spread to other regions on Hawai'i Island and other islands, and devastate the macadamia nut industry. We have seen what the coffee berry borer has done to the local coffee industry and we

know that we can't afford to wait. We need to fund research to find economical solutions to this problem. This bill would supply the needed funding to help develop new ways to prevent and treat MFC infestations.

What do we know and what's been done?

Currently, very little is known about the life cycle or vulnerabilities of the pest. In its native Australia, macadamia nut growers use considerable pesticides to control the MFC, but in Hawaii, because we typically don't use insecticides, we don't have the equipment and resources to apply these types of pesticides to large, mature trees. Some pesticides seem to work but require adequate rainfall or adequate irrigation, neither of which is available.

The MFC has no significant natural predators in Hawaii as compared to Australia.

Why fund research to control the pest?

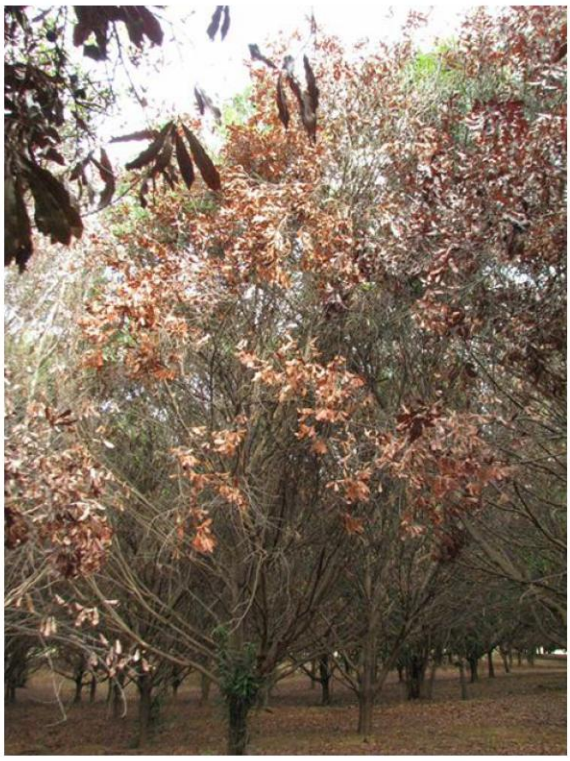
Hundreds of jobs are tied to macadamia farming in Hawai'i; it is a vital source of employment in Ka'u, which has among the highest unemployment rate in the state. Over 50% of Hawai'i's macadamia tree acres are located in the Ka'u district, the area hardest hit by the MFC.

We know there are many other demands for funding and there is a limited budget. Other pests such as the coffee berry borer have gotten more media attention and funding. But we want you to know that without intervention, we have little chance of successfully continuing macadamia farming.

The HDOA and UH CTAHR can help us by studying the MFC and figuring out sustainable and economical solutions. Growers themselves have contributed $95,000 to UH CTAHR to conduct MFC research, but more funding is needed.

Thank you for allowing me this opportunity to explain our predicament to you. I would be happy to answer any questions you might have. Please contact me if you're interested in seeing in person the devastation this pest has already caused in Ka'u (see photo examples on following pages).

MFC Damage in Ka’u Orchard



Tree infested with MFC

MFC on trunk of infested tree

Extensive MFC damage within an orchard block

688 Kinoole Street, Suite 121, Hilo, Hawaii 96720

February 6, 2014

Representative Isaac W. Choy
Chair, House Committee on Agriculture
Hawaii State Capitol, Room 404
415 S. Beretania Street
Honolulu, HI 96813

Re: In Support of House Bill 1931

Dear Chair Choy:

I am writing to ask for your support in passing legislation to obtain funding to combat the macadamia felted coccid and am in strong support of HB 1931. The funding to thoroughly study and develop methods of combatting the macadamia felted coccid is sorely needed. We currently own and lease over 5,000 tree acres of macadamia nut orchards on Hawaii Island and are one of the largest producers of macadamias in the world. We currently employ over 250 employees.

We have experienced the effects of this invasive pest and have lost and continue to lose macadamia nut trees, which were killed as a result of the coccid. Approximately 13% of macadamia nut trees growing in Pahala are severely infected. Representative Onishi has toured several of our orchards and has witnessed this devastation and it will only get worse. We see this pest having the same effect on our industry as the coffee bearer beetle has had on our coffee industry and if something is not done, our industry and all the people it employs will surely suffer.

We have made attempts to combat this pest with pesticides and other treatments with no lasting success, and have spent over $250,000 on these ineffective measures. We have sought help from USDA, CTAHR and others, but funding issues have prevented them from assisting us. Accordingly, our company and the Ed Olson Trust have contracted with CTAHR to conduct research, which we are funding. Unfortunately we will not be able to sustain this.

It is critical that this Bill gets passed, which will go a long way in developing methods of eliminating and or controlling this pest. This is one way to ensure our macadamia nut industry will remain viable.

Thank you very much for all you do. Should you have any questions, I can be reached at (808) 747-8471 or email at jmiyata@rhomac.com.

Very truly yours,

Jon Y. Miyata
Vice President & Chief
Accounting Officer

HOUSE COMMITTEE ON HIGHER EDUCTION
FEB 11, 2014
Relating to Agriculture
HB 1931

Aloha Chairperson Isaac Choy, Vice Chair Linda Ichiyama, and Members of the Committee,

My name is Randy Mochizuki and I am the Crop Control Superintendant at the Royal Hawaiian Orchard in Pahala, HI. **We strongly support this bill to fund a way to protect macadamia nut farmers from a devastating invasive pest**.

The coccids were first found in our orchard in 2009 damaging a few trees. It has since spread throughout our 3,300 acres and has destroyed or damaged a substantial number of trees.

Due to the size of our trees; oil sprays which can control the pest in other orchards, are ineffective because of inadequate coverage.

Other orchards in Kau and along the Hamakua coast are also being damaged by the coccids and have been unable to find effective means of control.

If we don't find a cost effective control; it will most certainly lead to the demise of our Pahala orchard and 125 jobs. But, it may lead to the demise of our company as a whole and another 150 jobs.

It also has the potential of destroying other macadamia orchards in the state affecting 1,500 acres and 570 farms and a 35-38 million dollar industry.

Our company's Pahala division has spent over $100,000 on this pest since 2009. The industry has recently contributed $85,000 for research. But much more is need to not only find an immediate control, but long term control measure.

Please help us by supporting this bill.

Thank you for your consideration of my comments.

HOUSE COMMITTEE ON AGRICULTURE
February 11, 2014
2:00 pm
Room 309
Relating to Agriculture
HB 1931

Aloha Chairperson Choy, Vice Chair Ichiyama, and Members of the Committee,

My name is Alan Yamaguchi and I am the former (retired) Director of Research for Royal Hawaiian Orchards, L.P. **I strongly support this bill to fund a way to protect macadamia nut farmers from a devastating invasive pest**.

Since 2005, when the Macadamia Feltid Coccid was first discovered, this insect pest has established itself on more than 7,000 acres of producing macadamia trees where greater than 50% of Hawaii's in-shell macadamia nuts are grown. The insect is distributed in, but not limited to, the South Kona, Ka'u, Hilo and Hamakua districts on the Big Island and is likely expected to spread over the entire island in due time and affect the entire 15,000 acres of macadamia trees. Most, if not all, of the growers that produce macadamia nuts for the State of Hawaii are on the Big Island.

Hawaii's ideal growth environment for macadamia is, unfortunately highly suitable for the development and distribution of MFC to all locations where macadamia is grown. Our mild temperatures and tropical climate provides an environment where multiple generations of the pest are produced annually. The insect is found on the trunks, branches, leaves, immature racemes and developing/maturing nuts. It is easily distributed by wind, transport of infested plant parts, and possibly winged animals. The primary damage to the macadamia is through the piercing/sucking mouthpart used to extract moisture and nutrients to sustain its life cycle. Heavily infested trees die while others remain weak with low nut production.

Research is needed to identify long term economical solutions to manage MFC to sustain the Hawaiian macadamia industry. This requires studies to determine to determine short term measures that can reduce pest distribution in orchards to

support current nut production levels. Additionally, research is necessary to seek longer term solutions, such as biological control or use of natural enemies, to manage MFC. The use of natural enemies would reduce the need to use pesticides. Natural enemies identified by the University of Hawaii College of Tropical Agriculture and released by the Hawaii Department of Agriculture significantly reduced the damage caused by the Southern Green Stink Bug on macadamia nuts and basically eliminated the use of pesticide to control the insect. We need to repeat this feat for MFC

Approximately 44-50 million pounds of macadamia nuts are handled or processed by about six processors, all on the Big Island annually. The two largest, MacFarms of Hawaii and Mauna Loa Macadamia Nut Corporation, are located on the east and southern parts of the Big Island and, combined, employ several hundred workers during harvest season and handle more than 50% of the nut production on Hawaii island. Additionally, Royal Hawaiian Orchards has approximately 200 workers at their orchards located at Pahala, Keaau and Hilo.

It is anticipated that MFC will continue to spread, damage macadamia orchards and negatively impact nut production and employment in the industry if this pest is not managed. Past efforts to identify suitable control measures have had mixed results and require extensive research. Any delay will only hurt the macadamia growers, processors and marketers of Hawaii's premium macadamia nut products.

Please help us by supporting this bill.

Thank you for your consideration of my comments.

Best Regards,

Alan Yamaguchi

February 11, 2:00 PM, Conference Room 309

RE: HB 1931 Relating to Agriculture

In Support

Chair and Committee Members,

I support HB 1931, which would provide appropriations for the University of Hawaii - College of Tropical Agriculture and Human Resources for the research of Macadamia Felted Coccid (MFC). In recent years, MFC has become a serious pest of Macadamia on the island of Hawaii and has caused the decline of otherwise healthy, productive trees throughout the Ka'u region. If left unchecked, this pest could cause the decline of the entire Macadamia industry, which directly and indirectly provides jobs for innumerable Hawaii residents.

With the drought that has been affecting parts of the state for some time, crops such as Macadamia have been under water stress. This has provided conditions that are conducive to a pest outbreak. In this case, the pest was a relative newcomer to Hawaii and therefore lacked the necessary research and treatment options that would have been necessary for suppression.

Research on MFC is still in its nascency and will require many years and a lot of funding to complete. Many growers within the industry have already contributed as much funding as they could afford to initiate the research, but it has not been nearly enough.

I believe that HB 1931 will provide more of the necessary funding and assistance towards the goal of finding a viable solution to this devastating pest. Without action, the Hawaiian Macadamia industry faces a grim fate. It is up to you to decide whether ensuring the survival of one of Hawaii's main agricultural industries is a cause worth supporting.

Thank you for the opportunity to submit testimony.

Mahalo,

Bonnie Schoneberg

Research Committee Chair

Hawaii Macadamia Nut Association

P.O. Box 253, Kunia, Hawai'i 96759
Phone: (808) 848-2074; Fax: (808) 848-1921
e-mail info@hfbf.org; www.hfbf.org

February 11, 2014

HEARING BEFORE THE
HOUSE COMMITTEE ON HIGHER EDUCATION

TESTIMONY ON HB 1931
RELATING TO AGRICULTURE

Room 309
2:00 P.M.

Chair Choy, Vice Chair Ichiyama, and Members of the Committee:

I am Christopher Manfredi, President of the Hawaii Farm Bureau Federation (HFBF). Organized since 1948, the HFBF is comprised of 1,832 farm family members statewide, and serves as Hawaii's voice of agriculture to protect, advocate and advance the social, economic and educational interest of our diverse agricultural community.

HFBF **strongly supports HB 1931** which appropriates funds to the Hawaii Department of Agriculture and the University of Hawaii to research and develop methods for the prevention and treatment of macadamia felted coccid.

Hawai'i is the 3rd largest producer of macadamia nuts in the world (570 farms, operating on 17,000 acres), after Australia and South Africa. Production in 2011-2012 totaled 58 million pounds; the net farm value was $38 million. It is the fourth most valuable crop in the state (see attached USDA NASS Statistics c.2009)

Hundreds of jobs are tied to macadamia farming in Hawai'i; it is a vital source of employment in Ka'u, which has among the highest unemployment rate in the state. Over 50% of Hawai'i's macadamia tree acres are located in the Ka'u district, the area hardest hit by the MFC.

The macadamia felted coccid (MFC) threatens the entire macadamia nut industry in Hawaii by causing severe tree dieback and then death. Even mature trees can be killed by this small insect. If not controlled, we believe the MFC will spread and could devastate Hawaii's macadamia nut industry. We have seen what the coffee berry borer has done to the local coffee industry and we know that we can't afford to wait. Its important to the state and the industry to fund research to find effective solutions to this problem. This bill would supply the funding needed to develop new ways to prevent and treat MFC infestations.

Thank you for the opportunity to comment on this measure.

Top 20 commodities, State of Hawaii, 2008-2009 [1]

Commodity [2]	Rank		Value of production	
	2008	2009	2008	2009
	--- Number ---		--- 1,000 dollars ---	
Seed crops	1	**1**	176,990	**222,560**
Sugarcane (unprocessed)	2	**2**	44,200	**44,200**
Macadamia nuts	3	**3**	33,500	**29,400**
Cattle	5	**4**	24,305	**28,945**
Coffee	4	**5**	29,240	**27,840**
Algae	6	**6**	15,740	**16,995**
Papayas	7	**7**	14,393	**14,186**
Bananas	9	**8**	8,004	**10,175**
Eggs	8	**9**	8,678	**8,759**
Milk	12	**10**	5,460	**7,491**
Basil	10	**11**	6,755	**6,810**
Potatoes, sweet	13	**12**	4,780	**5,413**
Palms, potted	11	**13**	6,635	**5,251**
Dendrobiums, potted	14	**14**	4,111	**3,474**
Anthuriums, cut	16	**15**	3,518	**3,006**
Hogs	17	**16**	3,359	**2,996**
Cabbage, head	19	**17**	2,820	**2,976**
Dracaena, potted	15	**18**	3,919	**2,766**
Taro	20	**19**	2,666	**2,440**
Ginger root	18	**20**	2,880	**2,240**

[1] Pineapples, sod, tomatoes, and watermelons not ranked due to disclosure of individual operations.
[2] Floriculture categories include only growers with total sales of $10,000 or more.

Farm values, State of Hawaii, 1990-2009

Year	Sugar (unprocessed cane)	Pineapples (fresh equivalent)	Diversified agriculture [1]	Total [2]
		1,000 dollars		
1990	213,800	106,365	275,789	595,954
1991	174,900	107,775	268,707	551,382
1992	153,700	102,100	264,427	520,227
1993	163,000	79,850	271,094	513,944
1994	160,100	78,890	273,826	512,816
1995	127,700	87,360	291,632	506,692
1996	108,100	95,914	307,329	511,343
1997	85,500	91,721	327,484	504,705
1998	87,300	92,776	329,886	509,962
1999	86,800	101,448	342,846	531,094
2000	62,200	101,530	358,170	521,900
2001	57,800	96,337	370,241	524,378
2002	64,300	100,616	374,602	539,518
2003	64,400	101,470	382,253	548,123
2004	61,500	83,104	407,453	552,057
2005	58,900	79,288	444,597	582,785
2006	50,200	73,652	455,738	579,590
2007	47,600	[3]	[3]	577,999
2008	44,200	[3]	[3]	605,230
2009	**44,200**	**[3]**	**[3]**	**627,690**

[1] Aquaculture included beginning 1993.
[2] Includes all agricultural commodities.
[3] Pineapples and diversified agriculture not shown separately to avoid disclosure of individual operations.

Diversified agriculture ranked by value, State of Hawaii, 2008-2009

Commodity	Rank		Value of production			Percent of diversified agriculture [1]	
	2008	2009	2008	2009	Year-to-year percent change	2008	2009
	--- Number ---		----- 1,000 dollars -----		---------- Percent ----------		
Seed crops	1	**1**	176,990	**222,560**	+26	38.8	**45.6**
Flowers and nursery products	2	**2**	94,662	**80,092**	-15	20.7	**16.4**
Aquaculture	3	**3**	34,650	**32,330**	-7	7.6	**6.6**
Macadamia nuts	4	**4**	33,500	**29,400**	-12	7.3	**6.0**
Cattle	6	**5**	24,305	**28,945**	+19	5.3	**5.9**
Coffee	5	**6**	29,240	**27,840**	-5	6.5	**5.7**
Fruits (excluding pineapples)	7	**7**	23,680	**25,373**	+7	5.2	**5.2**
Vegetables and melons [2]	8	**8**	21,898	**22,410**	+2	4.8	**4.6**
Eggs	9	**9**	8,678	**8,759**	+1	1.9	**1.8**
Milk	10	**10**	5,460	**7,491**	+37	1.2	**1.6**
Hogs	11	**11**	3,359	**2,996**	-11	.7	**.6**
Total			[3]	**[3]**		100.0	**100.0**

[1] Percentages are of displayed items only. [2] Includes ginger root and herbs. Beginning 2007, non-published vegetable commodities not included to avoid disclosure of individual operations, but included in total farm value. [3] Data not shown separately to avoid disclosure of individual operations but included in total farm value.

February 6, 2014

for Tuesday, February 11, 2014

Honorable Isaac W. Choy
Chair, Committee on Higher Education
State House of Representatives
Room 404, Hawaii State Capitol
Honolulu, Hawaii 96813

Honorable Linda Ichiyama
Vice Chair, Committee on Higher Education
Room 327, Hawaii State Capitol
Honolulu, Hawaii 96813

RE: HB RELATING TO AGRICULTURE
Testimony of Mark K. Crawford, Operations Manager,
MacFarms of Hawaii, LLC

Dear Honorable Choy and Honorable Ichiyama:

Thank you for the opportunity to testify on House Bill 1931. This would appropriate funding for research to develop new methods of control and treating macadamia felted coccid infestations.

MacFarms of Hawaii, LLC is in support of this bill as it will provide required resources to allow the University of Hawaii College of Tropical Agriculture and Human Resources to find a proper control to MFC.

The macadamia nut industry is a vital part of Hawaii's agriculture industry. With an estimated farm value of over $35 million, macadamia nuts are one of the top five agricultural commodities for the State of Hawaii.

If left uncontrolled, the MFC is a pest that can cause severe damage to mature producing macadamia nut trees resulting in a loss of income to Hawaii's macadamia nut farmers. Therefore, is it vital to develop new strategies and controls to limit the damage this pest can do, while at the same time providing additional learning opportunities for the advanced CTAHR students.

Respectfully,

MARK K. CRAWFORD
Operations Manager
MacFarms of Hawaii, LLC

MacFarms of Hawaii 89-406 Mamalahoa Highway Captain Cook, HI 96704
Telephone 808 328 2435 Fax 808 328 8081
"An Equal Opportunity Employer"

ichiyama2-Fern

From: mailinglist@capitol.hawaii.gov
Sent: Thursday, February 06, 2014 9:26 AM
To: HEDtestimony
Cc: akam808@aol.com
Subject: Submitted testimony for HB1931 on Feb 11, 2014 14:00PM

HB1931
Submitted on: 2/6/2014
Testimony for HED on Feb 11, 2014 14:00PM in Conference Room 309

Submitted By	Organization	Testifier Position	Present at Hearing
Albert Kam	Individual	Support	No

Comments: We own a small 10 acre macadamia nut farm in Pahala. The macadamia feltid coccid has the potential of destroying the Hawaiian macadamia nut industry. We strongly support and urge the Legislature to support HB1931. Thank you. Albert Kam PMK

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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ichiyama2-Fern

From: mailinglist@capitol.hawaii.gov
Sent: Thursday, February 06, 2014 2:06 PM
To: HEDtestimony
Cc: mendezj@hawaii.edu
Subject: *Submitted testimony for HB1931 on Feb 11, 2014 14:00PM*

HB1931
Submitted on: 2/6/2014
Testimony for HED on Feb 11, 2014 14:00PM in Conference Room 309

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

Comments:

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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HB1931, Relating to Higher Education:

Chair Choy, Vice Chair Ichiyama, and members of the House Committee on Agriculture, I thank you for this opportunity to provide my personal testimony in support of HB 1931, Relating to Higher Education. I strongly support this bill provided that its passage does not replace or adversely impact priorities as indicated in the University's Board of Regents Approved Executive Biennium Budget.

Macadamia felted coccid is the most serious pest of macadamia nuts cultivated in Hawaii. This insect is capable of killing trees, and can have a dramatic impact on yields if left unchecked. Losses in nut production in heavily infested trees upon which management efforts are made are severe; yield potential of trees is of course completely lost in the case of trees that succumb to the insects' impact. When this pest was initially detected in 2005, immediate efforts were made to suppress the pest in the South Kona, where it was restricted to at that time. The soil and moisture environment at the South Kona growing areas is significantly different from other areas where macadamia buts are grown, producing an environment in which effective pest control measures could relatively easily be implemented. Effective suppression protocols were developed end implemented with very good results. In some areas where this pest spread to subsequently, we were successful in eradicating early infestations in very young trees.

While biological control options and insecticide treatments are effective under certain circumstances, there are many situations where the impacts of both are reduced. Research is required to address improvement of biological and chemical control of this pest under all growing conditions; the exact origin (as potential sources of new biological control agents); interactions with macadamia felted coccids with pathogens of macadamia nut trees; and natural resistance to macadamia felted coccid in macadamia varieties. This pest is spreading extensively in macadamia growing areas of Hawaii, and immediate action is essential.

My name is Mark G Wright. I am a professor of entomology and an entomology extension specialist at UH Manoa. However, today, I am providing personal testimony.
February 7, 2014.

LATE

February 11, 2014

To: Representative Isaac W., Choy, Chair,

Representative Linda Ichiyama, Vice Chair and all House Comm. on Higher Education members

From: Patrick Conant, Volcano, Hawaii 96785

Re. HB 1931 Relating to Agriculture (and the pest insect macadamia felted coccid or MFC) to be heard on 2/11/14 at 2:00 pm

I fully support HB 1931. I retired from the State Department of Agriculture as the Entomologist for East Hawaii Island at the end of last year. I documented the spread of MFC from South Kona all the way to Honokaa over the years since it's initial discovery in 2005. I am very familiar with its devastating effects on macnut trees in Pahala, and Honokaa fields appears to be headed toward that same fate . Very recent work by Dr. Lisa Kieth at USDA-ARS-PBARC in Hilo indicates that the feeding punctures of the insect allow a fungus to infect trees and that slowly causes their deaths. Large, old, good producing trees are dying off in Pahala so I consider this a crisis for the macadamia nut industry, and the problem needs solutions soon before damage worsens.

Although we have found natural enemies in the macnut fields on Hawaii island, they either are not well adapted to that habitat, or are not effective enough to prevent nut production loss nor tree death. Hawaii Department of Agriculture (HDOA) has already sent an Entomologist to Australia to find natural enemies but much more work will need to be done by them. We also need to know more about the ecology of the insect in the macnut fields in Hawaii and Australia so that we know how to control it here. Dr. Mark Wright at UH Manoa CTAHR has already done work on the pest here and is the right man for the job. That work needs to be in cooperation with Dr. Kieth at PBARC so that the relationship of the insect to the fungus that it apparently facilitates can be elucidated and control measures tailored to prevent economic loss caused by these two seemingly symbiotic pests.

In closing, I hope I have made it clear that this is not a simple pest to control. It will require cooperative work among HDOA, University of Hawaii and USDA-ARS-PBARC, assuming the latter agency has funding to assist us with this potentially industry wrecking pest. Keep in mind it has not yet reached Kona macadamia nut fields nor other islands, but it most likely will. Things might get worse before we can make them better. The time to start on the problem is now.