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PHYLLIS SHIMABUKURO-GEISER
Chairperson, Board of Agriculture

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December 26, 2019

The Honorable Ronald D. Kouchi,
President and Member of the Senate
Thirtieth State Legislature
State Capitol, Room 409
Honolulu, HI 96813

The Honorable Scott K. Saiki,
Speaker and Member of the House of
Representatives
Thirtieth State Legislature
State Capitol, Room 431
Honolulu, HI 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of the Annual Report on the Biosecurity Program as required by Act 236, SLH 2008. In accordance with Section 93-16, Hawaii Revised Statutes, I am also informing you that the report may be viewed electronically at <http://hdoa.hawaii.gov/>.

Sincerely,

Phyllis Shimabukuro-Geiser, Chairperson
Board of Agriculture

Enclosures



**REPORT TO THE THIRTIETH LEGISLATURE
2019 REGULAR SESSION
STATE OF HAWAII**

ANNUAL REPORT ON THE BIOSECURITY PROGRAM

ACT 236, SLH 2008



PREPARED BY:

**THE STATE OF HAWAII
DEPARTMENT OF AGRICULTURE**

DECEMBER 2019

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SECTION I

Background

A. Act 236, 2008 Session Laws of Hawaii

Act 236 of the 2008 Session Laws of Hawaii recognized that the unchecked spread of invasive species was a threat to Hawaii's economy, natural environment, and the health and lifestyle of Hawaii's people. Act 236 created a Biosecurity Program within the Department of Agriculture to support the Department's efforts in combatting invasive species. In particular, Act 236 recognized that the Department was undertaking several activities to fight invasive species by:

1. Administering pre-entry measures to minimize the risk of invasive pests entering the State;
2. Conducting port-of-entry inspections to detect and quarantine or destroy pests upon arrival; and
3. Administering post-entry measures to mitigate the establishment of pests in the State.

Additionally, Act 236 acknowledged the Department's efforts to reduce the State's dependency on imported agricultural products by increasing the capacity of Hawaii's agricultural industry that would in turn reduce the risk of importing agricultural commodities that could contain invasive pests. The Biosecurity Program was created to support the Department's ongoing efforts to combat invasive pests. The Legislature also established the Pest Inspection, Quarantine, and Eradication (PIQE) fund to finance much of these activities.

B. Role of the Hawaii Department of Agriculture

Efforts to prevent the introduction of invasive species, control and mitigate existing invasive species, and where possible, to eradicate invasive species incursions, are covered by multiple divisions and branches within the Department of Agriculture. There are also multiple funding sources used to fund these activities including general funds, Pest Inspection, Quarantine, and Eradication (PIQE), barrel tax, and federal funds.

The Plant Industry Division is composed of the Plant Quarantine Branch, Plant Pest Control Branch, and the Pesticide Branch. All three branches play a role in biosecurity with HDOA and work closely together to accomplish the objectives. The Plant Quarantine Branch (PQ) is largely tasked with the inspections and permitting of agricultural commodities (live plants; non-propagative plant parts such as fresh produce, cut flowers, animal feed; non-domestic animals; microorganisms; and soil) at ports of entry to prevent the introduction and interisland spread of new or existing invasive species. This branch works closely with its federal partners (USDA-APHIS and USDA-PPQ) to ensure Hawaii's ports of entry are being kept free of invasive species threats. The Plant Pest Control Branch focus is primarily on the detection, response, control, containment, and eradication of pests that have managed to

bypass inspections at the ports of entry. It is staff from this branch that are in the field actively working with farmers, homeowners, and businesses to help treat, prevent, and where possible, eradicate invasive species threats when they are discovered. The Pesticides Branch ensures that pesticide technologies are available for these efforts and are being properly used. Specific activities of the Plant Industry Division relating to biosecurity are as follows:

Prevention – activities to prevent the introduction of invasive species

- Inspection at port-of-entries for agricultural commodities entering the State and moving inter-island.
- Issuance of permits for the importation and possession of restricted commodities such as restricted plants, non-domestic animals, and microorganisms.
- Origin certification programs for high risk commodities (compliance agreements between origin state, commodity handlers/shippers, and destination state) designed to minimize or eliminate pest risk levels.

Diagnostics – ability to identify pests and invasive species: Insects, Slugs, Snails, Plant Pathogens, Non-domestic Animals, Microorganisms, and Noxious Weed identification.

Detection – surveillance for the existence and location of an invasive species that may be introduced.

Rapid Response – Immediate survey, control, and eradication measures to detect, capture, or eliminate a single threat or incipient population of invasive species before it can become established.

Monitoring – ongoing surveys to track the presence or absence and status of introduced invasive species over time and to evaluate effectiveness of prevention, control and restoration activities. Surveys are conducted at high risk areas, including within the *airport and harbor environs, surrounding the ports-of-entry, agricultural lands, and selected protected areas within the State.*

Biological Sampling – ongoing surveys to track the presence and status of existing species over time and to evaluate effectiveness of prevention, control and restoration activities.

Research and Development – the development of scientific knowledge, methods, and technologies to prevent, detect, control and/or monitor invasive species and assist in implementing technologies to control invasive species' effects on agricultural production.

Education Outreach – actions taken to support public education and outreach programs.

Partnerships and Cooperative Activities – cooperative efforts with stakeholders (agricultural industries); federal, state, county, and private partners; including domestic and international partnerships and agreements.

Information Management – activities to facilitate access to and exchange of information concerning invasive species. Includes storage and sharing of data and databases.

Quality Control Programs – activities to measure levels of effectiveness, including on-going risk assessments to determine pest-risk pathways, evaluation of mitigation activities, and re-prioritization of inspection activities for invasive species.

Quarantine Treatment Facilities – “shared” government certified treatment facility(ies) approved to conduct disinfestations treatments to recondition and/or destroy shipments infested with quarantine pests, or to subject shipments to treatments that will exterminate the quarantine pest.

Permitting – issuing permits based on statutes, administrative rules, and prior Board of Agriculture decisions to ensure the introduction of regulated commodities can be appropriately imported into the State and not introduce or become invasive species in accordance with pest risk.

Compliance and Enforcement – strengthening the enforcement components to compel compliance with quarantine laws and regulations.

Export Programs – providing services to facilitate the export of agricultural goods to domestic and foreign markets.

The Animal Industry Division approaches biosecurity as a process for risk management of high impact animal diseases. This is accomplished as a spectrum of activities that encompasses mitigation of invasive animal disease occurrence and appropriate response methods to support continuity of business and protect human health. Detection of high impact animal diseases will affect both local industries as well as global trade. The Rabies Control Branch and the Animal Disease Control branch share the same objective of minimizing the impact of animal disease occurrence but focus on different species. Pre-arrival requirements provide assurances that newly imported animals have been properly identified, complied with disease testing and have undergone pre-transport examination. Upon arrival, inspection occurs to verify animal identification, examine for clinical signs of illness and check for the presence of foreign parasites. In addition to monitoring newly importing animals, Animal Division staff performs routine surveillance of existing populations to detect emerging or re-emerging animal diseases that are subject to control or eradication. To determine the level of impact when irregularities are detected, the Veterinary Laboratory provides diagnostic support. Upon confirmation of the presence of invasive animal disease or parasites, response methods are initiated to contain disease spread, work towards eradication, and minimize the impact on existing industries, human health and global trade.

Section II

Description of Projects and Activities Funded by the Pest Inspection, Quarantine, and Eradication Fund

Plant Quarantine Branch Database and e-Manifesting.

PQ maintains a database called INVICTA to record import inspection, permitting, and pest hotline reporting activities. The database is a critical and essential tool not only for information storage but is also used to determine effectiveness of operations and aids commodity and pathway risk analysis. Once analyzed, the data is used by PQ to focus inspection activities to intercept pests. However, the database is outdated, limiting among other things, the ability to retrieve information needed for comprehensive risk analysis. The database is being maintained and updated as much as possible with PIQE funds until PQ rolls out a more comprehensive and modern database. A request for proposals (RFP) was completed and HDOA selected Pacific Point, Inc to develop PQSYSTEM17. HDOA implemented the contract in March 2018 and completion of PQSYSTEM17 in the fourth quarter of CY2019.

Previous risk assessments conducted at ports of entry statewide, have determined that different commodities pose different risk levels for the introduction of pests. INVICTA has been instrumental in the implementation of these risk assessments but does not have the capacity to efficiently determine commodity and pest risk and allow for efficient electronic-manifesting (e-Manifest). The new database has incorporated a standardized e-Manifest module that will allow shippers and importers to electronically submit a shipping manifest to HDOA before (sea containers typically 5 days prior and air shipments typically 6-8 hours prior) the commodities arrive in the State. This will allow PQ to efficiently utilize limited manpower by scheduling inspections based on the risk level of the arriving commodities. A pilot project for the e-manifesting system has continued throughout this fiscal year to better design a module that can be incorporated into the new database. PQ is developing training modules to transition importers and shippers into the new system.

Nursery Certification and Compliance Project.

PQ continues to maintain a compliance project with selected nurseries who ship nursery stock in soil for Rapid Ohia Death (ROD). It includes best management practices as well as periodic testing of soil in the nursery for the fungus that causes ROD. One nursery was found to have ROD in their potting media, which contains soil. That nursery has since converted to a soil-free media for their plants shipped inter-island.

Christmas Tree Inspection Project.

PQ continues to work collaboratively with Oregon Department of Agriculture (ODA) and the Washington State Department of Agriculture (WSDA) to maintain implementation of best management practices (BMPs) and inspection protocols with Oregon Christmas tree shippers to ensure that the shipments are free of pests. In previous years, ODA personnel have come to Hawaii to work with HDOA to inspect the trees as they arrive and to assess the results of the efforts. The BMPs continue to

be successful with a 94% of the shipments found free of pests in 2016, 97% in 2017, 98% in 2018, and 98% in 2019.

In 2018, PQ worked directly with Amazon, who voluntarily restricted the shipping of Christmas trees to Hawaii from suppliers in North Carolina which are not utilizing the appropriate BMPs that ODA and WSDA enforce. This year, Amazon did not ship live Christmas trees.

Funding of Personnel.

The PIQE is a significant source of funding (\$3.5 million) for PQ staff positions. PIQE supports approximately half (42 of 90) of the PQ positions. These positions were originally general funded but lost during the RIF in 2009. The staff in these positions conduct the day-to-day inspection, permitting, pest response activities, and special projects funded by PIQE which meet the mandates of ACT 236, SLH 2008.

Funded Projects.

Hawaii Ant Lab Core Funding. This statewide initiative focuses on the development and use of novel and proven technologies to prevent, detect, respond, and control little fire ant. Increased spread of the little fire ant due to tough terrain, non-cooperative land owners, and unique natural environments have allowed the little fire ant to spread to various locations throughout the State. To affect change, the Hawaii Ant Lab will need available resources to address this invasive pest. The Hawaii Ant Lab at the University of Hawaii received \$344,902.

Early Detection and Prevention of little fire ant on Oahu. This project funds a trained research, survey and response team to provide monitoring of high-risk sites such as nurseries and landscape suppliers. The Hawaii Ant Lab at the University of Hawaii received \$113,254.

Little Fire Ant Research. This project allows the Hawaii Ant Lab and the University of Hawaii to perform research and field trials on the effectiveness of hydrogels and other water-storing granules to control little fire ant populations. The University of Hawaii received \$60,361.

Support for Big Island Invasive Species Committee. This project funding of \$115,000 will support three projects central to the Big Island Invasive Species Committee's mission. The projects include community-based training for residents to control little fire ants; promotion of the Plant Pono plant industry endorsement program; and survey and control of high-impact invasive plants that have escaped into the natural environment.

County of Hawaii Coqui Frog Control in North Kohala. This project will allow for educational activities and outreach events, prevention activities and control and eradication efforts of the coqui, and the maintenance of a 24/7 coqui hotline and response team. This project will receive \$50,000.

The Department looked to increase engagement and inter- and intra-agency communication through the help of the Coordinating Group on Alien Pest Species (CGAPS). Increased outreach allows for coordination on collaborative projects towards the goals outlined in the Hawaii Interagency Biosecurity Plan. This also allowed for education of decision makers, special interest groups, and the public about invasive species in order to effect a change in perception, actions, rules, or funding for invasive species issues.

In Hawaii, the total farm gate value of the crucifer industry is approximately \$4.55 million. The industry primarily consists of head cabbage, chinese cabbage, mustard cabbage and kale. The most serious problem facing the crucifer industry in Hawaii is the control of an insect pest called the diamondback moth (DBM)), *Plutella xylostella* (Linnaeus). In collaboration with University of Hawaii CTAHR, field monitoring and workshops are being conducted to provide crucifer growers a resistance management program and develop other sustainable management strategies for the control of diamondback moth and other lepidopteran pests on crucifers.

Ornamental Ginger survey and identification. Commercial production of ornamental ginger has been on the decline for the past 10 years on Oahu. Extension agents worked with CTAHR pathologist to learn that there are 3 plant viruses affecting ginger production (banana bract mosaic virus (BBrMV), canna yellow mottle virus (CaYMV), and banana streak virus (BSV) and at least one fungal pathogen (*marasmus*) that attributes to crop decline and death. More diagnostic work and a statewide survey is warranted before quarantine is pursued. The University of Hawaii will receive funds to carry out this work.

Coffee Nematode Management. The coffee root-knot nematode (CRKN) *Meloidogyne konaensis* is a serious pest of coffee in the Kona and Kau coffee producing regions. A current project will be expanded to address the lack of awareness of CRKN among growers and how rootstocks and grafted plants can help while also conducting more research on CRKN. Extension outreach efforts have focused on workshop/field-day events, including printed and online outreach materials. The University of Hawaii will receive funds to carry out this work.

Plant Quarantine/Invasive Species Awareness at the Daniel K. Inouye International Airport. An initiative by PQ personnel was launched to promote awareness of the impact of invasive species on our environment and the promotion of the Plant Quarantine Branch as the first line of defense in combatting invasive species in Hawaii. The effort will include 10-second videos on a 1-minute loop with other products or organizations. The videos will appear on all the television monitor screens above the escalators going down to Baggage Claim from all domestic arrivals and will include the escalator going down to Baggage Claim at the interisland terminal for a total of 4 video monitors. The videos are also be displayed on both sides of the new arrival and departure board at the Hawaiian Airlines/interisland ticket lobby. This is a 3-year project funded with \$300,000.

Apiary. Statewide biosecurity surveillance for Africanized Honey Bees (AHB), AHB DNA diagnostic, surveillance, inspections for honey bee pests is ongoing: Varroa, Nosema, Tropilaelaps Mites, American and European Foulbrood. Africanized Honey bees have not been detected in Hawaii.

Hawaii Administrative Rule amendments.

PQ administers Hawaii Administrative Rules that directly apply to biosecurity. These rules are continually being reviewed and updated as needed. This is a multi-tiered process which involves staff, various Advisory Subcommittees, the Advisory Committee on Plants and Animals, and Board of Agriculture review followed by the public hearing process. The process was initiated for the following changes:

Chapter 4-70 Plant Import Rules. Addition of a subchapter restricting plants in the family Myrtaceae (Myrtle family) to address the risk of the importation of new strains of the rust fungus, *Puccinia psidii*, commonly known as Ohia Rust or Guava Rust.

Section III

Description of Proposed Projects and Activities to be funded by the PIQE Fund

Funded Projects.

Hawaii Ant Lab Core Funding. This statewide initiative focuses on the development and use of novel and proven technologies to prevent, detect, respond, and control little fire ant. Increased spread of the little fire due to tough terrain, non-cooperative land owners, and unique natural environments have allowed the little fire ant to spread to various locations throughout the State. To affect change, the Hawaii Ant Lab will need available resources to address this invasive pest. The Hawaii Ant Lab at the University of Hawaii will receive funds to carry out this project.

Early Detection and Prevention little fire ant on Oahu. This project funds a trained research, survey and response team to provide monitoring of high-risk sites such as nurseries and landscape suppliers. The Hawaii Ant Lab at the University of Hawaii will receive funds to carry out this project.

Hawaii not only imports much of its food from outside of the State, but it also sits at a unique middle point between Asia and the continental United States, and as such, there are quite a bit of cargo and freight traffic moving through the islands. Due to the high volume of port traffic in our State, HDOA, along with its agency collaborators, rely heavily on the support of the public in battling invasive pests and diseases. Public awareness and action is critical in identifying new pest species in a manner that allows for treatment and eradication. Hawaii must continue to support public education on biosecurity issues and support a healthy, safe environment for agriculture in the State. Through increased invasive species and import replacement education, the State will be able to actively address pest issues that arise across the islands and help support the success of local agriculture.

Two-Lined Spittlebug. The two-lined spittlebug has caused severe impacts to key pasture grasses. In response to the recent invasion and the severe impact of the two-lined spittlebug to the Big Island of Hawaii, immediate actions to restrict its further spread and to prohibit establishment on the other non-infested Hawaiian Islands is necessary. The funds will continue to address rancher education, surveillance, biology and ecology research, Integrated Pest Management, and biological control.

Plant Quarantine Branch Database and e-Manifesting.

Plant Quarantine Database Development. The Department has contracted Pacific Point, Inc. to develop, implement and maintain a Statewide, modern, automated, data collection, reporting, permitting, and eManifest system. The contract addresses system design and implementation to meet PQ biosecurity efforts.

Nursery Certification and Compliance Project.

This project will continue as described in Section II.

Funding of Personnel.

Continuing as described in Section II with minimal change.

Hawaii Administrative Rule amendments.

The review and amendment process for Hawaii Administrative Rules is a dynamic process. The activities will continue as described in Section II.

Section IV

Act 243, Session Laws of Hawaii 2016 Report

The Department of Agriculture provided a report to the 2018 Legislative Session regarding Act 243, SLH 2016. The Act calls for annual reporting based on expenditures from general funds appropriated for FY2016-2017. General funds were not provided for additional years and as such there are no expenditures to report on regarding Act 243, SLH 2016.

Section V

Financial Plan

Pest Inspection, Quarantine, and Eradication Special Fund										
	Actual					Projected				
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Beginning Fund Balance	6,843,938	7,767,876	8,101,937	8,410,388	8,060,393	7,560,195	7,316,590	7,113,580	6,826,610	6,453,981
REVENUE										
Fees	5,100,803	5,369,318	6,644,219	6,074,598	5,809,186	6,048,285	6,100,000	6,100,000	6,100,000	6,100,000
Investment Pool Interest	33,616	57,162	76,287	43,205	-	44,000	45,000	46,000	47,000	47,000
Other	6,255	-	175	4,282	1,403	-	-	-	-	-
TOTAL REVENUE	5,140,674	5,426,480	6,720,681	6,122,085	5,810,589	6,092,285	6,145,000	6,146,000	6,147,000	6,147,000
EXPENDITURES										
Personnel Costs	3,196,542	3,226,237	3,145,506	3,273,310	3,421,001	4,235,890	4,248,010	4,332,970	4,419,629	4,508,021
Other Current Expenses	986,084	1,717,101	3,176,525	2,993,157	2,606,952	2,100,000	2,100,000	2,100,000	2,100,000	2,100,000
Equipment	34,110	83,400	33,520	205,613	282,834					
Motor Vehicles	-	65,681	56,679	-						
TOTAL EXPENDITURES	4,216,736	5,092,419	6,412,230	6,472,080	6,310,787	6,335,890	6,348,010	6,432,970	6,519,629	6,608,021
BALANCE	7,767,876	8,101,937	8,410,388	8,060,393	7,560,195	7,316,590	7,113,580	6,826,610	6,453,981	5,992,960