Aloha!

It is a pleasure to submit this annual report highlighting the accomplishments and activities of the Hawaii Department of Agriculture.

This year, we have combined the department's Annual Report for Fiscal Year 2007 with the most current statistical report covering 2006 from the Hawaii Field Office of the National Agricultural Statistics Service. We hope that by combining the two reports, we will provide a better resource on the activities of the Hawaii Department of Agriculture, as well as the important historical data for agriculture in Hawaii.

During the period covered in this report, the administration and staff of HDOA have continued their dedicated work toward supporting, expanding and promoting agriculture in Hawaii.

A few of the significant events of the 2007 Fiscal Year include:

- The earthquakes of October 2006 caused catastrophic damage to important irrigation systems on Hawaii Island and department staff pulled resources from the county and other state departments to try to restore water to as many farmers as possible. The damage was so severe that the repairs will be ongoing for years.
- Twenty-six agricultural loans were approved, totalling more than $1.2 million and helped to retain or increase farming and aquaculture acreage by 3,828 acres. The majority of the loans went to farmers who suffered damage due to flooding and earthquakes in 2006.
- Varroa mites, a deadly parasite of honey bees, were discovered on Oahu and the department implemented a plan to prevent the spread of the mite to neighboring islands.
- Act 221, the Livestock Feed Reimbursement Program, was enacted to revitalize Hawaii's livestock industry and increase Hawaii's food security. The program has begun to reimburse qualified farmers for a portion of their feed costs, which continue to rise.
- The Plant Quarantine Branch filled 34 new staff positions approved by the legislature in 2006, increasing the inspection corps at major ports of entry. Work continues on the state's biosecurity plan to increase Hawaii's food security and protect Hawaii's unique environment.

As we continue our mission to strengthening agriculture and aquaculture in the State of Hawaii, we truly appreciate your interest and support.

Sincerely,

Sandra Lee Kunimoto

Sandra Lee Kunimoto, Chairperson
Hawaii Board of Agriculture

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This annual report is accessible via the department's website at: www.hawaiiag.org/hdoa/ or copies may be requested by calling (808) 973-9560 or (808) 973-9588.

Cover photo: "Puna Gold" bromeliads

Planning & Development

The Hawaii Department of Agriculture (HDOA) actively seeks to protect existing farming areas and promote increased access to, and productive use of, thousands of acres of prime agricultural lands and infrastructure vacated by plantations throughout the state. The department, as principal advocate for agriculture among state agencies, offers consultative input into county, state, and federal land use planning and permitting, environmental program development and implementation, and initiates broader planning and economic development efforts to ensure the availability of agricultural resources and the growth of agricultural businesses. While modest in comparison to the visitor industry, the economic activity generated by diversified agriculture is stable and steadily increasing. Furthermore, characteristics associated with agricultural activity (open working landscapes, locally-grown fresh produce, reduction in atmospheric carbon dioxide, groundwater recharge) provide real value to Hawaii residents and visitors.

With the passage of the landmark Important Agricultural Lands Act (Act 183, 2005 Session Laws of Hawaii), the department, with the assistance of the Department of Taxation, established a 28-member forum to develop agricultural incentives. The forum produced and promoted a comprehensive set of Important Agricultural Land (IAL) incentive bills before the 2007 Legislature. These bills promote agricultural viability, sustained growth of the agricultural industry, and the long-term use and protection of IAL for agricultural use in Hawaii. Unfortunately, none of the proposed IAL incentives bills passed. The department plans to ask the 2008 Legislature to reconsider these crucial bills.

The department strongly supported a measure heard before the 2007 Legislature that sought to mitigate problems arising from the proliferation of “fake farms” – subdivisions of agricultural land where there is little or no agricultural activity. A major impact of these subdivisions is that they increase the value of agricultural lands for residential use rather than agricultural production. The price of land is often far beyond what a farm income is able to afford. Farmers seeking to lease lands often find lease terms and rents that are very short and expensive.

The measure requires every lot in agricultural subdivisions approved after July 1, 2007 to be used solely for agricultural activities, agribusiness, or subsistence farming; it requires the counties to require lot owners of subdivided agricultural lands applying for a building permit to substantially establish agricultural activity and submit farm plans, prior to approving building permits; and requires lot owners to include recorded deed restrictions that run with the land requiring agricultural use of the subdivided lots. These features are significantly more rigorous and descriptive than what currently exists in Chapters 205 and 46, Hawaii Revised Statutes. The measure did not pass in 2007; however, the department intends to ask the 2008 State Legislature to reconsider this critical measure.

The department also supported the protection of agricultural lands and related infrastructure as well as the expansion of diversified agriculture development in general. The department submitted testimony and position statements before county councils and county departments, state departments, the State Land Use Commission, and other organizations on agriculture-related issues including amendments to agricultural property tax programs, county-level initiatives to protect prime agricultural lands, facilitating discussions between farmers and landowners on “good neighbor” and land tenure issues, amendments to County agricultural zoning and community plan ordinances, and amendments to state and federal environmental regulations affecting the use of agricultural land and water resources.

Office of the Chairperson Projects and Initiatives

Important Agricultural Lands
Act 183 (SLH 2005) mandates that HDOA develop incentives to promote viability, sustained growth, long-term use and protection of Important Agricultural Lands (IAL) in Hawaii. Along with other key agencies, organizations and stakeholders, HDOA prepared and submitted its findings and recommendations for incentives for IAL to the Twenty-Fourth State Legislature. The report identified six high-priority incentives along with others for future consideration. While the high-priority incentives received support and interest, none were passed during the legislative session. HDOA will continue to work with its partners in the coming legislative session to protect and preserve important agricultural lands for the future of Hawaii's agriculture.

HDOA also offered legislation to stop the further creation of fake agricultural subdivisions. That measure was not adopted in the last session; however, the department will continue to pursue this important intiative.

Buy Fresh, Buy Local
The Buy Fresh, Buy Local campaign has become a regular feature of the KITV Morning Show with monthly segments spotlighting Hawaii farmers and their island-fresh produce. The segments are aimed at making a connection between consumers and the local farmers, which will hopefully encourage them to make conscious decisions to purchase locally grown products over those that are imported into the state.

The Buy Fresh, Buy Local campaign began in 2005 as a joint project of the University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR), the Hawaii Farm Bureau Federation and the Hawaii Department of Agriculture. A Seasonality Chart was developed that depicts when local crops are in season so that chefs and consumers can plan their menus around the freshest produce. The chart continues to be available on CTAHR and HDOA websites. The Hawaii Medical Service Association (HMSA) also printed the chart as a public service and included it in its member magazine.

Photographs and recipes from the KITV segments are also available on the department's website at:
http://www.hawaii.gov/hdoa/add/add_md/bfbl

Workshops and Conferences
HDOA, along with nonprofit, university and state agency partners, hosted the 2006 Agriculture Conference and the BioEnergy Workshop. The Ag Conference, a biannual meeting dedicated to agriculture in Hawaii, brought together producers, industry groups, landowners, community groups, nonprofit organizations, as well as state and federal agencies to discuss topics related to the conference theme, "Maximizing your bottom line." Speakers presented valuable information covering agricultural tourism and other marketing opportunities, IAL and agricultural worker housing. The inaugural BioEnergy Workshop brought together producers, landowners and renewable energy advocates to share data, methodologies and ideas regarding the potential for renewable energy production in Hawaii. Goals of the workshop included promoting a collaborative environment for progress, as well as informing the audience about recent legislation and state and federal funding opportunities.

Emergency Management
HDOA continues its efforts towards emergency management and preparedness. Utilizing United States Department of Homeland Security funds, HDOA is in the final stages of updating emergency response plans in accordance with the National Response Plan and the National Incident Management System.

HDOA also continues to participate in various emergency response training opportunities, including table top exercises focused on avian influenza and plant pests, and accredited courses covering the Incident Command System (ICS), Multi Agency Coordination Systems (MACS) and Continuity of Operations Planning (COOP) hosted by the Hawaii Department of Health, the Hawaii State Civil Defense, and USDA's Animal and Plant Health Inspection Service. In August, HDOA was represented at a full-scale exercise in Montana in preparation for a plant-focused full-scale exercise scheduled for 2008 in Hawaii. HDOA also participated in a real time web-based exercise testing plant pest diagnostic capabilities in Hawaii and the Pacific, hosted by the Western Plant Diagnostics Network.

Project Coordination
The Chairperson's Office works with divisions throughout HDOA, industry organizations, nonprofit organizations and community groups to collaboratively screen, apply for and manage grants and projects relating to increasing the viability of agriculture in Hawaii. Examples of such grant projects include risk management education training for refugee, immigrant and other low-income farmers on Oahu and research on local and organic seed availability.

Federal Farm Bill
Through the National Association of the State Departments of Agriculture (NASDA), HDOA gives input on issues specific to Hawaii, language and legislation regarding the federal Agricultural Appropriations Bill, also known as the Farm Bill. Issues of importance to Hawaii range from funding for specialty crops and continued conservation programs to new bioenergy initiatives and increased border protection to prevent the entry of invasive species.

ADMINISTRATIVE SERVICES OFFICE

Elaine Abe
Administrator

The goals of the Administrative Services Office are:

1) **to meet the staff support needs of the department's programs and personnel by providing guidance, training, information, efficient equipment and vehicles, and adequate facilities, and facilitating the processing of their requests in order to enhance managers' decision making capabilities and employee productivity; and**
2) **to meet the needs of the public by assisting them in their requests or directing them to the appropriate entity to address their needs.**

The following is a list of projects that have been completed:

- Implemented the State Procurement Office's (SPO) delegation of authority to the departments to approve purchases off the office supplies vendor list.
- Established an emergency pCard program approved by SPO that will be activated upon the Governor's declaration of a disaster. Developed departmental emergency pCard procedures that provide guidelines and responsibilities at various levels of the program. As of June 30, 2007, issued 14 emergency pCards.
- Coordinated with SPO the implementation of the Hawaii Electronic Procurement System (HePS) by 7/1/07 start date. Designated and coordinated with SPO training for HePS Administrator and forty-one (41) departmental buyers. In FY 2007, seven solicitations were successfully conducted on HePS.
- Implemented new travel rules established by SPO.
- Implemented guidelines and procedures for safekeeping and proper destruction of personal information by securing confidential records.
- Updated sections of the department's accounting manual with current procedures, including contract management to address a finding in the Legislative Auditor's financial audit of the department, and developed guidelines for new areas such as emergency pCard programs, HePS, and grants.gov.
- Modified Motor Pool System to collect information required by Act 96, SLH 2006, Relating to Energy. Developed database to import and summarize Hawaiian Petroleum transactions.
- Enhanced Dealer Licensing System as request by user.
- Updated network software on King Street and Plant Industry servers.
- Transferred 95 percent of hawaiiag.org/hdoa webpages to Information Communication Services Division.
- Upgraded Lotus Notes to Revision 6.5.5.
- Replaced network equipment no longer under maintenance support.
- Connected Aquaculture Sand Island Office to the NGN network.
- Developed Energy and Water Conservation and Resource Efficiency Program, established target consumption goals for electricity, fuel and environmentally preferable products, and compiled energy data to meet requirements of Section 168.5 of Act 160, SLH 2006, and Act 96, SLH 2006, Relating to Energy.
- Initiated project to complete the necessary National Pollutant Discharge Elimination System (NPDES) permit requirements for discharges of storm water from small MS4s.
- Established six-year special repair and maintenance and capital improvement program for department's office buildings.
- Installed security gates at the King Street facility.
- Coordinated training session for Oahu and neighbor island secretaries.
- Implemented change in residency requirements for recruitment.
- Participated in one job fair at the Blaisdell Convention Hall.
- Worked with Plant Quarantine Program to fill a number of vacant positions on all islands.
- Implemented a service contract checklist to determine if services are exempt from civil service.

- Coordinated with Hawaii State Federal Credit Union brown bag meetings for employees.
- Participated with other departments and the Personnel Transaction Office (DHRD) in a discussion group to find problem areas and streamline the HRMS process to record personnel.
- Developed Department of Agriculture Limited English Proficiency Plan.

Major projects still in progress are:

- Working with consultants to transfer Plant Quarantine on-line system to be housed at ISCD.
- Continuing to network all Oahu and neighbor island offices to State's NGN.
- Transferring applications to new APPX application server.
- Developing telecommunication database to inventory all phone and data lines.
- Coordinating various repair and maintenance projects to initiate repainting, repairing and energy efficiency projects. Also coordinating various capital improvement projects to correct safety concerns and other deficiencies, and make improvements at department facilities including re-roofing and air conditioning improvements at the Lanikaula office, air conditioning and electrical improvements at the King Street facility, and retro-commissioning projects at various facilities.
- Auditing leave records of program record keepers.
- Reviewing and rewriting internal personnel policies and procedures.
- Monitoring the length of time to service various program requests.
- Implementing the HDOA Workplace Violence Action Plan.
- Assisting the Plant Quarantine Program in establishing and filling new biosecurity Plant Quarantine Inspector positions and Plant Pest Control Aides/Technicians.
- Implementing procedures for processing contracts for services.
- Continuing to update the department's accounting manual with existing procedures and new guidelines and procedures for various procurement and purchasing processes.
- Attending State Procurement Office training sessions on various procurement methods and changes to the procurement law to provide improved guidance and support to programs.
- Updating and improving the contract checklist for certification and encumbrance by creating checklists by type of contract, and combining the contract requirements of the department and DAGS on one form.
- Updating Oahu and neighbor island staff directory for dissemination.
- Issuing new department identification badges to all employees.
- Providing training on vehicle maintenance and operation to new employees.
- Providing training for managers on the Department of Agriculture Limited English Proficiency Plan, and conducting survey to determine what kind of interpreter services and in what languages these services are needed.
- Coordinating FY07 Environmentally Preferable Products Purchased Survey for the department.

Other future projects include implementing the use of Grants.gov as a means of searching and applying for federal grants electronically, replacing server at Auiki St. and administration server at King Street, modifying Animal Quarantine System application, installing GIS server, conducting Labor Relations Workshops for supervisors, and developing flow charts and procedures for major personnel functions.

AGRICULTURAL DEVELOPMENT DIVISION

Matthew K. Loke, Ph.D.,
Administrator

The Agricultural Development Division (ADD) serves to promote the economic viability of commercial agriculture in Hawaii by sponsoring joint marketing programs for agricultural products with high revenue growth potentials; facilitating the development and expansion of marketing opportunities for targeted agricultural and processed products; and providing timely, accurate and useful statistics.

While this has been a challenging year for Hawaii's agriculture, which faced the departure of Del Monte Fresh Produce, drought and earthquakes, the division continued its efforts on marketing diversified agricultural products.

The launch of the Seals of Quality (SOQ) branding program provided much of the impetus. The SOQ program participated in many conferences and trade events including the HTA Annual Conference, the American Dietetics Association Conference, the Hawaii Agricultural Conference, and the Pacific Rim Incentive Meeting Exchange (PRIME).

Two additional achievements by the ADD include:

- In collaboration with the Hawaii Visitors and Convention Bureau (HVCB) and McNeil Wilson, the division assisted in the production of Bravo's "Top Chef" final two episodes in Hawaii. We were privileged in assisting the production team and celebrity chefs to secure the pantry list and other ingredients, as well as, organizing the farmers' market. As a result of the show, HDOA was mentioned in Forbes magazine and the New York Times.

- In partnership with the Western Center for Risk Management Education (RME), we completed a submission of the AGR-Lite – whole-farm revenue insurance program to the USDA-Risk Management Agency (RMA), which was approved in October 2007. The program will provide our farmers with access to federally subsidized crop insurance and will help farmers manage their business risk and help protect them against revenue losses due to natural disasters and market fluctuations.

MARKET DEVELOPMENT BRANCH

Todd Low, *Manager* (*From December 2006*)

The mission of the Market Development Branch is to facilitate the development of the agricultural industry, consisting of commodity groups of agricultural producers and food processors, through the expansion of new and existing markets.

Major activities during FY 2007 (FY07) were:

Matching Funds Promotional Contracts
This is the fourth fiscal year that the branch implemented a new procedure to solicit and award marketing funds under the State of Hawaii Request for Proposal (RFP) process. The commodity groups that participated included the Hawaii Food Manufacturers Association, the Hawaii Orchid Growers Association, the Hawaii Papaya Industry Association, the Kona Coffee Cultural Festival, the Hawaii Export Nursery Association, the Big Island Farm Bureau, the Hawaii Coffee Association, the Hawaii Cooperative of Organic Farmers, the Hawaii Tropical Fruit Growers Association, and the Hawaii Farm Bureau Federation.

Robert and Janise Stanga, co-owners of Hamakua Heritage Farm at the Waikaloa Farmers' Market shown during filming of the final episode of Bravo's Top Chef 2007 in Kohala.

The applications fell into three predetermined categories:

1. Distribution systems focusing on encouraging Hawaii ag businesses to pool resources, at least four companies, in order to improve efficiency in transportation/shipping, distribution, sales representation, or consolidation issues. There were three awards in this category.

2. Mainland and international trade shows focusing on a Hawaii-theme exhibit with a minimum of four unrelated companies attending the trade show. There were six awards in this category.

3. Industry education and promotion of agriculture focusing on producer's competitiveness and human capital capacity building; and marketing efforts or hosting events supportive of Hawaii's agriculture. There were 11 awards in this category.

The program received 16 applications from nine trade associations; of which 15 were funded for a total of $142,300. Based on previous experience, this program is expected to support an estimated $3 million in annual sales.

Seals of Quality Program

MDB launched the Seals of Quality (SOQ) program in May 2006 with 12 companies representing the cream of the crop of Hawaii's agricultural producers. The SOQ program was established to protect the integrity and value of the marketing cachet for Hawaii branded farm and "value-added products." Products with this seal are genuine, Hawaii-grown or Hawaii-made premium products, a guarantee that is enforced by the State of Hawaii. MDB was able to double the number of participants in the SOQ program during FY07 and added photos of each company to their digital assets for marketing and further development of the program. MDB promoted the SOQ program through a new SOQ webpage and product displays at the 2006 Hawaii Tourism Authority (HTA) Conference, the American Dietetics Association, the 2006 Hawaii Agriculture Conference, the Hawaii Tropical Floral Council Conference, the Pacific Rim Incentive Meeting Exchange (PRIME) dinner event, Top Chef event, "Ag Awareness Day" at the State Capitol, "Ag in the City" event at City Hall, the Wahiawa Pineapple Festival and a Hilo Chamber of Commerce event, among others. Continued promotion projects will focus on the online and television channels.

More information on the SOQ program is available on the HDOA website at:
http://www.hawaii.gov/hdoa/add/soq

Don Saaga and Spencer Kamauoha, President and Vice-President of Kamauoha Farms at their booth in the Natural Products Expo West Show in Anaheim, CA, March 2007.

Local Market Promotions and Activities

Hawaii Lodging, Hospitality, and Food Service Expo, Honolulu

Products that were sampled at the HDOA exhibit were wasabi from Yamashiro Farm, chocolate from Waialua Coffee and alii mushrooms from Hamakua Heritage Farm. The event attracted 5,500 buyers-chefs, caterers, grocers, convenience stores, hotels, military, and others.

Hawaii State Farm Fair, Kapolei

The traditional farm fair was organized by the Hawaii Farm Bureau Federation (HFBF) to showcase Hawaii's agriculture. The HDOA contributed in various ways including educational booths displaying the various activities of the department in keeping our plant and animal industries healthy, minimizing the introduction of invasive species, promoting the production and consumption of Hawaii's fruits and vegetables, maintaining viable measurements and standards for Hawaii's commerce, and exposing the public to the ornamental and business aspects of Hawaii's aquaculture.

Made in Hawaii Festival, Honolulu

MDB coordinated the chef demonstrations at the Made in Hawaii Festival at the Neal Blaisdell Center, which attracted 33,000 people. Participating chefs included Derek Kurisu of KTA Superstores, Elmer Guzman of Poke Stop, Grant Sato of Kapiolani Community College, Fred DeAngelo of Ola, Mike Imada of Hyatt Regency Waikiki, Eldon Ricardo and Michael Miller of Tiki's Bar & Grill, Mike Irish of Halm's Enterprise, Almar Arcano of Formaggio and Andy Nelson of Neptune's Garden. The chefs prepared dishes made with island-fresh products. The area was decorated with Hawaii-grown fruits, vegetables, flowers and foliage from our local farmers.

Wahiawa Pineapple Festival, Wahiawa
MDB set up a SOQ booth at the Pineapple Festival at Wahiawa District Park in the heart of Wahiawa town. The booth displayed fresh and value-added SOQ products. The event featured a parade, arts and crafts displays, games, and activities for the children, and pineapple culinary creations from celebrity chefs.

Mainland and International Promotions and Activities

Natural Products Expo West Trade Show, Anaheim, CA
Hawaii participated in the world's largest natural, organic & healthy products trade show, with more than 47,000 attendees and 3,620 exhibitors. With the natural & organic products industry growing by 9.1 percent annually mirrored national trends toward healthier lifestyle choices from grocery stores to pharmacy to home.

Hawaii Health Ohana, Oils of Aloha, Kamauoha Farms, Hawaii Orchid Growers Association, NOH foods, Hawaiian Herbal Blessings, Maui Excellent, Liko Lehua, Pharm East, Latitude 22, Hawaiian Natural Tea, Maui Natural Sugar, and Kauai Coffee participated in the Hawaii exhibit.

This show is open to a professional audience of manufacturers, buyers, retailers, and media. It is not open to the general public.

Produce Marketing Association (PMA) Convention and Exposition, San Diego, CA
Ten companies filled two 20' x 20' island booths at the PMA Expo in San Diego, CA. Companies consisted of Alembic International, Crown Pacific International, Fat Law's Farm, Happy Hawaiian Plants, Hawaii Papaya Industry Association, Hawaii Tropical Fruit Cooperative, Hawaiian Sunshine Nurseries, Maui Onion Growers Association, Ohana Banana Farm, and Wailea Agricultural Group.

Ken Kamiya, President of Kamiya Gold, Inc., at his packing facility in Laie, Oahu. Kamiya Gold was one of the founding companies in the Hawaii Seals of Quality program.

Young Tarring and Brandee Okinaga, Vice-President and Associate of Ohana Banana Farm, at their booth in the Produce Marketing Association (PMA) Expo in San Diego, CA, October 2006.

HAWAII AGRICULTURAL STATISTICS BRANCH

Mark Hudson, *State Agricultural Statistician/Director*

The Hawaii Agricultural Statistics (HAS) Branch is a cooperative effort between the Hawaii Department of Agriculture and the National Agricultural Statistics Service, U.S. Department of Agriculture. This partnership, spanning four decades, allows the efficient use of state and federal resources, while at the same time providing a comprehensive array of agricultural intelligence and reducing respondent burden.

Major activities of the branch included data collection, analysis, and timely publication of agricultural statistics of the State. The result of these efforts was a measure of total farm-gate estimated value of $582 million during 2006. Most of the data collection efforts were in the diversified agriculture sector, which was valued at $456 million in 2006.

Activities during FY07 included the following:

- Completed Census of Agriculture Area Coverage Survey.
- Collected and assembled land, water, sales and employment data to derive a measurement of the economic impact on 136 select reservoirs statewide.
- Published foreign and mainland agriculture export numbers (first time ever) in the Hawaii Agricultural Exports Release.
- Published 130 reports.
- Made over 15,000 individual contacts via personal interviews, telephone, and mail questionnaires.
- Distributed more than 40,000 releases to farmers, other individuals, businesses, universities, and governments worldwide.
- Answered more than 1,000 individual requests for information by mail, telephone, and office handouts.

Statistical reports from HAS follows the narrative portion of this annual report.

The reports are also available on the HDOA website at: http://www.hawaii.gov/hdoa/ or free e-mail subscriptions are available at http://www.usda.nass.gov/sub-form.htm

MARKET ANALYSIS & NEWS BRANCH

The Market Analysis and News Branch (MANB) is responsible for enhancing the effectiveness and efficiency of agriculture by conducting economic, market and business feasibility research, evaluating the efficiency and effectiveness of market development programs, collecting data on agricultural commodity shipments, supply and wholesale prices and disseminating information through various media. Through these functions, MANB assists the state's agricultural industry in its development and expansion efforts and provides sound input for program planning and policy making within and outside the department.

MANB is tasked with two primary, yet distinct functions. The first involves research on all market aspects of agricultural products. Towards this end, MANB conducts some ten research or program evaluation studies annually. The second function is carrying out the market news program, jointly with the Market News Branch of the Agricultural Marketing Service, U.S. Department of Agriculture. This program provides up-to-date information on current market conditions – wholesale market prices throughout the state, movement of fresh fruits and vegetables, and supply and demand information on different products.

Activities and accomplishments for FY07 included the following:

- Completed and jointly published a study entitled "Do Hawaii Producers Pay Higher Freight Costs for Agricultural Shipments to the U.S. Mainland Market Than Their Foreign Competitors?"
- Completed and jointly published a study entitled "Comparative Advantage of Selected Agricultural Products in Hawaii: A Revealed Comparative Advantage Assessment."
- Completed a study entitled "Fresh Produce Inshipment Trend and its Implications on Hawaii's Food Security."
- Completed annual estimation of Hawaii's fresh fruit and vegetable inshipment for the 2006 calendar year.
- Completed a preliminary estimate of the potential economic impact on crop production of the varroa mite infestation.
- Conducted research for the AGR-Lite insurance project proposal formulation for Hawaii and contributed to the AGR-Lite insurance project's "Expert Input" for developing risk rating for Hawaii session.

- Provided non-confidential data, study briefs and research papers to individual requests from the public and from government personnel intra- and interdepartmental.

- Continued to collaborate with the National Agricultural Statistics Service (NASS) and the National Association of States Department of Agriculture (NASDA) in enhancing the data collection efforts of the MANB.

- Continued to collect, compile, publish and disseminate weekly reports on a timely basis with limited personnel. The reports include:

  - Honolulu Wholesale Prices of Fresh Fruits and Vegetables;
  - Neighbor Island Wholesale Prices of Fresh Fruits and Vegetables;
  - Weekly Honolulu Arrivals of Fresh Fruits and Vegetables;
  - Honolulu Barge Arrivals; and
  - Honolulu Wholesale Egg Market.

AGRICULTURAL LOAN DIVISION

Dean Matsukawa
Administrator

The Agricultural Loan Division administers the Agricultural Loan Program and the Aquaculture Loan Program. The primary objective is to promote the development of the State's economy by stimulating, facilitating, and granting loans to qualified farmers, ranchers, aquaculturists and food manufacturers. The division also serves as a safety net for agriculture and aquaculture industries by providing assistance in times of emergency.

The program strives to work with private lenders through participation loans and providing loan guaranties to increase the amount of funding available to agriculture and aquaculture industries. The program also provides direct financial assistance to those that are unable to obtain financing from conventional sources. The program is self-sufficient, operating through interest collections, and is able to achieve its objective of growth, development and preservation of the agricultural and aquacultural industries without any taxpayer funding. Administration of the program requires a balance between providing financial assistance while ensuring that loans have a reasonable expectation of repayment.

The Agricultural Loan Division is committed to the growth, development, and well being of the agricultural and aquacultural industries in Hawaii. For fiscal year 2007, the division provided 24 loans, totaling $1,206,900 in low interest financing for agriculture and two loans totaling $42,500 for aquaculture. The majority of the loans were emergency loans to help farmers recover from the flooding and earthquake that affected the State in 2006. The early activation of the emergency loan programs resulted in strong demand for operating loans to assist farms in their recovery.

The division's mission is to support economic development and the support of the agriculture and aquaculture industries. Agriculture and aquaculture industries continue to face many challenges such as global competition, increasing costs, increasing regulations, adverse weather and lack of affordable land. Agriculture can no longer only adapt or react to these changes/situations but must become proactive, visionary and embrace these new realities and take advantage of potential opportunities. The recent trend focusing on healthy locally grown produce provides additional choices for consumers and an opportunity for Hawaii farmers. The rise of nutraceuticals may also provide an opportunity for farmers to grow non-traditional crops. As the agricultural and aquacultural industries evolve, the division must also adapt to the needs of the farm and aquaculture communities. The division will continue its outreach to increase awareness of the program and will continue to serve as a resource and safety net to these industries.

Major activities and accomplishments of the program for FY07 include the following:

- Approved 26 loans for $1.249 million during FY07. The loans helped farmer and aquaculturists retain or increase acreage by 3,828 acres. The division's loans also helped to preserve or increase employment for 275 farm employees.

- The division's loan portfolio as of June 30, 2007 was valued at $16.63 million with 202 loans booked. The loan breakdown by county is as follows:

  - Hawaii County $6.48 million
  - Oahu County $5.07 million
  - Maui County $3.31 million
  - Kauai County $1.77 million

Left: The Agricultural Loan Division provided financing to Sam and Tony Bayaoa to install irrigation lines and to purchase a propagation greenhouse to expand their protea plantings on their farm in Kau.

Above: The earthquake of October 15, 2006 damaged the Kohala Ditch irrigation system on the Big Island. The Agricultural Loan Division activated its Emergency Loan Program and provided Alvin Kawamoto with funds to purchase a county water meter and install water lines to provide water for his cattle ranch in Kohala.

- Collected $3.34 million in FY07. Of the amount collected $692,256 was in interest and $2.649 million was in principal.

- Modified eight loans during FY07 for a variety of purposes to assist farmers including subordination or releases of collateral, payment relief, etc.

- Approved a $400,000 participation loan with a private lender to provide assistance for a dairy operation. The participation loan is designed to increase the amount of funding available to farmers, ranchers and aquaculturists by providing funds in cooperation with private lenders to stretch State funds while providing a lower blended interest rate to improve the operation's cash flow.

- The Emergency Loan program remained in effect to assist qualified farmers in recovering from heavy rains and flooding which occurred in early 2006. The division received HDOA's Team of Year award for its work on the flood disaster which affected the State from February to April 2006.

- Activated an Emergency Loan program for the earthquake which occurred in October 2006 near the island of Hawaii.

AGRICULTURAL RESOURCE MANAGEMENT DIVISION

Brian Kau, P.E.
Administrator/
Chief Engineer

The Agricultural Resource Management Division (ARMD) works to ensure that the state has adequate and reliable sources of agricultural water, farmland, infrastructure for farming, and agricultural-related processing facilities. The division provides administrative oversight over a majority of state agricultural land in production, processing facilities, and several irrigation systems statewide.

By maintaining and operating abandoned plantation irrigation systems, the division supports and encourages the development and expansion of diversified agriculture on former mono-crop plantation lands.

Activities for FY07 included the following:

October 15, 2006 is a day that will remain prominent in ARMD staff memories for decades to come. Earlier in the calendar year, severe rainfall and flooding caused the division to enter into emergency mode to address a reservoir safety issue on Oahu. Issues relating to this event were being addressed when the earthquake hit. An already taxed division staff now had two issues to address with no additional internal resources.

The impacts of the earthquake to the Waimea and Honokaa/Paauilo Irrigation system (a.k.a. Lower Hamakua Ditch or LHD) were catastrophic. Inflow to both systems ceased due to many problems, including severe intake damage and massive landslides that covered long portions of open ditch. With help from local farmers and residents, State Civil Defense, Air National Guard, Army National Guard, Kulani Correctional Facility, Hawaii County Department of Water Supply, the Hawaii County Mayor, Hawaii County Civil Defense, U.S. Army Corps of Engineers, Natural Resources Conservation Service, U.S. Department of the Interior's Bureau of Reclamation, and others, the open ditches were cleared, a pump was placed into service, reservoirs were inspected for structural damage, and emergency repair work was undertaken.

The highest priority was to inspect tunnels from both systems for damage as soon as possible. Aftershocks were still rippling through the area, some higher than magnitude 3. The firm, Yogi Kwong Engineers, LLC stepped up to the plate and made plans to perform inspections of all of the tunnels. Literally putting their lives on the line, they were able to provide critical information to the department that allowed the creation of a priority list of projects that needed to be addressed.

Another noteworthy project was the installation of a temporary bypass flume to replace a wooden flume that had failed as a result of damages sustained from the earthquake. Funding for these repairs and all the other projects were provided by the Department of Budget and Finance, Natural Resources Conservation Service, State Civil Defense, and the Federal Emergency Management Agency. These efforts provided uninterrupted service to the Waimea farmers who were then asked to voluntarily reduce their water usage by 10 percent for precautionary purposes. The department anticipates the completion of all emergency repair projects by midyear 2008, funding permitted.

Unfortunately, although the emergency work effort on the LHD system was no less extensive, the damage was significantly greater and in more remote areas. The department continues to work under a Governor's emergency declaration to restore full flow to the LHD as soon as possible.

Structural work in progress at the Waima Tunnel Stream Crossing, Waipio Valley, Island of Hawaii

Additional funding is being requested as the work continues and portions of the system are being brought online. To date, a significant blockage at the Waima stream crossing has been cleared and structural repair work on the roof has begun. The Koiawe intake has been preliminarily cleared and water from this intake has been reintroduced to the LHD system. The upper most intake, Kawainui, has also been preliminarily cleared; however, significant damage at the Alakahi intake is preventing flow from passing this point.

The Alakahi intake sustained the greatest damage, by far, of all the pieces of either irrigation system. Massive landslides in this river valley buried the intake under thirty to one hundred feet of debris and collapsed portions of the intake tunnel. The first phase of remedial action for this intake is being undertaken now and should remove the landslide debris and collapsed portions of the intake tunnel. We anticipate this will allow water from Kawainui to pass through the Alakahi intake and join the flow provided by Koiawe.

Under a best case scenario, the department hopes water will be able to pass through the Alakahi intake by the end of 2007 or early 2008. The second phase of the reconstruction is anticipated to rebuild the Alakahi intake and tunnel structure and finally reintroduce the intake into full service. We also hope to provide some hardening of the rebuilt intake to mitigate future damage from landslides and earthquakes.

2007 was also a year of renewing partnerships with the water users in Waimea and Waimanalo. An informational working group was created to improve communication between the farmers and the department. This effort has led to stronger ties to the community and the ability to rapidly disseminate information regarding the status of the Waimea Irrigation System. In addition, early input from constituents allows the division to create more efficient designs for improvement projects to better serve the farmers.

Massive rainfall earlier in the year led to significant damage to the Waimanalo irrigation system's collection system in Maunawili Valley. The department was fortunate to receive a $6 million capital improvement project appropriation to address these issues. In the meantime, however, abnormally dry weather has caused the water levels at the Waimanalo reservoir to fall rapidly. Through exceptional volunteerism by the Waimanalo farmers, the division was able to perform weekend work to maximize water transmission to the reservoir. In addition, creative thinking has led to novel ways to reduce the impact of floating debris clogging siphon intakes. This collaborative effort has allowed the system to hold off on a 30 percent water usage reduction until early September compared to last year's 30 percent reduction issued in mid-July. We hope to use these successes to move our Molokai partnerships into the future.

The new non-agricultural park lands program continues to progress. Administrative rules to govern the program have been created in draft form. Public hearings to receive comments on the new rules are scheduled for early October 2007. If all goes well, we hope to have the rules adopted by early 2008. In the meantime, the department has executed an agreement with the Department of Land and Natural Resources (DLNR) that allows lease revenue to be deposited into the non-ag park lands program accounts in return for temporary property management services provided by DLNR for a fee. The accumulation of funds will allow the program to hire its own property manager and support staff to begin managing the program. In addition, we reviewed and inspected the Oahu, Maui, and Kauai leases held by farmers identified as bona fide and are in the process of creating a preliminary transfer list of these tenants.

FY07 continues the successful trend in securing partnerships for the division's programs and goals. We continue to participate in partnerships with the Natural Resources Conservation Service, U.S. Army Corps of Engineers, U.S. Department of the Interior's Bureau of Reclamation, and State of Hawaii Department of Defense's Civil Defense Division. We also welcomed a new partnership with the County of Hawaii. This year, the department has received more than $6 million in federal and other grant funding that has been or will be applied to the planning and design of new irrigation systems and renovation of our existing infrastructure.

As HDOA's largest system, the Molokai Irrigation System is looking forward to long awaited improvements which will increase efficiency in transportation of irrigation water. Improvements will include replacement of the Supervisory Control and Data Acquisition (SCADA) system, telemetry system, high voltage cables through the five-mile-long Waikolu Tunnel, switchboards and motor controls, gallery lighting in the tunnel, and pressure, flow, and power consumption meters on various components throughout the system. This SCADA system will be able to collect data from various sensors at remote locations and send it to a central computer. The department will have the ability to remotely monitor pressure, flow, power consumption, and water levels, control gate valves and on-off pump switches, and receive alarms in the event of high pressure or pump failure. These features will allow the department to greatly reduce time spent identifying and responding to future problems that may occur and focus more time maintaining the Kualapuu Reservoir, main transmission line, distribution system, and meters. Improvements to the system are nearing design completion and construction is scheduled to begin early next year.

Construction of the Paauilo Distribution Pipeline Improvements Phase 2 Project was completed in March of 2007. This phase of work included installation of approximately 4,700 linear feet of 12-inch pipe along Mamalahoa Highway and 220 linear feet of a special 12-inch pipe which spans across the Waipunahina Bridge. This project completes the new distribution system which services farmers in Kalopa and Paauilo. The total system consists of over four miles of pipeline varying in size from four inches to 16 inches in diameter. Once the October 15, 2006 earthquake damages are repaired and flow is restored in the system, the agricultural community will have a more reliable source of irrigation water with fewer interruptions. The department foresees the Lower Hamakua region as a major contributor to the state's agricultural economy in the near future.

The state's agricultural park (ag park) program continues to reach out to qualified farmers who are interested in becoming a lessee under this program. During FY07, 10 lots in five ag parks were offered to interested farmers. Seven of the new lessees were assignments, three were negotiations, and all are experienced farmers who are engaged in the production of nursery plants, potted orchids, and aquaculture operations. In addition, the division renewed one revocable permit.

Frank Sekiya owns and operates Frankie's Nursery in the Waimanalo Agricultural Park, a six-acre nursery that stocks seedlings for exotic fruits and vegetables. Plants used to be a weekend hobby, but Sekiya says "his interest turned into an occupation". Sekiya is an expert on tropical and subtropical plants and travels to Southeast Asia to explore new varieties of fruit. As he travels, he ships back bud bark which he can graft onto his seedlings, producing a better stock for planting in the islands. He also ships seeds and seedlings out of state, as well as inter-island. Frank has also conducted grafting classes at numerous state farm fairs.

Nora Sisouphanthong, dba Lao Aquafarm II, received an ag park lease through a public drawing in 1998 and began aquaculture development of her farm lot in 1999 in our Kahuku Agricultural Park. Lao Aquafarm II presently operates 15 fish tanks, each 20' x 40', with plans to build another five tanks in the next year. Nora produces approximately 200 lbs. weekly of Chinese Catfish, Silver fish and Sunfish (tilapia). Additionally, her 12.9-acre farm includes about five acres of apple banana, much of which was destroyed by a recent brush fire that also consumed approximately six acres of ti plants grown on an adjacent parcel by Carol Anamizu. Both Kahuku lessees, however, have begun the task of clearing away the debris and restarting their respective croppings.

Nora got her start in aquaculture through a workshop co-sponsored by OHA through the UH Extension Service in 1992. She started the aquafarm in Waianae in 1994 and moved to Kahuku upon securing a long-term lease within the ag park. The farm presently uses 14 million gallons of water annually through the Kahuku Irrigation System for its aquaculture and truck crops.

Nursery Solutions, Inc. is located in the Keahole Agricultural Park. A tenant since 1999, Nursery Solutions, Inc. specializes in producing native Hawaiian plants and a wide range of exotic species used in large-scale native Hawaiian reforestation, commercial forestry and

Kualapuu Reservoir, part of the Molokai Irrigation System

Nursery Solutions, Inc. in the Keahole Ag Park on the Big Island specializes in Native Hawaiian plants.

Left: Juanito Pataray, nursery manager for Nursery Solutions looks over plants in the greenhouse.
Below: Growing racks.

landscape projects. Experts in native Hawaiian plants, Nursery Solutions, Inc.'s in-house research scientists are constantly developing highly successful, species-specific techniques in seed germination and unique methods of seed storage that are effective in reducing degradation by insects and fungus. With a state-of-the-art sowing machine, Nursery Solutions, Inc. has the capacity to produce two million seedlings per year for clients including Queen Emma Foundation, Kamehameha Schools, and Parker Ranch.

In addition to the seedling operation, Nursery Solutions, Inc. has been cultivating vanilla plants for the production of beans for the past several years. While it is a long and highly technical process, initial trials have been very successful and a full, healthy crop is expected in upcoming years that may make Nursery Solutions, Inc., Hawaii's first large-scale producer of real Hawaii-grown vanilla.

Lease dispositions and irrigation system data may be found on pages 59 and 60.

ANIMAL INDUSTRY DIVISION

James Foppoli, Ph.D., DVM
Administrator/
State Veterinarian

The mission of the Animal Industry Division is to protect Hawaii's livestock and poultry industries and public health by preventing disease introductions and detecting and controlling economically important diseases or pests within the state. The division conducts: animal disease surveillance, epidemiology and control; inspection of all animals and birds entering the state; livestock brand registration; voluntary livestock disease certification and premise registration programs; laboratory diagnostic services; and dog and cat quarantine to reduce the risk of rabies introduction.

An important focus of the division continues to be animal health emergency management, especially with respect to avian influenza virus. Public health and environmental programs aimed at preventing the introduction of foreign animal diseases into the state continue to be important functions of the division.

Hawaii's statuses for State-Federal Cooperative Disease Control Programs during Fiscal Year 2007 (FY07):

- Brucellosis Free, cattle and swine
- Pseudorabies Free, Stage V
- Bovine Tuberculosis, Accredited Free

Hawaii is also recognized as free of bluetongue virus and anaplasmosis and surveillance programs for these diseases are ongoing to insure that the free status is documented and maintained. No new livestock and poultry disease agents were detected during FY07; however, Taura Syndrome Virus, a reportable disease was detected at an Oahu shrimp farm.

The division continues to encourage livestock owners to register their premises as part of the National Animal Identification System. The University of Hawaii, College of Tropical Agriculture and Human Resources has been contracted for a second year to hold outreach sessions for producers on Oahu and neighbor islands.

Continuing activities relating to voluntary disease control programs include scrapie in sheep and goats, Johne's disease in beef and dairy cattle, and bovine tuberculosis in feral swine on east Molokai. Stringent import requirements remain in place for birds entering Hawaii in an effort to reduce the chances of West Nile virus introduction.

The division received cooperative agreement funds from the United States Department of Agriculture, Animal and Plant Health Inspection Service, totaling $272,824 during FY07. The agreements supported specific activities such as the voluntary scrapie herd and flock certification program ($23,000), swine health protection ($46,850), foreign animal diseases ($15,100), Johne's disease surveillance and control ($19,374), National Animal Identification System ($79,500), avian influenza ($59,000) and bovine tuberculosis ($30,000).

RABIES QUARANTINE BRANCH

Isaac M. Maeda, D.V.M., *Program Manager*

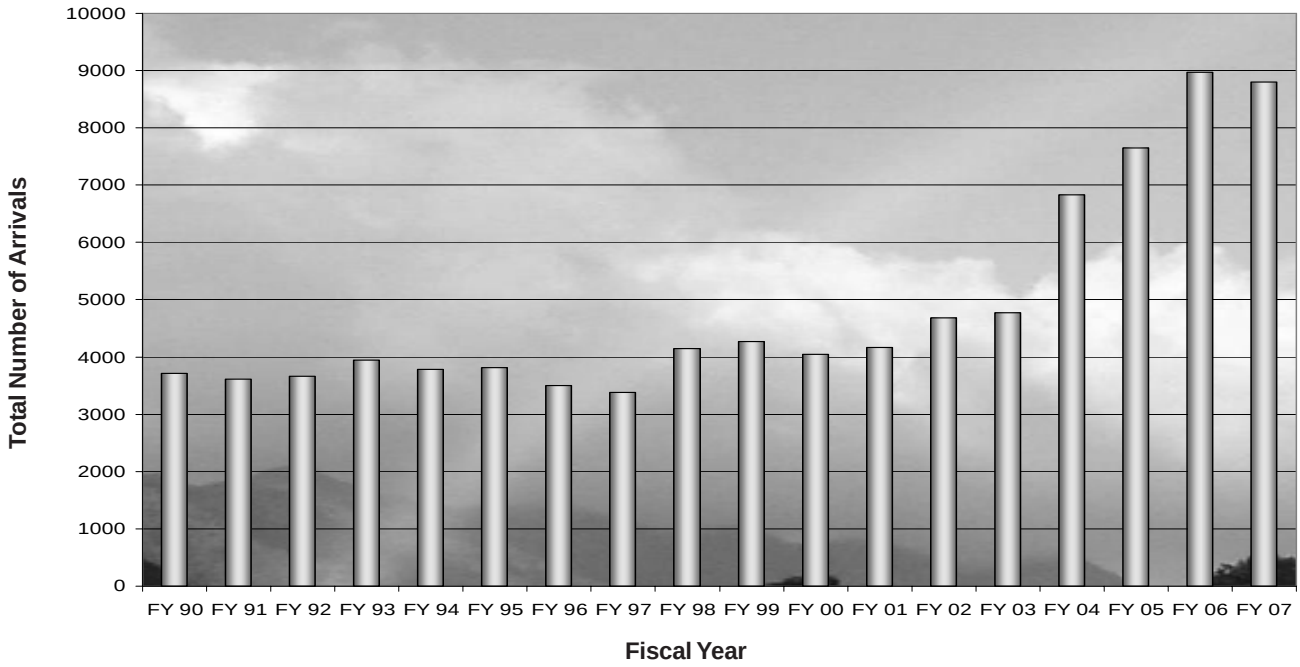
The number of dogs and cats entering the State leveled out in Fiscal Year 2007 (FY07) for the first time since the start of the Five-Day-or-Less program on June 30, 2006. The total number of dogs and cats dipped slightly from 8,966 in FY06 to approximately 8,804. This represents an approximate 1.8 percent decrease from the 8,966 animals that entered the State in FY06. Nevertheless, the entries represent an 85 percent increase from the 4,771 animals that entered Hawaii prior to the start of the Five-Day-or-Less program in FY03. In addition, 304 animals transited through the State resulting in approximately 9,110 animals that were processed through the program in FY07. (See table on page 20)

The following are rabies quarantine statistics for cats and dogs arriving between July 1, 2006 and June 30, 2007 (FY07):

PROGRAM	NUMBER	PERCENT
120-day	525	6%
5-Day-Or-Less*	996	11%
Airport Release	7,283	83%
Total	**8,804**	**100%**
Transiting Through Hawaii	306	

* Includes dogs and cats arriving early

Total Dog and Cat Entries by Fiscal Year



Since the Five-Day-or-Less program was implemented in June 2003, the rabies quarantine program has transitioned away from a "quarantine only" system to one that permits the release of qualified dogs and cats directly from the airport when specific pre-entry requirements are met. Such requirements include:

- Positive pet identification (electronic microchip);
- A minimum of two pre-entry rabies vaccinations;
- Rabies serological testing to measure vaccination response and 120-day waiting period after a passing test before entry into the state; and
- Inspection upon arrival

The transition of the program to direct animal release at the airport has increased the workload for the Veterinary, Inspection, Clerical and Accounting staff. Staff and computerized databases are heavily relied upon to monitor and verify information relevant to qualification. Considerable time is spent reviewing documents, pre-qualifying pets, processing payments, receiving and inspecting pets and addressing the needs, questions and concerns of the general public. The clerical, veterinary and inspection personnel spend a significant amount of time e-mailing and speaking with pet owners on the phone or in person, explaining program requirements. It is also estimated that about half of all submitted essential documents require follow-up contact with veterinarians or pet owners due to deficiencies. Although approximately 7,283 dogs and cats were released at the airport in FY07, this number does not reflect the workload of the total number of pet documents processed, as the database currently holds over 56,000 active files of animals for the Five-Day-or-Less program alone. With more than eight percent of arriving pet owners not submitting the required pre-arrival documents beforehand, screening and verification at the airport facility becomes a necessary responsibility not required in the past. Although the Five-Day-or-Less program has been very successful, it is labor intensive for documentation and verification when compared to traditional 120-day quarantine. Enhancements to the computer system are ongoing to effectively manage the data and processing of Five-Day-or-Less dogs and cats. In addition, the Livestock Disease Control Branch port veterinarian and livestock inspectors provide critical support to the program by assisting rabies quarantine veterinary technicians in processing dogs and cats released at the airport seven days a week.

The department routinely updates its website and information brochure dedicated to Hawaii's rabies quarantine program that contain all of the information and forms relating to quarantine and the importation of cats and dogs. Pet owners may access pre-arrival FAVN rabies serological test results and Five-Day-or-Less quarantine-eligible dates at this HDOA website. Checklists for the Five-Day-or-Less program are available at the site to assist pet owners of both resident pets and non-resident dogs and cats with preparations to qualify for this reduced quarantine option.

Under the Five-Day-or-Less program, pets may be released at Honolulu International Airport if they complete pre-arrival requirements that include (but are not limited to):

- Two rabies vaccinations, with the last vaccination administered no more than 12 months prior to arrival if it was a one-year vaccine, or no more than 36 months prior to arrival if it was a three-year vaccine. (The two vaccinations may not be administered within 90 days of each other; and the last vaccine must be administered no less than 90 days prior to the pet's entry into the state)
- Microchip implantation for identification purposes;
- OIE-FAVN rabies blood test results with sufficient level of rabies antibodies;
- 120-day pre-arrival waiting period between the time the lab receives the blood sample and the earliest date the pet may enter the state (the pre-arrival waiting period is necessary due to the long and variable length of rabies incubation, where the virus may hide in an animal before clinical signs of the disease become apparent); and
- Pet owners must also submit required paperwork more than 10 days before the pet's arrival.

Pet owners that do not submit the required documents have their pets held in quarantine for up to 120 days until all requirements are completed and documents submitted.

Approximately 94 percent of arriving dogs and cats qualified for the Five-Day-or-Less program in FY07. Furthermore, of the approximately 8,279 pets that qualified for the Five-Day-or-Less program, 7,283 pets (88 percent) qualified for direct release upon arrival at Honolulu International Airport. In comparison only six percent (525) of the arriving animals were quarantined for 120 days. Midway in FY06, 30-day quarantine was eliminated as a distinct category since animals may qualify for quarantine periods between zero (airport releases) to 120 days under the early arrival provision in the Five-Day-or-Less program. Animals previously in the 30-day category are now included within the Five-Day-or-Less program as arriving early by 30 days.

The daily population of animals occupying the animal quarantine station at any given time during FY06 ranged between 182 and 341 animals. The fluctuation in daily animal population at the station was lower and varied between 248 to 352 dogs and cats during FY06. The average daily population was higher in FY06 than FY07.

In FY07, the Department initiated a system that allows dogs and cats to enter Hawaii directly at Kona International Airport at Keahole, Kahului Airport on Maui and Lihue Airport on Kauai. Quarantine approved veterinary facilities serve as private contractors to inspect animals upon arrival at these airports because the rabies quarantine program does not have personnel on islands other than Oahu. A pet owner must apply for a Neighbor Island Inspection Permit (NIIP) to fly with their dog or cat directly to one of these airports from the continental U.S. The following are requirements to obtain a NIIP:

1. Every dog or cat must meet all the requirements listed on the "Checklist for the Five-Day-or-Less Program" except that all required documents must be submitted earlier; 30 days or more before the intended date of arrival.
2. Owners must submit the following documentation to the Animal Quarantine Station 30 days or more ahead of the planned arrival:
   - Completed and notarized Dog & Cat Import Form, AQS 278.
   - Original rabies vaccine certificates for the two most recent vaccinations.
   - Payment of $165 in cashier's check or money order.
   - Flight information.
   - A letter from the owner requesting Direct Airport Release at either "Kona" or "Kahului" or "Lihue".
3. Owners must make reservations for inspection with approved contractors. Contractors will then send a confirmation to the Animal Quarantine Station that they have agreed to perform the inspection and release procedure. Owners are responsible for the additional fees to the contractor for this service.
4. A Kona, Kahului or Lihue Neighbor Island Inspection Permit will be mailed to the owner once the Animal Quarantine Station has:
   - Received the above required documents, information and payment (see 2 above);
   - Confirmed the pet meets all of the requirements for the Five-Day-or-Less program and neighbor island inspection and release; and
   - Received confirmation from Kona Veterinary Service, Maui Humane Society, South Shore Veterinary Care or Kauai Humane Society that they will meet the pet.
5. The original Neighbor Island Inspection Permit must accompany the dog or cat on the aircraft and be submitted to the inspector upon arrival in Hawaii.

Pet owners are informed that all airlines may not be participating in flying dogs and cats with Neighbor Island Inspection Permits to Kona, Kahului and Lihue.

In addition to rabies exclusion, the quarantine program continues to monitor dogs and cats carefully for ticks exotic to Hawaii. Ixodes spp ticks were discovered and eliminated from two animals arriving in Hawaii during FY07. This genus has been reported to potentially serve as a vector for Lyme disease and other diseases of veterinary and human medical importance. Rhipicephalus sanguineus, the brown dog tick, is the only tick established in Hawaii associated with dogs.

LIVESTOCK DISEASE CONTROL BRANCH

Jason D. Moniz, D.V.M., *Manager*

The Livestock Disease Control Branch prevents, investigates, conducts surveillance, controls and eradicates animal diseases that may have serious economic impacts on the state and nation's livestock and poultry industries, some of which impact public health. The branch inspects animals entering the state and insures compliance with division rules and laws pertaining to the control and eradication of animal diseases.

Data tables on animal importation and disease surveillance testing may be found on page 61.

Avian Influenza (AI)

Highly pathogenic Avian Influenza (H5N1) continues to circulate in wild birds and poultry in Asia, Africa and Europe. An AI grant for $59,000 was received from the U.S. Department of Agriculture (USDA) for Hawaii to continue with its preparedness and surveillance activities in Fiscal Year 2007 (FY07). Funds were used to train microbiologist to run RT- PCR tests, fit and clear personnel to wear Personal Protective Equipment, continue poultry testing for early detection surveillance purposes and continue biosecurity and other outreach activities. To date, no positive AI (H5N1) tests results have occurred in domestic or wild birds in Hawaii or North America.

West Nile Virus (WNV)

An embargo on the movement of poultry and other birds, except chicken hatching eggs and chicken day-old chicks through the U.S. Post Service remains in place. In addition, all poultry and other birds including all hatching eggs and all day-old chicks require a "Poultry and Bird Import Permit" for entry into the state. Those species of poultry and birds capable of producing high WN virus levels are required to undergo a seven-day pre-arrival quarantine before qualifying for an entry permit. Poultry and other birds arriving in the state not meeting entry requirements are refused entry. In FY07 twelve shipments of poultry or other birds were refused entry or returned by carriers to their origins for failing to meet entry requirements. West Nile virus arrived in the continental U.S. in 1999 and since then it has made its way westward and now affects all states except Hawaii and Alaska.

Bovine Tuberculosis (BTB)

Bovine Tuberculosis free status maintained

The State of Hawaii continues to maintain a "Bovine Tuberculosis Free Status."

Bovine tuberculosis (BTB) a chronic, debilitating disease of cattle, bison, goats, cervids and other animals that can also cause a serious disease in man, is caused by the bacteria Mycobacterium bovis.

State and federal veterinarians test cattle herds annually and manage hunter assisted surveillance of wildlife on the east end of Molokai, where bovine tuberculosis has been a recurrent problem for the past 60 years. The last BTB infected cattle herd, located on eastern Molokai, was depopulated without further spread in 1997 and no new cases of BTB in cattle have been found.

A hunter assisted survey for BTB in wildlife began in 1998 on Molokai to monitor the prevalence of infection in axis deer, feral swine, feral goats and mongoose. Since the surveillance began in 1998 only infected feral swine have been detected. From 1998 through June 30, 2007, ten feral swine have been found infected. Four of the ten infected feral swine were found in FY07. Trapping used to capture feral swine in areas land owners do not allow hunting may have resulted in the increase in infected feral swine detected during the fiscal year. Thirty-nine total feral swine were tested during FY07. To date, all infected feral swine have been found within a two mile radius of Ualapue where the 1997 infected cow was found. The BTB infection appears to be maintaining itself in the feral swine population in and around the Ualapue to Mapalehu area.

To prevent the potential spread of bovine tuberculosis from eastern Molokai, all cattle east of Kamalo are required to obtain a permit and have an annual negative BTB test to move. All herds are in compliance with established testing and movement requirements. In addition, feral swine movement out of areas east of Kamalo has been prohibited by a quarantine.

A USDA grant for $30,000 was received in FY07 to continue surveillance in wildlife species on the East End of Molokai, support preparation and shipping of samples to the National Veterinary Services Laboratory and to provide outreach to livestock producers, hunters and the community. The hunter assisted program also reduces the feral swine population in the affected area thereby reducing the risk for transmission.

Bovine Brucellosis

Bovine Brucellosis class free status maintained

Hawaii has been officially classified free of bovine brucellosis since 1983.

Bovine brucellosis is an infectious disease of cattle, bison and elk caused by the bacteria Brucella abortus. Brucellosis can also infect man. During the fiscal year, 8,909 cattle were tested for brucellosis. No suspects or reactors were found. However occasional spill over of Brucella suis from infected feral swine and Yersina entrocolitica will cause cross reactivity on cattle surveillance testing resulting in herd epidemiological investigations that may include herd testing. These investigations find that in areas where B. suis is endemic in feral swine, a single or few head may become transiently infected but no cattle to cattle spread has been seen and no herd reproductive abnormalities have been found.

Swine Brucellosis & Pseudorabies (PRV)
Hawaii maintains free statuses for Swine Brucellosis and Pseudorabies

Brucellosis
Hawaii retained its free status for swine brucellosis during FY07.

Brucellosis in swine is caused by the bacteria Brucella suis. Infected swine experience reproductive problems including abortion and infertility. Brucella suis can cause serious infections in man. No domestic swine herds were found infected in FY07 and as a result Hawaii maintains its Brucella suis free status.

Feral swine in Kona, Hamakua (Hawaii), Kahakuloa (Maui), Ft. Shafter westward through Waianae, the North Shore and Windward (Oahu) are known to be infected with swine brucellosis. Exposure of domestic swine to infected feral swine and the practice of maintaining transitional herds of mixed feral and domestic swine have been the source of all domestic swine brucellosis infections in the past.

In addition to annual testing of all sows and boars over six months of age at slaughter, 25 percent of the herds in the state are randomly selected for testing to determine their brucellosis status. Surveillance for FY07 included 497 domestic swine, 90 transitional swine and 47 feral swine. One percent of the transitional swine and 4.2 percent of the feral swine tested were reactors to swine brucellosis. One transitional herd was quarantined and underwent a test and removal of reactors plan to rid the herd of swine brucellosis.

Pseudorabies
Hawaii maintains a free status for pseudorabies in swine.

Pseudorabies (PRV), a viral infection of swine, causes respiratory disease and reproductive failure. Pseudorabies infection of other species (such as dogs) is typically fatal but humans are not susceptible.

Pseudorabies surveillance testing of 498 domestic swine during FY07 found no infected domestic swine. One transitional herd was determined to be infected. Feral swine on the islands of Hawaii, Maui and Oahu are known to be PRV-infected. Nineteen percent of the feral swine tested in FY07 tested positive for PRV. Infected feral swine are a constant threat to domestic swine herds. Ninety head of transitional swine and 47 feral swine were tested in FY07. A statewide quarantine order prohibits the commingling of feral and domestic swine as well as inter-island movement of feral swine. During the fiscal year one transitional herd was found infected, quarantined and underwent a test and removal of animals that tested positive for the disease to rid the herd of infection.

Transmissible Spongiform Encephlopathies
Scrapie
Hawaii continues to be recognized as consistent with the USDA Voluntary Scrapie Certification Program Standards.

Scrapie is a transmissible, insidious, neuro-degenerative disease affecting the central nervous system of sheep and goats. Scrapie has not been diagnosed in goat or sheep flocks in Hawaii.

Hawaii received USDA cooperative agreements continued in FY07 to provide sheep and goat flock owners with educational information, enroll flocks in the status program, conduct surveillance testing on cull and diagnostic animals and provide for some genotype testing. A quarantine order is in place to require change of ownership identification requirements for certain classes of sheep and goats for Hawaii to remain consistent in the National Scrapie program.

Bovine Spongiform Encephalopathy (BSE)
During FY07 BSE sampling continued on cattle exhibiting neurological signs, unknown cause of death and those unable to rise continued. There were no positive test results.

Voluntary Johne's Disease Herd Certification Program (VJDHCP)
The VJDHCP goal is to implement disease control measures to reduce or eliminate Johne's disease from cattle herds and conduct annual surveillance to verify a herd's status. A USDA cooperative grant of $19,374 received in FY07 was used to conduct Johne's testing of dairy and beef herds, conduct risk assessments, write up individual herd plans and provide outreach during the fiscal year. During FY07, 586 cattle were tested for Johne's disease. Fifteen herds are currently participating in the VJDHCP.

Importation/Exportation of Livestock, Poultry and Other Animals
An embargo on the movement of poultry and other birds into Hawaii through the U.S. Postal Service implemented in September 2002 remains in place. The embargo remains in place to prevent the entry of West Nile virus, Avian Influenza and other avian diseases from entering the state with infected birds.

Inspected and approved for entry into the state: 19,457 head of livestock; 7,477 poultry and other birds; 764,242 day-old chicks and hatching eggs; 11,355 dogs and cats; and 12,127 other animals.

The branch staff conducted 61 compliance investigations, 11 citations were issued, 194 written warnings, and seven animals were refused entry.

VETERINARY LABORATORY BRANCH

Crane H. Hahn, D.V.M., *Program Manager*

The Veterinary Laboratory provides essential services to assist department veterinarians in identifying and controlling diseases affecting livestock and poultry and public health. The Veterinary Laboratory provides a diverse range of diagnostic services. Professional staff is trained in different disciplines such as bacteriology, chemistry, pathology, parasitology and serology. If specialized services are required, laboratory staff members handle and package specimens in accordance with specific shipping regulations to ensure safe and secure transport of specimens.

In the 2007 fiscal year, there was a slight increase in the number of tests performed over the previous fiscal year. Decreases in tests performed in serology were offset by increases in necropsy and clinical pathology. The addition of a Board Certified Veterinary Pathologist (ACVP) has increased the laboratory's expertise and capacity to provide diagnostic necropsies.

Over the last fiscal year, the importance of avian influenza (AI) has been seen both with increased media coverage and the number of samples submitted for testing. The Veterinary Laboratory receives domestic bird samples from a variety of sources including the Livestock Disease Control Branch as well as the Invasive Species Council. The Polymerase Chain Reaction (PCR), performed by the Hawaii Department of Health (HDOH) Laboratory Division, is the test used for detecting the virus. The Animal Industry Division supports HDOH testing through Federal Cooperative Agreement funds. Testing AI samples in-state facilitates a rapid turnaround time for results. In addition, the Veterinary Laboratory began purchasing supplies and equipment during FY07 to perform an avian influenza serologic test (agar gel immunodiffusion) as an additional surveillance method in certain situations.

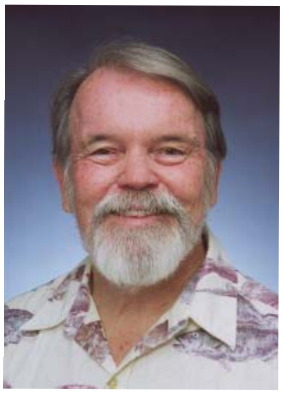
Impacts from downsizing the state's dairy industry resulted in a slight rise in livestock samples associated with the closing of Mountain View Dairy on Oahu. It is anticipated that there will be a decrease in livestock samples in the next fiscal year due to dairy closures and possible reduction or elimination of federal support for voluntary disease surveillance programs such as Johne's disease and scrapie.

Submissions from the Rabies Quarantine Branch have decreased slightly from FY06. This decrease is likely due to fewer animals held at the program's quarantine station and the number of pets transferred to approved private quarantine facilities. The majority of samples continue to be fecal samples for parasite detection.

All laboratory personnel are recertified to perform specific diagnostic tests such as for brucellosis, equine infectious anemia, anaplasmosis, and Johne's disease, by successfully completing the proficiency testing programs under the oversight of the National Veterinary Services Laboratory.

Data on specimen examinations by the Veterinary Laboratory may be found on page 61.

AQUACULTURE DEVELOPMENT PROGRAM



John Corbin
Manager
(Retired December 2006)

The Aquaculture Development Program (ADP) provides essential support services to encourage further growth and diversification of the aquaculture industry. ADP is a planning, development, and problem-solving organization whose goals are to assist in the start-up of production and service businesses, and to contribute to their success. Specific activities include planning and policy formulation, new business development, permit facilitation, marketing assistance, disease diagnosis and prevention assistance, and co-funding of statewide technical extension.

The mission of ADP is to: prepare and implement state aquaculture plans and policies for the expansion of aquatic farming, and research and technology transfer business; coordinate statewide development activities; and directly assist both public and private sector interests in achieving their aquaculture-related goals, so as to create jobs and diversify the economies of all islands.

Major activities for FY 2007 were:

- Wholesale product value for the industry was estimated at $28.4 million for calendar year 2005 according to department statisticians, and continues to be one of the fastest growing sectors of diversified agriculture. 2007 could be projected as nearly $30 million in gross production.

- Continued the joint implementation with the Department of Land and Natural Resources (DLNR) of the amended Chapter 190D, HRS, Ocean and Submerged Lands Leasing law by facilitating permit preparation for three additional aquaculture leases off various islands. Prepared annual joint report to Legislature, with DLNR, on status of the ocean leasing.

- Continued to provide a world-recognized Shrimp Surveillance and Certification Program to the growing shrimp broodstock industry. Held facilitated review of the Program with the industry to identify areas for upgrade and improvement after a second disease outbreak on Hawaii farms. At present there are 15 shrimp broodstock export farms under the surveillance program. During the year we have met with veterinarian and fishery officers from Vietnam interested in understanding our export procedures and standards for their importation of Hawaii broodstock for shrimp production.

- Participated in the Organizing Committee and sponsorship for the Marine Ornamentals 2008 Conference to be held at Orlando, Florida in February 2008. This international conference is the fifth in a series that originated in Hawaii.

Each year, ADP's aquaculture display attracts hundreds at the Hawaii State Farm Fair.

Jung Hoi Ku of Paradise Shrimp Farm with a basket of shrimp fresh from his ponds.

- Assisted with import and export permits for aquatic species by farmers on Oahu, Kauai, Maui and Hawaii. Co-sponsored and participated in the Hawaii Aquaculture Association's 2006 and 2007 Hawaii Aquaculture Conference held in July. For the first time, there are significant amounts of koi being imported and exported under specific pathogen-free certification under supervision of the Aquaculture Veterinarian. Additionally, we are now beginning to survey seahorses produced on one Hawaii farm.

- Promoted the local consumption of aquaculture products by participating in the Hawaii Lodging, Hospitality and Food Service Expo, State Farm Fair, Made in Hawaii Festival, Taste of Hawaii Aquaculture and the Sam Choy Poke Contest. Worked with various internet, television, radio and print media to provide background information, place stories and promote the industry. Continued ADP's electronic industry newsletter, *Aquaflashes*, to get out time-sensitive information which our farmers could use.

- We have recently hired a new Microbiologist III with a molecular biology background. Provided animal health management services to producers and research organizations statewide, with more than 59 farm visits and 340 analyzed case submissions. Contributed Hawaii's aquaculture experience to a researcher's publication reviewing the development of the Hawaii industry.

- Co-funded statewide technical extension services to the aquaculture industry (with over 3,600 documented incidents of assistance), in cooperation with the UH Sea Grant Extension Service, leveraging more than $500,000 in matching funds through the project.

- Participated in the governing boards and advisory committees of the Center for Tropical and Subtropical Aquaculture, National Association of State Aquaculture Coordinators, Marine and Coastal Zone Management Advisory Group and Hawaii Aquaculture Association.

- Provided technical reviews of research and development proposals to the UH Sea Grant College Program, U.S. Department of Commerce, U.S. Department of Agriculture, and the Pacific Tropical Ornamental Fish Program (PTOFP). Provided reviews of Aquatic Species Importation permits for the Department's Plant Quarantine Branch.

PLANT INDUSTRY DIVISION

Lyle Wong, Ph.D.
Administrator

The Division of Plant Industry consists of three branches, the Pesticides Branch, Plant Quarantine Branch, and Plant Pest Control Branch. Together, the Branches work to protect Hawaii's agricultural industries by preventing the entry and establishment of detrimental insects, weeds and other pests and by assuring the safe and efficient use of pesticides in Hawaii.

PESTICIDES BRANCH

Robert A. Boesch, *Manager*

The Pesticide Program regulates the distribution and use of pesticides through a program of licensing pesticide products, testing the competency of restricted-use pesticide applicators, and educating and monitoring pesticides distributors and applicators. This is to ensure the efficient, effective and safe use of pesticides to minimize adverse effects on the environment.

Data on branch activities may be found on page 62.

Highlighted activities for the program in FY 2007 include the following:

Pesticide Rule Revisions Completed
Revisions to the pesticides rules, which have been being developed for about 20 years were finally completed. These revisions provide the following:

- Additional ground water protections including classifying some pesticides as restricted-use pesticides based on their detection in ground water sources and authority to issue annual permits, when tracking the use of a pesticide is important to monitor surface and ground water resources;
- Additional protections for monitoring extremely hazardous substances. Both chlorine gas and chloropicrin (when used as a warning agent for structural fumigations) are classified for restricted use.
- More expertise is required for applicators who apply pesticides though irrigation systems and for those using agricultural fumigants.
- Fees were increased for product licenses, pesticide applicator certificates and pesticide dealer licenses.

There were a number of other changes. The revised rules are posted on the department's website.

Changes to the Pesticides Law

Two changes were made to the pesticides law (Chapter 149A, Hawaii Revised Statutes).

- One change related to structural pest control operators required to be licensed by the Pest Control Board. This change made it illegal for individuals to apply restricted-use pesticides for structural pest control without being licensed as a pest control operator, and also prohibits dealers from selling restricted-use product for structural pest control to persons that are not licensed pest control operators.
- The second change is to require pesticide retailers to post information on the poison hotline number and pesticide handling, storage, and disposal.

Liquid Termiticides Under Review
Urban streams on Oahu have highest levels of chlordane in the nation. In addition to appearing in urban streams, residue of chlordane and dieldrin have also been detected in drinking water supply wells. These legacy chemicals have not been used since 1988. They have been replaced by other liquid termiticides and baits. Baits use significantly less chemical and exploit the ground termites aggressive foraging behavior. Liquid termiticides must be applied at rates considerably higher than agricultural rates and must repel the foraging termites to be effective.

Many pest control operators are switching from baits to liquids. This change in practice has resulted in the department initiating a data call in for studies concerning the environmental fate of chemicals used in liquid termite treatments.

The department has executed a contract with the University of Hawaii, Water Resources Research Center to conduct a review of the data and determine if regulatory measures are needed to protect Hawaii's ground water and surface water resources.

Wildlife Protection Agencies Seek Aerial Application of Rodenticide to Control Predators
Predators (rats and mongooses) are one of the primary threats to endangered birds and snails. To counter these threats, land managers are developing control methods, including rodenticides for application in conservation areas. One method is the aerial application of rodenticide pellets to forests where predators are a problem. The

The Pesticides Branch helps to ensure that regulated pesticides are used properly, whether it be for agricultural, residential or commercial purposes.

pesticide program received an application for registering diphacinone pellets applied by aircraft. The application was for a special local need registration pursuant to Section 24(c) of the Federal Insecticide, Fungicide and Rodenticide Act. A considerable amount of data was supplied in support of this application.

Unwanted Pesticide Program
The Advisory Committee on Pesticides and the pesticides program have been working on an unwanted pesticide program to provide safe and affordable pesticide disposal to agriculture and small business. Specifications for bidding are prepared and it is expected that a contract will be awarded during the winter of 2008.

Pesticide Use Near Schools Causes Concern
Schools on three islands have filed complaints concerning the use of pesticides.

- A herbicide (DuPont Assure II Herbicide®) applied to a pineapple field in Haiku caused the school to call emergency responders and the evacuation of several classrooms.
- An insecticide (Orthene ®) applied to turf resulted in the closure of Kahuku High and Intermediate School for three days in May.
- Teachers at Waimea Canyon Elementary School have filed complaints concerning the application of pesticides to seed corn fields on an adjacent property.

Pesticide drift was identified in two of the complaints (Haiku and Kahuku). The department has been working with the agricultural operators in the cases to take measures so that school activities are not interrupted by pesticide applications. Among the measures that have been taken are to change formulations of pesticides used (from spray to granules), establish buffer zones around schools and not spray within those zones during school hours; to stop applications when wind speeds are excessive and other measures.

Because first responders including the police and fire department are often the first to respond to a school's reports of pesticide odors, the department worked with the Center for Occupational and Environmental Health, University of California Berkeley to sponsor a class. Four classes were offered in June. More than 120 individuals including police, fire, hazardous materials specialists and certified applicators attended these classes.

PLANT PEST CONTROL BRANCH
Neil Reimer, Ph.D., *Manager*

The primary function of the Plant Pest Control Branch is to reduce population densities of plant pests that cause significant damage to agriculture and the environment to manageable levels. This is achieved through statewide programs to eradicate or control plant pests, which include destructive insects, mites, snails and slugs, noxious weeds, plant diseases, and any other organisms harmful to plants, by utilizing chemical, mechanical, biological, and integrated control measures. The branch consists of the Biological Control Section and the Chemical/Mechanical Control Section.

Some of the accomplishments of the branch during Fiscal Year 2007 (FY07) included the following:

New Pest Detection and Identification

The HDOA Insect Taxonomist identified 576 samples of insects and other organisms from which 120 specimens were processed and added to the Branch's Zoological Reference Collection. The collection now contains approximately 166,300 specimens. In addition, 74 samples of insect specimens intercepted by the Plant Quarantine Branch were identified and 243 calls regarding various pests were received from the general public and processed.

HDOA's Plant Pathologist diagnosed 408 plant disease samples intercepted by Plant Quarantine inspectors and reported the detection of two new plants diseases.

- **A rust disease on bamboo** caused by *Dasturella divina* (Syd.) Mundk. & Khes. USDA APHIS PPQ officials informed the department that a California Department of Food and Agriculture plant pathologist identified a rust disease caused by *Dasturella divina* on bamboo in a shipment that originated on the island of Hawaii. Subsequent surveys in East Hawaii revealed that this

rust was well established. Within a few months, it was detected on all islands. This rust causes small, elongated, yellow spots on the leaves with the light brown rust pustule in the center of each spot. The spots can be so numerous that the leaf tissues become necrotic and the leaf dies. This disease most likely originated in Asia and is a pathogen of bamboo only. Due to the nature of rust diseases and the widespread plantings of bamboo, it would be impossible to eradicate or even control this disease. The only bamboo rust previously known to occur in Hawaii is *Puccinia phyllostachydis*.

- **A rust disease on purple vetch** caused by *Uromyces fabae* (Grev.) Fuckel. A rust fungal pathogen on purple vetch, *Vicia benghalensis* L., was observed on Maui and diagnosed as *Uromyces fabae*, which was not previously known in Hawaii. Its host range includes various peas, vetch, and broad bean. The already endangered, endemic Hawaiian vetch, *Vicia menziesii* Sprengel, may be further at risk due to the presence this disease.

The HDOA Survey Entomologist reported the detection of seven new immigrant insects in Hawaii during FY07, all of which are plant pests.

- **A taro whitefly**, *Aleuroglandulus* sp. prob. *subtilis* Bondar (Hemiptera: Aleyrodidae). Specimens of this whitefly were collected from caladium plants at Waiakea Uka on the Island of Hawaii in October 2006. A distinct feature on the nymphs of this whitefly are two pairs of thick, fragile, glassy, wax rods that exude from pores in the dorsal surface of the thorax and abdomen, and curve downward. This whitefly is known from Brazil and Panama. Host plants include several species of palms (Arecaceae), such as *Chamaedorea wendlandiana* and *Synechanthus warscewiczianus*, and *Chomelia oligantha* (Rubiaceae).

- **Ants,** *Solenopsis globularia* (Smith) and *Monomorium indicum* Forel. (Hymenoptera: Formicidae). Routine ant surveys during the year using Spam bait traps revealed the presence of two new species of ants. Specimens of *Solenopsis globularia* (Smith) were collected from Sand Island on Oahu in July 2005. Little is known about this ant. Specimens of the other new species, *Monomorium indicum* Forel, were collected at Kawaihae in July 2005. This ant is known in India and the United Arab Emirates.

- **A whitefly**, *Paraleyrodes minei* Iaccarino (Hemiptera: Aleyrodidae). Specimens of this whitefly were collected on Maui from coconut palms at a botanical garden in Kahului in August 2006. According to a USDA Systematic Entomology Laboratory insect identifier, this whitefly was not previously known from coconut or any other palms, which indicates that this is a new host record. Examination of specimens of another new closely-related species of whitefly, *Paraleyrodes bondari* Peracchi, which were collected on Oahu in 2003 and recorded as a new State record, revealed a mixture of both *P. minei* and *P. bondari*.

- **A thrips**, *Thrips parvispinus* (Karny) (Thysanoptera: Thripidae). Specimens of this thrips were collected from papaya blossoms at Pahoa on the island of Hawaii in May 2006. It was later collected from papaya blossoms on Oahu in September 2006. This thrips is known from Southeast Asia, Australia, and Greece, and is a polyphagous feeder. In Hawaii, this thrips appears to be causing some damage to papaya flowers, resulting in the scarring of young fruit. It may also be causing foliar damage to the terminal shoots of papaya.

- **A Bo tree pollinator wasp**, *Platyscapa quadraticeps* (Mayr) (Hymenoptera: Agaonidae). Adult specimens of this tiny black wasp were reared from fruits of the Bo tree (also known as the Bodhi tree, peepul tree, or sacred tree), *Ficus religiosa* L., in November 2006. This wasp is a pollinator of the Bo tree. Previously, there were no pollinators of this tree in Hawaii, so there now are concerns that this tree has the potential to become invasive.

- **Varroa mite**, *Varroa destructor* Anderson and Trueman (Acari: Varroidae). In April 2007, an Oahu beekeeper with a base yard in Manoa reported that he had observed tiny, red mites in three honey bee hives that he had obtained from the Hawaii Nature Center site several miles away in Makiki. The colonies were no longer being managed and were considered to be abandoned. After a report was received from the beekeeper via the HDOA Pest Hotline, specimens were collected by HDOA entomologists and identified as the varroa mite, *Varroa destructor* Anderson and Trueman. Prior to this discovery, Hawaii was one of the few places in the world that was still free of this very destructive honey bee pest. The varroa mite is considered to be the most serious pest of honey bees in the world. It has been spreading rapidly throughout most of the beekeeping countries in the world. In varroa mite-infested honey bee colonies, newly emerging bees are malformed. Severe infestations of the mite will result in an eventual decline of bee colonies and a reduced honey bee population. Commercial beekeeping in Hawaii, which includes queen bee and honey production, has been estimated at more than $4 million. However, the greatest value of honey bees is their ability to pollinate fruit trees, vegetables, and seed crops. With the presence of the varroa mite in Hawaii, a great decline in the honey bee population is anticipated. This will significantly reduce pollination of many commercial and residential fruit trees and vegetable crops, especially cucurbits, which are highly dependent on honey bees for pollination.

Above: A female varroa mite. The mite has only been detected on Oahu, but HDOA staff continue to conduct surveys statewide to detect the possible movement of the mite as soon as possible.

Left: Kona Plant Quarantine Supervisor Clare Okamura conducts a survey of bees in Kona with the assistance of a beekeeper.

Projects of the Branch's Biological Control Section included the following during FY07:

- **Nettle caterpillar** [*Darna pallivitta* Moore]. Since its discovery on the Island of Hawaii at a Panaewa ornamental plant nursery just southwest of Hilo in September 2001, *D. pallivitta* has steadily dispersed to neighboring areas in East Hawaii and has increasingly become a human health problem due to the stinging caterpillars. The nettle caterpillar (NC), at the end of FY06, was well established in the area from Papaikou, just north of Hilo, in the South Hilo District, southwest to Mountain View in the Puna District and south to the subdivisions in lower Puna.

  The first confirmed record of detection of the nettle caterpillar in West Hawaii was made in July 2006 at a Kona retail store, where a single larva was found on a potted gardenia plant. During September and October 2006, isolated discoveries were also made at Keahole and Hualalai, respectively. In February 2007, NC infestations were detected in Kohala at a plant nursery and a nearby school.

  On Oahu, a significant NC infestation was discovered in June 2007 at a landscaping nursery in central Oahu at Kipapa Gulch. The UH CTAHR PEPS Insect Diagnostician received a report of nursery workers being stung while handling potted areca palm plants. The reported infestation at this nursery was confirmed by HDOA personnel on June 4, 2007. Previously, the NC was only known to be present on the Big Island, although periodic interceptions had been made on Maui. The most likely source of the Oahu infestation was a shipment of palm plants about a year earlier from a nursery at Panaewa on the Big Island.

  An eradication attempt by the nursery owner using several insecticides appeared to be successful in killing the NC larvae. However, the pupal stages in the shell-like cocoons survived the treatments. In order to reduce the next generation of emerging moths and their progeny, a labor-intensive effort of hand-collection of more than 17,700 cocoons during a four-day period was conducted by personnel of the HDOA Plant Pest Control Branch, DLNR (Department of Land and Natural Resources), and OISC (Oahu Invasive Species Committee). Nursery personnel are continuing to apply insecticides to kill caterpillars and moths. Black light bug-zappers have been placed in the nursery to attract and kill the moths.

  A second nursery belonging to the same owner that is located about a mile away in Mililani was later found to be infested with the NC, even though earlier inspections had not detected any. Pheromone traps that attract male NC moths confirmed presence of the pest on June 7. HDOA personnel are continuing surveys and making recommendations to the nursery owner for containment of this pest.

  Exploration for natural enemies in Taiwan during October 2004 resulted in the collection of a parasitic wasp *Aroplectrus dimerus* Lin (Eulophidae) that was found attacking nettle caterpillar larvae. Testing of this ectoparasitoid in the HDOA Insect Quarantine Facility on Oahu has shown this potential biological control agent to be host-specific. The administrative process to obtain approval for its release from quarantine is underway. The colony of *A. dimerus* is being maintained in the IQF despite occasional rearing difficulties. A cytoplasmic polyhedrosis virus (CPV) has plagued the nettle caterpillar quarantine colonies for several years and has prevented continuous rearing in Honolulu. Parasitoid propagation is dependent on shipments of larvae from the Hilo Insectary. The CPV disease is also a continuing problem in the Hilo Insectary, but it has been managed through good sanitation practices and meticulous care in sterilizing equipment.

- **Pickleworm** [*Diaphania nitidalis* Cramer]. Funds for the USDA (CAPS) Pickleworm Survey Project were received in August 2006. A statewide survey of the pickleworm was undertaken from September 2006 through June 2007 to determine the extent of the distribution of the pest, using insect traps and monitoring crop infestation levels. Insect traps (Smart traps) baited with a floral extract lure were set up on each of the four major Hawaiian Islands and staff counted the number of moths trapped. The cucurbit hosts at each site were routinely examined for pickleworm damage and natural enemies. On Oahu, collections of infested plants were brought back to the laboratory. Insects were reared and observed for parasitoid emergence and parasitoids were examined.

  The Smart trap was not effective in capturing pickleworm moths. Pickleworm damages on cucurbit crops on Kauai ranged from 0 to 42 percent, but no moths were caught. Damages on Maui ranged from 0 to 10 percent, but no moths were caught there also. A total of two moths were caught on the Big Island at the Naalehu site during the month of January 2007 and damages of up to 11 percent were found at other sites. The highest number of moths (total of 56) was caught on Oahu at the Ewa and Kunia sites during the month of January 2007. Other sites had pickleworm damage, but no moths were caught. Although the Smart trap was not an effective monitoring tool for the moth, crop infestation data showed that the pest is well established throughout the four major Hawaiian Islands. Farmers, however, are able to control the damaging effects of the pickleworm with the use of insecticides. No natural enemies were observed in the field and none were reared from collected specimens.

- **Glassywinged sharpshooter** [*Homalodisca coagulata* (Say)]. The rapid, unprecedented suppression of the glassywinged sharpshooter (GWSS) in Hawaii has been an outstanding example of fortuitous biological control by an immigrant natural enemy. The GWSS parasitoid, *Gonatocerus ashmeadi* Girault (Hymenoptera: Mymaridae), which is believed to have arrived on the island of Oahu in association with the GWSS within parasitized eggs on infested host plants, completely suppressed the GWSS population that was just beginning to multiply and threatening to explode. The timely and effective intervention by *G. ashmeadi* in Hawaii saved the State of Hawaii from having to commit a substantial amount of funding, time, and manpower resources to deal with the problem.

  The GWSS was first discovered in May 2004 on Oahu. The GWSS is a major economic pest in California due to its ability to acquire and transmit the bacterial pathogen *Xylella fastidiosa*, that causes Pierce's disease of grapes, citrus variegated chlorosis and scorch diseases in almond, oak, and ornamental plants. During subsequent surveys, *G. ashmeadi* was found parasitizing GWSS eggs, as well as another predator, the Mexican ant, *Pseudomyrmex gracilis mexicanus* (Hymenoptera: Formicidae). The fortuitous introduction and establishment of *G. ashmeadi* resulted in the rapid suppression of the GWSS population density to the extent that this pest is now extremely difficult to detect.

- **Papaya mealybug** [*Paracoccus marginatus* Williams and Granara de Willink]. The increasing frequency of calls received from residents in 2006 and early 2007 with regard to papaya mealybug (PM) infestations on Oahu and the neighbor islands indicated that the mealybug is becoming more and more widespread throughout the state. PM infestations have been observed to be most severe on papaya, plumeria, hibiscus, and jatropha. A complex of natural enemies was found in association with the PM on four of the most preferred host plants in Hawaii.

  The first detection of the PM on the Island of Hawaii was confirmed in September 2006 in Waikoloa in West Hawaii. In March 2007, a PM infestation was discovered in East Hawaii at a papaya farm at Pohoiki by a UH county extension specialist. Surveys of all of the major papaya growing areas in Puna and routine surveys in the Hilo area did not result in the detection of any other PM infestations. Thus, the infested field at Pohoiki is still the only known PM infestation in East Hawaii, where most of the major papaya growers are located. A meeting of the Big Island papaya growers was organized by the CES and held in early April 2007 to inform the growers of the PM situation in Puna. The first release of 200 adults of the PM parasitoid *A. loecki* was made at the Pohoiki papaya orchard in mid-May, followed by several more releases.

- **Macadamia felted coccid** [*Eriococcus ironsidei* Williams]. PPC Branch personnel from Hilo and Kona visited macadamia nut groves in Honomalino in early March 2007 to inspect macadamia nut trees for this pest. Two groves under separate ownership were surveyed that are several hundred yards from the an orchard nursery known to be infested. No sign of the macadamia felted coccid was found. Subsequently, PPC Hilo personnel met with the infested farm's manager to discuss a management program for their nursery. All infested trees in close proximity to the nursery were cut down so that the nursery would be more isolated from the orchard.

  Other scale suppression methods, such as the application of horticultural oil spray and the culling of infested seedlings, are being used by nursery workers to minimize the chance of infested plants being sold.

The macadamia felted coccid (MFC) was first discovered in February 2005 in a macadamia nut orchard at Honomalino in the South Kona District. Initial fears that this pest would spread rapidly and cause crop losses have not been realized. The grower has gained good control over the infestation using horticultural oil. The MFC has not been much of a problem in other parts of the orchard. Some natural enemies of the MFC in its native origin in Australia, including a parasitic wasp and a predacious ladybird beetle, have already been found to be present in the infested orchards at Honomalino and are obviously contributing to the suppression of this pest, which is believed to have been on the island several years before its initial detection.

- **Erythrina gall wasp** [*Quadrastichus erythrinae* Kim]. The erythrina gall wasp (EGW) has become one of the most devastating invasive pests in the history of the Hawaiian Islands since its first discovery on the Island of Oahu in mid-April 2005. It spread rapidly throughout the state within six months and its damaging effects have been unstoppable. The constant leaf drop and the repeated galling and stunting of new leaf and shoot growth have completely defoliated susceptible erythrina trees and resulted in the loss of photosynthesis. The lack of food production has led to the eventual death of the trees.

  The EGW has already destroyed most of the plantings of the introduced, ornamental Indian coral tree, *Erythrina variegata* var. orientalis (L.) Merr., in Hawaii. This tree was commonly used in landscaping along highways and around public buildings, and most noticeably, at city parks. Approximately one thousand trees of this species had to be removed from parks on the Island of Oahu because of safety concerns after they had died. Tall erythrina, which is identified as the cultivar *E. variegata* (L.) 'Tropic Coral' has been used as windbreaks and for soil conservation in agricultural areas and for shade and privacy barriers around residential and commercial buildings. The equally susceptible native wiliwili, *E. sandwicensis* Degener, an endemic Hawaiian species that is the dominant tree in dry forests on the leeward slopes of all of the main islands, is seriously threatened by the EGW and its future is uncertain. The introduced ornamental *E. crista-galli* L., a Brazilian species that appears to have some tolerance to the EGW.

  The Erythrina Gall Wasp Biocontrol Project was initiated in August 2005. The branch's Exploratory Entomologist conducted his first exploration for EGW natural enemies in East Africa in December 2005 to late February 2006. Several biocontrol candidates were sent to the HDOA Insect Quarantine Facility in Honolulu for propagation, colonization, and studies. Two species of parasitic wasps, a eulophid (undetermined species) and a eurytomid (*Eurytoma* sp.), both collected in Arusha, Tanzania during January 2006, were determined to be the most promising candidates for biological control of the EGW. The eulophid colony died out after five generations due to a preponderance of males. *Eurytoma* sp., however, has reproduced well in the lab without any problems. According to field observations made in Tanzania by the HDOA Exploratory Entomologist, *Eurytoma* sp. was the most dominant parasitoid found. Host specificity and biology studies for *Eurytoma* sp. were initiated in March 2006 and completed in December 2006. Efforts are underway to document research to support the release of this biocontrol agent from quarantine.

  Risk assessment of *Eurytoma* sp., collected in Arusha, Tanzania, was completed in October 2006 and used a variety of non-target host plants. Tests results indicated that *Eurytoma* sp. is highly specific to the EGW.

- **Asian citrus psyllid** [*Diaphorina citri* Kuwayama]. Hilo PPC Branch members completed the initial survey of the Island of Hawaii for the Asian citrus psyllid (ACP) in July 2006. No ACP detections were made in the two Kona Districts in West Hawaii on all mock orange plants (*Murraya paniculata*) examined. However, the first sighting of ACP was found in July during an inspection of potted mock orange plants in a garden shop in Kailua. The presence of ACP has been noted from Papaikou (South Hilo District), south to Kalapana (lower Puna District), and west to Volcano (upper Puna District) in East Hawaii. In February 2007, an infestation was discovered at a Kohala school.

  In January 2007, ACP was found for the first time on Maui on various varieties of potted citrus trees at a garden shop in Kahului. Previously, a light infestation that was detected on potted citrus at Kula garden shop in late 2006 was successfully eliminated before it could disperse. The later infestation was more significant, with large numbers of adults, nymphs, and eggs being observed on about 20 large citrus plants and some smaller plants. Cursory surveys of citrus and mock orange plants conducted in Kahului in the vicinity did not detect any ACP infestations. However, more intensive surveys conducted later in the month indicated that ACP infestations were fairly widespread on Maui. During the survey, it was learned that several plant nurseries had received citrus plants from a prominent Big Island distributor.

  In June 2007, branch personnel, while visiting Lanai to assess infestations of the papaya ringspot virus, also collected ACP adults on citrus at a farm near Lanai Airport.

  Also in June 2007, specimens of ACP were found for the first time on Oahu on a mock orange hedge in

PPC Entomologist Ron Heu demonstrates for KITV News how staff use Spam baits to survey for Little Fire Ants and Red Imported Fire Ants at ports of entry, such as Honolulu International Airport.

Honolulu. This detection represents a new island record for this pest.

The ACP was initially found in Hawaii accidentally in May 2006 when a Waiakea resident submitted a branch from a navel orange tree that was infested with aphids to the HDOA Hilo Office. Because ACP is the primary vector of citrus greening disease (CGD), the branch immediately shipped a sample to the National Plant Germplasm and Biotechnology Laboratory in Beltsville, Maryland. The results were negative for CGD, and the disease has not been found in Hawaii to date.

- **Ivy Gourd** [*Coccinia grandis* (L.) Voigt]. Ivy gourd infestations throughout Oahu are now at the lowest levels since the early 1990's when populations of this highly invasive cucurbit vine began to explode and disperse. Recent drought-like conditions have had a major impact on ivy gourd densities in Windward Oahu, where the microclimate had been highly favorable for continued proliferation and the weed had continued to persist at relatively high densities. Ivy gourd infestations in these areas have diminished to low levels after the establishment of the biocontrol agents, such as the ivy gourd vine borer, *Melittia oedipus* Oberthur, and the ivy gourd leafmining weevil, *Acythopeus cocciniae* O'Brien. Their activities have had significant impacts in suppressing ivy gourd population densities in drier areas, especially in Leeward Oahu. Other invasive vining weeds, such as maile pilau (skunk vine) and wood rose are now making a come-back, as well as some newer invasive weeds, like the Madeira vine and *Neonotonia wightii*, are now displacing ivy gourd.

  A request to the USDA -APHIS for an extension of the CAPS-funded project for the biological control of fireweed was approved for another year. The original work plan was hampered by the loss of the quarantine colony in early 2006, which pushed back the much anticipated approval for release of *S. extensa* from quarantine. The project, now extended until June 2008, has been modified to study the phenology (life history pattern) of the target weed and environmental cues at selected sites on Hawaii and Maui in preparation for the release of the biocontrol agent. The project also includes a ground survey of pest organisms that may be fortuitously infesting the fireweed, development of an artificial larval diet formulation, and mass production of the moth, should it be released during the newly approved period of the project.

- **Miconia** [*Miconia calvescens* DC]. Colonies of the gall-forming nematode *Ditylenchus gallaeformis*, a potential biocontrol agent, were finally established on miconia plants in the quarantine greenhouse of the Plant Pathogen Containment Facility. Three previous shipments of galls sent via postal service from Brazil were not viable upon their arrival in Honolulu, possibly due to low temperatures in the cargo section of the aircraft. The fourth and final shipment of galls was hand-carried directly from Costa Rica by a USDA Forest Service entomologist. Live nematodes from these fresh galls were successfully inoculated onto miconia plants. This nematode causes gall formation at apices and along leaf veins. It can also cause death of young miconia plants. Host range tests will begin after the numbers of nematode have increased. This nematode thrives under wet conditions and requires a film of water for movement.

  Another potential biocontrol agent, the fungal pathogen *Coccodiella miconiae*, was also established in the quarantine greenhouse on miconia. This obligate parasite, which was also hand-carried from Costa Rica along with the nematode, causes pimpling of miconia leaves. The pimpling can be so numerous that the foliar photosynthetic process is significantly reduced. This fungus is effective in drier climates and may be a good biocontrol agent in areas where other control agents would not be effective.

- **Fireweed** [*Senecio madagascariensis* Poiret]. Rearing and colony maintenance of the arctiid moths *Nyctemera apicalis* from South Africa and *Secusio extensa* from Madagascar continued. Occasionally, routine propagation of both species was disrupted by a shortage of clean, healthy, potted fireweed host plants. Several leaf feeding insects, including aphids, thrips, and the most damaging serpentine leaf miner (*Liriomyza* sp.), periodically invaded the outdoor plant storage cages in which the host plants were kept.

Nevertheless, the risk assessment evaluation of *N. apicalis* is currently ongoing using selected test plants in the family Asteraceae. The quarantine colony of *S. extensa*, which had died out as a result of inadequate host plants, was reestablished with recent collections in East Africa. Efforts are continuing to produce appropriate documents to justify and request approval from Federal and State regulatory agencies for the release of S. extensa into the environment of Hawaii to suppress fireweed infestations. Efforts to reestablish a quarantine colony of *Sphenella austrina* Munro, a flower head feeding tephritid fly, with recent collections made in South Africa were not successful because of the very limited number of adults that emerged from the collected material.

- **Banana Poka** [*Passiflora tarminiana* Coppens & Barney, sp.nov. (formerly *P. mollissima*)]. Due to the success of previous releases in 2006 of the banana poka biocontrol fungus *Septoria passiflorae* near Poli Poli State Park on Maui, the Leeward Maui Watershed Partnership provided funding for an extended collaboration between Maui DLNR DOFAW and the HDOA Biocontrol Section Plant Pathology Unit. The Plant Pathology Unit provided 200 plates of *S. passiflorae* cultures for each of four releases that were made by DOFAW personnel along the slopes of Haleakala from March to June 2007. By the third release in May, DOFAW personnel reported that banana poka that had been sprayed earlier were already turning yellow. This fungus causes leaf spots, followed by leaf yellowing, and finally defoliation. Spores of this fungus are transported via wind-driven rains which, along the flanks of Haleakala, consistently flow upslope and not sideways. The goal of this project is to establish the biocontrol fungus along the low-level banana poka infestations in the Kula State Forest so that the disease could spread upslope with the winds.

- **Christmas berry** (Brazilian peppertree) [*Schinus terebinthifolius* Raddi]. Dried Christmas berry leaves with Septoria leaf spots were mailed from Brazil to the HDOA Plant Pathogen Containment Facility in Honolulu, where the fungal pathogen *Septoria schinii* was isolated and cultured . The endemic *Rhus sandwicensis*, which is in the same taxonomic family Anacardiaceae as Christmas berry, was the first test plant inoculated. Leaf spots developed on *R. sandwicensis* four weeks after inoculation and *S. schinii* was observed sporulating in the spots, thus proving pathogenicity. Because *S. schinii* infected *R. sandwicensis*, this fungus has been eliminated from consideration as a biocontrol agent for Christmas berry in Hawaii.

PPC's Sam Benzon searches palm plants for nettle caterpillar pupae at a Central Oahu nursery.

Projects of the Branch's Chemical/Mechanical Control Section included the following during the FY 2007:

- **Little Fire Ant** [*Wasmannia auropunctata* (Roger)]. Personnel of the Chemical/Mechanical (C/M) Control Section began surveying nurseries on Oahu for the presence of little fire ant (LFA). CM staff continued to monitor and treat infestations of the LFA on the Islands of Kauai and Hawaii. On the Island of Hawaii, CM staff continued to assist nurseries in detecting LFA and training nursery personnel to detect and treat infested property. Chemical trials continued to be conducted jointly with UH-CTAHR-PEPS researchers to find effective insecticides for use at various LFA infestation sites, including plant nurseries, residences, golf courses, pastures, and fruit and nut orchards.

- **Coqui Frog** [*Eleutherodactylus coqui* Thomas]. Coqui frog control efforts and sprayer loan programs have continued on the islands of Hawaii, Maui, Oahu, and Kauai. Community groups, plant nurseries, and private individuals are allowed to borrow spray equipment from the HDOA at no charge. On Kauai, CM staff worked with members of KISC to prepare the one 25-acre coqui-infested site for chemical treatment. Ground and trail clearing continued in order to create less habitable environments for the coqui in designated areas and to lessen the vegetation to allow better chemical penetration of infested areas.

  On Oahu, HDOA personnel assisted the Oahu Invasive Species Committee (OISC) and the U.S. Army, with night surveys at the one wild population on the island. The 15-acre site has been quiet during this past year due to the detection efforts of the multiple

agencies and OISC's strategic spraying. Selected Oahu commercial nurseries were monitored, treated and nursery staff trained for coqui frog control by HDOA, OISC, and Land and Natural Resources - Division of Forestry and Wildlife (DLNR - DOFAW). Frog populations at the nursery sites have declined significantly due to the collaborative efforts. The Oahu staff operated new equipment that uses steam to sanitize benches, containers and inanimate objects to disinfest them of coqui frogs. Experiments were done using this steamer to deliver a shower of hot water onto plants on benches. Staff from the University of Hawaii, Agricultural Engineering Department assisted with the experiment. On the Big Island CM personnel initiated experiments with physical barriers, and the search for better materials and barrier configurations for nursery use will continue.

- **Banana Bunchy Top Virus** (BBTV). Containment and management practices for the banana bunchy top virus (BBTV) continued on the islands of Hawaii, Kauai, and Maui, with limited chemical control work on commercial farms by HDOA personnel. Maui personnel traveled to Lanai to survey the island for BBTV. No BBTV was detected. On Oahu, HDOA personnel continue to assist commercial farmers in detecting and providing counseling on management of the disease.

- **Papaya Ringspot Virus** (PRV). Section personnel on Kauai continue surveying for PRV since it is not known to occur on that island. PPC personnel visited Lanai when PRV was discovered there by a UH-CES agent. The personnel conducted outreach with homeowners and one commercial papaya grower about managing the disease as it was found to be wide-spread on the island. CM personnel conducted periodic monitoring of the properties with infected plants and continued to provide information to the public about PRV.

- **Pickleworm Monitoring Project**
  CM personnel on Hawaii, Maui, and Kauai assisted the Biological Control Section Insectary Entomologist in surveying under the CAPS program for the pickleworm, *Diaphania nitidalis* Cramer. The pickleworm traps with lures were set out in fields of cucurbitaceous plants and monitored for the presence of pickleworms in the flowers and fruits.

- **Public Awareness Activities**. Section personnel participated in educational outreaches for public awareness at activities such as the Hawaii County Fair, Maui County Fair, and Kauai County Fair. Personnel also made visits to public schools to support agricultural awareness. Topics of presentations included noxious weeds, little fire ant, nettle caterpillar, and coqui frogs.

- **Seed Inspection**. Routine surveys of agricultural and vegetable seed vendors to ensure the quality and proper labeling of seeds sold to consumers were conducted. Examination of seed lots entering the United States from foreign ports was performed in the C/M Control Section Seed Laboratory under an agreement with the U.S. Department of Agriculture, Animal and Plant Health Inspection Service. Seed lots containing prohibited noxious weed seeds or seeds of quarantine status were refused entry into U.S. commerce. Germination tests were performed on vegetable and agricultural seed lots to ensure that minimum germination standards under the Hawaii Seed Rules were met. Tests upon requests were performed in the seed laboratory for Hawaii seed distributors to ensure compliance with the Hawaii Seed Rules.

PLANT QUARANTINE BRANCH
Carol Okada, *Manager*

The Plant Quarantine Branch (PQ) program administers Hawaii's plant and non-domestic animal quarantine and microorganism import law that are three-fold in nature:

(1) preventing the introduction of invasive plants, harmful insects, animal and plant diseases, illegal animals and other pests into the state;

(2) preventing the spread of established pests species from one island to another, or from an infested area to other areas on the same island; and

(3) facilitating the export of allowable agricultural materials to other states, territories and foreign countries. These functions are accomplished through:

- Permits for the importation of regulated microorganisms, plants and animals, including site inspections, pre-entry requirements and permit conditions;

- Airport and maritime port-of-entry inspection and clearance of imported agricultural products, including, propagated plants, cut flowers, and fresh fruits and vegetables for pests of quarantine concern to Hawaii;

- Investigations for possible violation of state plant quarantine laws and regulations;

- Inspection, certification and clearances of propagative plants materials for movement between islands; and

- Certification of nurseries for the export of propagative plants materials to U.S. mainland and foreign markets.

PQ Branch Highlights:

Staff position descriptions were updated in FY07 to enable the filling of new staff positions approved by the FY06 Legislature (Act 160, Hawaii Session Law).

Of the 56 new staff positions approved by the 2006 State Legislature (31 inspector, 25 pest control technician), 34 were filled during the fiscal year. Hilo and Oahu received the largest number of new staff positions to improve coverage of high-risk agricultural commodities arriving through the two ports, propagative plant materials to nurseries in East Hawaii and fresh fruits and vegetables and cut flower entering into the Oahu market.

Construction proceeded at Kahului Airport on the first dedicated plant quarantine inspection facility to be built in Hawaii. The "joint use" inspection facility will house state and federal plant quarantine programs for the inspection of incoming domestic (state) and foreign (federal) cargo arriving at the airport. The facility, with three dedicated inspection bays with containment and laboratory space was funded by the State Department of Transportation through an airport improvement grant from the U.S. Federal Aviation Administration. The facility is expected to be completed and operational by end of 2007.

Planning has been initiated for a proposed joint use inspection facility for Honolulu International Airport. HIA receives more than 90 percent of the passenger and fresh agricultural products entering Hawaii daily. Plant quarantine inspections, domestic (state) and foreign (federal) are conducted at cargo receiving warehouses of the individual carriers under existing lighting conditions and no containment for cargo found to be infested with pests. The proposed facility at HIA will have bays for the inspection of cargo with adequate lighting, tables and containment (refrigeration and freezers) to prevent the release of pests in infested cargo. Planning for the proposed facility is being funded by State Civil Defense through a federal grant from Homeland Security.

Plant Quarantine has a data management system tailored to track inspection and pest interception data at Kahului Airport. The system was developed as part of a Federal Record of Decision concluding the Environmental Impact Statement for Kahului Airport. The system was upgraded in FY07 to handle data management for State Plant Quarantine programs statewide for inspection, permitting, and pest reports.

Plant Quarantine staff training programs have traditionally been handled by senior port inspectors for new recruits with no formalized training thereafter for trained inspectors. To standardize training and assure that inspectors receive on-going training and updating on regulatory changes, pest detection and program priorities, a new educational specialist's position was established and filled in State Plant Quarantine in FY07. The new educational specialist will be responsible for training staff statewide and will work with federal quarantine officials to setup programs to enhance information exchange and cooperation across jurisdictional (state and federal) lines.

The ability to respond effectively to snake sightings in a timely fashion is a critical component of the branch's Biosecurity Program. To this end, selected branch personnel have received training from U.S. Geological Survey personnel in Guam with hands on training in locating, capturing and handling brown tree snakes (*Boiga irregularis*) in the wild. The three-week course provides participants with interview techniques, setting up the response that may include cutting transects and searching jungle environments, trapping for snakes, and doing roadside searches and inspections. Through FY07, 13 branch personnel statewide have received training and can provide response coverage in each county.

New Plant Quarantine Personnel Positions Established in FY07

Position	Island	Number	Description
PQ Inspector V	Oahu	3	Specialists: Aquatic,Bio-Tech, Education
PQ Inspector IV	Oahu	1	Military MJ Inspector
PQ Inspector III	Oahu	14	PQ Inspector
PQ Inspector III	Oahu	3	PQ Inspector / Canine Handler
PQ Inspector III	Hawaii-Hilo	7	PQ Inspector
PQ Inspector III	Hawaii-Kona	2	PQ Inspector
Pest Control Tech III	Oahu	9	Pest Ctrl Aid/Tech
Pest Control Tech III	Hawaii-Hilo	5	Pest Ctrl Aid/Tech

*** A total of 56 staff positions Statewide were created in FY 07

Plant Quarantine inspectors conducting increased inspections during a risk assessment at Keahole Airport in Kona.

Risk assessments provide important data on incoming pests so inspectors can determine the types of cargo and pathways that are high risks for hitchhiking invasive pests.

Plant Quarantine Branch personnel conducted 19 talks on the state's pest prevention and biosecurity program and tours of the Plant Quarantine Station with a total of 1,178 individuals in attendance ranging from pre-school, elementary through high school, and university-level students, as well as civic and senior citizen groups. Other public outreach activities consisted of educational exhibits at the various county fairs that were held on the islands of Kauai, Maui, Hawaii and Oahu, which highlighted information on the problems invasive species posed to Hawaii. The exhibits attracted a constant flow of fairgoers who were able to view a live display of various animals that were either prohibited or restricted to zoos for exhibition only, including a ball python, leopard gecko, giant day gecko, Madagascar hissing cockroach and dwarf African hedgehog.

A total of 170 containers of cut Christmas trees and wreaths were shipped to Hawaii from Oregon and Washington. In accordance with Branch protocols, Oregon and Washington Departments of Agriculture witnessed the shaking and cleaning of 100 percent of the trees in 140 (82.4 percent) of the containers. The remaining 30 containers were only spot checked by the two mainland agriculture departments. No container vans required treatment or further inspections due to yellow jacket infestations; however, four containers were refused entry due to infestations with the pest Cecidomyiidae: *Contarinia sp.* The Oregon Department of Agriculture also provided valuable information that assisted in the identification of some of the pests that were intercepted in the tree shipments.

The following risk assessments, both ongoing and new, were conducted throughout the year to focus on the different pathways for invasive species to enter Hawaii:

- United Parcel Service (July 2 – 19, 2006) – Personnel including detector dog teams monitored incoming mail/packages at the United Parcel Service distribution center at the Honolulu International Airport to determine the pest risk introduction through this express mail pathway.
- Transitional Inspection Facility Risk Assessment (August 20, 2006 to September 1, 2006) – Air and maritime cargo was allowed to be moved to Armstrong Produce Ltd. for on-site inspection at their facility in Honolulu, Oahu. The purpose of this risk assessment was to determine the feasibility for personnel to effectively inspect large volumes of surface and air freight at the site of an importer instead of at the transportation carrier's location. It was determined that the use of the selected produce company as a transitional inspection facility would increase inspection effectiveness capabilities while maintaining proper food safety requirements.
- Maui Risk Assessment (September 24, 2006 to October 8, 2006) – Personnel continued on-going intensified inspection of incoming shipments by assigning personnel from other ports to augment staff at Kahului Airport during this period.
- Foreign Pathway Risk Assessment (February 12, 2007 to May 4, 2007) – Periodic inspections of incoming air cargo of foreign origin were monitored by personnel to analyze this pathway risk by collecting data in regards to the commodity origin (foreign) that arrived in Hawaii via domestic ports.

Mexican fishing bat recovered from Aloha Tower building, Honolulu, Oahu.

Other program activities:

- A raccoon was immobilized by crew members of a vessel which docked at Kahului Harbor. The vessel originated from San Diego, California. The animal was tested for rabies and was found to be negative for the disease.

- A Maui resident captured a 17 - inch long veiled chameleon (Chamaeleo calyptratus) in his back yard in Makawao. A breeding population of the veiled chameleon is established in a gulch in Makawao and efforts are underway to eradicate the population through day and night searches by state as well as community organizations.

- Three king snakes (Lampropeltis sp) and a boa constrictor (Boa constrictor) were turned in by an individual to the Plant Quarantine (PQS) office in Hilo. Since the animals were turned in under the State's amnesty program, no action was taken.

- A tiger shovelnose catfish (Pseudoplatystoma fasciatum) was reported by an individual to be in a pet shop on the Island of Oahu. The prohibited fish was being held in a plastic tub and was not for sale. The manager of the pet shop reported that the pet shop had accepted the fish from an unidentified customer as a prohibited animal under the State's amnesty program.

- A hotel employee on Maui discovered a dead snake when unloading new furniture from a container that originated in the Philippines. The remains were identified by the Bishop Museum to be that of a reticulated python (Python reticulatus). From the condition of the snake, and the presence of maggots in the carcass, the snake was estimated to have been dead for approximately seven days.

- A 21-inch boa (*Boa constrictor*) was turned in to the Maui Humane Society anonymously on Thanksgiving Day. The animal was contained in a shoe box with a message that said it was found in Kihei, Maui. No other information was obtained on the circumstances involving this incident.

- A construction worker while working under Pier 2 in Hilo Harbor, Hawaii, killed a 23-inch grayish brown snake and notified port authorities. The snake was later identified by the Bishop Museum as an Asian water snake or chequered keelback snake (*Xenochiropis picator*). A follow-up investigation into the circumstances involved with the discovery of the animal may have revealed that the animal may have come from one of three ships arriving from an Asian port.

- A flight from Narita, Japan to Dallas Ft. Worth, Texas was diverted to Honolulu because the captain of the aircraft heard unusual noises in the ceiling panel above the cockpit and suspected that it may be a squirrel. He feared that the animal would chew into the wires of the aircraft and endanger the lives of all on board. Passengers were instructed to deplane from the aircraft and later sent to their destinations on other flights.

  Personnel from the USDA Wildlife Service, State Animal Quarantine Holding Facility, and Plant Quarantine stood by while passengers deplaned, and traps were set up in various areas of the cabin. The squirrel was finally caught in the First Class section of the aircraft and sent to the Animal Industry Veterinary Laboratory for identification and rabies testing. The animal was later identified as an Eastern Gray Squirrel and the results proved negative for rabies. The aircraft later was ferried to its final destination the following day.

- An air cargo agent received a call from their operations center stating that there was a loose animal on board their flight from San Francisco. Personnel met the flight and retrieved a hermit crab in the cabin.

- A maintenance employee discovered a bat on the floor of a second-floor office at Aloha Tower Marketplace in Honolulu, Hawaii, and captured the animal. The animal was turned in to the Branch and later identified as a Mexican fishing bat. The bat was tested for rabies and found to be negative. It was later learned that a Panamanian ship arrived from Mexico and was docked at Pier 11, which could have been the source of the find.

QUALITY ASSURANCE DIVISION

John Ryan, Ph.D.
Administrator
(beginning July 31, 2006)

The Quality Assurance Division consists of two branches; Commodities and Measurement Standards. These branches provide inspection and enforcement services designed to ensure food safety and quality in agricultural products, measurement accuracy and fairness in the marketplace. This year, the division embarks on a new journey to bring newer technologies into these inspection arenas in an effort to provide more modern quality procedures and tools as we replace 50-year-old practices.

The division will be employing radio frequency identification devices (RFID) as part of a food safety system designed to impact food-borne illnesses through real-time tracking, sensor measurement and rapid recall. HDOA has been awarded $500,000 in federal grant monies to pilot test an RFID food traceability project in the coming year. RFID and other agricultural traceability strategies will provide a basis for an overall food safety program designed to serve Hawaii agriculture and consumers.

This same technology will also be employed along with global positioning system (GPS) technology as Measurement Standards Branch personnel gain improved measurement accuracy over taxi meters, fuel pumps, scales and other industry devices that impact the consumer. These improvements are brought about through a greater cooperation between government and the business community and through employee training that includes continuous improvement and 6-sigma strategies.

COMMODITIES BRANCH
Jeri Kahana, *Manager*

The mission of the Commodities Branch is to "Set the Standards" and provide assurance that standardized, high quality, safe, and authentic Hawaii agricultural products can be showcased in Hawaii as well as throughout the world market through a fair and just agricultural business climate.

The Commodities Branch enhances the economic stability of Hawaii's agricultural industries by maintaining grade standards for locally produced fruits and vegetables, nuts, coffee, flowers and foliage, processed foods and other agricultural products. The branch provides unbiased, professional, and timely service-for-fee grade, condition, and origin certification and food safety audits, to add value and desirability to agricultural products. Under federal-state cooperative agreements, the branch provides federal certification for fresh and processed fruits and vegetables, eggs, seafood and meat, which may not otherwise be available to local clients, as well as state certification for origin and quality of green coffee, and origin of certain products.

The branch provides just, and unbiased enforcement to assure safety and fair business dealings in agricultural products, to protect the agricultural community as well as the general public. The branch administers laws and rules pertaining to fresh fruit, vegetable, coffee, egg labeling and advertising; minimum export quality; licensing of dealers in agricultural products; certificate of ownership requirements on the movement of agricultural commodities to deter agricultural theft; and sampling and testing of animal feed for label guarantee and adulteration.

The branch's Milk Control Section regulates and maintains the stability of the dairy industry in the Honolulu and Hawaii milk sheds by licensing producers and distributors of milk, establishing milk production quotas, setting minimum class 1 price paid to dairy producers, and conducting retail milk surveys and inspections. This special funded section is entirely self-funded through license fees assessed to milk producers and processors.

Listed below are brief overviews of developments that have impacted the branch's activities:

- Inspected and certified more than 701,000 cases of canned pineapple from Maui Pineapple Company, which continues to receive large federal government contracts and assessed over $125,000 in fees.

- Continued fee-for-service papaya non-transgenic testing program utilizing the "Identity Preservation Protocol" program for tighter control of non-transgenic papayas that are exported to Japan. More than 2.9 million pounds of papayas were checked and more than $44,000 in fees were assessed over the year.

- Educational visits were conducted on certificate of ownership requirements for agricultural commodities. Flyers were translated into nine foreign languages and distributed to various farmers and vendors.

- Hosted supervisory visits by USDA official from the Poultry Programs.

- Attended meetings with the coffee industry to discuss coffee grading certification and origin verification to ensure the quality of coffee being certified originated within the respective growing districts.
- Continued to conduct audits and educational visits with farmers on food safety awareness.
- Conducted greater number of fruit and vegetable inspections due to Defense Commissary Agency (DECA) implementing the use of a prime vendor for commissary orders.
- Increased acreage planted for seed corn production attributed to the increased volume of seed corn certified by the branch.
- Volume of locally produced milk decreased due to the closure of one Oahu dairy.
- Collected fee assessments totalling $742,042; approximately two percent greater than the previous year.

A detailed table of activities for the Commodities Branch may be found on page 65.

MEASUREMENT STANDARDS BRANCH
William Pierpont, *Manager*

The Measurement Standards Branch works to protect consumers, businesses, and manufacturers from unfair practices, based on a measurement process or subject to a standard of quality. The goal is to minimize losses and inaccuracies due to incorrect or fraudulent commercial measuring equipment, processes, or substandard products.

The Standards and Technical Services Section assures that State measurement standards conform to national standards. It performs metrological calibration of the enforcement standards used by the branch and the field standards used by registered service agencies in testing, repairing, and calibrating commercial devices.

The Standards and Trade Practices Enforcement Section has the responsibility of assuring the consumer that transactions involving measuring instruments, labeling, content of packaged commodities, and pricing are accurate and fair to all parties.

Listed below is a brief overview of the branch's activities:

- The state Metrologist participated in two advanced training and certification workshops sponsored by the National Institute of Standards and Technology (NIST).
- The state metrology laboratory received re-certification by the National Institute of Standards and Technology.
- The metrology laboratory inspected and calibrated 174 mass test standards, 518 mass enforcement standards, and 560 field standards for service agencies conducting business in the State of Hawaii.
- The metrology laboratory inspected and calibrated 1 volumetric test standard, 16 volumetric enforcement standards, and 15 volumetric field standards for service agencies conducting business in the State of Hawaii.
- The branch received and investigated six odometer complaints.
- The compliance rate for stores inspected for price verification was 100 percent.
- The branch performed 137 retail gasoline octane tests.

A detailed table of activities of the Measurement Standards Branch may be found on Page 65.

AGRIBUSINESS DEVELOPMENT CORPORATION

Alfredo Lee
Executive Director

The Agribusiness Development Corporation (ADC) was established pursuant to Act 264, SLH 1994 to coordinate the development of Hawaii's agricultural industry and to facilitate its transition from a dual-crop (sugar and pineapple) industry to a diversified, multi-crop and animal industry. One of ADC's major goals is to preserve agricultural land and infrastructure abandoned by former plantations for current or future agricultural use. For administrative purposes, ADC is attached to the Chairperson's Office of the Hawaii Department of Agriculture (HDOA).

The ADC is headed by a board of directors consisting of eight private-sector members appointed by the governor and three ex-officio members to include Chairperson of HDOA, Chairperson of the Department of Land and Natural Resources (DLNR) and Director of the Department of Business, Economic Development and Tourism (DBEDT).

Board members during FY 2007: Teena Rasmussen (Chair), Robert Sutherland (Vice-Chair), Robert Osgood, Robert Cooper, Susan Harada, Wayne Katayama, David Rietow, Duane Lau, Sandra Kunimoto (Ex-Officio), Ted Liu (Ex-Officio), and Peter Young (Ex-Officio).

The following summarizes ADC's various projects and activities during FY 2007:

- **Kekaha Agricultural Lands and Infrastructure**
  After the record rainfall in March and April of 2006, ADC funded approximately $400,000 of work to repair the irrigation/drainage system and roadways. About 75 percent of the expenditures were eventually reimbursed by FEMA since Kauai was declared a disaster area.

  ADC finished preparing Emergency Action Plans for the Puu Lua, Kitano, and Mana reservoirs on Kauai. Although classified as low-risk, each of the reservoirs has a regulated embankment dam as a feature. ADC also requested a $7 million CIP budget to bring these reservoir/dams up to standard. Work will involve removal of vegetation from the embankment and some appurtenant structure repairs.

  On April 1, 2007, ADC executed a 20-year agreement with the Kekaha Agriculture Association (Coop) for the operations and maintenance of the common infrastructure which include roadways, two hydroelectric plants and the power grid, two irrigation systems, and a portion of the drainage system. At the same time, ADC continued to negotiate with some of the tenants for their 20-year land licenses.

  In order to resolve an environmental concern, ADC contracted experts from University of Hawaii's College of Tropical Agriculture and Human Resources (CTAHR) to recommend methods to contain the waste from a piggery operation which could potentially contaminate the surrounding water bodies. The piggery operation was started by former sugar plantation employees. It is envisioned that the pig farmers will eventually form a cooperative and manage the area.

  ADC is nearing completion of the second year of a three-year contract awarded by the U.S. Navy to operate and maintain the Kawaiele and Nohili pump stations and the related drainage canals. Besides the daily operations and monitoring of the pump stations, the contract involves maintenance of the canals, roads, and electrical transmission lines. Emergency opening of the drains at PMRF during flooding situations and continuous maintenance of the NPDES permit were also part of the work. Budget for this second optional year was $1.3 million.

  At the Kawaiele pump station, the 100-hp pump which was the work horse to maintain the water level at -2 ft. MSL became damaged beyond repair. It was eventually determined that silt accumulation at the inlet of the pump station had limited water flow into the wet well. To offer immediate relief, ADC performed emergency dredging of the wet well and surrounding canals which were not identified in the Navy contract. While the damaged pump was taken down for repair, the water level was maintained by the two other, 200 hp flood-control pumps.

- **Waiahole Water System (WWS)**
  Del Monte, a major water user, ceased its Kunia pineapple operation abruptly in the fall of 2006. Originally, it was anticipated that the WWS would experience a 15-20 percent drop in water-delivery revenue for a transitional period until new farmers would occupy the former pineapple fields. Fortunately, due to favorable weather conditions and increased

***Newly installed pump-back station at Reservoir 225 in the Waiahole Irrigation System*.**

diversified agriculture activities, demand for irrigation water had remained strong throughout the year.

In the meantime, the James Campbell Company, LLC, started selling off its Kunia agricultural land holding which was divided into nine parcels. Purchasers of the Campbell land parcels included: Pioneer Hi-Bred, Hawaii Agriculture Research Center, Ed Olson Trust, Monsanto and Actus Lend Lease (Army Housing). ADC continues to work with the landowner and the various parties to transition the land from pineapple, plantation-style operation to diversified agriculture.

ADC initiated work on the installation of a pump-back system at Reservoir 225. This system will be a similar setup which has proven to work very well at Reservoir 155 located further down stream. Upon completion, the pump-back system will improve operating efficiency of the ditch and reduce system overflow losses.

ADC continues to work with the water users to refine the master agreement. At its annual meeting, the Kunia Water Users Cooperative agreed to turn over the farmers' water meters to the ADC. This change will allow ADC to do preventive maintenance on the water meters and to take quick actions to repair or replace a meter if needed. In turn, the ADC Board of Directors approved removing the minimal usage clause on the master agreement since it was not consistent with conservation efforts.

- **Kau Irrigation District**
  ADC board members visited with farmers and ranchers in the Kau area on a field trip in January of 2007. At its March 1, 2007 meeting, the ADC Board of Directors approved to take on the Kau irrigation systems as a project as it fits well into ADC's goal of preserving agricultural infrastructure abandoned by former plantations. The project will involve requesting the transfer of the state-owned water sources from DLNR to ADC and the negotiation of a long-term agreement with the Kau water users who had organized and formed a cooperative. An unofficial, quick estimate puts the current annual farm gate value of the crops grown in Kau to $10 - $15 million.

- **East Kauai Irrigation System**
  ADC continues to assist the East Kauai Water Users Cooperative to operate and maintain their irrigation system. ADC was the expending agency for $100,000 appropriated for the operation and maintenance of the system. In addition to regular repairs and maintenance work, focus was also placed on maintenance of the reservoir and the spillway.

  Transfer of the irrigation system and the approximately 7,000 acres of state-owned agricultural land in the Kalepa area to ADC was still on hold because of water diversion concerns and a potential contested case.

- **Wahiawa Irrigation System**
  In the fall of 2006, Dole Food Company expressed interest in gifting its Wahiawa irrigation system to the state (ADC) as the cost to maintain and repair the system has become too expensive for a private company to absorb. This major irrigation system services up to 10,000 acres of former plantation lands on the North Shore of Oahu. ADC initiated an engineering study of the irrigation system, including Lake Wilson, with objectives to evaluate the cost of repairing the system and the potential benefits and liabilities of taking over this privately owned system.

- **Farm and Ranch Land Protection Program**
  In August 2006, ADC executed an agreement with the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) and obligated $1.8 million of federal funds for the purchase of an agricultural conservation easement in Kunia under the federal Farm and Ranch Land Protection Program (FRPP). In June 2007, ADC was also able to secure $1.1 million from the Legacy Land Conservation fund managed by the DLNR as matching fund for the federal money. ADC continued to work with the various agencies and the landowner on issues relating to the purchase of the easement which is expected to close in 2008.

- **Kauai Tropical Fruit Disinfestation Facility**
  ADC finished the $150,000 improvement project at the facility which will still need to be re-certified by USDA- APHIS before treatment could start. In the meantime, ADC continued to work with CTAHR, the Kauai Farm Bureau Development Corporation, the County of Kauai and the Kauai Economic Opportunity (KEO), towards reopening of the Kauai's Tropical Fruit Disinfestation facility. Focus has been on papaya production on the island. ADC was also the expending agency for a $250,000 legislative grant awarded to KEO for the training of papaya farmers and treatment facility workers.

- **Solar Water Disinfestation Demonstrative Project**
  ADC provided funding to a group of researchers at CTAHR to demonstrate the use of solar technology to reduce the microbial load on irrigation water and make it safer for use on vegetable crops. Objective of the project was to evaluate the feasibility and operating costs associated with this technology in a remote farm setting. The demonstrative unit was assembled and operated at a farm in the Kula Ag Park on Maui. Test results showed that the microbial count reduction on the water treated by this unit was significant enough to make the technology worth considering as an alternative to chlorine, ozone, or ultraviolet treatments.

- **Development of a Tea Industry**
  ADC partnered with CTAHR on this multi-year project to develop a tea industry on the Big Island. This year, the in-ground procedure for rooting tea cuttings was completed. This will be a simpler, faster, and lower cost method for producers to get tea plants in the field and will alleviate a bottleneck identified by the industry.

- **Agricultural Worker Housing Demonstrative Project**
  Responding to the unavailability and the high cost to provide housing for agricultural workers, ADC began to look into the feasibility of assisting the farmers to build worker housing at its Kekaha property as a demonstrative project.

- **Purchase of Agriculture Land on Oahu**
  Recently, there has been a movement, supported by the legislature, for the state to preserve agricultural land by ownership. During the 2007 legislative session, SB837 would have appropriated $9.2 million for ADC to purchase agricultural land in the Kunia area which is under tremendous development pressure. Unfortunately, the bill was eventually vetoed by the Governor due to several concerns outlined in GM 1039.

Removal of silt at Kawaiele Pump Station wet well.

- **Legislative Reference Bureau (LRB) Report**
  Pursuant to Act 267, Session Laws of Hawaii 2006, the LRB was charged to prepare a report on the ADC. Purpose of the report was to explain why the ADC did not prepare a mandated Hawaii agribusiness plan and to obtain suggestions from government agencies and stakeholders to improve ADC.

  A total of 54 letters were sent out to government agencies and industry stakeholders. Responses were compiled and analyzed. The following is a summary of the findings of the report, titled "Agribusiness Development Corporation: Revisited."

  - The Hawaii agribusiness plan required by section 163D-5 is unnecessary because no less than eight agribusiness plans had been written in the past and that just recently a comprehensive agricultural plan has been developed by the Hawaii Farm Bureau Federation.
  - Many of the functions contained in section 163D-5 were already being handled by the various HDOA divisions and other agencies and organizations. Mandating ADC to assume these responsibilities was a duplication of efforts.
  - ADC has evolved into an agency principally in taking over the operations of abandoned plantation infrastructure, primarily irrigation systems, as the Legislature had envisioned and described in section 163D-1.
  - ADC is sorely underfunded and understaffed.
  - ADC has been criticized for lack of formally adopted written plans and standards for monitoring and measuring the success or failure of a project or program. And that standards and qualifications for all positions be formally adopted for the proper evaluation of personnel.
  - ADC was not meant to be like other state agencies, tied down in bureaucratic government red tape, but was to act as an independent agent that was able to move in immediate reaction to the need of the state agricultural industry. Respondents recommended that ADC be removed from under the control of the Board of Agriculture (BOA) and not be subject to the approval of BOA for every program or project it undertakes.
  - ADC should be granted back its exemption from the Hawaii Procurement Code.

  Attempts to change Chapter 163-D, Hawaii Revised Statutes, to better define ADC's role, to separate ADC from the DOA, and to gain back ADC's procurement exemption failed in the 2007 legislative session.

Recognizing the Cream of the Crop!

Each year, the State of Hawaii recognizes employees who have demonstrated exemplary government services through the Incentive Service Award Program (ISAP). ISAP recognizes employees who contribute to the efficiency, economy or other improvement of government operations, or who perform exceptionally meritorious acts or services in the public interest and for their loyalty and dedicated service. The following HDOA employees were recognized in 2007.

MANAGER OF THE YEAR
Dr. Isaac Maeda,
Manager,
Rabies Quarantine
Program

Under Dr. Maeda's tenure, the department implemented the Five-Day-or-Less Rabies Quarantine program that has substantially reduced the burden of quarantine on pets and their owners. Currently, nearly 83 percent of arriving dogs and cats qualify for release upon arrival at the airport.

EMPLOYEE OF THE YEAR
Domingo Cravalho, Jr. ,
Section Chief,
Plant Quarantine
Inspection & Compliance

Domingo was key in developing the State's rapid response program to snake sightings and has also been integral in developing and implementing the biosecurity plan for Hawaii.

SUSTAINED SUPERIOR PERFORMANCE
Cheryl Mitsuyuki
Accountant Supervisor,
Fiscal Office

Cheryl has implemented the state's procurement system and lead the charge to develop an emergency procurement system, which will help the state respond better to any type of disaster. She was also recognized for her leadership and guidance to staff.

SUSTAINED SUPERIOR PERFORMANCE
Dr. Mohsen Ramadan
Exploratory Entomologist

Mohsen spent more than two months in East Africa searching for biological control agents to the erythrina gall wasp, which has devastated Hawaii's wiliwili trees and other plants. His work has provided one of the most promising solutions to the gall wasp problem.

TEAM OF THE YEAR
Earthquake Response Team

From Left: Laura Matsunaga, Ernest Alfonso, Brian Kau, Ann Lo-Shimazu, Randy Teruya and Glenn Okamoto. Not pictured: Steve Dias, Lori Farrell, Elroy Juan, William Leleo, Paul Matsuo, Irineo Pagat, Myron Poepoe, Mark Laa and Christopher Knaub.

On October 15, 2007, two major earthquakes severely damaged the Waimea and Lower Hamakua Irrigation Systems on the Big Island. The team worked to restore water flow to as many farmers in the area as possible with the help of community volunteers, inmates at Kulani Correctional Facility, the Hawaii National Guard, state and county workers and private contractors.