

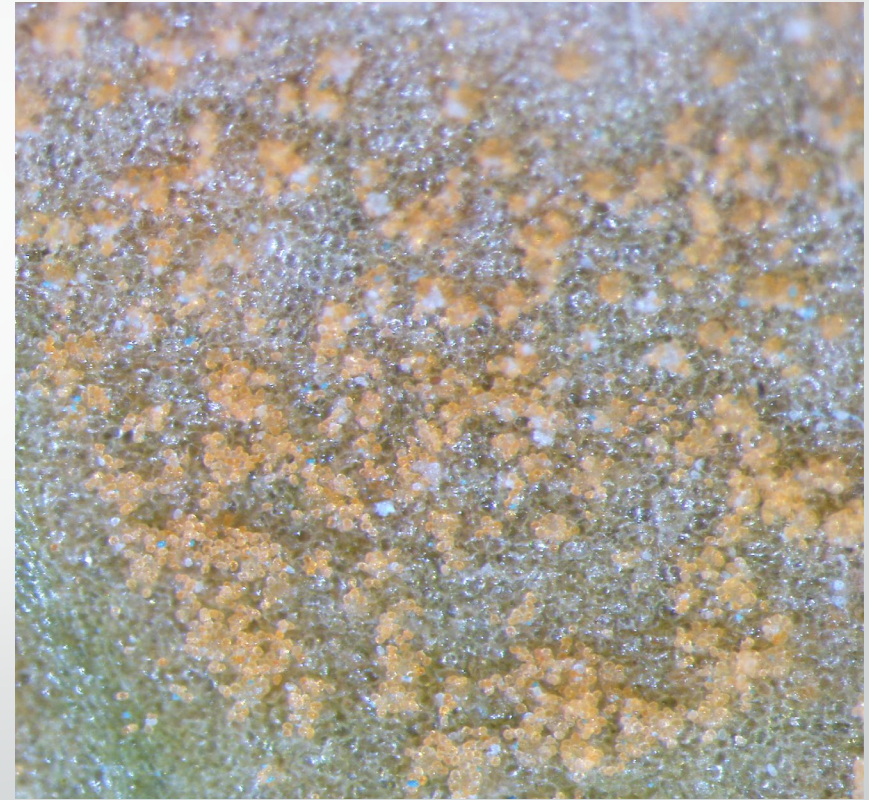
# **The Hawai'i Department of Agriculture Response to the Discovery of Coffee Leaf Rust in Hawai'i**

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# BACKGROUND

- On October 21, 2020, leaf samples displaying coffee leaf rust (CLR) symptoms from managed coffee plants in the Haiku area of Maui were turned in to the Hawai'i Department of Agriculture (HDOA). Based on physical characteristics and host expression, staff tentatively identified the pathogen as CLR.
- Samples were submitted to the University of Hawai'i College of Tropical Agriculture and Human Resources (UH-CTAHR) and the United States Department of Agriculture National Identification Services (USDA NIS) for identification confirmation.
- On October 26, UH-CTAHR tentatively identified the pathogen as CLR.
- On October 28, USDA NIS notified HDOA that the identification was confirmed as CLR, *Hemileia vastatrix*.

# COFFEE LEAF RUST SYMPTOMS



- Orange to yellowish-orange in color
- On the underside of leaves, appearing as a fine powder (spores)



# SURVEY

- Subsequent surveys on Maui found plants with symptoms at additional locations, including wild coffee.
- On October 31, UH-CTAHR staff received a sample of CLR collected by a grower on a farm on the west side of Hawai'i Island in the Kona area.
- The sample was submitted to USDA NIS, and HDOA was notified on November 10 that it was confirmed as CLR.
- Two samples from the east side of Hawai'i Island in the Hilo area were also sent to USDA NIS for identification, but were negative.
- HDOA is continuing to survey on Maui and Hawai'i Island to determine the extent of the infestations. Surveys are ongoing on Kaua'i and O'ahu, which have to date been negative for CLR. Partners on both Lāna'i and Moloka'i islands have been informed and asked to look for the disease, and to date no reports of CLR have been received.



# COFFEE LEAF RUST IMPACTS

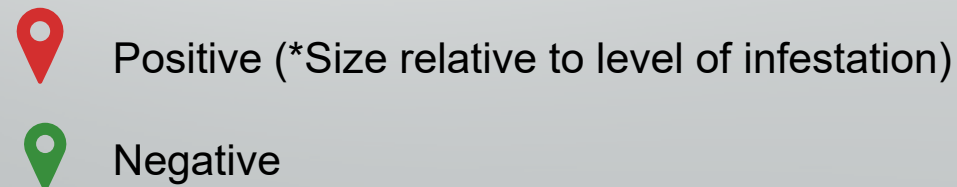
- Severe leaf drop
- Reduction in yield following first infection
  - 35% or more if untreated
- An overall devastation of coffee plantations and cultivation



Ha'ikū, Maui



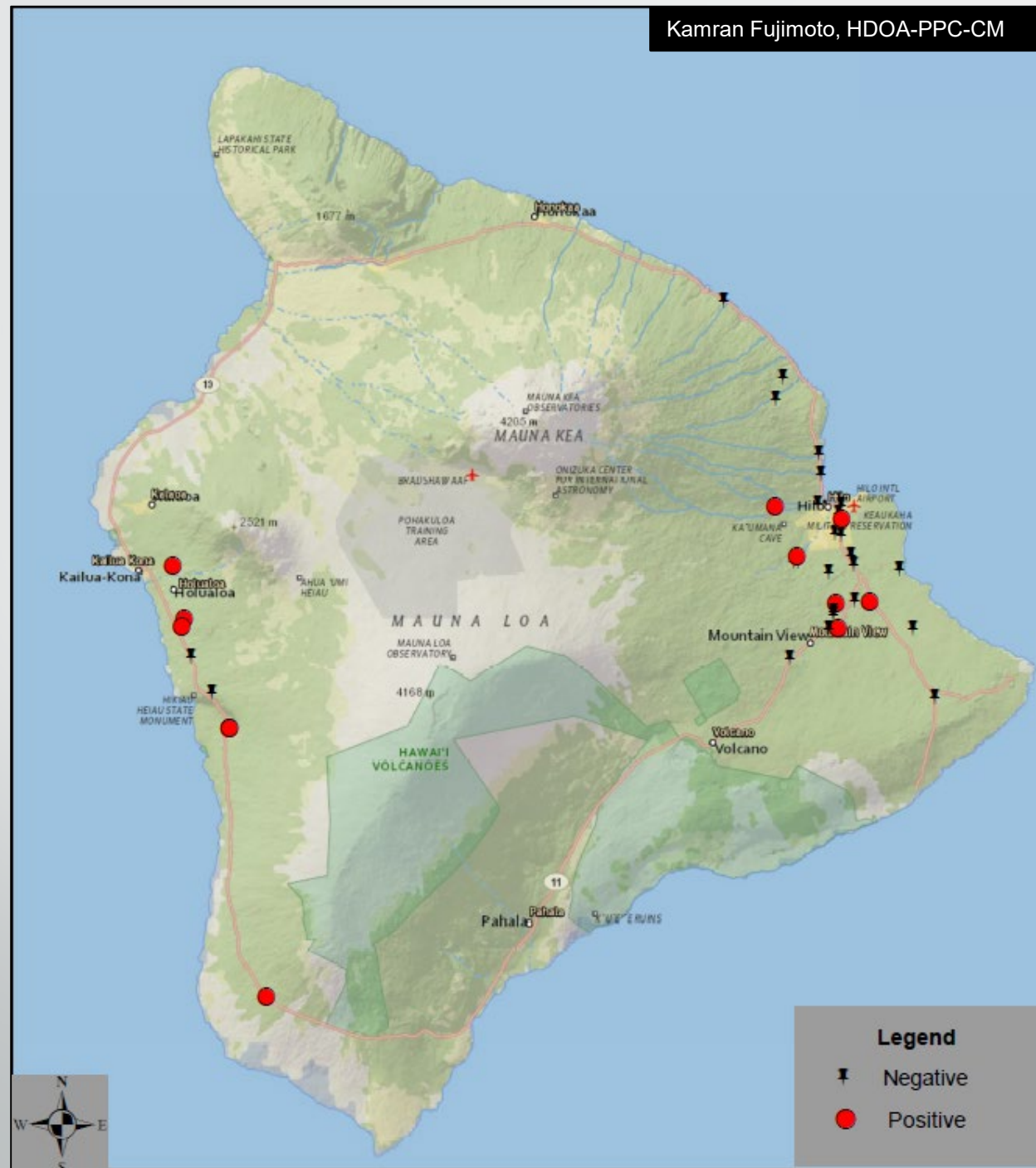
## Mach Fukada, HDOA-PPC-BC



- 46 locations surveyed
- 10 locations positive
- 36 negative, but under surveillance for outbreaks

# Hawai'i Island Survey as of 11/13/2020

- 40 locations surveyed
- 11 positive
- 29 negative





# O'ahu Survey as of 11/13/2020

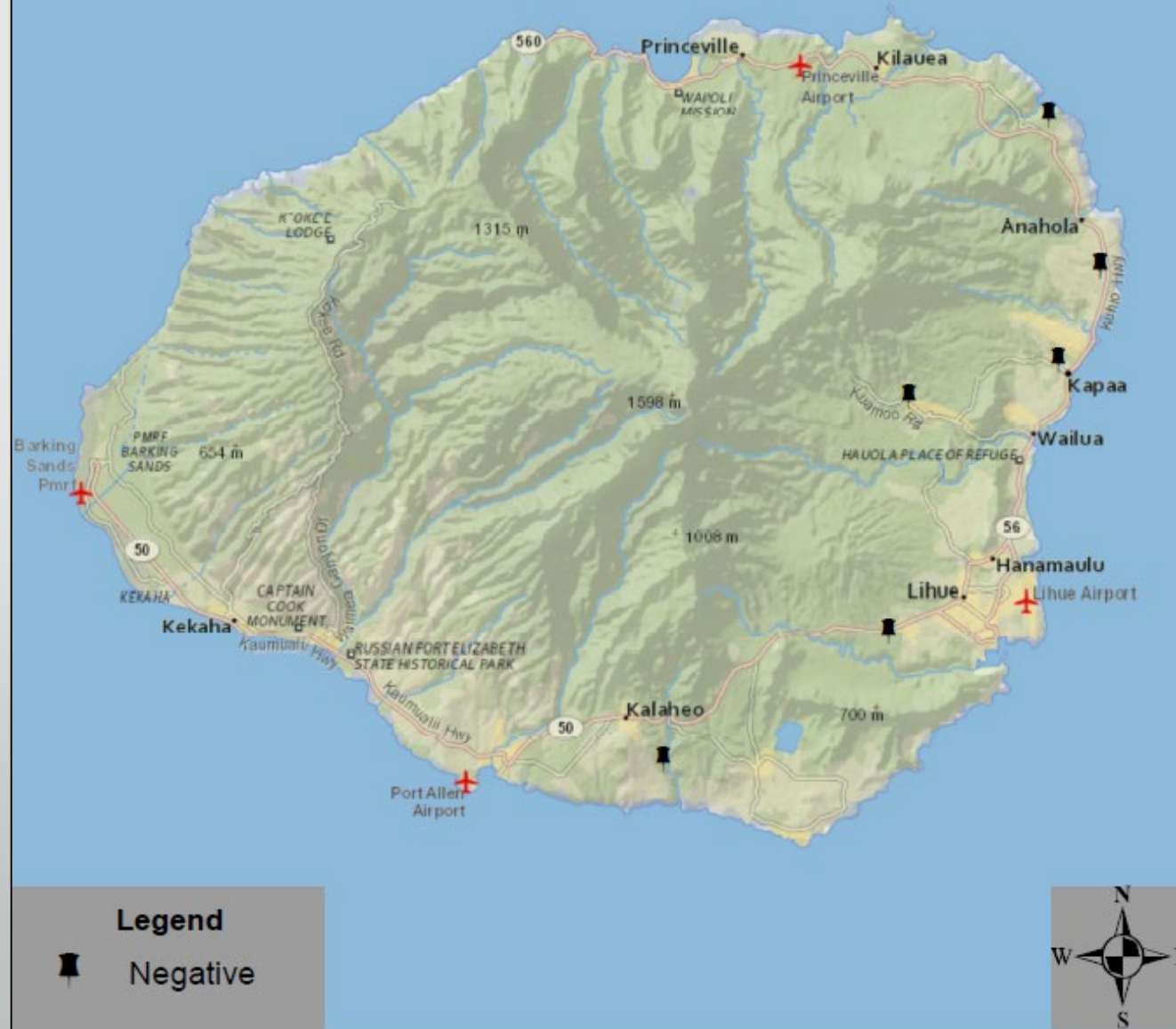
- 9 locations surveyed
- All negative





# Kaua'i Survey as of 11/13/2020

- 6 locations surveyed
- All negative



# IDEAL COFFEE LEAF RUST HABITAT

- Water (rain, mist, overhead irrigation, splashing water, etc.)
- High humidity
- Elevation: 300 ft – 1200 ft
- Temperatures: 59°F-85°F
- Partial shade
- Shelter from wind





# INDUSTRY OUTREACH

- On October 23, HDOA notified the coffee industry of the suspect sample from Maui.
- HDOA asked that the industry on Maui not transport coffee plants, coffee green waste, coffee cherries/pulp, used coffee processing/harvesting equipment, used coffee bags or green coffee beans interisland, and if possible, within the island until more is known of the extent of the infestation and actual identification of the fungus.
- On October 29, HDOA notified the coffee industry that USDA NIS had confirmed the sample from Maui.
- On November 10, HDOA notified the coffee industry that USDA NIS had confirmed the sample from Hawai'i Island.

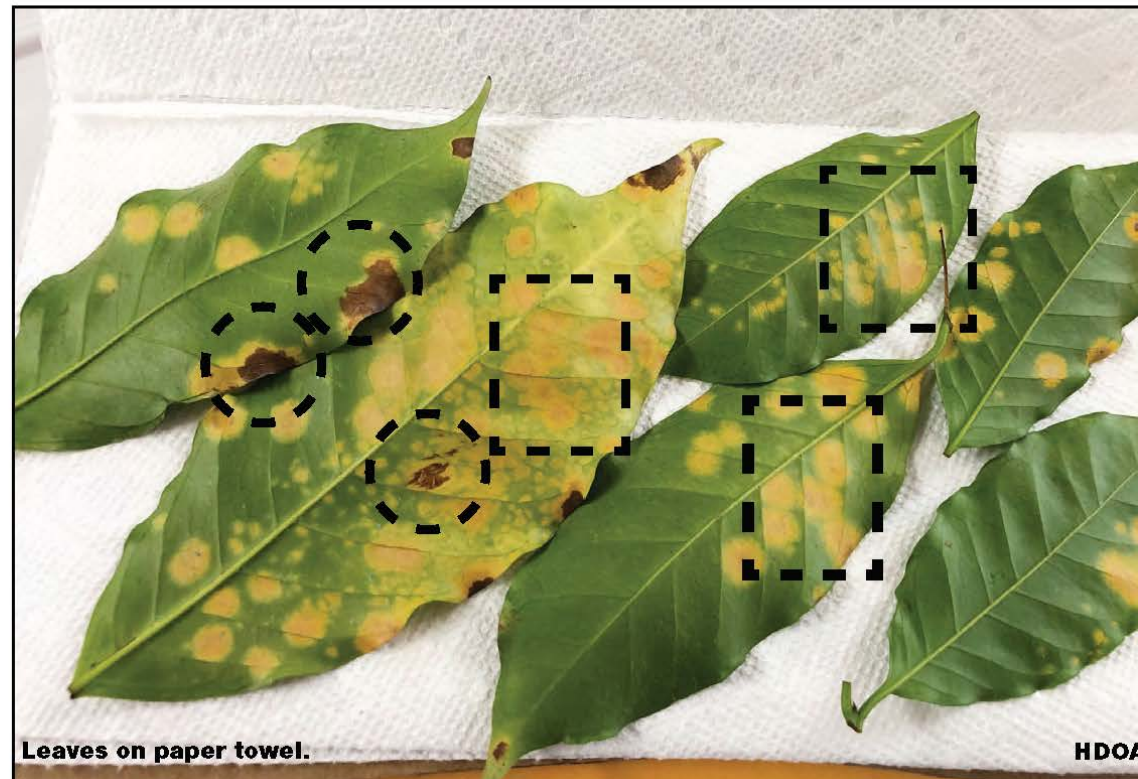


Department  
of Agriculture  
STATE OF HAWAII

## Field Guide to Coffee Leaf Rust (*Hemileia vastatrix*)

**Coffee leaf rust** is a fungal disease caused by *Hemileia vastatrix*. Hosts of note include but are not limited to *Coffea* spp. (worldwide) and *Gardenia* spp. (in South Africa). Symptoms appear first on the upper leaf surface and then the lower surface of leaves. Severe infections may lead to premature leaf drop, yield reduction, twig dieback, and tree death (Arneson, 2000)\*.

**LOOK FOR:** Orangeish to yellow-orangeish circular spots or lesions on leaves.



**RECTANGLES:** As spots expand or form, they may join together or overlap to form large irregular shapes.

**CIRCLES:** As spots age their centers may turn brown.

\*Arneson, P.A. 2000. Coffee rust. *The Plant Health Instructor*. Site: <https://www.apsnet.org/edcenter/disandpath/tungalbasidio/pdlessons/Pages/CoffeeRust.aspx> DOI: 10.1094/PHI-I-2000-0718-02



DO NOT COLLECT SAMPLES OF INFECTED PLANTS TO PREVENT POTENTIAL SPREAD.

## If you suspect coffee leaf rust

1. First, do not touch or collect diseased plants.

2. Do take clear photos.

### How to photograph coffee leaf rust:

- Take photographs of whole plant (refer to Field Guide to Coffee leaf rust pages 3 and 4).
- Take photographs of upper and lower surface of suspect leaves (refer to Field Guide to Coffee leaf rust pages 5-7).

3. Do not touch or collect diseased plants and flag or visibly mark the area where CLR was found. Let everyone (land owner, manager, workers, visitors, etc.) know to stay away. Do not move soil, plant materials, or supplies from the location.

4. Submit photos and Coffee Leaf Sampling Form to [HDOA.PPC@HAWAII.GOV](mailto:HDOA.PPC@HAWAII.GOV) through e-mail with the Subject: **Suspect Coffee Leaf Rust**

- We will be in contact on how to proceed.
- Your information is confidential and will not be shared outside of Hawai'i Department of Agriculture.

5. Decontaminate at site if possible! If you have touched or contaminated your clothing, footwear, hat, etc. with the fungal pathogen or think you may have, shower immediately with soap and water and wash your clothing, footwear, hat, etc. in laundry detergent and hot water and dry with high heat. Once decontaminated, then it is safe to travel from your farm or location.

DO NOT COLLECT SAMPLES OF INFECTED PLANTS TO PREVENT POTENTIAL SPREAD.

## Coffee leaf rust Sampling Form

Please complete this form as it applies and to the best of your ability. Include it with corresponding image(s). Submit only 1 form per farm/location/residence. Your information is confidential and will not be shared outside of the Hawai'i Department of Agriculture.

Contact Name: \_\_\_\_\_

Disease symptoms or signs (check all that apply):

Contact E-mail: \_\_\_\_\_

Dropping of green leaves

Contact Phone: \_\_\_\_\_

Bare to nearly bare branches

Date collected: \_\_\_\_\_

Yellowish circular spots or lesions on leaves, which may or may not have brown centers

Farm name: \_\_\_\_\_

Address: \_\_\_\_\_

Clusters of orange to yellow-orange powder-like substance on the lower leaf surface below leaf spots on upper leaf surface

GPS Coordinates: \_\_\_\_\_

Number of plants affected: \_\_\_\_\_

Location Type (Indicate or describe in Other):

Farm

Nursery

Residence

Wild growing

Other: \_\_\_\_\_

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This will be filled out by lab.

Received by: \_\_\_\_\_

Action taken: \_\_\_\_\_

Date received: \_\_\_\_\_

Notes: \_\_\_\_\_

Final ID: \_\_\_\_\_

Identifier: \_\_\_\_\_

Date identified: \_\_\_\_\_

DO NOT COLLECT SAMPLES OF INFECTED PLANTS TO PREVENT POTENTIAL SPREAD.

# REGULATORY ACTION

- On November 13, the Advisory Committee on Plants and Animals (ACPA) voted to recommend approval of an interim rule that restricts the interisland movement of potentially infested articles from Maui and Hawaii Island.
- On November 17, the HDOA Chairperson accepted the ACPA recommendation and approved the rule, with an effective date of November 20.



# INTERIM RULE

- The interim rule prohibits the intrastate movement of coffee plants (*Coffea arabica*, *C. canephora* and other *Coffea* spp. including hybrids and varietals) and plant parts such as green beans, fruits, leaves, stems, twigs, cuttings, wood, logs, and mulch or greenwaste, used coffee-related packing materials such as coffee bags, and any previously-used equipment used to harvest, transport, or process coffee plants or plant parts, all of which are potential carriers of the fungus, coffee leaf rust, from the Island of Maui, Hawai'i Island, or any other island confirmed with coffee leaf rust for up to one year from the effective date, except by permit issued by HDOA.

# INTERIM RULE PERMITS

Permits are allowed for the following exemptions:

- 1) For green coffee beans for roasting, or other non-propagative plant parts, that are shipped to an approved facility located in an uninfested area that is located at least two miles from a commercial coffee growing area, or are subjected to an approved treatment;
- 2) For plants from HDOA certified nurseries, green coffee beans for roasting, or other non-propagative plant parts, that are transshipped through an uninfested area of the State with a final destination outside the State;



# INTERIM RULE PERMITS

- 3) For previously-used equipment that is designed to harvest, process or transport coffee plants or plant parts;
- 4) For plants and plant parts for scientific studies or other diagnostic uses at approved facilities, provided the contents and packing materials used for shipping are subjected to a treatment approved by the Plant Quarantine Branch (PQB) chief after the contents are unloaded;

# INTERIM RULE PERMITS

- 5) For coffee plants, beans for roasting, other non-propagative plant parts, used coffee bags, and previously-used coffee harvesting, processing or transporting equipment, that are shipped between infested areas; and
- 6) For limited quantities of coffee plants for propagation from an infested area to a non-infested area, subject to a one-year quarantine in a state-run facility, provided that the Board of Agriculture may reduce the quarantine period.



# PERMIT APPLICATIONS

Form PQ-7 applications are available on the HDOA website under Importing & Exporting Plants & Animals, Importing Plants, Permit Applications at:

<http://hdoa.hawaii.gov/pi/pq/import-program/plant-quarantine-application-for-permits/>

Direct Link to Form PQ-7:

[http://hdoa.hawaii.gov/pi/files/2012/12/pq-7\\_fillable.pdf](http://hdoa.hawaii.gov/pi/files/2012/12/pq-7_fillable.pdf)

Cost: Free



## Date: \_\_\_\_\_

*Please type or print clearly.*

[illegible]

Name and address of shipper:

(United Kingdom or Foreign address)

*Please type or print clearly.*

Applicant's Name

Company Name

(if applicable)

Hawaii Mailing Address \_\_\_\_\_

☐ one time only☐ one time only      ☐ multi-shipments

☐ one time only      ☐ multi-shipments

☐ one time only      ☐ multi-shipments

Telephone number

Facsimile number

☐ Kept caged at all time

- ☐ Used for propagation

☐ Imported for exhibition☐ Imported for liberation

☐ Other purposes - specify

(complete reverse side)

PQ-7 (01/04)

For Office Use Only

Fee: \$ \_\_\_\_\_ Receipt No. \_\_\_\_\_

☐ Approve Permit No. \_\_\_\_\_ Date: \_\_\_\_\_

☐ Disapprove      ☐ Other \_\_\_\_\_

Processed by: \_\_\_\_\_ Date: \_\_\_\_\_

**PLEASE COMPLETE THE FOLLOWING INFORMATION** (attach extra sheet if necessary)

1. State in detail the reasons for introduction (include use or purpose).
2. Person responsible for the organism (include name, address and phone number).
3. Location(s) where the organism will be kept and used (include address, contact and phone number).
4. Method of disposition.
5. Give an abstract of the organism with particular reference to potential impact on the environment of Hawaii (include impact to plants, animals and humans).

\*\*\*\*\*

I request permission to import the articles as listed on the permit application and further, request that the articles be examined by an authorized agent of the Department of Agriculture upon arrival in Hawaii.

*I agree that I, as the importer, will be responsible for all costs, charges or expenses incident to the inspection or treatment of the imported articles.*

*I further agree that damages or losses incident to the inspection or the fumigation, disinfection, quarantine, or destruction of the articles, by an authorized agent of the Department of Agriculture, shall not be the basis of a claim against the department or the inspectors for the damage or loss incurred.*

Signature \_\_\_\_\_ Date \_\_\_\_\_  
(Applicant)



# MAHALO!

## Questions?