November 13, 2020

**TO:** Advisory Committee on Plants and Animals

**FROM:** Wilfred Leon Guerrero

Microorganism Specialist

Plant Quarantine Branch

**SUBJECT:** Request for: (1) A Finding that the Unrestricted Movement of Coffee Plants (*Coffea arabica*, *C. canephora* and other *Coffea* spp. Including Hybrids and Varietals*)* and Plant Parts Such as Unroasted Beans, Fruits, Leaves, Stems, Twigs, Cuttings, Wood, Logs, and Mulch or Greenwaste, Used Coffee-Related Packing Materials Such as Coffee Bags, and Any Equipment Used to Harvest, Transport, or Process Coffee Plants or Plant Parts, All of Which are Potential Carriers of the Fungus, Coffee Leaf Rust, *Hemileia vastatrix*, From the Island of Maui, Hawaii Island, or Any Other Island Confirmed with Coffee Leaf Rust, Constitutes an Emergency Justifying an Interim Rule; and

(2) A Finding that the Adoption of an Interim Rule to Restrict the Movement of Coffee Plants (*Coffea arabica*, *C. canephora* and other *Coffea* spp. Including Hybrids and Varietals*)* and Plant Parts Such as Unroasted Beans, Fruits, Leaves, Stems, Twigs, Cuttings, Wood, Logs, and Mulch or Greenwaste, Used Coffee-Related Packing Materials Such as Coffee Bags, and Any Equipment Used to Harvest, Transport or Process Coffee Plants or Plant Parts, All of Which are Potential Carriers of the Fungus, Coffee Leaf Rust, *Hemileia vastatrix*, to Prevent its Spread From the Island of Maui, Hawaii Island, or Any Other Island Confirmed with Coffee Leaf Rust.

1. **Introduction**

The Hawaii Department of Agriculture (HDOA) Plant Quarantine Branch (PQB) is proposing an interim rule to establish a quarantine to restrict the movement of all *Coffea spp.* plants and plant parts, including green waste, and used coffee packing, harvesting, processing and transporting equipment, to prevent the spread of coffee leaf rust (CLR)*, Hemileia vastatrix* from the Island of Maui, Hawaii Island, or any other island subsequently found to have CLR prior to implementation of the interim rule.

PATHOGEN**:**CLR, *H. vastatrix*, is a devastating coffee pathogen and was first discovered in Sri Lanka in 1869 and has subsequently spread to all major coffee producing areas worldwide. CLR can cause severe defoliation of coffee plants resulting in premature defoliation and greatly reducing photosynthetic capacity. Depending on CLR prevalence in a given year, both vegetative and berry growth are greatly reduced. There are multiple long-term impacts of CLR, including dieback, resulting in an impact to the following year’s crop, with estimated losses ranging from 30 percent to 80 percent.

SYMPTOMS: Initial symptoms of CLR are yellow-orange circular spots on the upper sides of the leaves, followed by yellowish-orange powdery rust on the underside of the leaves. CLR spreads readily through physical contact, is both an airborne and waterborne pathogen, and can have deleterious effects, possibly even death, to coffee plants.

1. **Background**

On October 21, 2020, leaf samples displaying CLR symptoms from managed coffee plants in the Haiku area of Maui were turned in to Maui HDOA staff. Based on physical characteristics and host expression, HDOA staff tentatively identified the pathogen as CLR. Subsequent surveys on Maui conducted after the initial detection found plants with symptoms at five additional locations, including wild coffee.

On October 23rd HDOA sent a memorandum to members of the coffee industry throughout the state to alert them to the situation. Sample leaves were submitted to the University of Hawaii College of Tropical Agriculture and Human Resources (UH-CTAHR) and the U.S. Department of Agriculture (USDA) National Identification Services (NIS) for identification confirmation. On October 26th, a statewide press release of the CLR detection was issued and UH-CTAHR also tentatively identified the pathogen as CLR. USDA NIS notified HDOA that the identification was confirmed as CLR, *H. vastatrix* on October 28th.

On October 26th, HDOA staff found a coffee plant suspected to be infected with CLR on the east side of Hawaii Island. That sample was submitted to USDA Agricultural Research Services (ARS). On October 28th, USDA ARS tentatively identified the sample as CLR. This sample is awaiting formal confirmation by USDA NIS. HDOA notified Coffee Industry members on October 29th and a statewide press release was issued on October 30th.

On October 31st, UH-CTAHR staff received a report of CLR on the west side of Hawaii Island. That sample was submitted to USDA ARS and tentatively identified as CLR as well. This sample is also awaiting formal confirmation by USDA NIS.

Currently, HDOA is continuing its efforts to survey Maui Island and has extended surveys statewide across Oahu, Hawaii Island, and Kauai to determine the full extent of the infestation. Partners on both Lanai and Molokai have been informed and asked to look for the disease.

1. **Procedural Background**

Pursuant to section 150A-9.5, Hawaii Revised Statutes (HRS), the HDOA may establish an interim rule governing the transport of flora and fauna into and within the State. Pursuant to §150A-9.5(b), HRS, an interim rule may be adopted in the event that the importation or movement of any flora or fauna, in the absence of effective rules, creates a situation dangerous to public health and safety or to the ecological health of flora or fauna present in the State which is so immediate in nature as to constitute an emergency. No interim rule can be adopted without a prerequisite finding by the Advisory Committee on Plants and Animals that the foregoing criteria stated in §150A-9.5(b), HRS, is met. The interim rule shall not be effective for more than one year.

Once adopted by HDOA, any interim rule must be published within twelve days of issuance at least once in any newspaper of general circulation in the State.

1. **Authority**

Chapter 4-72, Hawaii Administrative Rules (HAR), the HDOA’s Plant and Non-Domestic Animal Quarantine, Plant Intrastate Rules, regulates the intrastate movement of plants, generally. Section 4-72-3, HAR, requires inspection of propagative plants and plant parts prior to being transported between islands of the State. Section 4-72-4, HAR, prohibits interisland movement of commodities infested with a pest unless treated with a pesticide that exterminates the pest. An interim rule provides the means for quarantine and safeguard measures to restrict or prohibit the movement of pests and their plant or commodity hosts to prevent the spread and establishment of pests that are detrimental to agriculture, horticultural industries, and forest lands on uninfested islands and in uninfested localities of the State.

1. **Proposed Interim Rule**

The proposed interim rule establishes a quarantine to restrict the movement of coffee plants (*Coffea arabica*, *C. canephora* and other *Coffea* *spp.*, including hybrids and varietals*)*, plant parts such as unroasted beans, fruits, leaves, stems, twigs, cuttings, wood, logs, and mulch or greenwaste, used coffee-related packing materials such as coffee bags, and any equipment previously used to harvest, transport or process coffee plants or plant parts from the island of Maui, Hawaii Island, or any other island subsequently found to have CLR to other non-infested islands in the State. An interim rule is necessary to prevent the further spread and establishment of CLR, *H. vastatrix*.

Impact of Quarantine: This quarantine is intended to prevent the spread of CLR from areas of infestation to other areas. CLR will severely impact the coffee industries on Maui, Hawaii Island, and any other Island subsequently found to have CLR. Productivity will likely severely decline in infected areas. If effective measures are not taken immediately to control the spread of this disease, then CLR could spread statewide. If CLR spreads further, then great economic burdens will be placed on the coffee growing and roasting industries. Rouge or feral coffee plants in forest and private lands must also be dealt with to stop the spread of CLR, even within infested islands.

Boundaries of Proposed Quarantine Zones: HDOA proposes to establish quarantines including the entire island of Maui, all of Hawaii Island, and any other island subsequently found to have CLR infestations. Additional CLR infected areas on Maui, Hawaii Island, and other islands may continue to be found as more extensive sampling occurs, in addition to the likely expansion of existing infestations. It is suspected that the area infested with CLR is larger than what is currently known. To protect the rest of the State of Hawaii, restricting the inter-island movement of potentially infected material from Maui, Hawaii Island and all other infested islands is crucial. Past quarantines utilized established, defined quarantine zones within a specific island (for example, Banana Bunchy Top and Coffee Berry Borer on Hawaii Island), however the established quarantine zones were quickly breached, and island-wide spread quickly occurred. Focusing limited resources at the ports of entry allows for much greater control of CLR spreading.

Quarantine exceptions: The proposed interim rule will allow the movement of regulated coffee materials for the specific purposes listed below under permits issued by the PQB:

For green coffee beans which originate from an infested area and are transshipped through a non-infested area with a final destination outside of the state using approved mitigation measures.

For green coffee beans which originate from an infested area and are shipped to a PQB approved roaster on a non-infested island, provided that the roaster is located at least two miles from a commercial coffee growing operation and follows approved mitigation measures. In this instance, the shipper must also obtain a permit and use approved mitigation measures.

For green coffee beans which originate from an infested area and are shipped to a PQB approved roaster in an infested area.

Coffee plants and plant parts from an infested area may be moved for scientific studies or other diagnostic purposes, such as grading or disease identification, to a facility approved by the PQB, if shipped using approved mitigation measures, and provided that all contents and packing materials will be destroyed after completion of the procedure.

Used equipment designed to harvest, transport or process coffee plants or plant parts may be moved from an infested area to a non-infested area subject to safeguards and/or treatments approved by the PQB chief.

Roasted coffee beans and green coffee beans that are directly exported from an infested area with a final destination outside the state, are not subject to the proposed quarantine restictions.

1. **Advisory Subcommittee Review**

This request was submitted to the Advisory Subcommittee on Plants and the Advisory Subcommittee on Fungi for their review and recommendation. Their recommendations and comments are below:

***PQB Notes: After this request was sent to the respective Advisory Subcommittees, PQB subsequently removed proposed restrictions including roasted coffee.***

1. I recommend approval \_\_\_\_/ \_\_\_\_ disapproval that the unrestricted movement of coffee plants (*Coffea arabica*, *C. canephora* and other *Coffea* spp. including hybrids and varietals*)* and plant parts such as roasted and unroasted beans, fruits, leaves, stems, twigs, cuttings, wood, logs, and mulch or greenwaste, used coffee related packing materials such as coffee bags, and any equipment used to harvest, transport or process coffee plants or plant parts, all of which are hosts or harbor the fungus, coffee leaf rust, *Hemileia vastatrix*, from the Island of Maui, Hawaii Island, or any other island confirmed with coffee leaf rust constitutes an emergency justifying an interim rule.

ADVISORY SUBCOMMITTEE ON PLANTS

Dr. Susan Schenck: Recommends Approval.

Comments: none.

Dr. J.B. Friday: Pending response.

Dr. Stephen Montgomery: Recommends Approval.

Comments: none.

ADVISORY SUBCOMMITTEE ON FUNGI

Dr. Susan Schenck: Recommends Approval.

Comments: none.

Mr. George Wong: Recommends Approval.

Comments: none.

Dr. David Clements: Recommends Approval.

Comments: none.

Dr. A Chris Whelen: Recommends Approval.

Comments: none.

Dr. Raquel Wong: Recommends Approval.

Comments: none.

Dr. Edward Desmond: Recommends Approval.

Comments: none.

Dr. Stephen Ferreira: Recommends Approval.

Comments: none.

1. I recommend approval \_\_\_\_/ \_\_\_\_ disapproval to adopt an interim rule to restrict the movement of coffee plants (*Coffea arabica*, *C. canephora* and other *Coffea* spp. including hybrids and varietals*)* and plant parts such as roasted and unroasted beans, fruits, leaves, stems, twigs, cuttings, wood, logs, and mulch or greenwaste, used coffee related packing materials such as coffee bags, and any equipment used to harvest, transport or process coffee plants or plant parts, all of which are hosts or harbor the fungus, coffee leaf rust, *Hemileia vastatrix*, from the Island of Maui, Hawaii Island, or any other island confirmed with Coffee Leaf Rust.

ADVISORY SUBCOMMITTEE ON PLANTS

Dr. Susan Schenck: Recommends Approval.

Comments: none.

Dr. J.B. Friday: Pending response.

Dr. Stephen Montgomery: Recommends Approval.

Comments: none.

ADVISORY SUBCOMMITTEE ON FUNGI

Dr. Susan Schenck: Recommends Approval.

Comments: none.

Mr. George Wong: Recommends Approval.

Comments: none.

Dr. David Clements: Recommends Approval.

Comments: none.

Dr. A Chris Whelen: Recommends Approval.

Comments: none.

Dr. Raquel Wong: Recommends Approval.

Comments: none.

Dr. Edward Desmond: Recommends Approval.

Comments: none.

Dr. Stephen Ferreira: Recommends Approval.

Comments: none.

ADVISORY COMMITTEE REVIEW: May we request your recommendation and comments at the next meeting of the Advisory Committee on Plants and Animals.

**INTERIM RULE:** The proposed wording for the interim rule is as follows:

“HAWAII DEPARTMENT OF AGRICULTURE

PLANT QUARANTINE INTERIM RULE 20-1

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, *Hemileia vastatrix*,

From the Island of Maui, Hawaii Island, or Any Other Island Confirmed

with Coffee Leaf Rust

Except by Permit Issued by the Hawaii Department of Agriculture

Under authorization granted in Section 150-9.5, Hawaii Revised Statutes (HRS), the Hawaii Department of Agriculture (Department) hereby establishes this interim rule to impose a quarantine on the movement of coffee plants (*Coffea arabica*, *C. canephora* and other *Coffea* spp. including hybrids and varietals*)*, 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 from the Island of Maui and Hawaii Island. These quarantine areas are established to prevent the spread of the Coffee Leaf Rust, *Hemileia vastatrix,* a fungal pathogen, from areas infested by *H. vastatrix* to uninfested areas within the State.

Movement or transportation of coffee plants (*Coffea arabica*, *C. canephora* and other *Coffea* spp. including hybrids and varietals*)*, 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 from the Island of Maui and Hawaii Island is prohibited except by permit issued by the Department: 1) for green coffee beans for roasting at approved facilities, 2) for green coffee beans that are transshipped thorough an uninfested area of the state, 3) for previously-used equipment that is designed to harvest, process or transport coffee plants or plant parts, and 4) for plants and plant parts for scientific studies or other diagnostic uses at approved facilities. All movement is subject to inspection and approved mitigation and decontamination measures. This interim rule does not affect roasted coffee beans or green coffee that is shipped directly from an infested area to a destination outside of the State.

Any person who violates this rule shall be guilty of a misdemeanor and fined not less than $100. The provisions of HRS section 706-640 notwithstanding, the maximum fine shall be $10,000. For a second offense committed within five years of a prior conviction, the person or organization shall be fined not less than $500 and not more than $25,000.

This interim rule shall become effective on (insert date) and is valid for no longer than one year from its inception.”