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October 23, 2020

TO: Members of the Hawai`i Coffee Industry

FROM: Phyllis Shimabukuro-Geiser
Chairperson, Board of Agriculture

SUBJECT: Coffee Leaf Rust Suspected on Maui

Samples of a fungus tentatively identified as coffee leaf rust (CLR) were collected in managed and wild coffee on Maui. If confirmed, this will be the first detection in Hawai`i. Coffee leaf rust is one of the most devastating pests of coffee plants. Coffee leaf rust is established in all of the other major coffee growing areas of the world but has not previously been found in Hawai`i.

On October 21, 2020, leaves from managed coffee in the Haiku area of Maui displaying CLR symptoms were turned in to the Hawai`i Department of Agriculture (HDOA) on Maui. Subsequent surveys in the area found plants with symptoms at three additional locations, two of which were in wild coffee. Molecular analysis will be performed by the University of Hawai`i, College of Tropical Agriculture and Human Resources (UH-CTAHR) and by the United States Department of Agriculture National Identification Services to confirm the identity of the causal agent.

It is unknown at this time how the rust got to coffee plants on Maui. HDOA appreciates the assistance of the multiple agencies that are helping us to determine the extent of this infestation and how coffee leaf rust may have been introduced to the State.

Coffee leaf rust can cause severe defoliation. Infected leaves drop prematurely, greatly reducing the plant's photosynthetic capacity. Vegetative and berry growth are reduced and is correlated with the intensity of rust in the current year. Long term effects of rust can have a stronger impact by causing dieback, which effectively reduces the number of productive nodes on branches. This can have a significant impact on the following year's yield with some researchers estimating losses between 30% and 80%.

The first observable symptoms are chlorotic, yellow-orange rust spots, approximately 2-3 mm in diameter, appearing on the upper surface of leaves. On the underside of the leaves, these rust spots correspond with blotches of infectious spores, resembling a patch of yellow to dark orange

colored powder. These young lesions steadily increase in size with the center of the lesion turning necrotic and brown. Early spotting tends to occur around the margins or tips of leaves where dew and raindrops collect, creating the ideal environment for spore germination. Lower leaves are typically the first to show signs of rust, with the infection eventually progressing up the tree. Occasionally, CLR can be seen infecting young stems and berries.

One of the key factors to any pest management is good sanitation practices. Regular pruning and training of the coffee tree helps to prevent over-cropping and maintain a healthy field. These practices help to improve air circulation and to open up the canopy to allow proper fungicide spray coverage. Good weed control is an important factor as it keeps competition for vital nutrients low, thereby reducing the susceptibility to rust.

HDOA is asking that individuals 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.

To report possible CLR infestations on any island, call HDOA's Plant Pest Control Branch at (808) 973-9525.

For more information on coffee leaf rust go to the UH-CTAHR webpages at:
https://www.hawaiicoffeeed.com/coffee-leaf-rust---nko.html
http://www.extento.hawaii.edu/kbase/crop/Type/h_vasta.htm