



# Coffee Variety Trials in Hawaii

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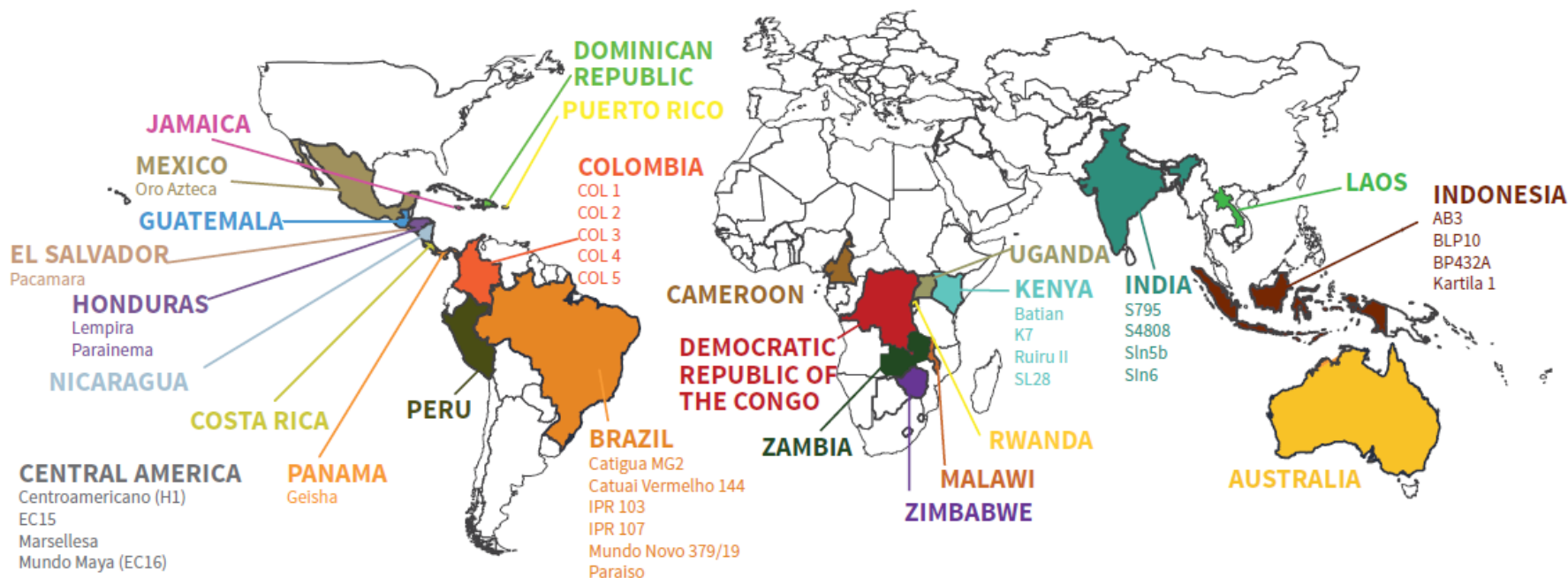
# HARC and USDA ARS DKI PBARC participating in World Coffee Research International Multilocation Variety Trial



**WORLD COFFEE  
RESEARCH**

22 countries host IMLVT sites

*NOTE: Countries/regions with varieties listed provided seeds and received plantlets.  
Countries without seeds listed are variety recipients only.*



# IMLVT Coffee Lines Timeline

- Plant arrive on September 4, 2020
- Coffee Leaf Rust found on Maui in October 2020
- Petition to propagate plants under quarantine filed
- Petition granted to propagate plants in quarantine March 23, 2021
- Lines being multiplied in culture
- Original plan was evaluation on Kauai, now 4 different locations



# IMLVT Coffee Varieties in Tissue Culture

## Susceptible

- AB<sub>3</sub>
- BLP<sub>10</sub>
- Catuai V IAC<sub>144</sub>
- Geisha
- K<sub>7</sub>
- Lempira
- Mundo Novo 379/19
- Pacamara
- SL<sub>28</sub>

## Tolerant/Resistant

- Batian
- Catigua MG<sub>2</sub>
- Col<sub>1</sub>
- Col<sub>2</sub>
- Col<sub>3</sub>
- Col<sub>4</sub>
- EC<sub>15</sub>
- EC<sub>16</sub>
- Centroamericano H<sub>1</sub>
- IPR<sub>103</sub>
- IPR<sub>107</sub>
- Kartila 1
- Marsellesa
- Oro Azteca
- Parainema
- Paraíso
- Ruiru 11
- S<sub>4808</sub>
- S<sub>795</sub>
- SLN<sub>5B</sub>
- SLN 6



# Other Ongoing Activities

- Importation of varieties through USDA APHIS Controlled Import Permit
- Collaboration with World Coffee Research on breeding IP free material for Hawaii
- Working with Nestle to screen new coffee lines in Hawaii







## Other Ongoing Activities

- Collaboration with HARC to breed Catimor-based resistance into elite Hawaiian coffee lines
- Looking for local CLR varieties already in Hawaii





**February 2022**



**May 2022**





## CLR resistant lines in Hawaii

- CLR resistant lines are being genotyped by Dr. Zhang ARS Beltsville
- Lines have been vegetatively propagated
- Leaf tissue given to Dr. Mike Shintaku for mass propagation by somatic embryogenesis



# Resistance varieties are an important component of your IPM strategy but please continue to treat with fungicides

## First Report of *Hemileia vastatrix* (Coffee Leaf Rust) Physiological Races Emergent in Coffee Germplasm Collections in the Coffee-Cropping Regions of China

Le Li,<sup>1</sup> Vítor Manuel Pinto Várzea,<sup>3,4</sup> Qianfeng Xia,<sup>1</sup> Wei Xiang,<sup>1</sup> Tianle Tang,<sup>1</sup> Mengfeng Zhu,<sup>2</sup> Chunping He,<sup>2</sup> Ana Paula Pereira,<sup>3,4</sup> Maria do Céu Machado Lavado da Silva,<sup>3,4</sup> Weihuai Wu,<sup>2,†</sup> and Kexian Yi<sup>2,†</sup>

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*H. vastatrix* with high evolutionary potential has inevitably overcome the resistance of released coffee cultivars with increase virulence, thereby adapting to new hosts

... emergence of new *H. vastatrix* races occurs preferentially at germplasm fields due to the multiselection pressures from various hosts.



# Breeder for Coffee Leaf Rust-Resistant Coffee





# Acknowledgements



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**WORLD COFFEE  
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## Coffee Strategic Plan Variety

Chifumi Nagai

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Arturo Correa





# Mahalo!



Tropical Plant Genetic Resources and Disease Research Unit



Questions?

