

Coffee Breeding and Selection in Hawaii

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SUMMARY

A cooperative coffee breeding and selection program between Hawaii Agriculture Research Center and University of Hawaii supported by the Hawaii Coffee Growers' Association and the State of Hawaii was established in 1997. The primary objective of the program is to develop high-yielding, excellent bean and cupping quality cultivars with distinctive flavors adapted to specific growing conditions in Hawaii. Disease resistance and mechanical harvestability are also important criteria for breeding and selection of Hawaii cultivars. As the area under coffee cultivation expands and as airline and ship arrivals increase, we must anticipate the eventual arrival of serious diseases and pests. Cultivars currently grown in Hawaii are not resistant to coffee rust (*Hemileia vastatrix*) and newly found nematodes (*Meloidogyne konaensis*) in Kona.

A common orchard was established at a Kunia field on the Island of Oahu for the breeding program and includes 37 potentially elite trees selected from five coffee growing areas in Hawaii. The trees in the orchard were evaluated for tree morphology and cherry/bean characteristics. Characters included tree height, cherry weight and size. We made 160 crosses among these trees and rust resistant cultivars in spring 1999. About 1,500 progeny of this first generation (F1) of the progeny resulting from these crosses were planted in fields in 2000. These progeny will be evaluated in summer.