

Evaluating Performance of Coffee Cultivars in Hawaii Using Stability Analysis

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SUMMARY

Hawaii's coffee industry will increase 300% to 3000 ha from 1987 to 1992. Hawaii's historic Kona coffee district is planted to a *typica* land race, "Guatemalan" introduced one hundred years ago.

Eight on-farm cultivar evaluation experiments were established on former sugar cane fields designated for coffee beyond Kona. Results of cultivar response to different environments are reported as cherry yields over two years (first and second year harvested), green bean yield, green bean value (\$/kg), and value per tree. Stability analysis was employed to classify cultivars into four groups. These were high yield or value (above the experiment grand mean and stable response across environments, regression coefficient or slope, $b \leq 1$), above the mean but less stable ($b > 1$), less than the mean and stable response and lastly less than the mean and less stable.

The cultivars "Guatemalan", "Red Catuai", and "Kent" had the highest stable cherry yield. Cultivar differences for green bean yield and per tree value were large in the first year. Bean value based on 1989 prices for Kona coffee grades showed little cultivar or location response.