Trees for improving profitability, sustainability, and resource conservation on farms and ranches

Field tours Thursday, May 18 (Day 3)

1. Mealani Agricultural Experiment Station of the University of Hawai‘i has 30-year-old windbreak trials that we will tour. JB Friday and Milton Yamasaki will be the tour leaders.

2. Ninole Orchard
   John Mood, Owner
   Ninole, Hamakua, Hawaii
   E-mail: zingiber@warmlava.com
   Windbreaks, ground covers, diverse tropical fruits, palm heart (with on-farm processing), bamboo (see reverse side)

NINOLE ORCHARD

Ninole orchard was established in March 1989 on land that had been dedicated to sugarcane for over 100 years. The 35-acre property is bounded by two streams, one on the south and one on the north. There are approximately 29 usable acres of which approximately 25 are in cultivation. The land elevation extends from 350–550 feet. Rainfall average is 144 inches per annum. The soil is Hilo series—silty clay loam with 6–8 feet to bedrock. Acidity normally is pH 5.5.

Windbreaks surround most of the property. The following genera/species were planted starting in 1989: *Podocarpus falcatus* (syn. *Nageia falcatus*) although there has been some discussion that this is *Podocarpus gracilior*, *Eucalyptus torrelliana*, *Tabebuia pentaphylla*, *Andira inermis*, *Syzygium malaccense* (Brazilian cultivar).

Legume ground covers were established in most areas with mixed results. Initially, the oil palm ground cover mixture brought from Sabah, Malaysia was used for major erosion control. The three species mix was *Calopogonium mucunoides*, *Centrosema pubescens*, and *Pueraria phaseoloides*. This performed very well and was in use up to a few years ago in most areas. Oats were used as an immediate cover after any soil disturbance. *Achras pintoi*, *Vigna luteola*, *Desmodium ovalifolium*, and others have been tried, but with lack of intensive labor, have not become dominant over the grasses. Other legume covers such as *Crotolaria juncea*, *Cajanus cajan*, *Sesbania bispinosa*, *Stylosanthes guianensis*, and *Vigna hosei* have been tried. Remnants of these species can be seen at various places on the farm.

Initially, the horticultural plan was to establish a fruit tree orchard of rambutan, longan, lychee, avocado and other tropical fruits. In hindsight, that would have been an economic disaster. Luckily in 1992, I had the privilege of meeting, Mr. Charles Clement, a PhD student of Dr. Richard Hamilton at University of Hawai‘i. Charles ask if he could use two acres of the land for an experimental planting of *Bactris gasipaes* for palmito—palm heart. The results of his work are the foundation for the palm heart industry in Hawai‘i and the basis for our farm’s success. Charles is now the Director of INPA in Brazil.

Currently, Ninole Orchard’s primary crop is palm heart which we harvest 52 weeks/year. Although it is planted on only 6 acres of the 25, it produces 80% of our revenues. Other crops are avocados, limes, durian, meritam, rambutan, longan, pitaya, pili nut and a mix of other tropical fruit. Many of the fruit trees are from Borneo and are quite rare in cultivation. Five or so bamboo species are grown for timber with *Guadua angustifolia* var. *bicolor* being the most planted. Several species of Zingiberaceae are interplanted in the orchards for seasonal cut flowers. Additionally, there are over 100 ginger species for botanical research and about 50 aroids for the same purpose. About one acre is dedicated for *Bactris gasipaes* seed and fruit production. Seed is sold worldwide and fruit used locally. Some timber has been harvested, e.g., balsa, lychee, *Eucalyptus*, *Podocarpus*, and jakfruit. The next research crop soon to be planted will be black pepper from seed brought from Sarawak.

I hope you enjoyed the visit. Future inquiries can be made via email at:
zingiber@warmlava.com

John Mood, Owner
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