



# Cacao for Chocolate Update

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# Priorities for Cacao identified at 2008 Hawaii International Tropical Fruit Growers Conference

1. Lack of information on management of Chinese rose beetle.
2. Need for crop statistics.
3. What are costs of production?
4. Lack information on fermentation.
5. Lack information on costs of processing.
6. Lack information on overstory crops.
7. Need of information on raw food potential.
8. Need to determine origin of product.
9. Need regulations for labeling and branding



# 1. Lack of information on management of Chinese rose beetle.

Grant McQuate, USDA PBARC Hilo, published a successful deterrent to beetle feeding by using solar powered lights at fairly low light intensity starting at sunset. Beetles left illuminated trees.

Sevin maybe re-registered for CRB control on non-bearing cacao. Alternatively imidacloprid is more effective and an Special Local Needs label might be considered by HDOA. Azatin has cacao on its label for CRB.

The 1x 4 ft covered cages –open at top- we use have given good control for direct seeded and transplanted seedling.

We are evaluating Surround, a wettable kaolin clay, sprayed on the leaves to deter beetle feeding.



## 2. Need for Crop Statistics

Generally the Hawaii office of the National Agricultural Statistics Service gathers crops statistics. They are short on staff currently. But if petitioned by a grower group like the Hawaii Chocolate and Cacao Association HCCA they will respond.

I did a survey in late 2011 and identified 23 cacao farms. There was less than 100 acres planted on Hawaii, Kauai, Maui and Oahu.



### 3. What are costs of production?

Kent Fleming, Virginia Easton Smith and I developed and published a tentative cost of production publication and interactive spreadsheet. It is available for download from the CTAHR Publications page.

It is preliminary simply because there were so few farmers who had developed consistent production methods to measure accurately.



## 4. Lack information on fermentation.

Fermentation is a challenge in Hawaii for two reasons.

Cool temperatures, Hawaii is the North Pole for growing and fermenting cacao.

Our farmers frequently need to ferment small amounts less than 100 lb., which is very small world standards.

A presentation on harvesting and fermenting from our lab is posted on the HCCA website.

Seed should warmed to 80 – 85 F before being placed in fermenter. The ferment should be sealed initially to encourage the yeast to consume all oxygen to inhibit mold growth. Fermenter needs to maintain warmth generated- so raised off ground, not exposed to breeze, and use a long stem composting thermometer to monitor.



## 5. Lack information on costs of processing.

Our cost of production publication had only a small section on fermenting costs and nothing on roasting through bar production.

However there are now several small bean to bar manufacturers in Hawaii so that data can be gathered.



## 6. Lack information on overstory crops.

This has only been minimally addressed in part due to most cacao farms are unshaded to obtain higher yield.

We have experimented with a sterile haole koa. Gliricidia (Madre de Cacao) has not worked well for us.

Commercial banana is used as an overstory at planting and production.

For establishment we recommend protective cages that cost \$5-6 to build.



## 7. Need of information on raw food potential.

There are potential health hazards with eating dry unroasted seed if the pulp was not completely removed.

Yes there is a market with raw foodists.



8. Need to determine origin of product.

No progress.



## 9. Need regulations for labeling and branding.

The HCCA petitioned the HDOA in July to develop importation regulations for importing live cacao parts and dried bean which could harbor disease or pests.

HCCA has not taken up the issue of labeling and branding in great detail. This is important to address as we are already importing foreign beans and chocolate to cover Made-in-Hawaii products like cookies, macadamia, and coffee. Further most bean to bar companies now use foreign beans as Hawaii beans are in small supply and sometimes poor quality.

