

UNIVERSITY OF HAWAII AT MĀNOA

College of Tropical Agriculture and Human Resources

Department of Plant and Environmental Protection Sciences

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Subject: **Copper RED Comments on Mangoes**

The following comments are being submitted in response to the March 8, 2007 email messages regarding the use of copper fungicides on mangoes. These comments are being submitted on behalf of the Western Integrated Pest Management Center and provide input on the use of copper in Hawai'i.

Two questions were posed in the email messages:

- 1) Do you know what product(s) the mango growers use?
- 2) Does the proposed 30 day repeat application interval present a problem for the bloom period applications on mangos?

Responses:

- 1) Do you know what product(s) the mango growers use?

Growers in Hawai'i often select their product based on current availability. A product specifically mentioned is Kocide® DF. It is not known how frequently this product is actually selected.

Both the Dupont (EPA Reg. No. 352-688) and Griffin (EPA Reg. No. 1812-303) products are licensed for sale in Hawai'i. The label language on both products regarding mangoes seems to be quite similar, indicating application after fruit set. In Hawai'i, in a single orchard, or even on a single tree, small fruits and flowers are normally present at the same time. Therefore, distinguishing between a flowering period and a period of fruit set is an ambiguous distinction, at best.

Copper is used to control anthracnose (*Colletotrichum gloeosporioides*) and powdery mildew (*Oidium mangiferae*) on mangoes in Hawai'i. All parts of the inflorescence are susceptible to anthracnose. Powdery mildew is primarily a disease of flowers, young shoots, and young fruits. Fungicide applications are applied after the beginning of flowering.

2) Does the proposed 30 day repeat application interval present a problem for the bloom period applications on mangos?

Probably not. Despite some recommendations for applications as frequently as weekly, this practice has not been reported to our office. Where copper is applied, the normal practice is to alternate the copper product with another fungicide.

Information for these comments was contributed by extension staff of the College of Tropical Agriculture and Human Resources at the University of Hawai'i, and a representative mango grower.

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