

Coconut Rhinoceros Beetle, *Oryctes rhinoceros*

Coleoptera: Scarabaeidae

A Major Threat to Hawaii's Coconut and Palm Trees



Arnold H. Hara

University of Hawaii at Manoa

College of Tropical Agriculture & Human Resources

875 Komohana St. Hilo, Hawaii

E-mail: arnold@hawaii.edu

Coconut rhinoceros beetle (CRB)

Native range: Southeastern Asia (M. Schmaedick 2005 Am. Samoa)

- *CRB was introduced throughout the Pacific primarily due to increased sea traffic during World War II.
- *Most recently, CRB was discovered in Guam in September 2007.
- *Primary damage is caused by adults boring from the petioles of fronds into the crown, cutting through developing leaves, and feeding on the exuded sap.
- *The beetle breeds in dead, standing coconut palms killed by pest/disease/ lightning, and in decaying organic materials, such as compost and sawdust heaps. (Bedford, 1980).
- *Eggs hatch in 8-12 days; larvae feed on decaying coconut/palm debris for 82-207 days.
- *Prepupal and pupal stage is 25-35 days; adult remains in the pupal cell for 17-22 days.
- *Adults live for 4-9 months; each female lays 50-100 eggs.



Coconut rhinoceros beetle (CRB) - Damage Symptoms

**Primary damage is caused by adults boring from the petioles of fronds into the crown, cutting through developing, unopened fronds, and feeding on the exuded sap.*

V-shaped cut on open fronds.

Similar to mechanical pruning damage to unopened fronds



Active adult boring hole in petiole causing "wet look"



Active adult boring hole thru petiole



Coconut fibers resulting from adults' boring



**DAMAGE TO EMERGING FROND ON
FOXTAIL PALM**



**EXPOSED COCONUT FIBER
CAUSED BY BORING**



Area attacked by adult beetle



Site of old adult boring hole



Adult boring hole thru frond petiole



Site of old boring holes in trunk



Symptoms of CRB attack: V-cuts with associated lateral boring thru fronds



Semi-circular damage caused by boring through folded new terminal growth



Major breeding site among coconut trimming debris - Asan, Guam



Major Breeding Site with all CRB stages - Asan, Guam



Asan Beach, Guam



Dead coconut
tree with CRB



Adults and
grubs found
in rotting
coconut trunk
terminal





Most Efficient CRB Trap in Guam

- 50 gal steel barrel filled with rotting coconut debris, live CRB, grubs and aggregation pheromone.
- Ultraviolet LED light over trap.
- Chicken wire allows CRB to enter but not fly out (with spread wings).



(Moore & Quitugua, pers. com. 09/13)





hooded vane trap



UV LED light plus pheromone increase trap efficiency (Moore & Quitugua, pers. com. 09/13)

Trap with chicken wire instead of vane



Traps with CRB pheromone



Rotting coconut stumps placed beneath trap with CRB pheromone increases trap efficiency

