

Coconut Rhinoceros Beetle Outbreak on Guam Triggered by Typhoon Dolphin

Abundant new breeding sites in the form of decaying vegetation left in the wake of Typhoon Dolphin which passed over Guam in May 2015 has initiated an island-wide CRB population explosion. It is feared that this population explosion is self-sustaining, whereby adults kill mature palms, creating even more breeding sites which generate even more adults which kill even more palms.

Since the 1960s, CRB outbreaks initiated by typhoons and large scale agricultural operations have been mitigated using a density-dependent biological control agent, *Oryctes nudivirus* (OrNV). This virus typically reduces CRB damage by up to 90% within months of introduction. It spreads naturally through the CRB population and control lasts for decades. After initial attempts to introduce OrNV on Guam failed, it was discovered that the Guam CRB genotype is resistant to all OrNV isolates currently in culture.

Marshall et al. (2015) suggested that CRB attacking Guam's palms should be considered as a distinct biotype. In addition to being genetically different from other Pacific island CRB populations, the Guam biotype (CRB-G) is resistant to currently available isolates of OrNV and it appears to be more invasive than other biotypes. For 30 years prior to detection of CRB on Guam in 2007, there was no recorded range extension for this pest. Since 2007, new CRB infestations have been recorded in Oahu, Hawaii, in the Port Moresby area of Papua New Guinea, in the Honiara area of Guadalcanal, Solomon Islands. These new invasions all involve CRB-G. In addition, CRB-G has been found in Palau, which has had CRB since WWII.

Pacific entomologists are worried that failure to respond to the CRB-G threat will result in losing 50% or more palms on Guam and other infested islands and rapid spread of this pest throughout palm growing areas of the world (Jackson 2015, Vaqalo et al. 2015, Moore 2016). The 22 Pacific island countries and territories represented at the Pacific Plant Protection Organization meeting in Fiji during September 2015 approved a resolution requesting assistance from the Pacific Community to help organize and find funding for a regional project to address CRB-G. The major goal of this project will be to find an effective biological control agent for CRB-G, especially OrNV from the native range of CRB-G.

References

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