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Detection of the Guam Biotype (CRB-G) Oryctes rhinoceros Linneaus (Coleoptera: Scarabaeidae) in Port Moresby, Papua New Guinea

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Oryctes thinoceros L is an important pest of coconuts and oil palm. The damage to palms is primarily caused by adult beetles. They either cut through the frond butts or bore through the palm bases with their forelegs and feed on the inner soft tissues. A strain of Oryctes NudiVirus (Rhabdionvirus oryctes) was identified from Malaysia in the 1960s and used effectively for classical biological control of the pest. However, in 2007 a more destructive population of the beetle was found in Guam. Molecular analysis confirmed its genotype to be different from that of the common population and also to be resistant against NudiVirus infection. The new population has subsequently been referred to as the Guam biotype (CRB-G) whilst the common type has been referred to as the Samoan/Pacific biotype (CRB-S/P). In 2010, similar damage was noted on coconuts in Port Moresby, National Capital District, Papua New Guinea. Sympatric occurrence of both CRB-G and CRB-S in National Capital District with no NudiVirus infection on CRB-G has been confirmed. CRB-G has been found to be less responsive to the aggregation pheromone (ethyl 4-methyloctanoate) used for monitoring and control of O. thinoceros. Only CRB-S is found in East New Britain, New Ireland and West New Britain with NudiVirus infection. Widespread severe damage was observed in National Capital District and Central Province, whilst severe damage in New Ireland, East New Britain and West New Britain were localised in areas with readily available breeding sites. Light damages were noted in some areas of Milne Bay, Northern and West New Britain Provinces, but most areas were free of damage. The results are discussed in relation to the impact CRB-G is likely to have on the palm industries in Papua New Guinea if no effective control options are put in place.

Keywords: Coconut, oil palm, biological control, Rhabdionvirus oryctes, defoliation.

