



Bug of the week



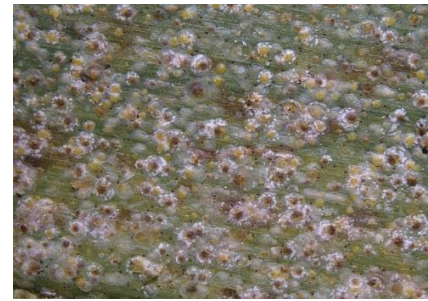
The Coconut Scale (*Aspidiotus destructor*) is a nasty pest that is spreading around Rarotonga and heavy infestations of scales have killed some trees. Symptoms include yellowing of older leaves that eventually turn brown and die. The scale insects excrete honeydew, a sugary liquid that is loved by ants. If not harvested by ants honeydew drips on plant leaves and is attacked by sooty mould which turns leaves black, reducing photosynthesis. The Fijian white-footed ant (*Technomyrmex vitiensis*) feed on the honeydew from the coconut scales and in return protect them against natural enemies like ladybirds. This results in as many as 500 ants travelling up and down coconut tree trunks in one minute.



Coconut scale insect infested tree



Coconut scale infested leaves



Female scales are round to oval in shape, 1.5-2.0 mm wide, and begin translucent but develop to brown with a black cap. Males are about half the size, reddish, and can fly. Scales are mostly found on the underside of leaves. Contrary to its name, the coconut scale can live on a large number of species including: breadfruit, camellia, capsicum, kapok, coconut, pawpaw, cinnamon, citrus, taro, cucumber, yam, oil palm, eucalyptus, fig, rubber, hibiscus, nutmeg, tomato, frangipani, mango, banana, pandanus, passionfruit, avocado, black pepper, kava, peach, radish, guava, sugarcane, nightshade, clove, tamarind, cocoa, grapevine, ginger and cowpea. Coconut scale infestations cause leaves to turn yellow then to brown and eventually drop off. Bad infestations will kill coconut trees, especially where ants are present in large numbers and deterring ladybird colonisation. Infested leaves should not be used to cover taro as this may result in spreading the problem. They can be removed and safely burnt and/or buried at same location. Selective horticultural oils, D-C-Tron and Neem oil (available for purchase at Ministry of Agriculture) may be used to control scales on younger, lower trees. Taller trees are harder to mist spray, so a cherry picker or an expert tree climber is needed for them. The use of more toxic insecticides such as organophosphates is not advised as they will kill the natural enemies such as the two specialist scale-feeding ladybirds *Chilocorus nigritus* and *Chilocorus circumdatus* that are doing their best to control the coconut scale in Rarotonga.



Scale feeding specialist predators *Chilocorus nigritus* (left), *Chilocorus circumdatus* (centre) and larva (right)

Chilocorus circumdatus were released on to Pukapuka in 2009 and successfully controlled a coconut scale outbreak. However, the Fijian white-footed ant is the point of difference in Rarotonga and efforts to reduce ants on trees include putting a ring of tacky grease barrier around the trunks and applying ant bait above the barrier to kill the ants in trees.

