

Bait Shy Rats, a New Bane to Oil Palm Planters

Management of rats in oil palm includes the combination of ecological, cultural / agronomic measures, biological and chemical controls. Most of these measures are being practiced in oil palm plantations without fully realising its impact on rat population. For long-term biological control, the setting up of barn owl nest boxes at one unit per 10 ha and carefully monitoring the owl population by regular assessment on nest box occupancy rates are carried out. These are preventive control measures and plantation personnel must be vigilant to assess their effectiveness. When these measures fail to keep rat population low and prevent serious damage, chemical control *via* rat baiting has to be carried out to keep low rat population and thus ensuring minimum damage to crop. By far, rat baiting to control rat infestation in oil palm plantations is most widely practiced and proper implementation results in good, efficient, cost-effective rat control.

Bait shy *R. tiomanicus* (Malayan field rat, Malaysian field rat or Malaysian wood rat), a biotype which does not accept commercial wax baits, has been detected in an oil palm estate in East Coast, Johore, Malaysia about the beginning of twenty-first century and barn owl population has been encouraged by setting up nest boxes progressively over the last 9 years up to the intensity of one unit per 4 ha oil palm planting. However, the barn owl population is moderate (indicated by occupancy rate of the nest boxes), and there is no effective control of bait shy *R. tiomanicus* population and damage to fruit bunches on palms are still high. Recently, the manager has initiated dog assisted rat hunting. Contrary to commonly recommended biological rat control using barn owl, increasing

publications have reported its ineffectiveness in the control of bait shy *R. tiomanicus*. Moreover, barn owl population augmentation had not resulted in the desired level of control of *R. r. diardii* (non bait shy biotype) in oil palm plantations in Central Kalimantan. What are the possible causes of failures in biological control by augmenting barn owl population (by introduction of nest boxes)? There is an urgent need to evaluate the situation in full and possibly look into other biological control agents, for example, encouraging monitor lizard (*Varanus salvator*) population which could contribute to biological control of rats in oil palm plantations.

A bait shy rat species known as *Sundamys muelleri* (Swamp Giant rat, Muller's rat, Muller's Sundamys, Muller's Giant Sunda rat) is present in an oil palm plantation in Miri, Sarawak, Malaysia. At present, the hard pressed manager is carrying out intensive mass trapping of rats using wire netting cages. Similarly, *S. muelleri* was reported earlier to be bait shy to local wax baits in oil palm plantations in Belitung Island and Bangka Island, Indonesia. Shooting at night is being carried out to reduce rat population and damage. The plantation in Bangka Island has also carried out successful captive breeding of barn owl and release into field which has nest boxes set up. However, occupancy rate has been poor and thus rat damage on palms is not abated. In another incidence, *S. muelleri* was the main rat species in oil palm plantation near Sampadi, Kuching, Sarawak. It was successfully controlled using in-house product (bromadiolone wax baits). Currently the severe damage caused by bait shy rat, *S. muelleri*, may be confined to a few isolated instances but what assurance is there that this will not spread?

Thus there is an urgent need to understand the biology, habitat, nutrition, etc. of *S. muelleri*, especially the bait shy biotype in order to better understand and formulate control measures.

In both cases, oil palm plantations facing infestation of bait shy *R. tiomanicus* or *S. muelleri*, will incur higher crop losses due to less effective control measures and higher

expenditure due to more intensive usage of equipment and labour.

Chung Gait Fee

Note:

Also refer to article on "Hunting and Trapping to Control Bait Shy Rats" (pp. 267-272).

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