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## **Preliminary Investigations on the Infestation of Swamp Giant Rat, *Sundamys muelleri* (Jentink), Muridae, Rodentia in an Oil Palm Estate, Miri, Sarawak**

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Severe rat damage was reported in an oil palm estate on peat soil near Miri, Sarawak. Fruit bunches and post-anthesis male inflorescence (PAMI) in mature plantings were attacked by rats. The main rat species was identified as *Sundamys muelleri* from the many rats provided by the estate and rats found during the present investigation [hunting, trapping in catch-mark-release (CMR) study]. Two other rats killed during hunting were identified as *Rattus tiomanicus*. In the short two days period, the preliminary investigations (including training of young agronomists) covered hunting, CMR study, damage assessment and bait acceptance study. The stomach content of *S. muelleri* was mainly yellowish mesocarp material. The activity signs in the field were loose fruits under tree stump, burrows, tunnels and runways. In the CMR study, the trapping success was 35 per cent. The estate also reported 50 per cent success in rat trapping. Ripe oil palm fruit was an effective baiting lure placed in the drop door cages. There were 21 rats trapped in the CMR study; three rats weighed more than 300 g, ten rats more than 200 g, five rats more than 100 g and three rats less than 100 g. Among the 18 rats successfully marked and released, six were males, eight were females and four juveniles. These records and findings indicate that a healthy breeding population existed in this area. The palms with fresh damage in the CMR study area was found to be 30 per cent. In another section of the same 14-year-old planting, percentage fresh damage was found to vary from 4 per cent to 28 per cent, indicating rat damage, possibly rat number, is not evenly distributed in the large oil palm planting. In bait acceptance study, ripe oil palm fruit recorded 88 per cent acceptance and the five wax baits recorded 10 per cent or less acceptance (results of 1 day exposure). One of these wax baits was attractive to bigheaded ants (*Pheidole* sp) and another wax bait was highly attractive. These ants were seen in large numbers and actively feeding on some of the wax baits. The poor bait acceptance and interference by ant feeding could be the main causes of failure in the estate baiting campaign. Measures to deal with bait shyness in rats (in this case *S. muelleri*) include a series of testing and searching for attractive materials for bait formulation, acceptance and bioefficacy of new bait formulations, baiting trials and baiting technique trials.

**Keywords:** *Sundamys muelleri*, oil palm, rat baits, bait shyness, control measures, bigheaded ant (BHA).