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# A Study of Rat Species, Their Populations and Crop Damage in Mature Oil Palm Plantations in Central Kalimantan

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*Rats are the most important amongst the many vertebrate pests of oil palm. They occur in nurseries, immature and mature oil palm plantation areas and can cause substantial economic losses to the plantations. A study was conducted to determine the species and population of the rats as well as to assess the crop damage in a mature oil palm area in Central Kalimantan province. Five study plots were established at randomly selected fields in five oil palm estates and the rat populations were estimated using the 'catch, marked and recapture' (CMR) technique. The house rat, *Rattus rattus diardii*, was the only rat species found from live-trapping using wire mesh drop door traps. Using the CMR technique, the population of the *Rattus rattus diardii* was estimated; it ranged from 185 to 718 rats per hectare among the five trapping plots. The average rat population was 384 rats per hectare over the five estates. The percentage of palms with fresh rat damage on fresh fruit bunches (FFB), ranged from low to moderate, i.e. 5 – 15 per cent. Generally, it was observed that high rat population amounted to high number of palms with fresh damage on FFB. The potential crop losses were calculated for the five estates and it ranged from USD 201.48 to USD 779.64 per hectare per year. At the average potential crop loss of USD 417.42 per hectare per year, the combined potential loss for the five estates with a total area of about 20 000 ha amounted to USD 8.35 million. This study also indicated that the house rat, *Rattus rattus diardii*, was the sole rat species found to be well established in the mature oil palm plantation areas of Central Kalimantan. Side observation from this study indicated that barn owl population augmentation did not result in the desired level of rat control. Hence, the need for a pragmatic integrated approach incorporating both judicious rat baiting together with biological control of rats using barn owls.*

**Keywords:** *Oil palm, rat species, rat population, catch, marked and recapture (CMR), *Rattus rattus diardii*, crop losses.*

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