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Application Methods of Coumatetralyl Baits to Control *Rattus rattus diardii* in High Infestation Areas

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*The most widely practiced method of rat control in oil palm plantations is by baiting with anticoagulant rat poisons. Two experiments were conducted to study the efficacy and susceptibility of first-generation anticoagulant rat bait, coumatetralyl (0.375%) to control *Rattus rattus diardii*.*

*In the first experiment, a laboratory trial was conducted to test two commercial coumatetralyl 0.375 per cent rat baits (5 g and 6 g) and one brodifacoum bait (5 g) in comparison with an untreated control. All the three baits provided excellent kill of *Rattus rattus diardii*. The results indicated that, *Rattus rattus diardii* from the locality of Sampit in Central Kalimantan was susceptible to first-generation anticoagulant of coumatetralyl and coumatetralyl baits were highly palatable. The laboratory findings prompted to evaluate the efficacy of first-generation bait in the field.*

*The second experiment was conducted in an 18-year-old mature oil palm field to evaluate coumatetralyl rat bait in three baiting treatments to control high rat infestation with high fresh damage (18%; 12%; 15%; 17%) of *Rattus rattus diardii*. The coumatetralyl wax bait was evaluated with one bait per palm (replacement at 4 days interval), three baits per palm (replacement at 7 days interval) and five baits per palm (replacement at 7 days interval); and an untreated control treatment was included. All the three baiting treatments provided successful control of rats and reduced the rat population to a negligible level. The standard baiting treatment required nine baiting rounds. The three baits per palm and five baits per palm treatments needed eight and five baiting rounds respectively. The fresh damage on fresh fruit bunches (FFB) in all the three treatments were observed to have reduced from high level to 0 per cent. The first-generation coumatetralyl anticoagulant bait was effective for the control of *Rattus rattus diardii*.*

Hence, it is good approach to use the first-generation baits (for example coumatetralyl bait) in susceptible rat population areas until such time the change to second generation rodenticide bait is required. Placements of more baits required fewer baiting rounds but may result in over application of baits which lead to high cost. Therefore, multiple bait application is not recommended for routine baiting campaigns. It is relatively an interim measure for quick reduction of rat populations especially in high infestation areas.

Keywords: Oil palm, high rat population, baiting, first-generation anticoagulant, coumatetralyl, *Rattus rattus diardii*.