THE USE OF THE BARN OWL AS A BIOCONTROL AGENT*

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INTRODUCTION

The human race is becoming more aware every day of the need to take care of the environment, and in the oil palm industry, environmental and economic considerations have not been ignored. Since the industry is part of the plantation sector, naturally work pertaining to environmental matters begins in the field, the case of rat control being an example.

RAT CONTROL IN OIL PALM

Rats (*Rattus sp.*) are the main vertebrate pest in oil palm and it is normally necessary to control them throughout the whole life-span of the trees. Damage to FFB by rats has been substantial at times, amounting to as much as 240 kg/ha/year or 6% of the nation's annual production (Wood and Liau, 1978).

The most widely practiced method of rat control is baiting, mainly using anticoagulants (Basri and Halim, 1985). This method is the most practical, convenient and effective, to date. However anti-coagulants have their disadvantages. Resistance to Warfarin (a first-generation anticoagulant), has emerged sporadically in Malaysia (Wood, *et al.*, 1989). In the area where this occurs 'second-generation' anticoagulants need to be applied for control to be effective. However, a lot of concern has also been expressed about the effects of these second-generation' anticoagulants on non-target species (Duckett, 1984, 1986).

THE BARN OWL (*Tyto alba*) AS A BIOCONTROL AGENT

This avian species began to attract serious consideration in 1986 after PORIM initiated a large-scale trial to study its potential as a rat control agent (Smal, 1989). The main objective at first was simply to cut the costs of rat control, on which Malaysia had been spending about $17.0 million a year (Basri and Halim, 1985).

Using artificial nest boxes as the principal management tool, a population of barn owls can be built up. The birds use these structures for breeding. The results from the PORIM studies showed very encouraging prospects for the use of barn owls in rat control. In the absence of baiting, damage to FFB by rats was reduced to an economical level of less than five percent. In areas baited with Warfarin, the number of baiting rounds necessary also dropped substantially (Smal, 1989). It appears that, with proper management, this natural predator of rats can be exploited to benefit the oil palm industry.

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FUTURE OF BARN OWLS IN OIL PALM

The future looks bright, since more palm oil plantation agencies have made it a policy to start their own barn owl propagation programmes.

It is reasonable to hope that such programmes will reduce the development of resistance to anti-coagulants as well as the side-effects of their use, and that this biological control method will reduce costs.

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