Relative Efficiency of Two Live Traps in Capturing Small Mammals in Coconut - Cocoa Mixed Habitat*

Live trapping technique is most widely used in ecological observations of rodents, especially on population fluctuation, movement and dispersal, persistence of individual sand home range estimation. White et al. (1982) provided a comprehensive review of literature on this method. The trappability of individual species varies considerably depending on the type of trap used (Spillett, 1968; Wiener and Smith, 1972; Pelikan, Jan and Holisova, 1977).

In India, two single catch live traps, *viz.*, wooden and Sherman are commonly used for collecting small mammals. The former function when the bait hook (treadle) is displaced, whereas the latter function by the weight of the animal. The main objective of this study was to determine the best live trap for accurate sampling of small mammals infesting coconut-cocoa mixed cropping system.

The effectiveness of wooden (30 × 12 × 11.5 cm) and Sherman (23 × 7.5 × 9 cm) live traps in sampling small mammals was studied in five coconut-cocoa mixed gardens (0.3 to 1.2 ha) around Kasaragod from January 1985 to March 1986. Twenty to sixty trap points at a distance of about 3.2m were selected in each plot depending on its size. At each bait point, both the types of traps were set, one type on the branches of cocoa and the other on the ground. At alternate bait point the location of the type of trap was changed between branch and ground so that both the arboreal and ground dwelling animals would have access to both the types of traps equally.

Trapping was carried out using coconut kernel as bait for ten consecutive days in each plot and repeated once in three to four months. Traps were examined every day and the animals removed to laboratory for further observations. The effective trap days were calculated by applying the correction procedure (Spillet, 1968). During the period of the study each garden was surveyed four times.

Altogether the traps were set for 5,800 trap days. However, the effective trap days for wooden and Sherman live traps were calculated to be 5303.5 and 5506.5, respectively. During this period a total of 540 specimens of small mammals (Table I) belonging to six different species were collected. The number of black rat (*Rattus rattus wroughtoni* Hinton) and the house rat (*R. r. rufescens* Gray) trapped in wooden traps were found to be significantly more than those trapped in Sherman traps. On the contrary, the number of Indian field mouse (*Mus booduga* Gray) and the Indian musk shrew (*Suncus murinus* Anderson) were found to be significantly more in Sherman than in wooden traps. The Western Ghat squirrel (*Funambulus*

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Table I. *Number of different species of small mammals in wooden and Sherman traps*

Species	Number caught in wooden traps ground	branches	total	Sherman traps ground	branches	total	X^2 (1) between traps
R. r. wroughtoni	35	168	203	14	68	82	41.4**
R. r. rufescens	5	16	21	2	5	7	7.0*
F. tristriatus	3	14	17	2	12	14	0.3
V. oleracea	0	25	25	1	34	35	1.7
M. booduga	7	0	7	115	0	115	95.6**
S. murinus	2	0	2	12	0	12	7.1*

* Significant at P = 0.01 ** significant at P = 0.001

tristriatus Waterhouse) and the long tailed tree mouse *(Vandeleuria oleracea* Bennett) did not show any specific preference between the wooden and the Sherman traps.

The body weights of animals trapped in Sherman live traps were found to be significantly less (P=0.05) than the body weights of those trapped in wooden live traps. When the animals were grouped into different weight classes it was observed that the Sherman traps collected significantly more (P=0.01) number of animals than wooden traps in 20gm or less weight class. On the other hand, wooden traps collected significantly more (P=0.05) number of animals than Sherman traps in more than 60 gm category. Similarly, Advani (1984) reported that wooden and Sherman traps preferentially trapped adult and subadult populations of *R. rattus*. Spillet (1968) also found that Sherman traps were effective in trapping smaller rodents such as house mouse *(M. musculus)* but ineffective for larger rodents.

The poor catch of *M. booduga* in wooden traps was attributed to lower treadle sensitivity in these traps. The force exerted by *M. booduga* while eating the bait in wooden trap was too weak to trigger the lever. The Sherman traps, on the other hand, close even at a weight of 10g or less (Advani, 1984). Further, the wire spacing on some of the wooden traps was too wide and, as such, small animals could escape easily.

Out of 540 specimens of small mammals, 331 were collected on the branches and 209 on the ground. On the branches, wooden traps collected significantly more (P=0.001) number of small mammals than Sherman traps, whereas on the ground level, Sherman traps collected significantly more (P=0.001) number of small mammals than wooden traps. The presence of more number of *R. r. wroughtoni* on the branches (69.0%) and *M. booduga* and and *S. murinus* on the ground (68.0%) was the main reason for such difference in the effectiveness between traps.

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Studies on Cold Storage of Tea Seed

In north-east India tea seed bearers flower during October–January and tea seeds are ready the following cold weather. Tea seeds remains viable for a short period after harvest and are planted within a month of harvesting.

Preliminary trial on cold storage of tea seed was done in 1984–85 cold weather. The trial gave encouraging result. This experiment was done in 1985–86 cold weather with seeds collected in end October, 1985. Seeds were tested using sinker–floater test and floaters were rejected. Sinkers were treated with Seed Tox (PMA) @ 30 gm/10 kg seed and packed in 10 kg polythene bags and then covered with

Table I. *Germination of tea seed*

	April	May	June	July	August
Date–seed taken out	9/4	13/5	13/6	11/7	9/8
Date–90% germination completed	25/4	28/5	30/6	1/8	24/8
Per cent sinker seed by weight	97	92	92	97	90