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Food intake in three Asian Muridae

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Diversified food habits enable rodents to survive in numerous habitat types. Rats eat virtually any human foods available and many species have evolved food hoarding behavior to increase survival during periods of food stress.

Much research has been documented on rodent food habits and caching behavior (Fulk, 1977; Poché *et al.*, 1982; Barnett and Prakash, 1975). Little information has been reported on rodent food intake in relation to animal body weight. As part of a rodent control research program in Bangladesh, various aspects of rodent behavior are being explored to develop efficient means of reducing field rat damage. The objective of this study was to obtain quantitative data on food ingestion in the lesser bandicoot rat (*Bandicota bengalensis*), the greater bandicoot rat (*B. indica*), and the roof rat (*Rattus rattus*) with respect to body weight of the animals. These data are of particular importance in determining the amounts of treated baits to apply in fields with knowledge of approximate rat densities. The consumption rates also give an indication of approximately how many rodents fed on treated baits provided at bait stations over a given time period.

Five males and five females of two species (*B. bengalensis* and *R. rattus*) and two male and three female *B. indica* were used for this study which was conducted in the Vertebrate Pest Research Center laboratory, Joydebpur, Bangladesh. Each rat was weighed to the nearest 0.1 g at the beginning and end of the study and the mean weight used in the analysis. Thirty grams of crushed laboratory pellets were provided to each rat in spill-proof cups on a daily basis for 4 days. The amount of food consumed was recorded each day for all animals. A curvilinear regression analysis was used to examine for correlations between the average daily food consumption as a percent body weight (Y) and the weight of the animals (X).

The average daily food consumption rates in relation to animal body weight are shown in Figure 1. Heavy rats consumed a smaller percentage of food in relation to body weight. The converse was observed with smaller rodents consuming more food per gram of body weight.

Daily consumption rates for *B. indica* were 15.6% in young rats (131.9 g) and 0.55% for a 731-g rat. Food consumption varied in the lesser bandicoot rats from 5.6% (220.2-g rat) to 2.7% in a 309.4-g individual. Sagar and Bindra (1976) reported an average consumption of 14.4 g daily. Other estimates from the literature show daily intake range from 4.5 to 18 g/rat/day (Brooks *et al.*, 1981). Pingale *et al.* (1967) reported daily consumption rates for *B. bengalensis* as only 8% of the body weight.

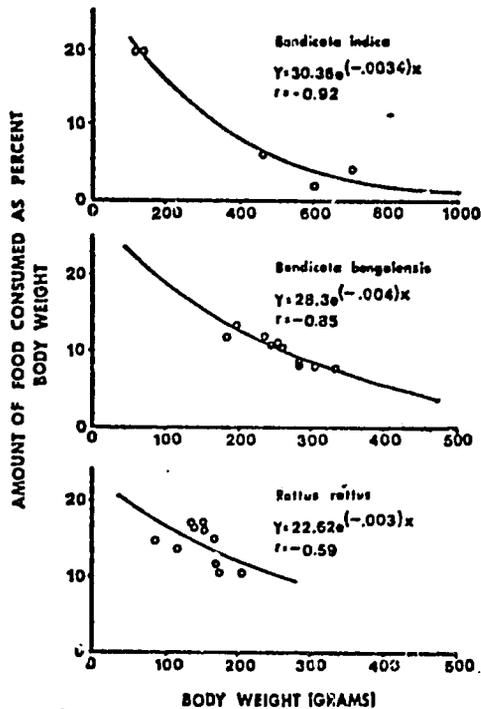


Fig. 1. — A curvilinear regression analysis used in correlating daily food consumption in three rodent species in relation to body weight.

In *R. rattus*, daily consumption of food was 19.8% of the body weight for a 76.6-g animal, but only 5.4% in a 205.4-g rat. Leslie and Ranson (1954) observed food consumption as dependent upon the weight of rats and the mean daily consumption rate varied from 7.8 to 21% of the body weight. Majumdar *et al.* (1966) reported *R. rattus* consumed food equivalent to 20% of its body weight for young animals but only 10% for mature individuals.

The curvilinear regression analysis showed the relationship between food consumption and body weight was significant in *B. indica* with a correlation coefficient of  $r = -0.92$  ( $P < 0.05$ ) and  $r = -0.85$  ( $P < 0.05$ ) in *B. bengalensis*.

For *R. rattus*, however, the differences were not significant ( $r = -0.59$ ,  $P < 0.5$ ). This would imply that consumption of food is more variable with respect to body size in the roof rat and less variable in the bandicoot rats.

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**Observations sur les rongeurs de l'île Salina (îles Lipari,  
prov. de Messine, Italie)**

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Dans la deuxième moitié du mois d'août 1981, quelques rongeurs ont été collectés dans l'île Salina (26,8 km<sup>2</sup>, deuxième île par ses dimensions de l'archipel des Eoliennes, aussi appelées îles Lipari, du nom de la principale d'entre elles).

— Localité Pollara (mairie de Malfa, village agricole): *Mus musculus* L.: 2 ♂, 5 ♀; *Rattus rattus* (L.): 1 ♂ (habitus *alexandrinus*), 1 ♀ (habitus *frugivorus*).

— Localité Fossa delle Felci (962 m au-dessus du niveau de la mer; cratère volcanique éteint boisé à fougères aigles, genêts, bruyères, arbousiers, etc.): *Mus musculus* L.: 1 ♀; *Rattus rattus* (L.): 1 ♂ (habitus *alexandrinus*), 1 ♀ (habitus *frugivorus*).

— Localité Portella (mairie de St. Maria Salina): *Glis glis* (L.): 1 ♂ (trouvé écrasé sur la route de St. Marina Salina-Malfa).

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