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Grasscutter production: an example of rational exploitation of wildlife

F. JORI[1]*, G.A. MENSAH[2], and E. ADJANOHOUN[3]

[1]*Projet Elevage de Petit Gibier, 'Vétérinaires Sans Frontières', Ministère de la Cooperation Française, B.P. 20423, Libreville, Gabon*

[2]*Unité de Recherche Zootechnique de Vétérinaire, INRAB B-P 804, Cotonou, Bénin*

[3]*Institut de Sélection Animale (ISA), Le Foeil, B.P. 169, 22800 Quintin, France*

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Grasscutters or cane rats (*Thryonomys* spp.) are widely-distributed and valuable animals in West and Central Africa. Research has been carried out over the past 15 years to select and improve stock in order to improve their adaptability to a restricted life in captivity and to develop rearing programmes in rural and peri-urban areas of Africa. The biology of these rodents and the current status of grasscutter production are reviewed. The cultural and nutritional value of grasscutter meat, compared with that of other domestic animals, is underlined. Diverse economical, nutritional and environmental arguments for implementing grasscutter rearing in rural development programmes in Africa are listed and a method to develop grasscutter farming in any given country is suggested.

Keywords: grasscutter production; nutritional value; biology; rural development

Introduction

Among types of bushmeat consumed by Africans, the meat of the cane rat or grasscutter (*Thryonomys swinderianus*) is particularly appreciated in West and Central Africa (Asibey, 1974a, b; Martin, 1985; Kyle, 1987; Van de Velde, 1991). Trials of intensive grasscutter farming initiated in 1985 by the Bénin-German grasscutter rearing project (PBAA) in Bénin yielded such interesting results that a programme aimed at the introduction of grasscutter rearing through pilot farms among Béninese peasants started in the south of the country (Mensah, 1991; Adoun, 1992a). In the meantime, studies have been carried out on the ethology of this species (Codjia, 1985; Holzer *et al.*, 1985), feeding, pathology (Akomédi, 1988), selection systems (Senou *et al.*, 1992), reproduction (Adjanohoun, 1988, 1992a, b) and the technical feasibility of grasscutter farming at peasant level (Adoun, 1992a). Several other African countries have also initiated trials on grasscutter rearing with varying degrees of success.

The commercial production of grasscutters could help to conserve this species in countries where it is irrationally overhunted and might also protect savannah habitats that are threatened by bushfires organized during small bushmeat-catching operations (Mensah, 1991; Ganmavo, 1992). Furthermore, grasscutters appear to be readily available and are culturally better accepted as a source of protein than many domestic livestock.

*To whom correspondence should be addressed.

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Distribution and biology of the grasscutter

The grasscutter is, after the African porcupines of the genus *Hystrix*, the largest of all African rodents (Delany and Happold, 1979). It belongs to the suborder Hystrocomorpha, family Thryonomydae. This family consists of only one genus, *Thryonomys* (classified at times in the literature as *Aulacodus* or *Choeromys*) and encompasses two species: *T. sinderianus* (Temminck, 1827), the giant cane rat, and *T. gregorianus* (Thomas, 1894), the small cane rat. This classification has been determined on the basis of the size difference, the coat and the skull dimensions. However, it remains uncertain as to whether they are really two different species (Rosevear, 1969). The giant cane rat is present throughout tropical Africa above the 15th Northern parallel. Its natural habitats are the Sudanese and Guinean savannahs. It has been described from all over West Africa from Senegal to Nigeria (Adoun, 1992b) and in Central Africa from Cameroon to Zambia (Ansell, 1966; Adjanohoun, 1988; Van de Velde, 1991). The grasscutter has a thickset body, measuring 40–60 cm in addition to a 20–25 cm tail. Its average weight is between 2–4 kg in females and 3–6 kg in males. Its fur colour is a mixture of brown, reddish-brown and grey depending on habitat. Some individuals have a black, whitish or brown coat. The belly, the throat and the snout are covered by paler and softer fur. Its dentition consists of 4 incisors and 16 molars and the dental formula is:

$$\frac{1I+OC+4M}{1I+OC+4M}$$

The offspring are born with four incisors and are not replaced during maturation (Adjanohoun, 1988). These teeth grow continuously (Mensah *et al.*, 1992), and the animals need to grind them against each other or gnaw solid materials to prevent overgrowth. The grasscutter is a monogastric herbivore which is easy to feed in captivity although it wastes much of its food. The diet consists of green forage such as *Penicetum purpureum*, *Panicum maximum*, hay, cereal grains, leguminous plants and agro-industrial by-products; drinking water is given *ad libitum*. In common with the rabbit (*Oryctolagus cuniculus*) and other rodents it is a good food converter and practises coprophagy (Holzer *et al.*, 1986).

The gestation period is 5 months. It is able to breed throughout the year (Asibey, 1974b), and two litters consisting of 2–6 youngsters can be produced annually (Mensah and Baptist, 1986; Adjanohoun, 1988, 1992a, b; Mensah, 1991).

Grasscutter production

Despite some unresolved aspects of management, the technical feasibility of grasscutter production has been amply demonstrated, and nowadays there is a selected breed of animals that is adapted to captivity (Senou *et al.*, 1992). A pre-extension programme for grasscutter production in rural areas of southern Benin has given very promising results (Adoun, 1992a; Ganmavo, 1992). Experimental and private grasscutter farms already exist in countries other than Bénin including Germany, France, Burkina Faso, Ivory Coast, Gabon, Ghana, Nigeria, Senegal, Togo and Zaire. The many demands for the species from other African countries indicate a potentially good market for its meat and suggest that the Béninese experience can be readily spread to other parts of the world.

Initial stock for many farms has been established using animals captured in the wild. The grasscutters can be kept in cages or in floor boxes in groups of one male with 2–6 females (Figs. 1 and 2). Both rearing systems are useful for production or breeding. Routine

management is limited to forage supply, livestock inspection, pregnancy tests on females every fortnight (Adjanohoun, 1992a, b) and preventive hygienic precautions.

Mating can occur by taking the female to the male's cage or vice versa; however, the former is the preferred method, as in rabbit farming. Mating in polygamous groups of a male with 4–6 females has been adopted by several private breeders in Bénin, Togo, Ghana and Nigeria. In Gabon, mating is in bigamous groups for the cage-rearing system and in polygamous groups of one male to five females for the floor-box system. Sexual activity is more intense and precocious in a polygamous group than in pairs (Schwarzenberg *et al.*, 1992). Sex determination is possible at birth by measuring the anogenital distance and weaning can take place at 4 weeks of age.

A general improvement in performance of the grasscutter as a farm animal has been observed after more than 10 years of research. The current production parameters are listed in Table 1.

Cultural and biological value of grasscutter meat

This rodent is not a highly productive animal. Its gestation period is longer and its growth rate less than that of other domestic animals such as the rabbit. Its production is more complicated than that of traditional meat animals. However, rabbit production has often failed in African countries, usually due to the restricted market, while grasscutter popularity appears unlimited. Besides, while grasscutter growth rate is less than that of an improved rabbit breed, it compares well with that of local rabbits in a tropical environment.

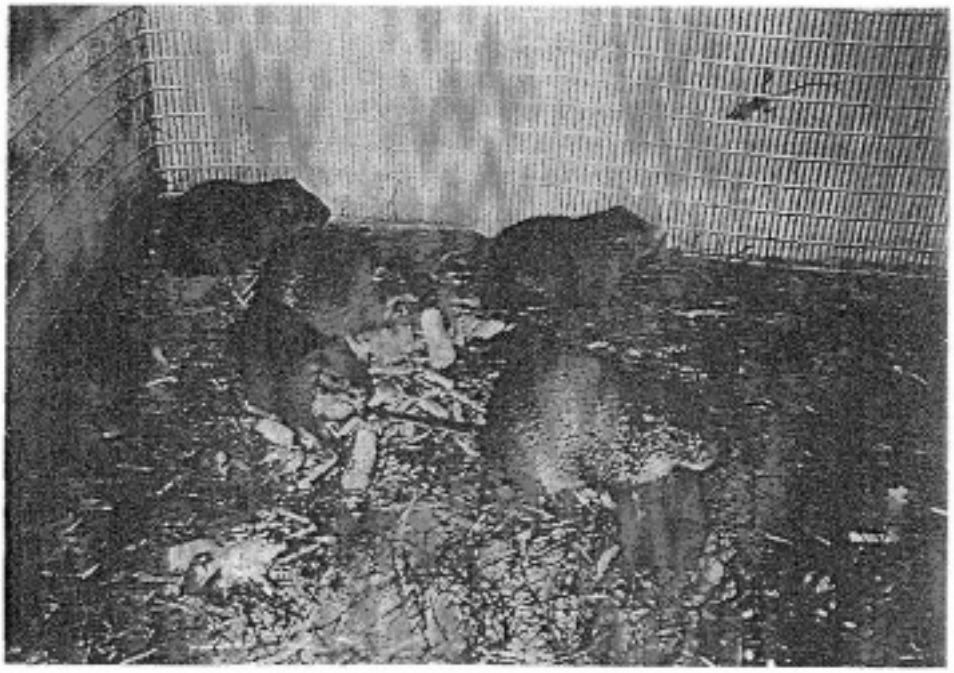

Figure 1. A polygamous group of one male and five female grasscutters in a wire-netting box.