GRASSCUTTER (THYONOMYS SWINDERIANUS) HUSBANDRY IN NIGERIA: A REVIEW OF THE POTENTIALITIES, OPPORTUNITIES AND CHALLENGES

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ABSTRACT

Domestication of grasscutter is a relatively novel practice in Nigeria with its potentialities, challenges and opportunities. This study was a review of grasscutter husbandry in Nigeria. The major aim was to assess the potentialities, opportunities and challenges of this aspect of farming in Nigeria. As revealed by the study, the potentialities of grasscutter rearing are that grasscutter farming has social acceptability, good meat quality of high biological value (high protein and low fat), inexpensive feeds and amenability to captive rearing, good litter size and short generation interval. Despite the challenges of domestication of grasscutter, non-steady supply of the meat, air pollution and ecological devastation as a result of bush burning to hunt cane-rats and threat of extinction of grasscutter; the domestication and production of grasscutter is another dimension in the livestock industry that has the potential to ensure regular and sustainable animal production in the nation.

Keywords: *Biological values, grasscutter, Thryonomys swinderianus, animal protein, animal nutrition*

INTRODUCTION

The relevance of animal protein in human and animal nutrition in Nigeria cannot be over-emphasized. (Owen et al, 2009; Owen and Amakiri, 2009). In recent times, there has been a significant short fall between the production and supply of animal protein to feed the ever increasing population (Akpan, *et al*, 2009). To arrest this unacceptable trend, efforts have been directed towards boosting the micro-livestock sector. Among the micro-livestock animals is the grasscutter or cane-rat *(Thryonomys swinderianus)*. The production of livestock and livestock products has been declining steadily since 1965 and the percentage decline from year to year has been estimated at over 2% (FAO, 1982). Present trends in herd multiplication and productivity however suggest that the production of animal protein from livestock sector alone cannot supply the needs of Nigeria's growing population (FAO, 1982). Hence the need for increase in meat production (FAO, 1982) and intensified management of wildlife as well as domestic stocks.

THE POTENTIALITIES OF GRASSCUTTER HUSBANDRY IN NIGERIA

It is obvious that the current acute shortage of protein in Nigeria and the rapidly increasing demand for livestock products could be solved through the production of grasscutter meat (Ajayi, 1971; Asibey, 1976; Adekola and Ogunsola, 2009). Globally, wildlife has great potentials for meat production and serves as an important source of the highly desired

animal protein to the people of Africa, both in urban areas and rural communities (Ajayi, 1975; Fonweban and Njwe, 1990). The preference for "bush meat" or the meat of commercially available game animals is widely accepted (Ajayi, 1975; Baptist and Mensah, 1986; Fonweban and Njwe, 1990). However with ever increasing human population and obvious protein shortage in Africa, there is the need for an exploration of other means to provide readily acceptable meat on short term basis. Wildlife domestication has been recognized as a way of achieving this objective (Ajayi, 1975). A few number of small mammal and crop farmers, trade or breed wild rodents (Fonweban and Njwe, 1990; National Research Council, 1991), but research studies in their domestication are producing conflicting results (Baptist and Mensah, 1986; National Research Council, 1991).

Among the wild rodents, the grasscutter, or cane rat or cane cutter is the most preferred (Asibey and Eyeson, 1973; Clottey 1981). Grasscutter (Thryonomys Swinderianus) is a wild hystricomorphic rodent widely distributed in the African sub-region and exploited in most areas as a source of animal protein (Vos, 1978; Asibey, 1974; National Research Council, 1991). Being the most preferred (Martin, 1985) and most expensive meat in West Africa including Nigeria, Togo, Benin, Ghana and Cote d'voire (Baptist and Mensah, 1986; Asibey and Addo, 2000), it contributes to both local and export earning in most West African countries (Asibey, 1969; National Research Council, 1991; Baptist and Mensah, 1986; Ghana Environmental Protection and Control (GEPC), 1995; Ntiamoa-Baidu, 1998) and is therefore hunted aggressively.

Unfortunately its collection from the wild is attended by destruction of the environment through the setting of bush fires by hunters (National Research Council, 1991; Yeboah and Adamu, 1995; Ntiamoa-Baidu, 1995). To alleviate this problem, attempts are being made in the sub-region to domesticate the grasscutter (National Research Council, 1991; Addo, 2002) and make it more readily available, gain economic benefit and also reduce the environmental destruction that accompanies its collection from the wild (Opara and Fagbemi, 2009). For example, a major research programme on grasscutter has been initiated in Benin Republic under the Project Benino - Allemand d'Aulacodiculture (PBAA) to select genetically improved grasscutter stocks adapted to life in captivity and to promote the rearing of the animal in rural and sub-urban environments (Baptist and Mensah, 1996).

Grasscutter farming is profitable because of its social acceptability, meat quality, inexpensive feed sources and amenability to captive rearing, good litter size and short generation interval ((National Research Council (NRC), 1991; Agbelusi, 1992). The meat popularly called "bush meat" is highly acceptable in Nigeria. There is no restriction to its consumption. The meat of grasscutter fetches higher prices than meats of domestic animals (Martin, 1983; Asibey, 1986 and 1987). Adeboye (2007) reported that grasscutter is a good source of animal protein of high biological value. Cane-rat meat has good nutritional qualities: high quality animal protein, low fat, high dressing percentage and good/unique taste (Fayenuwo et al, 2003; Olomu et al, 2003). The cost of establishment is low and grasscutters are hardy animals. Its domestication requires less space and less capital (Agwunobi et al, 2009). It can be raised in backyards, within limited space by landless farmers. Grasscutters "feeds" are not competed for. They range from green forages to

kitchen wastes which can easily be obtained by the most poverty stricken farmer compared to larger livestock which require large expanse of land and capital (Agwunobi, et al, 2009). The market for both fresh and smoked grasscutter meat, as well as its contribution to per capita consumption of animal protein is unlimited (Ntiamoa-Baidu, 1987). In the wild, grasscutter eats a variety of feedstuffs ranging from green forages, grains to root and tuber crops. The feed of grasscutter in captivity must be well balanced in nutrients to enable the grasscutter not only to have good health but also perform maximally in terms of growth and productivity (Agwunobi et al, 2009).

Fig 1: A mature Grasscutter

THE CHALLENGES OF GRASSCUTTER HUSBANDRY IN NIGERIA

Domestication of grasscutter is a relatively novel practice. However, cane-rat meat is mainly obtained by hunting and trapping of the animals (Taiwo et al, 2009). This does not ensure steady and regular supply of the meat. It at times involves bush burning in order to smoke out the animals from their hidings. This has its attendant problems of damaging/ destruction of valuable plants, animal life and the ecosystem. Thus, there is the need to domesticate the animal in order to avoid the ill effects of bush burning and ensure regular supply of cane-rat meat.

Nevertheless, domestication of cane-rats has its own teething problems. These include the need to provide regular supply of feeds rich and balanced in nutrients (Taiwo et al, 2009). There is dearth of information on the nutrient requirements of grasscutter. It has been observed (that grasscutters normally prefer grasses such as elephant grass, sugar cane, guinea grass etc) with succulent stalk (Fayenuwo et al, 2003). However, grasscutters reared in captivity on forages/grasses alone does not do well compared to those living in the wild. This is because they normally obtain balanced nutrients from a variety of feeds such as grasses/forages, tuber, grains, nuts, herbs etc in their natural habitat or in the wild.

The feed of grasscutter in captivity must be well balanced in nutrients to enable the grasscutter not only to have good health but also perform maximally in terms of growth and productivity. Therefore there is the need to supplement the basal grasses/forages that cane-rats are fed on with concentrate feeds. Studies with other species of livestock have demonstrated the positive effect of supplementary concentrate feeding (Taiwo et al, 2009). It has been reported that supplementation of the natural grazing of Bunaji cattle with agro-industrial by-products (such as maize offals, palm kernel cake and dried brewers grains) resulted in improved daily weight gain, body condition score and high milk yield (Olafadehan and Adewunmi, 2007; Olafadehan et al, 2007). Berepubo et al. (1995); Alawa and Oyarole (2004), reported that marked improvement were obtained in production indices by varying the roughage to concentrate ratio on the performance of growing rabbits. The alternative feed formulation in the development countries using agro-industrial by-products has also been demonstrated by Alawa and Umunna (1993). Also, improved body weight gain and carcass yield have been recorded in rabbits fed sweet potato forage supplemented with concentrate diet as compared to forage only (Shoremi, 2001).

Socio-economical and zootechnical characteristics of raising grasscutter have been reported (Baptist and Mensah, 1986; Holzer et al, 1986; Mensah et al, 1986, National Research council, 1991; Awa-Ndukum et al, 2001), but there is little information on their disease status. However, preliminary studies on the captive grasscutter (Awah-Ndukum et al, 2001) in Cameroon showed the occurrence of ectoparasities such as Fleas (xenopsylla sp) and endoparasites like Cestode (Hymenolopsis sp) and Nematodes (Heterakis sp) in this animal. In another work by Yeboah and Simpson (2004) in Ghana, four species of ticks namely Rhipicephalus simpsoni, Ixodes aulacodi, Ixodes sp and Haemaphysalis parmata were the ectoparasites found while six species of helminthes parasites comprising 2 species of Cestodes (Furhmanella transvalensis, Railettina mahone) and 4 species of Nematode (Longistriata spira, Trachyphanyx natalensis, Paralibyostongylus vondwei and Trichuris paravispicularis) were equally found. Reports by Opara and Fagbemi (2008) showed that grasscutters can be infected with trypanosomes, although without obvious clinical disease. The trypanosomes isolated were of the species pathogenic to ruminants livestock such as Trypanosoma congolense and T.vivax (Soulsby, 1989). There is no report of the pathogenicity of isolated trypanosome stock on other species of animals (Opara and Fagbemi, 2009).

THE OPPORTUNITIES OF GRASSCUTTER HUSBANDRY IN NIGERIA

An increase in the size of human population is almost always at the extreme of wildlife populations. Widespread destruction of wildlife and its habitats precedes the establishment of sedentary agriculture and animal husbandry. In some developing countries in Africa, bush meat is the main source of animal protein among rural communities and the demand for it is rapidly increasing at the very time when the supply is diminishing (Jayeoba and Adebambo, 2009). The imminent shortage of most kinds of game calls for the wisest possible management. This requires an accurate knowledge about the density and distribution of the surviving animals (Kio, 1979). Due to the diminishing numbers of wild animals occasioned with a drastic reduction in the population of endangered species, there

is need to study their genetic relevance so as to provide a means of converting them from extinction (Jayeoba and Adebambo, 2009).

Animal genetic resources are a part our common heritage that is too valuable to neglect therefore commitment and co-operation in the sustainable use; development and conservation of these resources are urgently required. A consideration of wildlife management in many countries suggest that management is seldom taken seriously until animal stocks are depleted to the point of near extinction (Spinage, 1979). Part of West Africa fall into the category of having sadly depleted stocks of wildlife and we may suppose, therefore, that management in those areas will wish to embrace the most sophisticated approaches. Wildlife conservation is the wise use of animal resources which ensures the greatest good for the greatest number of people over the longest time (Etukudo, et al, 1994 as cited by Jayeoba and Adebambo, 2009). This implies prudent use and management of wildlife resources and their habitats. Such scientific approach will ensure that while we, of the present generation, obtain the greatest benefits from our wildlife, its existence is ensured to meet the needs of future generations (Jayeoba and Adebambo, 2009).

CONCLUSION

Grasscutter farming is a venture which offers profitable opportunities for enhancing livelihood and revenue generation in rural and urban areas of the country. This study - Grasscutter husbandry in Nigeria was carried out with the primary aim evaluating the potentialities, opportunities and challenges of this farming type. The study revealed that this kind of farming is of high nutritional value was taken as food and inexpensive to practice. Irrespective of the attendant challenges of the domestication of grasscutter such as non steady supply of the meat, air pollution and ecological devastation as a result of bush burning to hunt grasscutter, it is concluded that grasscutter domestication and production is another dimension in the livestock industry that has the potential to ensure regular and sustainable animal production to solve national protein deficiency problem and make good business option for individuals and government (Adekola and Ogunsola, 2009). Consequently, farmers should be encouraged by both public and private sectors of the economy in terms of financing the domestication of grasscutter and other livestock so as to provide meat of good nutritional values to the growing population.

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