Appraisal of Village Chicken’s Potential in Egg Production

Behora L.C.1, P.G. Mbutinha1, Macharia J.N. 1, Mwaniki G1, Njagi L.W.1 and Nyaga P.N.1
1University of Nairobi, Department of Veterinary Pathology, Microbiology and Parasitology, P.O. Box 29033, Kabebe, Nairobi
2Veterinary Investigation Laboratory, Private Bag Kabebe, Nairobi

Abstract
A study was carried out on the laying capacities of Village / indigenous and exotic / commercial hens that were brought to the Agricultural Society of Kenya show, Nairobi, over a period of 10 years. The parameter of egg-production capacity was estimated by the pliability of bones, especially the pubic bone spread and the space between the pubic bone and the keel bone; measured as number of fingers that can fit between each space, respectively. The results showed that some of the indigenous birds had good laying capacities, contrary to popular belief. Some indigenous birds were close to, and others had higher laying capabilities than the respective commercial ones. This observation indicates that, with a little extra effort in management and genetic selection, these village birds have a potential of increasing their egg yields.

Introduction
Free-range scavenging local chicken (SLC), also referred to as village chicken, is the most abundant type of livestock in Kenya (Mbugua, 1990; Ministry of Livestock Development (MLD), 1991; Njue, 2003), and is in many other developing countries. Over 90% of the rural (village) household of Kenya keep these chickens under free-range system together with ducks, geese and turkeys. The Kenyan chicken population is estimated to be 29 million (Njue, 2003), of which 75% (21.8 million) are SLCs. The SLCs supply most of the meat and eggs in villages and 20% of urban and peri-urban demands (Melewasa, 1989; MLD, 1989; Minga et al., 1996); the urban and peri-urban regions are also supplied with poultry products from exotic commercial birds. The SLCs are important because they contribute to rural employment, family nutrition and income (Sonaiya, 1990); they are a major source of protein for the rural poor families. Income from these birds assists to pay school-fees and unexpected expenses such as medicine (Mbugua, 1990; Sonaiya, 1990). Village chickens, therefore, represent a significant part of rural economy in particular and the national economy as a whole. These birds are also part and parcel of the cultural life of the rural people: they form special dish for special visitors, are given as gifts to visitors and relatives, are normally used to raise capital for youths and newly-weds, and are part of the sacrificial offerings in traditional worship (Geuye, 1998). SLCs normally show low productivity of 20-100 eggs per hen per year, hatchability of 60-70% and an average mature weight of 1.2 kg. (Williamson and Payne, 1965; Mbugua, 1990; Mbutinha et al., 2002a).

Because of this, farmers, livestock keepers, agriculture and livestock extension officers have paid little attention to them and consider keeping of these birds as an insignificant secondary occupation. The birds are, therefore, given little managerial attention; they only get minimal food and water supplementation, overnight housing and, to a lesser degree, health management (Mbutinha et al. 2002b). Selection, mating, incubation and brooding are left entirely to the birds. These SLC-keepers thus practise a ‘low input low output’ production system, as opposed to the ‘high input high output’ system of exotic commercial birds. They tend to have the wrong belief that these birds are hardy to diseases (except Newcastle disease) and that they do not need extra attention. They also seem to be satisfied with the fact that the SLCs find their own food and accommodation and that everything they produce – from manure to eggs and meat – earn them a net profit; aiming at keeping just enough birds for family consumption. These village birds are preferred because they have a high feed-conversion efficiency, tasty meat and desirable egg quality, colour and taste. Their products are also normally free of antibiotics, hormones and other harmful chemicals (Mbugua, 1990; Sonaiya, 1990).

Efforts to improve these birds’ production have been tried. A cockerel – exchange programme was carried out in Kenya in year 1976 under the auspices of the National Poultry Development Programme (NPDP), financed by the Danish International Development Assistance (DANIDA), but failed due to high non-broody nature of the progeny (NPDP, 1985-1986). The cross-breeding would also have diluted the indigenous chicken’s genotype. Currently, DANIDA has re-introduced the programme, using the Bangladesh model, in two districts in Kenya (Nielsen et al., 2003). There is no documented study on the production ability of SLCs nor record of any efforts to single-out good layers, among the village birds, and breed production lines from them, as has been done for the exotic commercial layers. This study has looked at the laying capacity of a sample of SLCs brought to the Nairobi International Agricultural Show and entered for the ‘Indigenous bird’ class. Their capacities were compared with those of respective commercial layers brought to the same show and entered for the ‘Commercial layer’s class. The parameter for egg-production capacity was estimated by the pliability of the pubic bones. The pliability of these bones, plus that of other structures, is