

Japanese Quail (Coturnix coturnix japonica) Husbandry: A means of Increasing Animal Protein Base in Developing Countries

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ABSTRACT

Raising Japanese quail (Coturnix coturnix japonica) for food can be regarded as another dimension of poultry farming as a result of increase demand for animal protein in Nigeria. The major aim of this review is to examine the challenges, potentialities and opportunities of quail production in Nigeria. This study reveals among other things that quail husbandry was introduced in Nigeria in order to expand the domestic chicken production through meat and eggs. It highlighted other unique qualities of Japanese quail over other species of poultry to include fast growth, resistant to many diseases than domestic fowl, less expensive to rear, early maturity with short gestation and generation intervals. It further reveals that they have high fecundity and their meat and eggs are renowned for their high quality protein, high biological value and low calorific contents, making it a choice product for hypertension prone individuals. Despite the challenge of high cost of concentrates, non-readily available market, inadequate knowledge and information about the advantages of eating quail meat coupled with high proportion of spoiled eggs due to infertility and embryonic mortalities in hatcheries, the Japanese quail has the potential to serve as an excellent and affordable source of animal protein in Nigeria.

Keywords: *Biological values, challenges, hypertension, Japanese quail, opportunities, potentialities*

INTRODUCTION

The relevance of protein in human and animal nutrition cannot be over emphasized. In recent times, there has been a significant short fall between the production and supply of animal protein to feed the ever increasing population. The human population projection for the Sub-Saharan Africa is put at about one billion by the year 2020 (Winrock, 1992). Nigeria at present with a population of over 140 million (NPC, 2006) is expected to contribute a significant percentage of anticipated population growth. This means greater pressure on feeding the populace. The present rate of growth in the agricultural sector is considered too slow to match the expected population growth (Abu and Soetan, 2009).

Nigeria, notwithstanding the anticipated thick population, is highly deficient in animal protein security with the per capita consumption put at 9.3g/day as against the 34g/day recommended by the FAO to be the minimum requirement for the growth and development of the body (Lamorde, 1997; Esobhawan, 2007, Esobhawan, Ojo and Ikhelao, 2008).

This implies that only about 27.35% of the minimum requirement in animal protein intake is secured in Nigeria. To arrest this unacceptable trend, efforts have been directed towards boosting the animal industry with micro-livestock having prolific tendency, short gestation period, short generation interval and rapid growth. Among the micro-livestock animals is the Japanese quail (*Coturnix coturnix japonica*) which falls within the above description and should therefore be the animal of choice in increasing animal protein base in the developing countries hence the review on Japanese quail husbandary as a means of increasing animal protein base in developing countries.

THE CHALLENGES OF QUAIL PRODUCTION IN NIGERIA

In spite of the exceptional attributes and advantages of keeping Japanese quail, its production in Nigeria is still comparatively rudimentary. Among the major challenges of quail production in Nigeria are high cost of concentrates, non-readily available market when the farmers are ready to sell their stock and inadequate knowledge and information about the advantages of eating quail meat. Domesticated quail do not have the tendency for broodiness and hence eggs must be incubated under broody hen or by artificial incubation (Naibi, Zahraddeen, Kalla, and Nathaniel, 2009). However, because of their short generation interval and an average production of 250 – 280 eggs per bird yearly, artificial incubation is the surest choice for commercial farmers.

The high proportion of eggs discarded due to infertility and embryonic mortality in hatcheries have been associated with low quality facilities and poor incubation techniques (Chang, Martella, Navarro and Robles, 2001). Little is known about the factors that affect the fertility and hatchability of quail eggs (Abatcha *et al.*, 2009). However, it is reasonable to expect that many of the common factors known to influence incubation success in eggs of commercial poultry may likely affect quail eggs hatchability (Gonzalez, Satterlee, Moharer, and Cadd, 1999).

THE POTENTIALITIES AND OPPORTUNITIES OF QUAIL PRODUCTION IN NIGERIA

Ani and Adiegwu (2005) suggest that a solution to the problem of inadequate consumption of animal by an average Nigerian is to increase the level of highly reproductive animals with short generation intervals such as poultry, pigs and rabbits (Fielding, 1991; Serres, 1992; and Smith, 2001). Poultry is the quickest source of meat and its production involves the least hazardous and arduous process in relation to other livestock enterprises (Obioha, 1992). Poultry are able to adapt to most areas of the world, have a low economic value, rapid generation time and a high rate of productivity (Smith, 2001). The genus of poultry being studied is the Japanese quail (*Coturnix coturnix japonica*) which was introduced into Nigeria to expand the poultry sub-sector and help supplement the domestic chicken production through meat and eggs (Ani, Okeke and Emeh, 2009). Commercialization of quail bird production is a recent development in Nigeria (Akpan and Nsa, 2009). Emphasis has been on domestic fowl production, whereas nutritive and economic benefits can be derived from quail production since the quail is fast growing and resistant to many diseases

than domestic fowls (Oluyemi and Roberts, 2000). Japanese quails are hardy birds that thrive in small cages and are inexpensive to produce. They require less floor space; about 8 – 10 adult quails can be reared in a space meant for one adult chicken (Haruna *et al.*, 1997). They are said to have less feed requirement, according to Ani, Okeke and Emeh., (2009) an adult quail requires only 20 – 25g feed per day compared to chicken (120 – 130g) per day.

Other unique characteristics and advantages of quails over other species of poultry include early attainment of sexual maturity, being able to come to lay as early as 5–6 weeks of age, having short generation interval making it possible to have many generations in a year (Robbins, 1981; Annon, 1991), attaining market weight of 150–180g between 5–6- weeks of age and a high rate of egg production between 180 – 250 (Garwood and Diehl, 1987; Shwartz and Allen, 1981) and 200 – 300 eggs in their first year of lay (NRC, 1991). Reports by Haruna *et al.* (1997a) and Olubamiwa *et al.* (1999) show that quail meat and eggs are renowned for their high quality protein, high biological value and low caloric content, making it a choice product for hypertension prone individuals. According to Babangida and Ubosi (2005), the Japanese quail has the potential to serve as an excellent and affordable source of animal protein in Nigeria.

CONCLUSION

This study examined Japanese Quail (*Coturnix coturnix japonica*) husbandry as a means of increasing animal protein base in developing countries. It also explores the challenges and opportunities. This study reveals that encouraging quail production in Nigeria will not only augment the present deficient animal protein intake but will deepen our understanding of these birds that are gaining popularity among Nigerian farmers and various laboratories. Hence, farmers should invest heavily in rearing this specie of poultry in Nigeria. Government, as part of its responsibilities in ensuring a healthy living among the populace should support the farmers to rear these birds by making funds available to interested farmers.

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