A STUDY ON COMMERCIAL QUAIL FARMING

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ABSTRACT

One out of every three people in developing countries is affected by protein deficiency. Quail farming is seen as one of the most promising means to bridge the animal protein gap. Quail production is gaining popularity in the developing countries like India, due to its role in bridging the protein malnutrition and socio-economic empowerment of the poor segment of the society. At this current situation, half of the Indian are self-employed but they are all working as casual labourers. So, quail farming will create an alternative employment for the rural youths. The students themselves who were growing quail during their study period acquired their entrepreneurship attributes.

KEYWORDS: Quail Farming, Agri-Business, Entrepreneurship, Nutritious Food & Case Study

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INTRODUCTION

Poultry industry is one of the growing industries globally; many people have developed interest and realized the benefits of investing in this area of production (FAO, 2007). Globally, due to the continued preference of white meat to red meat, consumption of poultry has increased from 68.50 MT in 2000 to 103.50 MT in 2012 which is a 51 per cent increase. On a per-person basis, the increase in animal protein consumption has been around from 11.1g per day to 13.6g per day. In 2010, FAO reported that in developing countries, the number of undernourished people has increased from 824 M in 1990-92 to 870 M people in 2010-2012. One out of every three people in developing countries is affected by protein deficiencies. The findings by WHO Global Database on children Growth confirm that more than a third of the world's children have Protein Energy Malnutrition (PEM) (WHO Working Group, 2006).

There is a continued rise in human population and also increased undernourished people in developing countries, there is a need to introduce additional source of protein to people in developing countries. So, demand exists for animal protein. To meet up this demand, chicken production alone in poultry farming could not satisfy the demand, so we have to choose an alternative way of increasing the animal protein and also generate a self employment opportunities to the people in developing countries. In this regard, Quail farming is one of the best self employment sectors and also meets the protein demand in the form of meat and quail eggs. It also meets the demand for poultry products. Quail farming is seen as one of the most promising means to bridge the animal protein gap. In 2013, DAFF reported that quails are small and hunting birds which are raised for eggs and meat production.

A Quail belongs to the family as the domestic fowl (Wilkinson, 1999). Quails are therefore considered as

one of the minor species of poultry. People have some restrictions to go for poultry production due to lack of proper information. So, it is difficult to go for quail farming. But compared to other poultry birds, quail has more advantages that include, low feed requirement, require small floor space, have high immunity against diseases, meat has low fat content and high nutritive and medicinal value of eggs and early maturity (Shanaway, 2008).

Quail farming involves raising quails commercially for the purpose of meat production and profitable eggs. There are 18 species of quails used for profitable quail farming business. Quail breeds are of two types; broilers (meat production) and layers (egg production). Popular quail breeds used for egg production includes Tuxedo, Pharaoh, British Range, English White and Manchurian Golden. Popular quail breeds used for meat production includes Bobwhite and White Breasted (Mc Naughton and Haymes, 1978).

In 2013, Onyewuchi et al., reported that quail farming is more profitable venture than poultry. Quails has various benefits that includes early maturity of quail birds, capability to lay eggs 5 to 6 weeks after hatching, also has capability to lay 280 to 300 number of eggs in a year, quail eggs takes about 16 to 18 days to hatch, higher immunity against diseases; they are poor feeders and they require small floor space. Their meat is low in fat and the eggs are perceived to have nutritional and medicinal value (MOLD, 2012). In 2002, View West Marketing; Zeetn off Agro-Environmental Consulting reported that 7 to 7 ½ weeks old quail produce around 220 to 250 grams of meat and also it used for hunting and animal search in many countries.

According to NRC (1991), Quails are grown in almost all types of weather conditions; it is suitable to grow all weather conditions. Quail farming has been widely acknowledged as a great agro-business (Heft, Puppharessa, Otte, Roland, Sudsawasd and Zilberman, 2008).

In 1974, Quail bird was introduced in India from California. There are two quail species grown in India viz., the black-breasted quail found in jungle (*Coturnix coromandelica*) and the brown-coloured Japanese quail (*Coturnix coturnix japonica*). The quail farming is very important, because it has the potential to fill the gap between the proteins availability and requirement. The commercial quail farming also improve the socio-economic status of rural people. After three decades from its introduction, quail farming has not yet popularized in rural areas in developing countries like India.

At this current situation, half of the Indian are self-employed but they are all working as casual labourers. So quail farming is one of the promising enterprises for all. This will create an alternative employment for the rural youths. The quail farming witnessed rapid expansion in urban areas. These farms are producing meat, eggs and quail-chicks/pullets. So, the students took this quail farming as a real life experience.

JAPANESE QUAIL CHARACTERISTICS

Japanese quails are hardy birds that live in small cages and are in expensive to keep. As similar to other birds, quails are affected by common poultry diseases but which are disease resistant than other poultry birds. With regard to Japanese variety of quails, they usually attain maturity around 6 weeks and start to lay eggs by the age of 50 days (50 days after hatching). With the proper care and maintenance that include pest and diseases management and correct feeding and watering, the quails should lay 200 eggs in first year. Life expectancy of quail is approximately 2 to 2 ½ years. The bodyweight of adult male quail and female quail was 100 to 140 grams and 120 to 160 grams respectively. The female quails are slightly heavier than the male quail. The females are characterised by light tan feathers with black speckling on

the throat and upper breast. The males have rusty brown throat and breast feathers. Males also have a cloacal gland, a bulbous structure on the upper edge of the vent that secretes a white, foamy material. This unique gland can be used to assess the reproductive fitness of the males.

Japanese quail eggs are a molten brown colour and are often covered with a light blue chalky material. The egg shells are easily breakable, so handle with care. The average quail eggs weight about on 10 grams, it's about 8 per cent of the bodyweight of on adult quail. After hatching, the young chicks weigh nearly 7 grams and also look brownish with yellow stripes.

CASE STUDY

A group of 8 students studying final year, B.Sc. Horticulture, School of Agriculture and Horticulture, Kalasalingam Academy of Research and Education, started quail farming under my guidance, as a part of their experiential learning course. Initially, the students purchased 330 Japanese quail eggs from Virudhunagar quail farming entrepreneurs.

Figure1: Japanese Quail Eggs.

Figure 2: Brooding and Care of Young Quails.

Figure 3: Feeding in PVC Pipes.

INCUBATION OF EGGS

The purchased eggs were placed in Incubator with right temperature, humidity, ventilation, turning and sanitation for successful incubation. A wire mesh measured 1.5 * 1 inch fitted on the incubator was prepared to avoid egg damage. The eggs were kept in incubator for about 18 days. Eggs were stored at 55° F with 70 % relative humidity before incubation. The eggs were fumigated before incubation. Eggs could be stored up to 7 days. Beyond 7 days, hatchability will be reduced. Eggs are stored in a plastic bag to reduce dehydration. The chicks were transferred to brooder, 2 days after its hatching.

HOUSING OF QUAIL

Different types of brooder can be used for quail brooding, namely floor brooding, battery brooding, gas brooding etc. Heater or electric bulb may be used for provision of heat generation in brooder house. Here, the students used floor brooding for early quail rearing. The little temperature was maintained in brooder house. Total timing for brooding was 10 days. They have placed the bulbs in four corners using sticks.

The birds can be reared in litter system or in cage. Here, the cages were designed with two layers to ensure comfort for the bird's movement, ensuring availability and accessibility of food and water. Also, the cleaning and sanitation of cage should be ensured to avoid the disease and pest attach. It should have proper ventilation system so as to allow proper flow of air and light inside the cage and it also should be protected from the wild animals and predators like dog and snake etc. The room should be well ventilated, insulated and free from dust. PVC pipes were cut into two parts, fitted in outside of the cage. The feeds were filled in the pipes and two drinker placed in one layer, so totally four drinker were used in single cage. They transferred the quail at 100 per cage, 50 quails per layer. To avoid feed loss, the feed trough should be filled up to three forth and there should be provision for clean drinking water throughout the day. Quail house should have facility for 14 to 18 light hours for optimum feed intake and egg production. But as the students were raising quails for commercial meat purposes, they provided 24 hours light for early growth and for getting higher market value. The removable wooden plates were placed at the bottom of the cage. This was used to collect the quail droppings and wastes in a clean manner regularly. They have used the wastes as organic manure in nearby field.

FEEDING AND WATER MANAGEMENT

With regards to feed, availability of high-quality feed is a pre-requisite for improved quail production and productivity. To ensure healthy growth of quails, and maintain productivity, they should be provided with balanced feed regularly. For the first two days (3 week age quail), ground maize was given. After that, the students prepared quail feed by using locally available ingredients like maize, rice, groundnut and sunflower seeds. The ingredients were mixed together, crushed and converted into small particles. The feed consumed by 5 weeks old quail was around 500 grams. For production of 12 eggs per quail, nearly grams of feed were required.

Quails should be provided with fresh, clean and readily accessible drinking water at all times and a space should be maintained for individual quail with minimum of 0.6 cm. The feeder and watering system was cleaned daily and disinfected at regular intervals. After brooding period, the quails were transferred into the cage. For feeder, they used the PVC pipes. Each cage, they placed hundred quails. So, they had fixed two poultry drinkers for each cage.

DISEASE MANAGEMENT

It can be challenging to prevent quail disease from infiltrating a healthy flock because it is often spread by wild birds. If you raise both chickens and quail and if they are free-range, you will have very little control over the contact your birds have with wild birds and their droppings. Once the disease has taken hold, it moves fast. Most quail do not survive the disease, but if find quickly, you may be able to prevent the spread and treat birds in the early stages. Some of the symptoms of quail diseases viz., dropped wings, fluffed appearance, lethargy, watery droppings and paleness. One way to ensure that your quail do not get quail disease is by keeping them confined in an area away from other birds.

Compared to other poultry birds, Quail suffers less disease and pest problem. According to a report on quail production and management in Georgia by Dozier, et al., (2010), no medications are approved for quail and there are no disease preventive vaccines available. So they should be maintained with following practices to avoid pest and disease problem; keeping their house dry and clean, ensuring proper movement of light and air inside their house, separating the disease affected quails from the healthy one, not allowing other birds, animals or unknown persons entering inside quail house, ensuring hygienic and balanced feed supply and providing adequate fresh and clean water according to their demand. To avoid spread of diseases, proper care of the youngest birds should be undertaken in comparison to the oldest birds and care for healthy birds should be undertaken against the sick birds.

MARKETING OF QUAILS

Totally, 300 quails were ready for marketing after brooding period of 15-18 days. So, it is possible to market from 25 to 28 days. 28 days old quails were sold to nearby restaurants, hotels and local shops at the rate of Rs.32/quail. The quail litter was used as organic manure. The cost benefit ratio was 1:1.5 and mortality rate was 11 per cent.

CONCLUSIONS

From that study, we could see that the students gained practical knowledge on doing business during their study period. These activities helped the students, to start a agri business after completing their degree program and create employment opportunities to the students.

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