OVERVIEW OF OSTRICH FARMING EXPERIENCE OF TANUVAS

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Introduction

Ostrich (Arabic na-ama, French autruche, German Strauß, Italian struzzo, Norwegian struts, and Spanish aveSTRUZ) have always been a fascinating species for more than 5000 years. Ostrich farming has created lot of interest around the world. The global demand for ostrich products has generally risen over the past decades, mainly due to growing acceptability of ostrich meat. Demand for ostrich leather is related to the income growth, but it is also relatively stable. A good future holds for the ostrich industry, since the balance between supply and demand is being better managed worldwide with few players having greater stake in the business. A more coordinated and sensible approach to the whole issue could have long-term benefits for the entrepreneurs. As far as our country is considered, ostrich is yet to be adapted as commercial venture. But, our country has wide and great prospects to be a pioneer in ostrich farming due to lower input cost of production.

Ostrich products, yields and their uses

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Product</th>
<th>Yield / bird</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Skin</td>
<td>12 – 14 sq.ft</td>
<td>Preparation of leather goods</td>
</tr>
<tr>
<td>2.</td>
<td>Oil</td>
<td>4 to 6 ltr</td>
<td>Therapeutic, cosmetic and for sports injuries</td>
</tr>
<tr>
<td>3.</td>
<td>Meat</td>
<td>50 – 55 kg</td>
<td>Low in fat, rich in protein and vitamins</td>
</tr>
<tr>
<td>4.</td>
<td>Feather</td>
<td>900 – 1000 g</td>
<td>For fancy and decorative purposes</td>
</tr>
<tr>
<td>5.</td>
<td>Egg</td>
<td>30 – 50 nos. per year</td>
<td>For normal consumption</td>
</tr>
<tr>
<td>6.</td>
<td>Egg shells</td>
<td>All infertile eggs</td>
<td>For decorative purposes</td>
</tr>
</tbody>
</table>

Farming system

Ostriches are very well adapted to the environment from which they are evolved. As in poultry three systems are followed in their management, viz., extensive, semi-intensive and intensive system.

Extensive system

Under this system at least 100 acres of land are required. The concept of this system is to rear the birds under the natural habitat with least disturbances.

Semi intensive system

Under this system about 50 acres of land are sufficient. The birds are maintained in small paddocks of 5 to 10 acres depending upon the number of birds. Supplement feed are provided to keep their natural habitat intact.
Intensive system

Under this system the birds are provided with less than 50 acres of land and they are further divided into small paddock of 3 – 5 acres. This is most popular under the current system of management. Only small area is required for maintaining the birds.

Depending upon the space and the purpose of ostrich rearing, any one of the above system can be followed.

Chick management (0 – 2 months)

- Stocking Density (0 – 1 month) - 5 sq m/bird
  (1 – 2 month) - 10 sq m/bird
- Waterer space - 18 cm/bird (minimum)
- Feeder space - 12 cm/bird (minimum)
- Heat requirement - 2 watts /chick
- Light requirement - 24 hours for first 4 weeks
- Feed intake/day (0 – 4 weeks) - 180 – 200 g/day
  (5 – 8 weeks) - 200 – 300 g/day
- Vaccination - RDV Lasota at 8 weeks

Grower management – I (2 – 6 months)

- Stocking Density (2 – 4 month) - 40 sq m/bird
  (4 – 6 month) - 80 sq m/bird
- Waterer space - 30 cm/bird (minimum)
- Feeder space - 20 cm/bird (minimum)
- Light requirement - No light
- Feed intake/day (3 month) - 400 to 500 g/day
  (4 month) - 600 to 700 g/day
- Vaccination - RDV Lasota at 6th month

Grower management – II (7 – 12 months)

- Stocking Density - 100 to 150 sq m/bird
- Waterer space - 60 cm/bird (minimum)
- Feeder space - 40 cm/bird (minimum)
- Light requirement - No light
- Feed intake/day - 1000 to 1200 g
- Vaccination - RDV Lasota at 12th month
Adult management (> 12 months)

- Stocking Density - 200 to 500 sq m/ bird
- Waterer space - 4 – 5 ft /bird
- Feeder space - 3 – 4 ft /bird
- Feed intake/day - 1500 – 2500 g/day
- Light requirement - No light
- Sex Ratio - 1:2 (Trios)

Good management practices

- Transfer of individual chicks from hatcher should be done using a soft cloth, while avoiding direct hand contact
- Navel of chicks should be wiped and sprayed using good antiseptic solution.
- Appropriate warmth to keep the chicks comfortable
- Availability of fresh air (good cross ventilation)
- Chick area should always be kept clean and sanitized
- Brooding floor should be preferably sand covered with bed sheets or use of rubberized mats.
- Frequent feeding (at least 6 times daily)
- Sanitation and management should be of highest order
- Chicks should be trained to take feed as soon as possible
- Growers are maintained in pen and run system, hence juveniles should be allowed outside after complete cleaning
- Water and feed should be changed at least three times in a day
- Juvenile age is most prone for leg problems, hence feeding quality and quantity should be most appropriate
- Growers should also be not subjected to any kind of stress
- Fences around the birds should be devoid of any sharp or pointed objects
- The paddocks should be preferably in rectangular shape for the birds to run and exercise
- Growers can be preferably let in groups of not more than 10
- One shelter (10’ x 12’) can be constructed per paddock for keeping feed and water in a breeding paddock
- Shallow sand pit and showers may be provided for additional comforts to the growers and adults.
- Water and feeding should be done at least two times daily in semi intensive of management
- Ostriches are mostly bred in trios, but situation may prefer to have colony or group mating
Most of the (> 90%) hen ostriches lay the eggs in the evening hours only

- Hatching eggs should be collected as soon as it is laid and stored for incubation
- Layer or breeder diet should contain nutrients as specified in the recommendations
- Sexual maturity in hens may be expected in about 30 months period and in males 6 months later. Ideal breeding age is 4 years
- Male ostriches would exhibit more aggressiveness and violent behaviour during breeding phase
- Feed consumption in both male and females would be significantly reduced during the onset of breeding
- Males would also exhibit red coloration around their beaks, eye rings, vents and thigh region
- Body weight of 130 kg and above is ideal for getting satisfactory reproductive results
- Marketing age of 110 kg may be obtained at about 15 months of age (for meat purpose and leather purpose)

**Hatching requirements**

- Ideal hatching egg weight - 1300 to 1500 g
- Average Fertility % - 50 – 60 %
- Average Hatchability % - 80 – 85 %
- Storage duration - not more than 4 days
- Storage temperature - 13 – 15°C
- Total incubation period - 42 – 44 days
- Setter period - 1 – 38 days
- Hatcher period - 39 – 44 days
- Rotation duration - 8 times per day (min)
- Setter temperature - 36.2°C
- Hatcher Temperature - 36.1°C
- Relative humidity - 20 – 30 %
- Ideal chick weight - 850 g (min)

**Health cover**

Ostrich chicks are relatively easy to rear after the completion of first six months. It is during these periods when the mortality percentage can go as high as 50 to 60%. Most mortality among the ostriches occurs during the first 6 months. Omphalitis or yolk sac infection is the most common disease of the young ones. The care must be the best during brooding to avoid death. The “fading chick syndrome” or the mal absorption syndrome is usually a fatal one. It can occur mostly during the first three months. The chicks will show listlessness, stop eating, and drinking and die. Impaction can occur at all ages. Hence, the area of rearing of chicks and growers should be well checked. Avoid sudden feed changes
or addition of sudden high fiber diets. Both, internal and external parasites can affect the ostriches. It is better to protect the ostriches against Ranikhet diseases. RDV (Lasota) can be given once in six months to maintain optimum protection. Growers and adults are seldom affected by any major illness except few conditions like trauma, summer stress, prolapse of reproductive organs, etc.

**Nutrient requirements in ostriches as established at PGRIAS, Kattupakkam**

<table>
<thead>
<tr>
<th>Nutrients</th>
<th>Age of birds(months)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>0 – 6</td>
</tr>
<tr>
<td>Crude Protein (%)</td>
<td>21 – 22</td>
</tr>
<tr>
<td>Met. Energy (Kcal/Kg)</td>
<td>2600 - 2700</td>
</tr>
<tr>
<td>Lysine (%)</td>
<td>0.70 – 0.80</td>
</tr>
<tr>
<td>Methionine (%)</td>
<td>0.30</td>
</tr>
<tr>
<td>Calcium (%)</td>
<td>1.2</td>
</tr>
<tr>
<td>Phosphorus (%)</td>
<td>0.6</td>
</tr>
</tbody>
</table>

**Growth performance of birds as established at PGRIAS, Kattupakkam**

<table>
<thead>
<tr>
<th>Age (months)</th>
<th>Cumulative dry matter intake (kg)</th>
<th>Live body weight (kg)</th>
<th>Feed conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>10.77</td>
<td>4.5</td>
<td>3.59</td>
</tr>
<tr>
<td>4</td>
<td>36.36</td>
<td>20.0</td>
<td>3.03</td>
</tr>
<tr>
<td>6</td>
<td>55.50</td>
<td>40.0</td>
<td>6.94</td>
</tr>
<tr>
<td>8</td>
<td>101.25</td>
<td>62.0</td>
<td>9.2</td>
</tr>
<tr>
<td>10</td>
<td>115.50</td>
<td>82.0</td>
<td>10.5</td>
</tr>
<tr>
<td>12</td>
<td>157.50</td>
<td>102.0</td>
<td>14.32</td>
</tr>
</tbody>
</table>

**Conclusion**

Ostrich farming is a very interesting enterprise. The investment involved is high as also the returns. Though the accurate economics is difficult to work under Indian conditions, due to lack of ostrich farms, proper data, costs of production, marketing structure, etc but it can be assured that the returns are @ 9 to 10% per annum during the phase of production. Though leather and meat are the main products, feathers, oil, empty eggshells, are some of the other minor marketable products. Oil especially has a good market. Ostrich farming in India can also be started but with a caution that the supply and demand are well balanced, sufficient technical knowledge are available and of course availability of good quality chicks. Ostrich reproduction, artificial insemination and feed requirements are the areas that require more concentration for sustainable development of ostrich farming.