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Breeding management of ostrich at captive condition

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Abstract

This article is about the breeding behavioral pattern and natural incubation of ostrich (*Struthio camelus*) which were reared in the captive condition. Male and female attains maturity at 30 months and 24 months respectively. Walking, feeding and running are the most common behaviour in both sexes. Breeding season begins from August to March in Southern Hemisphere. During this season kantling (male), soliciting (female) and agonistic (male and female) displays are the predominant reproductive characters of ostriches reared in captive conditions. Not much appreciable difference has been found among the genders related to this behaviour. Male cock shows territorial aggressiveness towards hen resulting in mating which may lead to fertile egg production. Cock dug a nest bowl of about 15 -20 cm deep and 1-2 m in diameter where the hens lay their eggs. Mature females can lay 60-70 eggs per year in different clutches. Interval between each clutch will be around 35-40 days. In each clutch it lays around 14-15 eggs. After fourteen days from laying of its first eggs, both genders of ostrich incubate egg for a period of 42 days. Change of shift between female and male is noticed during day and night respectively. The present study reveals that the study of breeding behaviour and natural incubation helps to manage and produce more.

Keywords: Cock, Kantling, Soliciting, Agonistic, Clutches.

Introduction

The ostrich is the world's largest living bird. South Africa is the native of ostrich. They are omnivores, they feed on grass, grains in addition to that they also feed on insects and lizards etc. It has a remarkable tolerance to heat, withstanding air temperatures of 56 °c without undue stress. The feathers are excellent insulators, minimizing heat gain from direct solar radiation, as well as reducing heat loss during cold desert. Their strong legs allow them to run up to 70-90 km per hour when necessary. The *Struthio camelus* species has different subspecies as Red Necks (*Struthio camelus massaicus*, *Struthio camelus camelus*) Blue Necks (*Struthio camelus molybdophanes* *Struthio camelus australis*) and the South African Black Neck (*Struthio camelus domesticus*), on which the ostrich industry is built and was created by the synthetic cross of the *Struthio camelus camelus* and the *Struthio camelus australis* (Engelbrecht, 2013)^[1]. Three main economic values of the ostrich are egg, meat and skin. Ostrich meat is ideal as a healthy diet due to its low fat and cholesterol content (Poławska *et al.*, 2011)^[2] and high amount of polyunsaturated fatty acid content. Even though it is known for its high nutritional value, is rather used for hatching chicks (Kokoszynski, 2017)^[3]. Skin is particularly used for making items, accessories and jeweleries from it. Ostrich has a longer productive life-period compared to all poultry species (Ipek and Sahan, 2003)^[4]. In the wilderness they mature at the age of 4-5 years the male and the female, respectively, while among domesticated circumstances at the age of 3, the females mature earlier, than the males (Smith *et al.*, 1995)^[5]. Female lay 12-18 eggs in one breeding season in wild. Conversely, in farms they produce 40-60 eggs. Layers are able to lay eggs even until at the age of 40 and reach the peak at the age of 7-11. There are many factors influencing egg production. Some of them are related to the environment (temperature, feed, health condition). Research studies indicated that they lay the most eggs in June and July and the hatchability rate is the best in August.

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Behaviour

	Male	Female
Sexual Maturity	2-1/2years	2 years
Height	7 feet	7 feet
Weight	130 kg	120 kgs
Colour	Black	Grey
Speed	90 km/hr.	90km/hr.

Sexual Behaviour

Clucking and fluttering: A breeding hen may express her physiological readiness to breed by emitting a clucking sound made by rapidly opening and closing her beak. Simultaneously, she may flutter her wings by dropping them low and forward, and vibrating them in sequence.

Kantling: This is a typical male territorial behaviour in which the bird drops to his hocks, and fans both wings forward and backward while hitting his head on each side of his spine.

Soliciting: Female bird shows this display as a part of her willingness to mate where she holds her wings forward and down flapping them backward and forward while holding her head close to the ground opening her beak repeatedly to make a clapping sound.

Agonistic display: This is the sign of aggressiveness exhibited by male towards neighbouring male/female birds or other animals.

Courtship display: Importance of this behaviour is that it leads to copulation (Sauer and Sauer, 1966) ^[6] which is often initiated by monotonous booming sound (male). Reports proved that unsuccessful attempts at copulation are mainly due to mating without kantling display. Courtship display diminishes in frequency in both male and female when the clutch is being laid as the bird usually goes for brooding (Bertram, 1992) ^[7].

**Breeding season**

Northern Hemisphere	March-September
Southern Hemisphere	August-March

Ostriches are seasonal breeders which means that the birds will mate successfully only during a certain time or part of the year. Sexual interest and behaviours are expressed during this period. These should be differentiated from opportunistic (budgerigars) and continuous breeders (human). Timing and duration vary based on the different parts of the world (Shanawany, 1994)⁸.

Conclusion

A detailed analysis of behaviour sequences and natural incubation methods can be used for the understanding of the species behaviour pattern, as well as from the captive breeding point of view for developing better husbandry techniques and more production of chicks with less cost

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