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A Study on Breeding Proportions of Emu

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Abstract: In Kazakhstan, over the past decade, farmers' attention has been directed towards the breeding of ostriches. Just a couple of farms used to breed emus, though mostly for tourist attraction, until few years ago when a research began by Kazakh National Agricultural University in order to assist Governmental program for developing agricultural industry. Today emu farming is still a new and developing part of poultry farming in Kazakhstan. By 2012, emu population in Kazakhstan was about 250 birds, out of which 200 were bred at farms in suburbs of Almaty city. Most of their owners still think of them mainly as pets or tourist attraction and do not pay a special care for their breeding and raising techniques. Most of these emu stocks have inadequate, proportion of males and females. Therefore, an attempt was made to study the effect of different male-female proportions of emu packs during breeding season.

Key words: Emu, Kazakhstan, ostriches, breeding

INTRODUCTION

Just like ostrich farming. Emu farming has become a popular and lucrative part of agricultural industry throughout the world. After visiting and conducting research at several emu farms, it could be estimated that the total population of emus in India is around 75,000. Today, the world population of emus is estimated to be around 2 million, out of which 1 million is estimated to be spread between Northern America, Peru, India and China and about 750 000 in Australia. (Minnaar and Minnaar, 1998).

Assuming the feeding cost to be about \$100/year, with average meat price of \$25/kg, crude fat \$10/kg, \$150/m² of leather, \$50/kg of feathers, hatchlings cost \$150, adult birds selling at \$500-700 and egg prices \$30/unit and with a possibility to get up to 40 eggs/year or 35 chicks, there is a good chance to get at least \$1500 profit from one single pair of emus (Orumbayev and Sh. Alpeyisov, 2012). Generally emus (*Dromaius novaehollandiae*) are easier to grow than ostriches (*Struthio camelus*) and require less maintenance, space and forage.

Emus are very adaptive to climatic conditions and because they have thick layer of feathers and fat, its possible to breed emus even in places with cold winters like Kazakhstan or Siberian parts of Russia.

MATERIALS AND METHODS

The experiment has been conducted at the farm conditions in suburbs of Almaty city, during the breeding season of Emus (November to March). Emus of the same age and average weight of 32 kg were used during the test which was a part of larger experiment where birds received various premixes and rations. In this article, we will discuss only results of control group that received same ration without premixes.

RESULTS

Emus received 1.2 kg of forage as well as food supplements viz. chopped pumpkins, apples, carrots and milk whey (Table 1).

Emus were kept in an open air section with area 5 x 15 and 3 x 5 m in heated winter quarters. During the day the emus were kept in open air section unless outside temperature was below -10°C in which case the birds were kept outside for 2-3 h during mid-day. If the outside temperature was -15°C or less emus were kept in open air section for up to 40 min so that their winter quarters could be cleaned from waste. In heated winter quarters, temperature ranged between +5 to 15°C. The floor was made of concrete and partly covered by thick layer of straw where emus used to nest and lay eggs.

The structure of emu packs was made-up the following way:

- Pack A-1 male, 3 females, Pack B-2 males, 3 females and. Pack C-3 males, 3 females

DISCUSSION

The results of the experiment are shown in Table 2. The methods of breeding and feeding emus is very similar with African ostriches. American farmers breed emus by keeping 20 couples on 0.4 hectare space or 600 birds on 15 acres space (101 square meters per bird), while Australian farmers use 65 square meters per bird (Orumbayev and Sh. Alpeyisov, 2012; Ridlen *et al.*, 1992).

It is a common knowledge among emu breeders that the optimal recommended male-female ratio for emus is 1:1 or 3 males / 2 females. During mating season birds frequently copulate and female lay eggs on an average every 3 days. In natural conditions, a female lays about 10-11 eggs per mating season while under



Fig. 1: Australian emus at farm conditions

Table 1: Composition of ration fed to the control group of emus

Components	Values (%)
Corn	30
Alfalfa hay	20
Barley	20
Soya shrot	20
Oats	10
1000 g contains	
Nutritional value, units	1.0
Energy, Megajoules	11.4
Dry matter (g)	858
Protein (g)	169
Crude fat (g)	34.5
Raw fiber (g)	106
Lysine (g)	7.95
Methionine+cystine (g)	4.22
Ca (g)	12.0
P (g)	3.5
Na (g)	19.0
Mn (g)	23.5
Zn (mg)	20.0
I (mg)	0.10

farm conditions with proper food, bio-supplements and care, its possible to achieve up to 20 eggs. Its important to know that males must be mature and eager for copulation, otherwise, in 90% cases females will lay a few or even no eggs at all without frequent copulation. That is why, its better to have several males to ensure higher percentage of inseminated eggs.

Table 2: Summary of the results of present study

Months	Pack A	Pack B	Pack C
November	1	3	5
December	0	3	4
January	3	3	3
February	3	2	3
Total eggs/test	7 pieces	11 pieces	15 pieces
Barren eggs	2	4	5
Fertilized eggs	5	7	10
Hatched eggs	2	3	6

From our research conducted in Andra Pradesh region of India between 2010-2012, it could be stated that Indian farmers usually breed emus in open-air conditions, feeding birds rations that comply suggested ration compositions by Rao (2004). Farmers keep on an average 75-120 birds in 75 x 75 m space. In our experiments a control group of emus consisting of 5 males and 5 females that didn't receive bio-supplements produced 26 eggs during the mating season with the following data: 7 eggs were barren, 19 eggs fertilized 10 of which hatched.

Conclusion: Thus, by comparing the results of present experiment, it could be concluded that its better to form breeding packs of emus with at least 1:1 ratio, although, another recommended ratio is 3 males per 2 females in order to assure continuous copulation and insemination

of eggs. Larger packs of birds ensure larger amount of egg production.

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