

TO STUDY THE MORTALITY AND BREEDING RATE IN AUSTRALIAN PARROT (*MALOPSITTACUS UNDULATES*) IN CAPTIVITY AT TANDOJAM, PAKISTAN

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ABSTRACT: The present research was performed to find out the mortality and breeding rate in *Malopsittacus undulates* a famous species of Australian parrot (budgerigar). In this study a total (50) pairs 100 birds were kept at a farm house Tandojam, Pakistan. Number of egg, size of clutch, hatchlings, number of hatching and fledglings were recorded to observe the breeding rate. During the whole breeding season total number of egg was 527. The size of clutch was varied from 1-7. The hatchling and hatching outcome was observed 79.62% and 27.26%, respectively. The number of egg and size of clutch during breeding season showed rapid growth in parrot population. According to fledging and hatching rate good success rate was observed.

Key words: Australian parrot, breeding, mortality rate, clutch, fledging

INTRODUCTION

There are about 350 species of parrot order Psittaciformes, present in the world. Many species of parrot are kept as pet bird [1]. The budgerigar (Shaw), it is specie of parrot names birds, which are captive and self-reproducing population and don't like to live like other wild birds. This specie of Australian parrot can be found throughout the world [2]. Information regarding the breeding of parrot is an important tool for productive farming of parrots [3]. Captive birds have enough reproductive efficiency to persuade the demand of market. A number of researchers has conducted the researches to observe the reproductive efficiency of these captive parrot species [4,5]. Everyday increasing the population of parrots tends increased the importance of parrot farming. It has been reported that in past 2 years Australian parrot culture is rapidly increasing in Pakistan and getting importance as pet business [6,7]. That is why studies are required to contribute parrot culture more effective and beneficial [8]. The current research was carried out to observe the size of clutch, hatchling and hatching success in captivity of Australian parrot specie *Melopsittacus undulatus* to find out the mortality and breeding rate.

MATERIAL AND METHODS

The mortality and breeding rate of Australian parrot specie *Melopsittacus undulates* (Budgerigar) were observed. The research was performed at a farm house in Tandojam, Pakistan. Research experiment was carried out for the period of 6 months (October 2016 to March 2017). The total 50 Pairs (100) equal male and female birds were included in this study. Artificial nets made up of wood and net were provided to these birds with mud pots with the entrance and opening of birds from the nest. In the nest availability of water was ensured round the clock and proper light, ventilation, temperature and cleaning was performed on a routine basis. In the present study data was collected with one day intervals. The each eggs fate was recorded when the egg was lost before hatching or failed to hatch. The nestling, which was disappeared from the nest reaching fledging egg were recorded as the death. The number of total eggs, hatching and fledging was recorded. Following formula was applied to observe the hatchling success"

Hatchling success= (number of hatched eggs/ number of laid eggs) x 100. The formula for observing the fledgling is as follows: Fledgling success = (fledgling's number/ number of hatchlings) x 100.

RESULTS

In this study total eggs were recorded 527 in the duration of six month. Maximum number of egg was laid 137 in the month of March 2017, while minimum number of eggs was laid 39 in October 2016, details are present in Table-1. The maximum size of clutch was found (8) in the month of March. While maximum rotten/broken egg percentage (94%) 39/37 was found October 2016 followed by (82%) 52/62 in the month of January and (70%) 83/116 in February month. While the lowest percentage of rotten/broken eggs was recorded (44.08) 62/139 in March 2017. The highest hatching rate was observed (35%) 51/137 in March 2017 followed by (34%) 16/47 in month of December 2016, while (33%) 41/119 in February. It was observed lowest 2% 1/40 in month of October 2016. The fledgling success ratio of fledgling to success was observed higher 80%, whereas hatchling mortality was observed lower 16% in current study, details are presented in Table-1. In this study no adult parrot was observed dead.

DISCUSSION

In the current study, breeding season of Australian parrots starts from October 2016 to March 2017 for the period of 6 months in captivity. The results of a current study vary from the results of [4], who have reported the breeding season of Australian parrot in wild lasted in from the month of September to February. The said the difference among the breeding season may be due to captivity of wildness or due to climatic conditions. [9], reported that breeding season is primarily controlled by the photoperiod and environmental factors are known for a second reason, such as temperature of environment, the supply of food has also effected on the starting of the egg laying period [9]. In other species of parrot [9], reported the breeding season start from October to January for monk parakeet, while for the month of March to May for the Rose-ringed parakeet species [7]. This mentioned difference among the researches may because of difference species under the study.

Tabl-1 Mortality and breeding rate in Australian parrot in captivity at Tandojam

No of Month	Number of total eggs	Size of the clutch	Eggs rotten		Hatched eggs		Died hatchling		Fledglings	
			≠	%	≠	%	≠	%	≠	%
Oct. 2016	39	1-5	39	94.23	1	2.65	0	0	1	99
Nov. 2016	49	1-5	25	59.18	18	36.73	4	21.21	14	76.68
Dec. 2017	63	1-5	50	84.38	10	34.53	1	09	09	89
Jan. 2017	118	1-6	52	82.5	47	33.76	3	8.09	30	91.91
Feb. 2017	139	1-7	62	70.11	53	37.59	14	25.41	39	71.58
Mar. 2017	137	1-8	73	44.08	43	35.6	07	15.27	36	83.61
	527		309		159		29		130	

The number of was laid on daily base or on alternate days, this is a statement of [5] is supporting the current study of different species including Neotropical parrot, while black cheeked lovebird [10]. In this study the size of clutch varied from 1-8, while the size of clutch range up to 7 in similar species in wild captivity [4]. However, it has been reported little bit vary in other different parrot species. It ranges more than 7 red crowned parakeets and in Rose-ringed parakeets and above 8 in black cheeked lovebirds and thick billed parrot up to 12 in moon parakeets [6-12]. The size of clutch seems too conserved in clades and mostly co varies with genetical variation such as the size of the body, development of nestling, type of nest, frequency of females and feeding rate [13]. There are many factors responsible for the changing in size of clutch varies due to climate and seasonal variations or rain fall [14,15]. The results the of current study showed that incubation period starts after 1st egg was laid till 22-25 days and end at 18-21 days in Budgerigar. The results of [4], showed slight changes in incubation period due to climate and seasonal effect or wildness. In current study higher hatching success was observed in March 2016, whereas total hatching success was 29%. Many authors reported different percentage of hatching success, such as 70%, 79%, 52% in Black checked lovebirds, thin billed parrots and monk parakeets, respectively [10-12]. Many studies suggested that human disturbance also caused failure to egg hatching. However in present study fledgling mortality was observed low as compared to [12,16], who have reported higher in monk parakeet and psittaciform birds, that is may because of some other factors such as food, predation and deprivation to cause mortality were not act on captivity.

CONCLUSION

It is concluded that Australian parrot start the laying eggs after the maturity on daily basis or alternate days with the size of clutch range from 1-7. While the incubation period start with laying of first egg and end till 22-25 days. According to size of clutch, eggs numbers and season of breeding show rapid increase in growth population of Australian parrots. The rate of hatching and fledgling showed better reproductive efficiency in captivity. The period of fledgling consist of 30-37 days.

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