

Feeding Regimens of Rose-Ringed Parakeet (*Psittacula krameri*) in a Maize Agro-Ecosystem in Central Punjab, Pakistan

HAMMAD AHMAD KHAN

Department of Zoology and Fisheries, University of Agriculture, Faisalabad-38040, Pakistan

ABSTRACT

The Rose-ringed parakeet (*Psittacula krameri*), a serious avian pest depredates cereals, oil-seed crops, and orchards in the cultivations of Central Punjab. Feeding regimens of this parakeet with reference to the maize crop located at the University of Agriculture, Faisalabad, were studied for three years, May 1996 through May 1998. Average for three years depicts that the number of parakeets feeding during the morning was 39.04 and 73.13 for the evening. Parakeets feeding per hour on the maize crop during the morning were 12.00 and 23.34 for the evening. In the light of this study it was concluded that the cultivation of food crops away from the parakeet nests coupled with a sagacious use of toxicants at the breeding season, might prove effective in reducing the parakeet devastation to the croplands.

Key Words: Parakeet; Feeding regimens; Maize; Pakistan

INTRODUCTION

Maize is an important cereal crop, and is cultivated largely throughout Central Punjab. Maize cobs are intensively predated by the Rose-ringed Parakeet (*Psittacula krameri*) both at the milky and ripening stages (Ali *et al.*, 1981; Beg, 1985; Malhi & Brar, 1987; Karim, 1987). Rose-ringed parakeet is serious avian pest in the sub-continent and feeds on a variety of food items *viz.* cereals, oil-seed crops and orchards, causing substantial economic losses amounting to millions of rupees annually (Khan & Hussain, 1990; Rana & Bankar, 1993). It is a wasteful feeder and discards or destroys partially consumed food items (Beg, 1978; Ali & Ripley, 1988). Parakeets feed the maize crop at the milky and mature stages, removing the outer leafy foliage and consume the grains. Their feeding activity is more intense during the morning and in the afternoon (Ramzan & Toor, 1988). Main objective of the present was to know about the feeding regimens of the parakeet during different times of the day, and to suggest various methods for the potent control of the parakeet attack on the maize crop.

MATERIALS AND METHODS

Study on the feeding activity of parakeets was conducted on a selected half an acre maize field, Department of Agronomy, University of Agriculture, Faisalabad. This field was bordered by a harvested wheat field at about 50 m on the south-western side, by a fallow-land from the northern side, a mango

orchard and two rows of the *Dalbergia sisso* trees on the eastern side. Observations were made in the month of May, three days each for 1996, 1997 and 1998 from dawn till dusk at the specific points with a 30-minute time interval. Observation points were carefully selected without causing any disturbance to the parakeets. All observations on the feeding activity of parakeets were recorded in a data book. Field binoculars (7x50 mm) were frequently used to get a clear image of the parakeets in the maize field.

RESULTS AND DISCUSSION

It is evident from Table I that the peak predatory activity of parakeets was found between 1700–1800 hours each year, followed generally on overall basis in the morning and evening. No parakeet attacks occurred between 0900–1600 hours and the average number of birds visiting the maize field was 122.30, 106.60 and 106.21 during 1996, 1997 and 1998, respectively (Table I). It is clear from the results that parakeets had two periods of feeding, one in the morning and the other in the afternoon. Both these periods were separated by a period of inactivity during the mid-day. During this period, parakeets were generally confined within their roosts (site for rest within trees). Intensity of parakeet attacks on the maize crop were more during the afternoon than in the morning (Table II). An average for three years depicts that the afternoon number of parakeet attacks during the afternoon were greater (219.42) than in the morning (117.12). Table II also indicates that the average parakeet visits recorded per hour in afternoon were also enhanced (70.33) than

Table 1. Feeding regimens of Rose-Ringed Parakeet (*Psittacula krameri*) in a maize field located on the campus University of Agriculture, Faisalabad

Obs. Time	May, 1996				May, 1997				May, 1998			
	20	23	28	Av.No. Parakeets visited	10	11	12	Av.No. Parakeets visited	10	11	12	Av.No. Parakeets visited
0500-0530	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
0530-0600	0	7	0	2.33	0	0	0	0.00	0	0	0	0.00
0600-0630	2	5	0	2.33	5	1	4	3.33	4	3	7	4.66
0630-0700	6	11	10	9.00	11	7	12	10.00	11	7	12	10.00
0700-0730	11	19	14	14.66	10	9	14	11.00	10	9	3	7.33
0730-0800	8	6	6	6.66	9	6	7	7.33	4	0	3	2.33
0800-0830	7	13	7	9.00	5	0	3	2.66	0	0	0	0.00
0830-0900	6	0	0	2.00	0	0	0	0.00	0	0	0	0.00
0900-0930	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
0930-1000	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
1000-1030	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
1030-1100	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
1100-1130	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
1130-1200	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
1200-1230	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
1230-1300	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
1300-1330	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
1330-1400	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
1400-1430	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
1430-1500	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
1500-1530	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00
1530-1600	0	4	0	1.33	0	0	0	0.00	0	0	0	0.00
1600-1630	5	11	0	5.33	0	2	5	2.33	3	7	8	6.00
1630-1700	7	7	10	8.00	7	11	14	10.66	12	12	15	13.33
1700-1730	11	16	14	17.00	15	20	23	19.33	21	20	27	2.66
1730-1800	20	22	19	20.33	17	26	31	24.66	17	25	22	21.33
1800-1830	14	26	27	19.00	10	17	13	13.33	20	14	12	15.33
1830-1900	5	4	7	5.33	3	0	2	1.66	4	2	5	3.66
Total	102	141	94	122.30	92	99	128	106.60	106	89	114	106.21

in the morning (45.99). The Rose-ringed parakeet has a wide feeding niche as it feeds on both the agricultural and horticultural plants (Sekhon, 1986; Shafi *et al.*, 1986; Karim, 1987). In the Central Punjab, the introduction of the canal irrigation system, about a century ago to extend the agriculture in this region, had a favourable impact on the population size of this parakeet, as it not only, received the suitable vegetational cover but also the abundance of food (Beg, 1978; Zia, 1982; Bashir, 1987; Ali & Ripley, 1988). Data recorded suggests that the parakeets have two periods of feeding regimens-one in the morning and the other during the afternoon, separated by an almost quiescent period. Results show that the Rose-ringed parakeet predated intensively on the maize crop at the milky and ripening stages, and its intensity was found to be more during the afternoon period than the morning. Maize, one of the main crops in the Central Punjab, suffers heavily against the parakeet menace. According to Khan and Hussain (1990), the maize has been the main target of the parakeet, and according to a damage report an estimated loss of this crop in

Punjab was 26.21%, in NWFP 13.03%, and in Islamabad 26.24%. Present studies also document that being a serious avian pest, this parakeet selects nutritious food items (rich in protein, fat and sugars), and therefore, exploits the cereals, oil-seeds and orchards (Karim, 1987). A variety of avicides and toxicants are present to control several bird pests; however, their unwise and indiscriminate use often kills many non-target animals including many useful mammals. (Prakash, 1992). Palpably, the food crops may be saved against the depredatory activities of the

Table II. Average parakeet feeding during morning and afternoon on the maize crop

Year	Ave. Parakeets fed in morning	Ave. Parakeets fed in afternoon	Ave. Parakeets visited/hour (morning)	Ave. Parakeets visited/hour (afternoon)
1996	39.42	65.42	11.26	18.70
1997	41.20	72.20	16.48	24.00
1998	36.50	82.00	18.25	27.33
Total	117.12	219.42	45.99	70.03

Rose-ringed parakeet, unquestionably, the worst avian pest, by cultivating them away from the nesting sites of this bird, as parakeets can fly for an average of about 10 km per visit. Thus, when the croplands would occur at a far distance from the parakeet nests, they would require extra energy for the feeding activities (Ali, 1990). Use of poison baits within the fascimile crop such as that of maize can be done during the breeding season (March to May) as the parakeets are in search of food to look after the offspring. It is suggested that initially, the parakeets should be allowed to feed on the maize crop, and later on few model maize soaked in an avicide should be incorporated with the original maize crop. This method can be both effective and safe and may serve to reduce the parakeet depredations on maize crop and, therefore, save economic loss.

REFERENCES

- Ali, S., 1990. Saving the maize against parakeet invasion. *Indian J. Hort.*, 12:122-4.
- Ali, M.H., B.H.L. Rao, M.A. Rao and P.S. Rao, 1981. Bird damage in maize. *J. Bomb. Nat. Hist. Soc.*, 79: 201-4.
- Ali, S. and S.D. Ripley, 1988. A note on Parakeet depredation. *J. Bomb. Nat. Hist. Soc.*, 10: 102-6.
- Bashir, El.S.A., 1978. Review of parakeet damage in Pakistan and suggested control methods. *Proc. Sem. on Bird Pest Problems in Agriculture*, July 5-6, 1978, Karachi, Pakistan.
- Beg, M.A., 1978. Some observations on the biology of Rose-ringed parakeet in Punjab. *Proc. Sem. on Bird Pest Problems in Agriculture*, July 5-6, 1978, Karachi, Pakistan.
- Beg, M.A., 1985. A note on the activities of Rose-ringed parakeet in Central Punjab. *Indian J. Forestry*, 12: 26-8.
- Karim, A., 1987. Foraging and feeding behaviour of Rose-ringed Parakeet. M.Phil. Thesis, Dept. Zoology & Fisheries, Univ. Agriculture, Faisalabad, p.78.
- Khan, A.A. and I. Hussain, 1990. Damage to standing maize crop in Pakistan by Rose-ringed Parakeet (*Psittacula krameri*). A Manual of Vertebrate Pest Control, USAID/GOP/NARC, Islamabad, p. 276.
- Malhi, C.S. and S.S. Brar, 1987. Damage by Rose-ringed parakeet (*Psittacula krameri*) at Ludhiana, Punjab, India. *Indian J. Forestry*, 10:156-8.
- Prakash, J.P., 1992. Indiscriminate killings of animals by the use of avicides. *Indian J. Hort.*, 13: 76-0.
- Rana, T.S. and R. Bankar, 1993. Economic losses to food crops by Rose-ringed parakeet (*Psittacula krameri*) in Punjab, India. *Indian J. Agri. Sci.*, 33: 114-88.
- Ramzan, M. and H.S. Toor, 1988. Studies on damage to maize due to Rose ringed parakeet (*Psittacula krameri*) at Ludhiana, Punjab. *The Punjab Hort. J.*, 12 : 144-5.
- Shafi, M.M., A.A. Khan and I. Hussain, 1986. Parakeet damage to citrus fruit in Punjab, Pakistan. *J. Bomb. Nat. Hist. Soc.*, 83: 439-44.
- Zia, S., 1982. Abundance of Rose-ringed Parakeet population. M.Sc. Thesis, Dept. Zoology and Fisheries, Univ. Agriculture, Faisalabad, p. 55.

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