

FEEDING REGIMENS OF ROSE-RINGED PARAKEET (*Psittacula krameri*) ON A SUNFLOWER FIELD IN AN AGRO-ECOSYSTEM OF CENTRAL PUNJAB, PAKISTAN

Muhammad Tariq Iqbal, Hammad Ahmad Khan and Mahmood-ul-Hassan Ahmad,
Department of Zoology and Fisheries, University of Agriculture, Faisalabad – 38040, Pakistan

ABSTRACT

The rose-ringed parakeet (*Psittacula krameri*) is a serious avian pest and as such, destroys a variety of food crops throughout the Central Punjab. This paper documents an information about the feeding regimens of the parakeet with reference to the sunflower field. For the two years, the average number of parakeet during the morning foraging session was 11.59 ± 1.76 , and for the afternoon it was 15.29 ± 1.79 . It was concluded that the food sources should be protected against the attack of parakeets preferably by using the trap crops near the cultivations along with the intelligent use of avicides and chemosterilants to inhibit the parakeet population.

Keywords: Parakeet, sunflower field, agro-ecosystem, feeding regimens

INTRODUCTION

Sunflower (*Helianthus annuus*) is an important oil seed crop, and is cultivated twice a year; during January/February, and next in August/September. It is one of the preferred food source of the parakeet and is damaged intensively at the ripening stages (Shakoor, 1997). The rose-ringed parakeet is one of the serious problem of agriculture and attacks a variety of crops and orchard fruits (Ramzan and Toor, 1972; Bashir, 1978; Ali *et al.*, 1981; Shafi *et al.*, 1986; Babu and Muthukrishnan, 1987). Crops as maize and sunflower are exploited by the parakeets while remaining perched on the crop plants, and feed the panicles by clipping off the crop. Use of temporary roosts thus, play an important role in exploiting different food resources. Utilization of food resources from a crop which offers no perching site to the parakeets and where no nearby trees are present would be expensive in terms of energy and safety. Parakeets, therefore, prefer the food sources closer to their nest sites for more effective predation (Karim, 1987). According to Toor and Ramzan (1973), a 20 % damage was recorded on a one acre sunflower field located at the Agricultural University, Ludhiana, India. The damage was more intense at the mature heads with the seeds being consumed, and continued till the harvest period. A loss of 25-100 % to brassica, mangoes, guava, and sunflower was reported by Prasad and Verghese (1985) in India. Saini *et al* (1993) analyzing the gut contents of the rose-ringed parakeets for one year showed that it consisted of cereals (45%), tree orchards (38%) and oilseeds (16%). The main objective of the present study was to know about the

feeding activities of the parakeet with reference to the sunflower and to suggest the economically and environmentally effective measures to prevent the parakeet depreddations on cultivated crops and orchard fruits.

MATERIALS AND METHODS

Studies on the feeding regimens of rose-ringed parakeet on the sunflower crop was extended for three days each during February 1997 and 1998 on half an acre plot of sunflower at the Student Farms, University of Agriculture, Faisalabad. The field was bordered on the south-western side by a metallic road, intervened by a line of the Eucalyptus trees, used as the perching sites by the parakeets, while on the north eastern side was a fallow land. A chickpea field was present adjacent to the sunflower field. Observations started before the sunrise and continued till the sunset at randomly sampled points of time for three consecutive days. Field binocular (7x50 mm) was frequently used to note the visiting parakeets in the field.

RESULTS AND DISCUSSION

Studies on the feeding activities of the rose ringed parakeet were extended for three days each in May 1997 and 1998 on half an acre sunflower field located at the Students Farm, Table 1 depicts that the morning parakeet attack in February, 1997 on the sunflower

started during 0630-0700 hours time interval, and continued till 0930-1000 hours time interval for all three days, while for the evening foraging session, the depredations began during 1500-1530 hours time interval and lasted till 1700-1730 hours time interval. For all three days, a total of 139, 132 and 147 parakeets were recorded during both the morning and evening sessions (Table 1).

In February, 1998, once again the parakeet foraging commenced during 0630-0700 hours time interval and lasted through 0900-0930 hours time interval. In the evening, the timings of parakeet attack were between 1500-1530 hours time interval through 1700-1730 hours (Table 1). For the three days, a total of 120, 171 and 141 parakeets were recorded during the morning and evening foraging intervals. It is evident from Table 2 that the first parakeet attack on sunflower started during 0630-0700 hours time interval, and a total of seven parakeets were recorded. Their depredations peaked till 0830-0900 hours time interval, and past this, their number declined (Table 2). The maximum average number of parakeets recorded during the morning foraging session was 17.17 ± 1.76 , and the minimum was 0.28 ± 0.14 . In all, 273 parakeets were recorded visiting the sunflower field with an average of 11.59 ± 1.76 (Table 2). Similarly in the evening, 473 parakeets attacked the sunflower field in five time intervals, and the maximum number was 157 which occurred during 1600-1630 hours with an average parakeets recorded per sampling point of time 31.40 ± 1.71 . A total of 473 parakeets fed during five time intervals and the average was 15.29 ± 1.79 (Table 2).

The rose-ringed parakeet has a wide feeding niche as it depredates a variety of food items. Oil seed crops

as sunflower is intensively predated by the parakeets at the ripening stages and its panicles are clipped off from the crop and seeds eaten by the parakeets (Shafi *et al.*, 1986; Karim, 1987). It is clear from both Table 1 and 2 that the parakeets fed in the morning and evening foraging sessions. In all, 473 parakeets were recorded in the evening session in the combined data for February 1997 and 1998, while for the two years in the morning, the total parakeet number was 273. It envisages that the rate of foraging was enhanced during the evening foraging session. The introduction of canal irrigation system in the region of Central Punjab to promote agriculture during the past century, had a favourable impact on the parakeet population since the tall trees as *Salmaia malabarica* and *Terminalia arjuna*, not only provided the suitable cover, but the abundance of food sources, enhanced the feeding niche of the bird (Beg, 1978; Bashir, 1978; Sarwar *et al.*, 1989; Shakoob, 1997). On the analysis of the gut contents of the parakeet, a variety of food items as cereals, oil seeds and orchards are almost always likely to be found (Saini *et al.*, 1994). The present has provided information about the availability of a food item to the parakeets at the farms of University of Agriculture Faisalabad. Now an environmentally sustainable strategy can be formulated with the use of trap crops as sunflower and maize during February and May, since these months are also the breeding season for the parakeets and they are in active pursuit for food. The careful application of the avicides and toxicants on the especially designed model trap crops viz. sunflower and maize, may thus, help in alleviating the parakeet population, unquestionably the serious vertebrate pest in the region.

Table 1: Number of rose ringed parakeets visits on the sunflower field located at the Student Farm, University of Agriculture, Faisalabad.

Obs. Time	February 1997			February 1998		
	20	21	22	13	14	15
Morning						
0630-0700	4	-	5	1	2	-
0700-0730	7	17	17	5	7	3
0730-0800	11	24	22	7	11	14
0800-0830	21	14	4	15	22	16
0830-0900	15	8	2	16	20	23
0900-0930	10	1	-	5	13	-
0930-1000	-	-	-	-	-	-
Afternoon						
1500-1530	7	11	12	10	13	12
1530-1600	15	16	24	14	22	19
1600-1630	24	21	25	24	34	29
1630-1700	18	16	14	16	20	21
1700-1730	7	4	7	7	7	4
Total	139	132	147	120	171	141

Table 2: Foraging timings of rose-ringed parakeet on the sunflower field at the Student Farm, University of Agriculture, Faisalabad.

Observation parakeets per SPT time	Total no. of parakeets observed at different SPTs(range)	Average no. of parakeets per SPT \pm SE
Morning		
0630-0700	7(1-4)	1.0 \pm 1.00
0700-0730	44 (3-17)	6.28 \pm 0.90
0730-0800	84 (7-24)	14.00 \pm 2.14
0800-0830	103 (14-21)	17.17 \pm 1.76
0830-0900	104 (8-23)	14.85 \pm 1.40
0900-0930	33 (1-13)	4.71 \pm 1.14
0930-1000	2 (0-2)	0.28 \pm 0.14
Total	273 (0-24)	11.59 \pm 0.14
Afternoon		
1500-1530	65(7-13)	13.00 \pm 1.05
1530-1600	110(014-24)	22.00 \pm 2.10
1600-1630	157(21-34)	31.40 \pm 1.71
1630-1700	105(14-21)	21.00 \pm 0.79
1700-1730	36(4-7)	7.20 \pm 1.12
Total	473(4-34)	15.29 \pm 1.79

REFERENCES

- 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: 201-2014.
- Bashir, El. S.A., 1978. Review of parakeet damage in Pakistan and suggested control methods. Proceedings of Seminar on Bird Pest Problems in Agriculture, July 5-6, 1978, Karachi, Pakistan.
- Babu, R.S. and T.S. Muthukrishnan, 1987. Studies on the damage by *Psittacula krameri* (Scopoli) and *Passer domesticus* (Linnaeus) on certain crops. Tropical Pest Management. 33(4) : 367-369.
- Beg, M.A., 1978. Some observations on the biology of rose-ringed parakeet in Punjab. Proceeding of Seminar on Bird Pest Problems in Agriculture, July 5-6, 1978, Karachi, Pakistan.
- Karim, A., 1987. Foraging and feeding behaviour of rose-ringed parakeet. M.Phil. Thesis, Department of Zoology and Fisheries, University of Agriculture, Faisalabad.
- Prasad, V.G. and A. Verghese, 1985. Birds as pests of horticultural crops. Bull. Entom., 26(1) : 94-96.
- Ramzan, M. and H.S. Toor, 1972. Studies on damage to guava fruits due to rose-ringed parakeet (*Psittacula krameri*) (Scopoli) at Ludhiana. The Punjab Hort. J., 12(2 &3): 144-145.
- Saini, M.S., P. Sandhu and R. Maitra, 1993. An analysis of the gut contents of the rose-ringed parakeets (*Psittacula krameri*) in Ludhiana, India. The Punjab Hort. J., 19(2): 126-130.
- Sarwar, M., M.A. Beg, A.A. Khan and D. Shehwar, 1989. Distribution and abundance of tree hollows as parakeet nests in agroecosystem of Central Punjab. Pakistan J. Zool., 21(2) : 139-146.
- Shafi, M.M., A.A. Khan and I. Hussain, 1986. Parakeet (*Psittacula krameri*) damage to citrus fruits in Punjab, Pakistan. J. Bomb. Nat. Hist. Soc., 83(2): 438-444.
- Shakoor, A., 1997. Foraging and feeding behaviour of rose-ringed parakeet in the field crops and orchards. M.Sc. Thesis, Department of Zoology and Fisheries, University of Agriculture, Faisalabad.
- Toor, M.M. and H.S. Ramzan, 1973. The extent of losses due to rose-ringed parakeet in India. J. Res. Punjab Agri. Univeristy, Ludhiana, 11(12) : 197-199.