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Assessment of Rose-Ringed Parakeets (*Psittaculakrameri*) damage in Guava (*Psidiumguajava*) orchard



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ABSTRACT

Field Studies on bird damage to the guava (*Psidiumguajava*) orchards were carried out in protected and unprotected conditions at Kongara Village of Ibrahimpatnammandal, Ranga Reddy District, Hyderabad, Telangana State. The Rose-ringed parakeets (*Psittaculakrameri*), and other bird pests were also observed in damaging the unprotected guava orchard. The orchard of 60 trees were was unprotected and damage caused due to bird pests was heavy and yield was recorded as very less (8kg/tree) and its total yield was 480 kg. Half part of the orchard(60 trees) 300 meters away from the main orchard were was protected by bird scarers, where damage was found negligible and its yield was 24kg/tree, and the total yield was 1440 kg. The damage due to birds pest during morning hours was 36.17%, and during evening hours 48.68% was observed under unprotected conditions. The yield of 60 trees of an unprotected orchard compared with the yield obtained from the 60 trees of a protected orchard and the cost-cost-benefit ratio was nearly 1:4.00. It is suggested that engaging bird scarers, wire netting or other eco-friendly methods must protect the orchards, particularly during the fruits ripening stage until the harvest of the crop.

Keywords: Guava orchard, Parakeets, Unprotected, Bird Scarers, Protected and Damage assessment

INTRODUCTION

The Rose-ringed parakeets (*Psittaculakrameri*) are serious bird pests of Ber (*Zizyphusauritiana*) fruits at Rajendranagar, Hyderabad [1]. Rose -ringed parakeets are the common pests of Pomegranate in the arid zone at Jodhpur [2]. The Rose-ringed parakeets (*Psittaculakrameri*), Plum-headed Parakeet (*Psittaculacyanocephala*), Crow- pheasant or Greater coucal (*Centropussinensis*), and Asian Koel (*Eudynamysscolopacea*) were also observed causing damage to guava fruits at Hyderabad. The Rose-ringed parakeets are serious pests of Cordiamyxain the Western Rajasthan desert [3]. These parakeets caused considerable damage to Almond (*Prunusamygdalus*) and Ber (*Zizyphusauritiana*) [4] and [5] orchards at Ludhiana, Punjab. Bird pests inflict a substantial amount of damage on fruits in Punjab [6]. The parakeets are distributed throughout the country and among the 12 species of parakeets the Rose-ringed parakeet is the most destructive bird pest in horticultural crops [7]. In recent years the parakeet bird pest problems have increased to the fruit crops, particularly in all three agro-climatic zones (Northern Telangana Zone,

Central Telangana Zone, and Southern Telangana Zone) of the recently formed Telangana State. Parakeets and other birds damage was observed in the guava orchard when the fruits are in the ripening stage and damage intensifies towards harvest. Parakeets would cause 20.1% to 40% damage to guava fruits reported [8]. Information on bird damage to guava fruits is lacking. To fill this gap, the present study was under taken during the Rabi season of 2022-23 in a guava orchard of the farmer field.

MATERIALS AND METHODS

The study was carried out in an unprotected guava orchard damaged by parakeets and other birds in a guava orchard situated at Kongara Village of IbrahimpatnamMandal (Lat 17019'N, long 780 23'E; altitude 543 m above MSL) 25 km from Hyderabad in South India. The variety used was local variety and the farmer followed all the regular good agricultural practices. This orchard was in an area of 1.0 ha in semi-arid open land. The total number of guava trees was 60 under unprotected conditions, of which 60 guava trees 300 meters distance were away from the main orchard. These trees were protected by bird scarers and observations were made daily from 0600 to 0900 hours in the morning, and 1600 to 1800 hours in the evening, from mid-November, 2022 to mid-January, 2023 (60 days), to drive the birds away from the orchard. The data about the bird visits, percentage of fruit damage, yield particulars, and cost economics was computed as per the standard protocols. The scarers did their best to scare away the birds by traditional bird scaring methods such as shouting, clapping of hands, drumming

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with empty iron tins, and pelting of stones with a special device called as “Vadishala” or “Gulleru”. No bird scarers were employed in the unprotected guava orchard, the yield of the guava orchard at two places was compared and the cost-benefit ratio was calculated as per the formulae $\text{Gross income} \div \text{Total cost of cultivation}$ [9 & 10].

RESULTS

The Rose-ringed Parakeets, Greater coucals, and Asian koels are the serious bird pests of guava fruits under unprotected conditions. They caused considerable damage to guava fruits, particularly when the fruits were in the ripening stage until harvest of the crop. Protected with bird scarers orchards cause little or no damage compared to the unprotected orchard. The fruit fruit-eating birds were observed to attack the unprotected orchard during the morning and evening hours every day after the fruits at the ripening stage (Fig.1). In the protected field a group of 09 parakeets (during morning hours) to 15 parakeets (during evening hours) and 5 to 10 koels were occasionally observed in the vicinity of the field but they never used to enter into the orchard mainly due to attention of bird scarers (Fig.2). However in the unprotected orchard a mean average of 38 parakeets (during morning hours) to 47 parakeets (during evening hours) was observed (Table.1).

In an unprotected orchard of 60 trees damage caused by birds was slightly high and yield was recorded very less 8kg /tree. The total yield was 480 kg/ 60 trees. The yield of the protected orchard with bird scarers was 24kg /tree. The total yield was 1440 kg/60 trees. A quantity of 960 kg higher yield was obtained in the bird-scarer-protected orchard compared with the unprotected orchard. The birds caused damaged nearly 42.5% of the unprotected orchard.

The bird scarers were hired at Rs.300 per day per person (for one employee for 60 days, this worked out to be about 18,000/-). Given the cost of guava fruits (Rs: 50/kg), the cost; benefit ratio in the bird scarer protected orchard was 1:4.00, compared with 1:1.33 for the unprotected orchard (Table.2).

Table.1 Mean number of Parakeet birds visits during the morning and evening hours

S.no	Type of protection	Mean average no.of birds observed during morning hours	Mean average no.of birds observed during evening hours
1	Bird scarer orchard	09	13
2	Un protected orchard	38	47

Table.2 : Cost- benefit ratio of the Guava orchard with protected and unprotected orchard

S.No	Type of protection	Quantity	Expenditure (Rs)	Yield Kg/tree	Gross Income 50/Kg(Rs)	Net income (Rs)	B: C ratio
1	Bird scarers orchard	1 person per day @ 300/- for 60 days	18,000	1440kg@ 50/kg	72,000	72,000-18000=54,000/-	1:4.00
2	Unprotected orchard	-	-	480kg@ 50/kg	24,000	24,000/-	1:1.33



Fig.1 Parakeet bird feeding on the guava fruits and damage guava fruits

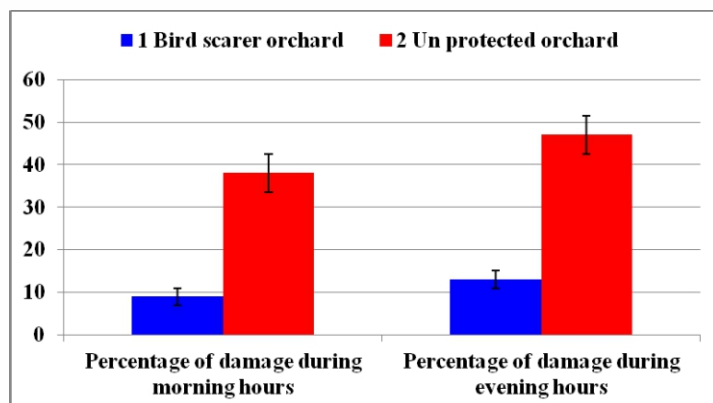


Fig.2 Percentage of Parakeet birds damage to Guava fruits

DISCUSSION

Parakeets and other birds caused damage to guava fruits in the unprotected plot during the ripening to maturity stage. [11 and 12] reported parakeet causes considerable damage to guava fruits at Ludhiana, Punjab. This is also supported by [1], who reported that unprotected ber orchard parakeets caused slightly high damage and very less yield was recorded at Rajendranagar, Hyderabad.

In the present study an amount of Rs: 24,000 was obtained in the unprotected plot (Table.2). An amount of 72,000 was obtained in the bird scarer-protected plot after deducting the labour expenditure; a benefit of Rs: 54,000 was obtained in the bird scarer protected plot compared with the unprotected plot. An average of 7.10%-11.90% of fruit damage was observed in protected orchards compared to unprotected orchards 36.17%-48.68%, our findings are inclined with earlier workers who reported that the parakeets would cause the 20.1% to 40% damage to guava fruits by [8]. These results were supported by many workers, who reported that parakeet damage to protected almonds and ber orchards at Ludhiana was very less [4,5 and 3]. The study also revealed that parakeets and other birds cause damage to guava fruits at the ripening to maturity stage, indicating the crucial period at which the orchard needs to be protected by using traditional bird scarers was also found to be cheaper than the use of others caring methods.

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REFERENCES

1. Reddy V R(2006) Damage to Ber (*Zizyphusmauritiana*) fruits by Rose- ringed parakeet, *Psittaculakrameri*, at Hyderabad.*J.Ecotoxicol. Environ.monit.*16(6), 587-589.
2. Rana B D and Bankar G J (1992) Damage to pomegranate fruits by rose ringed parakeet, *PsittaculaKrameri*, at Jodhpur.*Pavo.*30 (1&2), 1-3.
3. Rana B D (1987)The rose- ringed parakeet: A serious pest of *Cordiamixa* fruits in Western Rajasthan Desert. *Pavo.* 25, 29-32.
4. Sandhu P S and Dhindsa M S (1982) Damage by Rose ringed parakeet and some other animal pest to almond at Ludhiana, Punjab. *Indian J.Agric.Sci.*52, 779-781.
5. Malhi C S and Brar S S(1985) Damage to ber (*Zizyphusmauritianaumram*) by rose ringed parakeet (*Psittaculakrameri*) at Ludhiana. *Indian J.Forestry*2, 290-292
6. Sandhu P S and Toor H S (1984) Some pestiferous birds in agriculture and their management in Punjab. In: Status of wild life in Punjab.Ed: Atwal A S, Bains S S and Dhindsa M S. Indian Ecological Society, Ludhiana,Punjab p.78-87.
7. Chakravarthy AK (1998) Field investigations on birds damaging fruit crops in the hill region of Karanataka. In: *Birds in Agricultural Ecosystem*. Ed:Dhindsa,M.S.,Rao,PSS and Parasharya, B.M. Society for Applied ornithology (India),Rajendranagar,Hyderabad p.4-8
8. Khan H A, Anwar N and Perveen S (2006) Abundance of Rose-ringed parakeet (*Psittacula krameri*) and house sparrow (*Passer domesticus*) on guava and sunflower farmlands in an agro- ecosystem in Faisalabad, Pakistan. *J of Agri. and Social Sciences*2:125-128.
9. Reddy V R (1998a) Bird damage to maize crop on the Student's Research farm, Rajendranagar, Hyderabad, Andhra Pradesh. *Pavo.*36 (1&2),77-78.
10. Reddy V R (1998b) Studies on damage to Sorghum by the rose ringed parakeet, *Psittacula Krameri*, at Rajendranagar, Hyderabad, Andhra Pradesh. *Pavo.*36 (1&2), 79-80.
11. Ramzan M and Toor H S (1972) Studies on damage to guava fruits due to Rose ringed parakeet, *Psittaculakrameri* (Scopoli) at Ludhiana (Punjab). *Punjab Hort.J.*12,144-145.
12. Ramzan M and Toor H S (1975) Damage to maize crop by roseringed parakeet, *Psittacula krameri* (Scopoli) at Ludhiana (Punjab). *J.Bombay Nat.Hist.Soc.*70,201-204.