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Research Article

Fig fruit is a medicinal diet Not only for humans and for birds too

Ramarao Vendrapati[1*], Siddamallayya[2] & Veerá Mahesh[3]

[1]*Central Ayurveda Research Centre, Bangaluru, India.*
3Central Council of Research in Ayurvedic Sciences, New Delhi, India
[3]*Department of Biosciences & Biotechnology,Krishna University, Machiliipatnam. India.*

Corresponding Author:*vendrapati@yahoo.com*

Abstract

The trees like Banyan, Peepal, *Pitta carica,* etc produce fig fruit. This fruit consists several minerals and also consist several antioxidents. In Ayurveda, the uses of fig fruit described. It improves vitality in man and also stimulates oogenesis in females. Fig fruit is a favourite diet for several frugivorous birds. Though fruit produces discontinuously, most of the birds prefer as a major diet. In this paper, the observational research aimed to explore the influence of fig fruit on frugivorous birds reproductive success.

Keywords: Fig Fruit, Ficus begalensis, Ficus carica, Ficus relisiosa, Frugivorous birds, bird's diet,

Introduction

Ficus plant species have been using with medicinal importance for the past 10 thousand years (Shi et al 2011). Traditionally the leaves of *Ficus auricularia* is used to treat diabetis, diarrohea, its fruit and leaf has been used to heal wounds, diarrohea, dysentry and its root latex used to treat mumps, cholera, diarrohea and vomiting (Khuraijam and Huidrom 2014).

The fruit of *Ficus carica* being used as food resource all over the world, as it has good quantities of phyto chemicals like phenolic compounds and organic acids that improve human health (Shahrajabian et al. 2021). Fruits of *Ficus carica* are delicious food resource with rich content of minerals such as calcium, magnesium, iron, potassium and copper and also good source for dietary fiber and Vitamins A and K (Al-Dmoor 2021) and used to treat Alzheimer's disease (Shahrajabian et al. 2021).

Fruit *Ficus bengalensis* is used for the treatment of chronic diarrohea, dysentery and haemorrhoids. Consuming of fruit can reduce blood glucose level (diabetis), and also beneficial for curing leucorrhoea, menorrhagia and acerbic (Kmail et al. 2018).

Fruit and latex of *Ficus bengalensis* used in ayurveda to cure other disease like erysipelas, neuronal disorders, burning sensation, seminal weakness and tropically

used to cure pimples, abscesses, wounds, ulcers, sores, cracked soles and rheumatic inflammations (Devidas et al. 2021). Several ayurvedic studies also stated that the vitality can be improved by consuming Ficus fruits. They stimulate the spermatogenesis in males and oogenesis in females.

Birds consume the majority of Ficus fruit, in addition to animals and humans. Fig fruit is a favourite diet for several frugivorous birds. Though fruit produces discontinuously, most of the birds prefer as a major diet. Ficus fruit is an important food resource for frugivorous birds (Daru et al. 2015). As the Ficus species provide food resources, these plants also involved for the conservation of avian species, as different ficus speciesis in one zone produce fruits in asynchronous season (Mahanta et al. 2016). As the Ficus species are the chief food reseources for frugivoruous birds, they play several ecological roles in ecosystem such as soil stability by biding the soil by their roots, enrich soil by droppings as these plants also act as roosting sites (Rahayuningsih et al. 2020). In urban zones, Ficus species act as habitat for both diurnal and nocturnal avian species (Pradana et al. 2018; Mardiastuti et al. 2021).

The objective of this study is to examine the density of avian species in areas with and without Ficus species trees in terms of frugivorous bird species.

Methodology

Study area

This observational study conducted at Chincholi Wildlife Sanctuary, which is located in Kalaburagi district of Karnataka state of India. The sanctuary distributed in 139 sq. km area at 100 m altitude from median sea level. This habitat is of dry desideous forest. It accomplish with floristic diversity with several medicinal herbs and trees. Acacia and Teak are the plated vegetation contribute canopy.

To study the comparison, two different areas were selected that are one which consists Ficus species plants such as *Ficus bengalensis, Ficus Amplissima* and *Ficus relisiosa* (named as Ficus zone) and another one which is far from the ficus zone and does not consist the ficus trees (named as Non-ficus zone).

The selected ficus zone consists three *Ficus bengalensis* trees, two *Ficus Amplissima* and six *Ficus relisiosa* trees.

Fig.1: Study area Chincholi Wildlife Sanctuary.

Line Transect Method

Line transect method is more accurate procedure to estimate the bird population

Fig.1: A: Orange-headed Thrush B: Cuckoo Shrike & C: Brahminy Myna feeding on fruit of *Ficus bengalensis*

(Buckland et al. 1993). Four Line transects were established in the two different zones and each transect with one km in length. Birding done 30 min from the sunrise and at 4 pm in the evening. Survey conducted for about four months from March to June of 2023, and one visiting at each transect in the first week of each month.

Results and Discussion

A total of 28 opportunistic frugivorous bird species has been traced out in in both ficus and non ficus zones. Among these, 16 species were the regular fruit feeders. The correlation is done with the appeared frugivorous birds that are observed in the ficus zone with that of non ficus zone. The species richness is more at ficus zone. Among the traced species the most abundant species are Rosy Pastor (mean 22, ±10) followed by Rose ringed Parakeet (mean 20±7) and the lowest abundance is Grey Hornbill (2).

tropical and subtropical areas, where they are already necessary for many species in tropical and subtropical woods (Walther et al. 2018). As per the observations by Pooja *et al.* (2020) in Annamalai hills of Tamilnadu, hornbills such as Great Hornbill (*Buceros bicornis*) Malabar Grey hornbills (*Ocyceros griseus*) use shade-coffee plantations all year long, in part because fig fruit is readily available, leads to the variations in hornbill population and breeding occurrence. It concluded that coffee plantations are a poor habitat choice for hornbills. Our studies also shown the same abundance of frugivorous birds including hornbill. As per the study by Chong *et al.* (2021)Community dispersion was noticeably smaller around fig trees that were in fruit. Our findings show that, whereas fig trees do not necessarily support more diversified total bird assemblages than non-fig trees, they do offer fruit and non-fruit resources for birds in an urban context. On

Table.1: Comparasion of Avian fauna in ficus zone and nonficus zone

	Common Name	Scientific Name	Ficus Zone	Non-ficus Zone
1	Rose-ringed Parakeet	*Psittacula krameri*	20±7	8±6
2	Spotted Dove	*Streptopelia chinensis*	8±5	6±3
3	Lesser-golden backed woodpecker	*Dinopium benghalense*	4±2	2±1
4	Magpie Robin	*Copsychus malabaricus*	6±3	3±1
5	Golden Oriole	*Oriolus oriolus*	4±2	4±3
6	Orange-headed Ground Thrush	*Zoothera citrine citrina*	10±4	6±3
7	Common Myna	Acredotheris tristis	15±10	6±4
8	Pied Starling	*Sturnus contra*	16±12	16±5
9	Brahminy Myna	*Sturnus pagodarum*	12±4	4±1
10	Rosy Pastor	*Sturnus roseus*	22±10	-
11	Common Grey Horbill	*Tocus birostrius*	4±1	-
12	Grey-bellied Cuckoo	*Cacomantis passerinus*	6±2	2±0
13	Koel	*Eudynamys scolopacea*	12±4	4±2
14	Crow-Pheasant	*Centrous sinensis*	4±2	2±0
15	Large-green Barbet	*Megalaima zeylanica*	8±3	3±1
16	Indian Pitta	*Pitta brachyura*	4±2	2±0
17	Cockoo Shrike	*Lanius Species*	4±2	0
18	Black Drongo	*Dicrurus adsimilis*	9±2	3±1
19	Large-billed Crow	*Corvus macrorhynchos*	14±5	6±2
20	Iora	*Aegithina tiphia*	6±2	2±2
21	Red-vented Bulbul	*Pycnontus cafer*	9±6	6±3
22	Red-whiskered Bulbul	*Pycnonotus jacosus*	6±4	4±2
23	White-browed Bulbul	*Pycnonotus luteolus*	4±0	-
24	Tailor Bird	*Orthotomus sutoris*	6±2	3±1
25	Large-Pied wagtail	*Motacilla maderaspatensis*	4±2	-
26	Yellow headed Wagtail	*Motacilla citreola*	4±2	2
27	Black redstart	*Phoenicurus ochruros*	12±6	4±2
28	Ashy-wern Warbler	*Prinia socialis*	5±2	2±0

The analysis shown the abundance of the frugivorous birds in the Ficus zone is more than the non-frugivorous zone. Fig trees may be important to urban birds in fruiting urban figs, however, bird groups would be much more uniform and dominated by a small number of species.

The study conducted by Thomos D.K. (1979) shown that the Compared to other diets, migratory birds like garden warblers consume a lot of fig fruits, which helps their bodies store fat quickly for usage during migration.

Conclusion and suggestions

Though the ficus plants produce fruits discontinuously, irrespective to season, they offer major food resource to frugivorous birds. The abundance of the avian species is more in the ficus zones also revealed the diet dependence. It to understand and estimate that the influence of fig fruit on reproductive efficiency at birds as in humans. The probably of increasing the clutch size may be stimulated by fig fruit. The future research can do on this aspect.

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