

A Study of Food and Feeding Habits of Blue Peafowl, *Pavo Cristatus* Linnaeus, 1758 in District Kurukshetra, Haryana (India)

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Summary: Present study was conducted to determine the food and feeding habits of blue peafowl in three study sites, namely, Saraswati plantation wildlife sanctuary (SPWS), Bir Sonti Reserve Forest (BSRF), and Jhrouli Kalan village (JKAL). Point count method (Blondel et al., 1981) was followed during periodic fortnightly visits to all the three selected study sites. The peafowls were observed to feed on flowers, fruits, leaves of 11, 8 and 8 plant species respectively. These were sighted to feed on *Brassica campestris* (flowers, leaves), *Trifolium alexandarium* (flowers, leaves), *Triticum aestivum* (flowers, leaves, fruits), *Oryza sativa* (flowers, leaves, fruits), *Chenopodium album* (flowers, leaves, fruits), *Parthenium hysterophoresus* (flowers, leaves), *Pisum sativum* (flowers, leaves, fruits), *Cicer arietinum* (flowers, leaves, fruits), *Pyrus pyrifolia* (flowers, fruits), *Ficus benghalensis* (flowers, fruits), *Ficus rumphii* (flowers, fruits). They were also observed feeding on insects in all three study sites and on remains of the snake bodies at the BSRF and JKAL study site. The findings revealed that the Indian peafowl, on one hand, functions as a predator of agricultural pests but, on the other hand, is itself a pest on agricultural crops.

Keywords: Blue peafowl, Food, Feeding Habits, Herbs, Shrubs, Trees.

1. INTRODUCTION

Birds are warm-blooded, bipedal, oviparous vertebrates characterized by bony beak, pneumatic bones, feathers and wings. Most recently, Lepage (2008) has reported around 10,000 species of birds, descended from one another through the process of adaptation by natural selection. Of these, on worldwide basis, more than 250 species of turkeys, grouse, chicken, quails and pheasants belong to order Galliformes (Crowe et al., 2006). The blue peafowl, *Pavo cristatus*, commonly called as Mor or Myur, is the most common pheasant of India. It occupies a prominent place in Indian art, culture and folklore due to colourful plumage and attractive display. In India, *Pavo cristatus* is distributed in the states of Gujarat, Haryana, Madhya Pradesh, Punjab, Rajasthan and Uttar Pradesh. In Haryana, *Pavo cristatus* is mainly distributed in Sultanpur National Park (Gurgaon), Kalesar National Park (Yamunanagar), Saraswati Plantation Wildlife Sanctuary (Kurukshetra) and in other districts such as Faridabad, Hisar, Jind, Kurukshetra and Mahendergarh. Keeping in view the scanty information available about food and feeding activities of blue peafowls, particularly in most productive agricultural state of Haryana, the present study was designed.

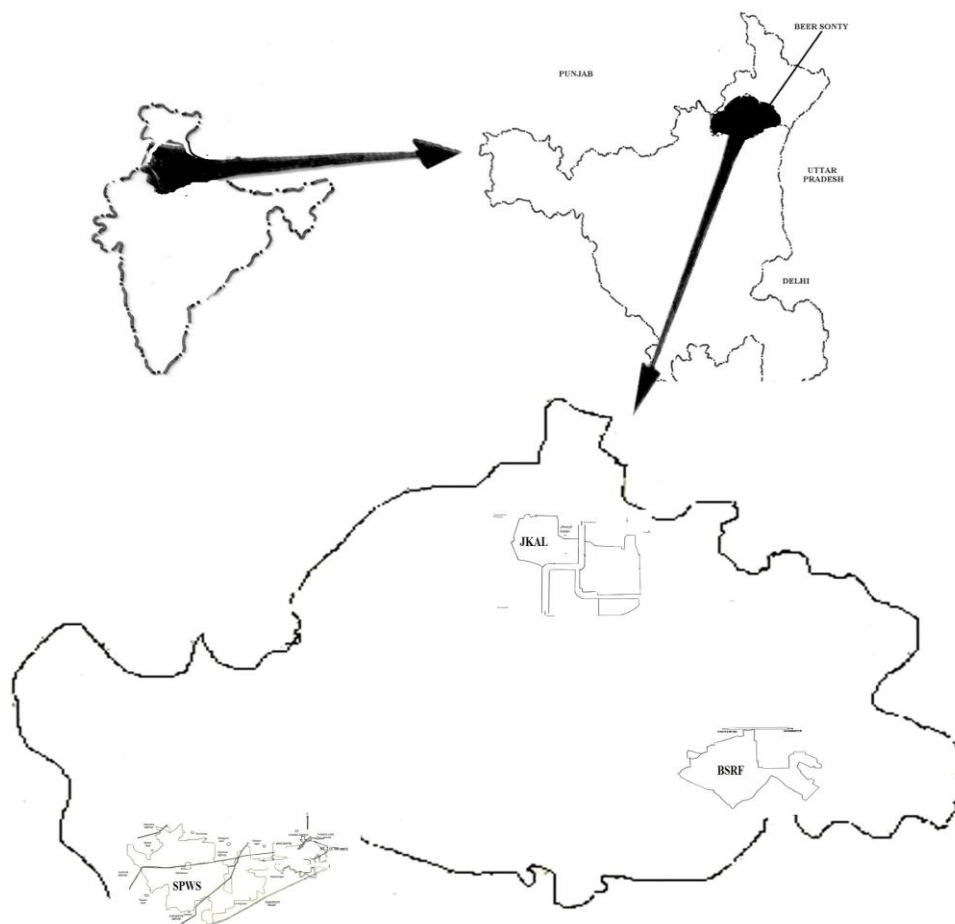


Fig. 1 Map showing tentative location of study areas in district Kurukshetra, Haryana (India)

2. MATERIALS AND METHODS

Three study sites, namely, Saraswati plantation wildlife sanctuary ($76^{\circ}27'$ to $76^{\circ}33'$ E and $29^{\circ}56'$ to $30^{\circ}01'$ N), Bir Sonti Reserve Forest ($76^{\circ}93'$ to $76^{\circ}95'$ E and $29^{\circ}63'$ to $29^{\circ}65'$ N), and Jhrouli Kalan village ($76^{\circ}39'$ to $76^{\circ}41'$ E and $30^{\circ}18'$ to $30^{\circ}19'$ N) were selected in district Kurukshetra (Fig. 1) to determine the feeding habits of peafowl. Saraswati plantation wildlife sanctuary is located in Kurukshetra and Kaithal districts of Haryana with an area of 11,003 acres (Dagar *et al.*, 2001). Bir Sonti reserve forest is located in Tehsil Ladwa of district Kurukshetra, on Kurukshetra-Yamunanagar link road with an area of 474.5 acres while the third study site, *i.e.*, Jhrouli Kalan village is located on the Shahabad-Kalsana-Pehowa road covering an area of around 600 acres. Of these three study sites, Saraswati plantation wildlife sanctuary (SPWS) and Bir Sonti Reserve Forest (BSRF) are preserved areas as declared by Government of Haryana harboring both natural and cultivated flora. On the other hand, JKAL has residential premises surrounded by agriculture fields and an orchard on one side of the village.

Point count method (Blondel *et al.*, 1981) was followed to record the food and feeding habits of blue peafowl during periodic fortnightly visits to all the three selected study sites. Whenever, peafowls/muster was encountered feeding, it was photographed. The sites were later visually scanned where the individual or group(s) of *Pavo cristatus* were noticed feeding and plant parts/inflorescence/fruits damaged by peafowls were collected and later identified in the laboratory. Direct visual counts were the only basis used to determine the animal food in the diet of the blue peafowls. Whenever, such instances were observed, the animals being fed by peafowls were noticed by watching the peafowl feeding on the objects or by noticing the remains of body found on the feeding sites in the study area which was later identified from remains. Food preference(s) of peafowl were recorded on the basis of the record of number of instances during which the bird or muster was found feeding on the particular food item.

3. RESULTS

In all, 15 species of herbs, 8 species of shrubs and 21 species of trees were identified to be predominant flora in SPWS. Similarly, 14 species of herbs, 9 species of shrubs and 21 species of trees represented dominant vegetation in BSRF and 13 species of herbs, 7 species of shrubs and 17 species of trees as dominants in JKAL (Table 1).

Table 1. Showing dominant flora in three selected study sites.

	Plant species		SPWS	BSRF	JKAL
	Common name	Scientific name			
Herbs	Akash bel	<i>Cuscuta reflexa</i>	+	+	+
	Della	<i>Cyprus rotundus</i>	+	+	+
	Anjan	<i>Cenchrus ciliaris</i>	+	+	-
	Dab	<i>Desmostachya bipinnata</i>	+	+	+
	Sarkand	<i>Dichanthium annuatum</i>	+	+	-
	Chirhia grass	<i>Sporobolus marginatus</i>	+	+	-
	Kans	<i>Saccharum spontaneum</i>	+	+	-
	Patera	<i>Typha elephantia</i>	+	+	-
	Panni/Khas	<i>Vetiveria zizanoides</i>	+	+	-
	Congress grass	<i>Partheniumhisterophoresus</i>	-	-	+
	Kandai	<i>Argemone maxicana</i>	+	+	+
	Sarso	<i>Brassica campestris</i>	+	+	+
	Mahua	<i>Solanum nigrum</i>	+	+	+
	Bersin	<i>Trifolium alexandarium</i>	+	-	+
	Wheat	<i>Triticum aestivum</i>	+	+	+
	Paddy	<i>Oryza sativa</i>	+	+	+
	Matar	<i>Pisum sativum</i>	-	-	+
	Chana	<i>Cicer arietum</i>	-	-	+
	Kela	<i>Musa paradisiaca</i>	-	-	+
Shrubs	Bansa	<i>Adhatoda vasica</i>	+	+	+
	Hins	<i>Capparis sepiaria</i>	+	+	+
	Kair	<i>Capparis desidia</i>	+	-	-
	Karaunda	<i>Carissa opaca</i>	+	+	-
	Ak	<i>Calotropis procera</i>	+	+	+
	Bathua	<i>Chenopodium album</i>	+	+	+
	Bui	<i>Kochia indica</i>	+	+	-
	Potato	<i>Solanum tuberosum</i>	-	+	-
	Sugarcane	<i>Saccharum officinarum</i>	-	+	-
	Malha	<i>Zizyphus mauritiana</i>	+	+	-
	Sunflower	<i>Helianthus annus</i>	-	-	+
	Chillies	<i>Capsicum annum</i>	-	-	+
	Maize	<i>Zea mays</i>	-	-	+
Trees	Kikar	<i>Acacia nilotica</i>	+	+	+
	Nimber	<i>A. Leucopholia</i>	+	+	+
	Siris	<i>Albizza lebbek</i>	+	+	+
	Neem	<i>Azadirachata indica</i>	+	+	+
	Kachnar	<i>Bauhinia variegata</i>	+	+	-
	Dhak	<i>Butea monosperma</i>	+	+	-
	Lasura	<i>Cordea dichtoma</i>	+	+	-
	Barna	<i>Crataeva nurvala</i>	+	+	-
	Shisham	<i>Dalbergia sissoo</i>	+	+	+
	Safeda	<i>Eukalyptus hybrid</i>	+	+	+
	Barh	<i>Ficus bengalensis</i>	+	-	-
	Gular	<i>Ficus glomerata</i>	+	+	+
	Peepal	<i>Ficus religiosa</i>	+	+	+
	Pilkhan	<i>Ficus Rumphii</i>	+	+	-
	Shahtoot	<i>Morus alba</i>	+	+	+
	Parkinsonia	<i>Parkinsonia aculeate</i>	+	+	-
	Jand	<i>Prosopis cineraria</i>	+	+	-

	Jaal	<i>Salvadora oleoides</i>	+	+	-
	Jamun	<i>Syzygium cumini</i>	+	+	+
	Frash	<i>Tamarise aphylla</i>	+	+	-
	Beri	<i>Zizyphus mauritiana</i>	+	+	+
	Sal	<i>Shorea rubusta</i>	-	+	+
	Nashpati	<i>Pyrus pyrifolia</i>	-	-	+
	Nakh	<i>Pyrus cummunis</i>	-	-	+
	Mango	<i>Mangifera indica</i>	-	-	+
	Guava	<i>Psidium guajava</i>	-	-	+
	Popular	<i>Populus populous</i>	-	-	+

SPWS – Saraswati plantation wildlife sanctuary

BSRF – Bir sonti reserve forest

JKAL – Jhroli kalan and its agriculture lands

Peafowls were recorded feeding on 7, 5 and 9 plant species in SPWS, BSRF and JKAL respectively. Peafowls were sighted feeding on leaves of plants frequently but occasionally on the flowers of same vegetation and that too only during the flowering period. In SPWS, peafowls utilized leaves/flowers of 2 species of herbs (*Brassica compestris*, *Trifolium alexandrum*) In addition to flowers and leaves, peafowls were found to consume fruits of 2 species of herbs (*Triticum aestivum*, *Oryza sativa*) and 1 species of shrub (*Chenopodium album*) in SPWS (Plate 1). They utilized flowers and fruits of 2 species of trees (*Ficus benghalensis*, *Ficus rumphi*). In BSRF, peafowls feed on flowers and leaves of 1 species of herb (*Brassica compestris*); flowers, fruit, and leaves of 2 species of herbs (*Triticum aestivum*, *Oryza sativa*) and 1 species of shrub (*Chenopodium album*); flowers and fruits of 1 species of tree (*Ficus rumphi*). Peafowls were found to consume flowers and leaves of 3 species of herbs (*Parthenium hysterophoresus*, *Brassica compestris*, *Trifolium alexandrum*), flowers, fruits and leaves of 4 species of herbs (*Pisum sativum*, *cicer arientum*, *Triticum aestivum*, *Oryza sativa*) and 1 species of shrub (*Chenopodium album*), flowers and fruits of I species of tree (*Pyrus pyriflora*) in JKAL study site (Table 2).

Table 2. Plant part (s)/animal part (s) used by peafowls as food in three study sites

Plant species		SPWS	BSRF	JKAL	
	Common name	Scientific name			
	Crops	Sarso	<i>Brassica compestris</i>	Fl., L	Fl., L
Bersin		<i>Trifolium alexandarium</i>	Fl., L	-	Fl., L
Wheat		<i>Triticum aestivum</i>	Fl., Fr., L	Fl., Fr., L	Fl., Fr., L
Paddy		<i>Oryza sativa</i>	Fl., Fr., L	Fl., Fr., L	Fl., Fr., L
Matar		<i>Pisum sativum</i>	-	-	Fl., Fr., L
Chana		<i>Cicer arientum</i>	-	-	Fl., Fr., L
Wild plants		Bathua	<i>Chenopodium album</i>	Fl., Fr., L	Fl., Fr., L
	Congress grass	<i>Parthenium hysterophoresus</i>	-	-	Fl., L
Trees	Nashpati	<i>Pyrus pyrifolia</i>	-	-	Fl., Fr.
	Bargad	<i>Ficus benghalensis</i>	Fl., Fr.	-	-
	Pilkhan	<i>Ficus rumphii</i>	Fl., Fr.	Fl., Fr.	-
Animal species					
Snake		Central part of body			

Fl.-Flowers, Fr.-FruitsL-Leaves

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Occasionally, peafowls were found to feed on harvested crop in agriculture fields as it contained cereals. Remains of the snake bodies were sighted at the BSRF and JKAL study sites revealing that peafowls might have fed on these reptiles (Plate 1).

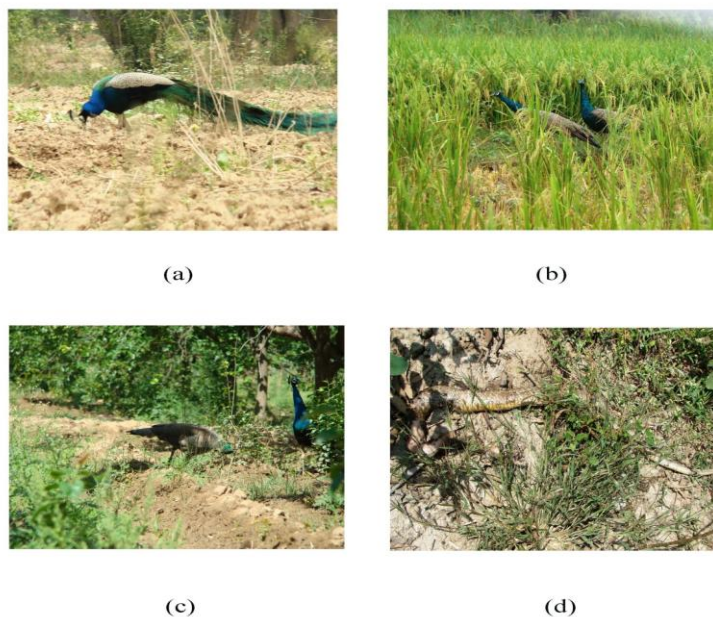


Plate 1. Feeding activity of peafowl on (a) Harvested field (b) Standing crop (c) Insects and (d) Remains of snake fed by peafowl.

4. DISCUSSION

Peafowl is generally believed to be omnivorous, large sized bird of family Phasianidae as it can eat everything from grain and green crops to insects, small reptiles and small mammals (Johansingh and Murali, 1980; Ali and Ripley, 1987; Sathyanarayana, 2005). Berries and drupes of plants such as *Carissa*, *Lantana*, *Zizyphus* and wild figs (*Ficus*) are apparently favoured foods of peafowl (Baker, 1930; Dilger and Wallen, 1966; Ali and Ripley, 1987; Johansgard, 1986). In the present study, peafowl were observed to feed on flowers/leaves/fruits parts of *Brassica campestris* (flowers, leaves), *Trifolium alexandarium* (flowers, leaves), *Triticum aestivum* (flowers, leaves, fruits), *Oryza sativa* (Flowers, leaves, fruits), *Chenopodium album* (Flowers, leaves, fruits), *Parthenium hysterophoresus* (flowers, leaves), *Pisum sativum* (flowers, leaves, fruits), *Cicer arietinum* (Flowers, leaves, fruits), *Pyrus pyrifolia* (Flowers, fruits), *Ficus benghalensis* (Flowers, fruits), *Ficus rumphii* (Flowers, fruits) in SPWS, BSRF and JKAL study sites (Table 2). They were sighted feeding on insects in all the three study sites and on remains of the snake bodies at the BSRF and JKAL study site. Earlier also, Johansingh and Murali (1980) has also recorded that peafowls feed on plant materials such as leaves, grass seeds and flower parts, cotton fruits, *Acacia* seeds, *Cyperus* rhizomes, standing cereal crops and various insects (termites, grasshoppers, ants and beetles) in cultivated fields, adjoining *Acacia* plantation and fallow lands. Drisdelle (2007) has also been reported that due to omnivorous nature, blue peafowls. They eat snakes and keep these venomous animals away from human communities. Present findings as well as earlier reports suggest that the Indian peafowl, on one hand, functions as a predator of agricultural pests and on the other hand, is itself a pest on agricultural crops.

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