



Preferences of artificial nest boxes with square opening over the round opening by Common myna

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Abstract

Wooden nests serves as an important conservational tool for maintaining the population of the hollow-dependent fauna. Common myna occupied artificial nest boxes located in four different habitats i.e A- near Principal's office, B-near Registrar's office, C-canteen side and D- Back side of college near Khalsa Dewan of Khalsa College for women, civil lines, Ldh in the year 2015 and 2016. The boxes installed varied in entrance diameter with square and round openings, height above ground, and orientation. Over the study period the observations revealed that occupancies of Common myna were higher at the site with boxes with Square entrances whereas round entrance boxes were least occupied by them.

Keywords: artificial nests, common mynah

Introduction

The common, myna, *Acridotheres tristis* (Sturnidae: Passeriformes: Aves) was introduced in 1870's throughout New Zealand by locals and Acclimatisation Societies (Bull *et al* 1985) [2]. Birds subsequently invaded in most parts of the North Island, with large densities present in the urban and suburban areas. They continue to flourish in the north and central North Island, and are usually more abundant than most native birds in gardens and parks (LCR, 2008) [9]. The common myna usually thrives in human-modified environments, reaches to high densities with more than 200 birds per km in towns and cities (Cousilman 1971; Dhami and Nagle 2009; Hone 1978; Long 1981) [7, 11]. It is amongst the commonest birds found all over tropical the Asian countries (Ali *et al* 1983) [1]. They build bulky nests in in heavy vegetation or tree cavities, pockets of buildings, also observed in walls where air-conditioners, traffic lights, narrow ledges, water drainpipes, palm trees etc. (Cousilman 1974). They also build nests in roofs of houses or even old wells, in the earthen riverine banks, the natives hang out for their use though very rarely (Pell *et al*. 1997) [13]. Mostly they build nests in the habitations of man and their immediate neighbourhood. The nest is commonly made up of twigs, grass, straw and feathers and sometimes it may include paper. In many birds' species selection of nesting site is considered to be one of the most important factors in reproductive success (Coulson 1968, McCrimmon 1978 [12], Ryder and Ryder 1981 [5], Rendell and Robertson 1989 [14], Li and Martin 1991 [10], Tuomenpuro 1991) [16]. Nest site selection in American White Ibis is strongly affected by the availability of foraging sites (Kushlan 1976) [8]. In some species, It has been recorded that, reduced reproductive success has been attributed to poor nest site selection (Burger and Miller 1977, Frederick 1986, 1987) [3-5]. Therefore, the study on nest site requirement of a bird species is fundamental principle to understand the management implications and conservation. Common Myna in this present study initiated breeding activity in March which

lasted up till August, extending over a period of six months. These species builds a bowl-shaped nest made out of twigs (Cousilman 1974; Harper *et al*. 2005) [6] and green leaves are normally added in the final stages (Wilson 1973) [17].

Materials and Methods

A total of 20 artificial wooden nests (10 with square opening and 10 with round openings) were installed at four different location of the college Campus i.e A- near Principal's office, B-near Registrar office, C-canteen side and D- Back side of college near Khalsa Deewan. These artificial wooden boxes were installed at the height of about 3 metres to 6metres on the tree trunk in the study area.

Each nest boxes with square opening has dimensions 25 cm height, 21 cm width and and 20cm length with entrance of 9cm at the height and 8.3 cm in front (Total area of entrance=74.7cm²) It has 6 holes at the back for aeration and fixing it with strings on the tree trunk and two at bottom for drainage

The other nest with round opening has dimensions and holes same as of the square box and a diameter of opening is 8.4cm (Total area of entrance= 55.38cm²)

These were installed in 2015 and 2016 which gives these birds a lot of time to become accustomed to these artificial nest boxes. They were monitored time to time. Breeding season of common myna is from March to August.

Results and discussion

During the study it was observed that out of 20 total artificial wooden nests (10 with square opening and 10 with round openings) were installed at four different locations i.e nesting sites of the college Campus i.e A- near Principal's office, B-near Registrar office, C-canteen side and D- Back side of college near Khalsa Dewan (Table 1). Number of birds was observed collecting nesting material like twigs, leaves, polythene, grass, feathers of birds, plastic etc for their nesting habitat. In the first study area near A-Principal mam's office-

Two artificial nest boxes were installed on *Caryota urens* (Fish tail palm) and *Syzygium cumini* (Jamun) tree having square entrance and Two artificial nest boxes with round entrance were installed on *Magnifera indica* (Mango) and *Caryota urens* (Fish tail palm). The observations revealed that only the nest boxes with square openings were preferred by the common myna. In the second study area B- near Registrar’s office – 4 artificial nest boxes with round entrance were installed on *Dalbergia sissoo* (Tali), *Delonix regia* (Gulmohar), *Caryota urens* (Fish tail palm) and *Caryota urens* (Fish tail palm). Two artificial nest boxes with square entrance were placed on two *Caryota urens* (Fish tail palm). Thus, in this area also only the square shaped entrance was much more preferred. In the third area C-canteen side. In this area 4 nest

boxes were installed on 4 trees i.e *Grevillea robusta* (Silver Oak) and *Dalbergia sissoo* (Tali) with the nest boxes with the square entrance and *Caryota urens* (Fish tail palm) and *Delonix regia* (Gulmohar) with the nest boxes with round entrance. The observations depicts that two of the square entrance were occupied as well as one round entrance nest box was also occupied. In the fourth study area near Khalsa Dewan -Four artificial nest boxes with square entrance were installed on *Dalbergia sissoo* (Tali), *Bauhinia variegata* (Kachnar), *Aegle marmelos* (Bel), *Dalbergia sissoo* (Tali) and two with round entrance were placed on *Aegle marmelos* (Bel) and *Dalbergia sissoo* (Tali). Here also the nest with square entrance was preferred over the other (Table 1).

Table 1: Detailed description of the artificial nest boxes placed at various sites of Khalsa College for Women, Civil lines, Ldh

S. No.	Site No.	Tree Name	Direction of Nest Box	Height of nest Box from the ground (in feet)	Nest boxes installed R.E- round entrance S.E- Square entrance	Nest boxes occupied
1	A	<i>Caryota urens</i> (Fish tail palm)	North	10	4 (2- R.E and 2 S.E)	S.E -2
		<i>Syzygium cumini</i> (Jamun)	West	12		R.E- nil
		<i>Magnifera indica</i> (Mango)	North	11.5		
		<i>Caryota urens</i> (Fish tail palm)	South	11		
2	B	<i>Dalbergia sissoo</i> (Tali)	West	12	6 (4-R.E and 2 S.E)	S.E-2
		<i>Delonix regia</i> (Gulmohar)	North	12.5		
		<i>Caryota urens</i> (Fish tail palm)	North	12		
		<i>Caryota urens</i> (Fish tail palm)	South	11.5		
		<i>Caryota urens</i> (Fish tail palm)	South	12.4		R.E-nil
		<i>Caryota urens</i> (Fish tail palm)	South	12		
3	C	<i>Grevillea robusta</i> (Silver Oak)	North	13	4 (2- R.E and 2- S.E)	S.E-2
		<i>Dalbergia sissoo</i> (Tali)	West	12.5		
		<i>Caryota urens</i> (Fish tail palm)	West	11.8		R.E-1
		<i>Delonix regia</i> (Gulmohar)	North	11.8		
4	D	<i>Dalbergia sissoo</i> (Tali)	East	13	6 (2- R.E and 4-S.E)	S.E-4
		<i>Bauhinia variegata</i> (Kachnar)	West	12.8		
		<i>Aegle marmelos</i> (Bel)	East	11.8		
		<i>Aegle marmelos</i> (Bel)	East	10		
		<i>Dalbergia sissoo</i> (Tal)	West	12		R.E-Ta
		<i>Dalbergia sissoo</i> (Tali)	North	12.5		

Study area type: A- near Principal’s office,
 B-near Registrar office,
 C-canteen side
 D- Back side of college near Khalsa Dewan



Plate 1

Conclusion

Thus, the study signifies that the entrance size had a significant effect on overall occupancy. Nest boxes with

square shape and larger entrance sizes were occupied more than nest boxes with round shape and smaller entrance sizes. Establishing nest boxes with larger entrance sizes could

maximise occupancy by a variety of common hollow-nesting species Tree size and landscape has no significance upon the overall occupancy of common myna only the entrance shape and size played a significant relationship in occupancy of artificial nest boxes.

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