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Constraints analysis of organic poultry farming in southern region of Rajasthan

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Abstract
An analytical study of organic poultry farming was conducted on 240 randomly selected poultry farmers of 16 villages in 08 tehsils of 04 districts of Non-tribal and Tribal area of southern Rajasthan to identified the constraint level and different type of constraints perceived by the respondents in rearing of organic poultry farming. During the study found that majority (62.50%) of total respondents had severe type of constraints for adopting the organic poultry farming. Feeding practices were the most severe constraints in the organic poultry farming practices with (85.35 MPS) and has the first rank followed by breeding practices (79.13 MPS) and housing management practices (72.27 MPS).

Keywords: Backyard, constraints, farmers, organic poultry

Introduction
Poultry sector is one of the fastest booming agricultural sectors in India, having over 8% annual growth rates (Erdaw and Beyene, 2022). In the world India is the third largest producer of eggs and seventh largest producer of chicken meat. Annually in India, 260 million layers generate around 3.4 million tons (74 billion) of eggs, while 3000 million broilers produced about 3.8 million tons of chicken meat (Kanakachari *et al*. 2022) [20]. However, Rajasthan ranks 18th in poultry population (80.24 lakh, Livestock Census, 2012) [18] which is less than 2% of India's poultry population (Mishra *et al*. 2019) [17]. The per capita availability of egg per year in Rajasthan is very low (11 eggs) as compared to national average of 45 and much lower than eggs recommended by Nutritional Advisory Committee of ICMR (180 eggs per capita per year) which suggests great scope of improvement in poultry production in Rajasthan. The poultry population under backyard in Rajasthan is 30.33 lakh which is about 38% of total population (Mishra *et al*. 2019) [17]. The majority poultry production in Southern Rajasthan is under free range/backyard i.e., 94% of total poultry population in southern Rajasthan (Livestock Census, 2012) [18]. Therefore, enhancement of poultry production in southern Rajasthan must focus on improving backyard poultry production. In Rajasthan, there are 80.24 lac poultry, of which 30.33 lac are kept in backyards and the remainder 49.91 lac are kept in commercial poultry. With 5.43 lac backyard chickens, Udaipur maintained first place, surpassing Jhunjhunu, Banswara and Jaipur, which came in second, third, and fourth, respectively (Livestock Census, 2012) [18].
Organic livestock farming is most suitable to our Indian conditions because of indigenous technical knowledge and practices followed by Indian farmers but organic poultry production is still lagging behind (Chander and Mukherjee, 2005) [21]. India has a large population of poultry and switching just a little from conventional to organic poultry farming could create up a growing market for both domestic consumption and export (Chatterjee and Rajkumar, 2015) [22].
In India, there are currently almost no research studies conduct on organic poultry. The main goal of the current research is to examine the need for the development of organic poultry and to give an evaluation of various interventions that may be used to encourage the production of organic poultry in India.

Materials and Methods
Selection of Districts: The present study was conducted for evaluation of constraints level and different type of constraints faced by the poultry farmers in rearing of organic poultry farming in Southern region of Rajasthan, which consists of seven districts namely Dungarpur, Udaipur, Rajsamand, Pratapgarh, Banswara, Bhilwara and Chittorgarh.

Out of these seven districts, two tribal districts namely Udaipur and Dungarpur and two Non-tribal districts namely Bhilwara and Chittorgarh was selected purposely on the basis of maximum population of poultry and have the scope of organic poultry farming.

Selection of Villages

For selection of villages, a comprehensive list of organic poultry reared was collected from each identified tehsil with the help of personnel of department of Animal Husbandry, patwari and agriculture supervisors. From the list so prepared, two villages were selected from each selected tehsils on the basis of maximum number of poultry farmers. Thus, total sixteen villages were taken for the study purpose and identified for the present investigation. The name of selected villages is given in Table 1.

Selection of Respondent

For selection of respondents, a comprehensive list of farmers who were having at least 15-20 poultry birds rearing was prepared from selected village with the help of respective patwari, gram sevek and key informants. From the sites formative list, 15 farmers were selected randomly from each identified village. Thus, the total samples were 240 poultry rearears was included in the present study. The details of village wise selected respondents are given in Table 1.

Table 1: Village- wise selected respondents

Selected Districts	Selected Tehsils	Selected Villages	Selected Respondents	Total
Udaipur	Jhadol	Dharti Devi	15	30
		Upali Bassi	15	
	Kherwada	Budra	15	30
		Balicha	15	
Dungarpur	Dovda	Dolver	15	30
		Khari	15	
	Dungarpur	Majola	15	30
		Chela Kherwada	15	
Bhilwara	Mandal	Bhagwanpura	15	30
		Bhimlyawas	15	
	Bhilwara	Pondras	15	30
		Kodukota	15	
Chittorgarh	Bhadesar	Navapura	15	30
		Kanoj	15	
	Chittorgarh	Panchli	15	30
		Natwat Maharaj	15	
				240

Constraints being faced by organic poultry farmers

In this section, major poultry production constraints perceived by poultry owners in adoption of scientific poultry management practices of poultry were recorded. This section was divided into nine categories *viz*. breeding, feeding and housing. To assess the constraints being faced by the farmers, their responses were recorded on three points continuums *viz*. most severe, severe and least severe by giving score 3, 2 and 1, respectively.

On the basis of experience gained through pre testing suitable modifications were made in the construction and sequence of questions. In order to arrive at logical interpretation, the data were compiled, tabulated and analyzed as per Snedecor and Cochran (1994).

Results and Discussion

The data presented in table 2 depict that majority of total respondents (62.50%) were in the Sever constraints group, whereas, 22.08 per cent in most severe level of constraints and 15.41 per cent in level of least severe constraints in study area.

Table 2: Distribution of respondents on the basis of level of constraints n=240

S. No.	Constraints level	NON-TSP		TSP		Over all n=240	
		f	%	f	%	f	%
1.	Least severe (<76.07)	18	15.00	19	15.83	37	15.41
2.	Severe (76.07 to 90.25)	79	65.84	71	59.16	150	62.50
3.	Most severe (>90.25)	23	19.16	30	25.00	53	22.08
Total		120	100	120	100	240	100

Mean= 83.16; Standard deviation= 7.08, f=Frequency; % = Percent

Breeding constraints

The data presented in table 3 reveals that among the breeding constraints, majority (80.50 MPS) of the respondents from Non-TSP area perceived constraints on "Low production performance by chicken" and accorded 1st rank. While, the majority (70.87 MPS) of the respondents from TSP area were perceiving major constraint among the breeding constraints "High cost of one day old chicks" and accorded 1st rank. "Non availability of improved/pure breed birds" was the second most severe constraint among breeding constraints perceived by the respondents from both non-TSP and TSP area with 71.38 and 86.38 MPS, respectively and accorded 2nd rank. Least severe constraint among the constraints related to breeding respondents perceived by from non-TSP area was "Availability of chicks from a long distance" with 46.94 MPS and accorded 4th rank. Whereas, "Low production performance by native chicken" with 65.83 MPS was the least severe constraint perceiving by the respondents from TSP area and accorded 4th rank. Similar findings were reported by Singh and Jilani (2005) [1], Mandal *et al.* (2006) [2], Verma (2009) [3], Nath *et al.* (2012) [8] and Tiwari *et al.* (2020) [17]. Whereas, Budharam *et al.* (2021) [12] and Mishra *et al.* (2019) [17] recorded same constraints on fourth and fifth rank.

Table 3: Constraints of breeding practices n=240

S. No.	Particulars	NON-TSP (n_1=120)		TSP (n_2=120)	
		MPS	Rank	MPS	Rank
1.	Non availability of improved/pure breed birds	71.38	II	86.38	II
2.	High cost of one day old chicks	70.87	III	90.27	I
3.	Availability of chicks from a long distance	46.94	IV	69.72	III
4.	Low production performance by chicken	80.55	I	65.83	IV

MPS=Mean Per Cent Score, n= Total number of respondents

Feeding constraints

It can be visualized from table 4 that among the feeding constraints, majority (93.61 MPS) of the respondents from Non-TSP area faced "Lack of availability of organic feeds" as major constraint and accorded 1st rank. While, the majority (92.50 MPS) of the respondents from TSP area perceived "Lack of availability of quality feeds" as major constraint and accorded 1st rank. "High cost of organic poultry feed" was the

second most severe constraint perceived by the respondents from Non-TSP area with 91.38 MPS, while, the respondents from TSP area perceived second most severe constraints among feeding practices on "Lack of knowledge regarding balance feed of poultry" with 90.83 MPS and accorded 2nd rank. The respondents from non-TSP area perceived least severe constraint as "Lack of knowledge regarding balance feed of poultry" with 74.72 MPS and accorded 4th rank, whereas, "High cost of organic poultry feed" with 72.77 MPS was the least severe constraint perceived by the respondents from TSP area and accorded 4th rank. It was observed that lack of availability of organic feeds was the main constraints faced by respondents in Non-TSP area. Similar study was reported by the Rahman *et al*. (2009) [14], Vaidya and Chouan (2012), Kisku *et al*. (2019) [13], Balamurugan *et al*. (2019) [11] and Budharam *et al*. (2021) [12]. Lack of availability of quality feeds was the major constraints perceived by respondents in TSP area in present investigation.

Table 4: Constraints of feeding practices n=240

S. No.	Particulars	NON-TSP (n_1=120)		TSP (n_2=120)	
		MPS	Rank	MPS	Rank
1.	Lack of availability of organic feeds	93.61	I	85.83	III
2.	Lack of availability of quality feeds	81.11	III	92.50	I
3.	High cost of organic poultry feed	91.38	II	72.77	IV
4.	Lack of knowledge regarding balance feed of poultry	74.72	IV	90.83	II

MPS=Mean Per Cent Score, n= Total number of respondents

Housing management constraints

The data presented in table 5 reveals that among the housing constraints, majority of the respondents from both Non-TSP and TSP area perceived "Inadequate housing facilities" as major constraint with 74.44 and 86.66 MPS and accorded 1st rank. "Non availability of separate house for chicks and layers" was the second most severe constraint among housing constraints perceived by the respondents from both non-TSP and TSP area with 64.72 and 85.27 MPS, respectively and accorded 2nd rank. The respondents from non-TSP area perceived least severe constraint among the constraints related to housing was "Improper ventilation" with 56.66 MPS and accorded 4th rank, whereas, "High cost of construction" with 69.16 MPS was the least severe constraint perceived by the respondents from TSP area and accorded 4th rank. It was observed that inadequate housing facilities for poultry rearing was one of the major constraints faced by the poultry owner in both Non-TSP and TSP area. Similar findings were reported by the Mapiye *et al*. (2008) [7], Nath *et al*. (2012) [8], Billah *et al*. (2013) [10], Alaol *et al*. (2015) [9], Goitom *et al*. (2017) [6], Sharma (2021) [5] and Sajitha and Ramchandra (2022) [4].

Table 5: Constraints of housing management n=240

S. No.	Particulars	NON-TSP (n_1=120)		TSP (n_2=120)	
		MPS	Rank	MPS	Rank
1.	Non availability of separate house for chicks and layers	64.72	II	85.27	II
2.	Inadequate housing facilities	74.44	I	86.66	I
3.	High cost of construction	58.33	III	69.16	IV
4.	Improper ventilation	56.66	IV	79.16	III

MPS=Mean Per Cent Score, n= Total number of respondents

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