Journal of Entomology and Zoology Studies

Available online at www.entomoljournal.com

E-ISSN: 2320-7078
P-ISSN: 2349-6800
JEZS 2020; 8(1): 80-83

Received: 13-11-2019
Accepted: 15-12-2019

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Constraints analysis of Kadaknath chicken farming in Kanker districts of Chhattisgarh

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Abstract
Small agricultural lands and Continuous climate change lead to decrease in crop production and poor economic condition of farmers, so need to diversification of farmer's income source is must for economic security. Backyard Kadaknath chicken production is a good source of money and animal protein because it required low initial capital and fetches high price in market due to its black colour. Finding constraints help in adaptation and production of Kadaknath chicken farming. Constraints were arranged in order by Garrett ranking method. Predator, mortality and high cost of feed and fodder are reported as severe constraints followed by high cost of new flock, shortage of extension services, and lack of management practices and housing system. Lack of breeding stock and marketing knowledge are not much severe for Kadaknath farmers. This study concludes that finding and checking of constraints lead to increase production and adoption of Kadaknath chicken production between farmers.

Keywords: Kadaknath, constraints, garrett, rural poultry, predator, extension, Kanker

Introduction
Indian rural people have crop production as major occupation, but needs diversification of agriculture to sustain in changing scenarios. Chicken rearing has the potential to alleviate poverty alleviation and increase food production [1, 2] Backyard poultry farming of desi birds is popular in villages despite of low productivity because Villages lack proper resources and infrastructure for commercial poultry production and marketing. The rising demand of its unique characteristics and high meat price luring indigenous poultry breed to gives more profit to rural chicken owner [3]. Kadaknath poultry breed of Jhabua district of Madhya Pradesh state has claimed aphrodisiac and medicinal properties and fits for village conditions [4]. The district Kanker occupies an important place in Chhattisgarh state in respect of its farming because the governmental agencies promote the farmers to rear Kadaknath chicken through KVK`s. So, the present study was undertaken to identify the socio- economic status of farmers who choose Kadaknath chicken farming and constraints that reduce profit and livelihood.

Material and Methods
The present study was conducted in 13 villages of Kanker district of Chhattisgarh state. Data for this study were obtained from both primary and secondary sources. The primary data were collected from the poultry farmer using structured interview schedule. The secondary data were obtained from Kanker Krishi Vigayan Kendra. The research design adopted for this study was of ex-post-facto in nature since the phenomenon has already occurred [5]. All possible Kadaknath chicken famers selected for study those had more than 30 Kadaknath chicken. Purposive random sampling was used for collection of data. Kanker district selected purposively and used Kanker KVK data of Kadaknath farmer to randomly select villages and farmers. Data were collected through direct interview schedule and recorded in a questionnaire. The schedule was prepared maintaining relevance with the objectives of the study. Before launching the survey, the questionnaire was pre-tested and improved accordingly. In order to collect the more purified data of various farms an organized questionnaire was formatted [6]. The selected farms were categorized as small, medium and large as per bird capacity viz., 40 – 66 birds, 67 -93 birds and 94 -120 birds respectively [7]. The data were put on the excel sheet in Microsoft Office Excel 2007 and were arranged in tabular form. The obtained data imported to software SPSS for analysis. The constraints faced by the farmers analyzed according to severity of constraints using the Garrett scale of ranking

technique [8]. By using this technique, the order of the merits given by the respondents was changed into ranks by using the following.
Formula;

$$\text{Per cent position} = \frac{100\ (Rj - 0.5)}{Nj}$$

Where,
Rij = Rank given for ith factor by jth individual.
Nj = Number of factors ranked by jth individual.

Result and Discussions

Constraint analysis

Constraints of Kanker Kadaknath chicken farmers were compared for their order of importance based on Garrett's mean score values obtained. The ranking obtained for different constraints with their respective Garrett's mean score is presented in Table 1. All the groups have fare difference in ranking order of constraints.

Table 1: Garrett ranking and mean score of different constraints faced by Low, Medium and High flock size of Kadaknath chicken farms.

Constraints	Small flock size (Group 1)		Medium flock size (Group 2)		Larger flock size (Group 3)	
	Mean score	Rank	Mean score	Rank	Mean score	Rank
Predators	70.38	1	68.6	2	69	2
mortality of flock	66.72	2	67.53	3	70.5	1
high cost of feed and fodder	62.08	3	68.64	1	67.33	3
high cost of new flock	53.25	4	53.03	4	53	4
shortage of extension services	48.91	5	49.67	5	47.5	5
lack of management practices	43.51	6	42.71	6	41.5	7
Lack of proper housing system	39.1	7	40.14	7	34.5	8
lack of breeding stock	31.51	9	30.78	9	25	9
lack of knowledge of marketing	36.51	8	30.85	8	43.66	6

Group 1

It could be inferred from Table 1 that group 1 assigned predator as ranked first (I) followed by mortality of flock (II). It highlighted that predator cause mortality to the flocks and economic stress on farm. Similar findings were reported by [9]. High cost of feed and fodder ranked third (III) and next to it, high cost of new flock and shortage of extension services assigned ranked fourth (IV) and fifth (V) respectively. Feed and fodder did not consider as severe as predator due to backyard system and small flock size. Lack of management practices, lack of proper housing, lack of breeding stock and lack of knowledge of marketing were least sever constraint and assigned rank sixth (VI), seventh (VII), eight (VIII) and ninth (IX) respectively. The findings are agreement with the findings of Naila (2001) [10], Khan (2003) [11], Goitom et.al (2017) [12] and Kumar *et al*., 2018 [13].

Group 2

Group 2 assigned high cost of feed and fodder as ranked I it's because larger flock size required more feed and this caused more economic strain on production. Larger number of birds was hard to manage so, they too vulnerable to predator (II) and its cause high mortality (III) in backyard poultry system. This report is in agreement with the report of Dwigeretal (2003) [14], who reported that village chickens mortality accounts due to predators because of lack of proper housing. High cost of new flock (IV) also caused economic stress on production. Shortage of extension services (V) related to lack of awareness regarding management practices of Kadaknath production so, next constraint was lack of management practices (VI). Lack of proper housing (VII), lack of knowledge of marketing (VIII) and breeding stock (IX) were the hurdle to reached commercialization of Kadaknath production and escalate rural economy. This report is in agreement with the report of Moges (2010) [15], Weyuma (2015) [16], Patra *et al* (2016) [17] and Sahu *et al* (2019) [18] who reported that village chickens mortality accounts due to predators because of lack of proper housing.

Group 3

Rank of constraints faced by group 3 could be inferred from Table 1 that the respondents perceived the problem of mortality of flock (I) as severe constraint in Kadaknath farming followed by predator (II), high cost of feed and fodder (III) and high cost of new flock (IV).There reasons were similar to group 2 that was; Larger flock size means high production cost and for rural people arrangement of initial money was always difficult. Shortage of extension services (V) means lack of awareness that lead to lack of knowledge of marketing (VI) which is consistent with the report of Bezabih (2013) [19]. Lack of management practices (VII), Lack of proper housing system (VIII), and lack of breeding stock (IX) were not severe constraints for farmer. Similar finding reported by Conroy (2005) [20], Nath (2012) [21] and Assefa (2015) [22].

Conclusion

The study concluded that Kadaknath chicken farmers confront predator as severe problem because its cause mortality followed by high cost of initialization of farming due to high cost of feed, fodder and new flock. The Animal Husbandry department should enhance their extension activities by acquainting the farmers with improved management, marketing and breeding stock of chicken. Thus, the Kadaknath chicken farming is considered as an instrument of socio-economic change in the rural areas.

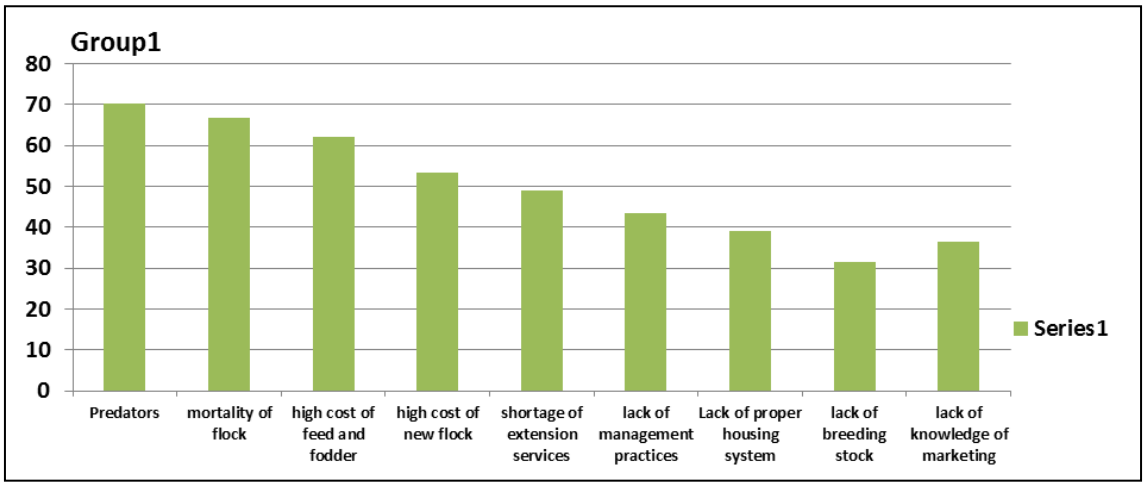

Fig 1: Constraints of Kanker Kadaknath chicken farmers compared for their order of importance based on Garrett's mean score values

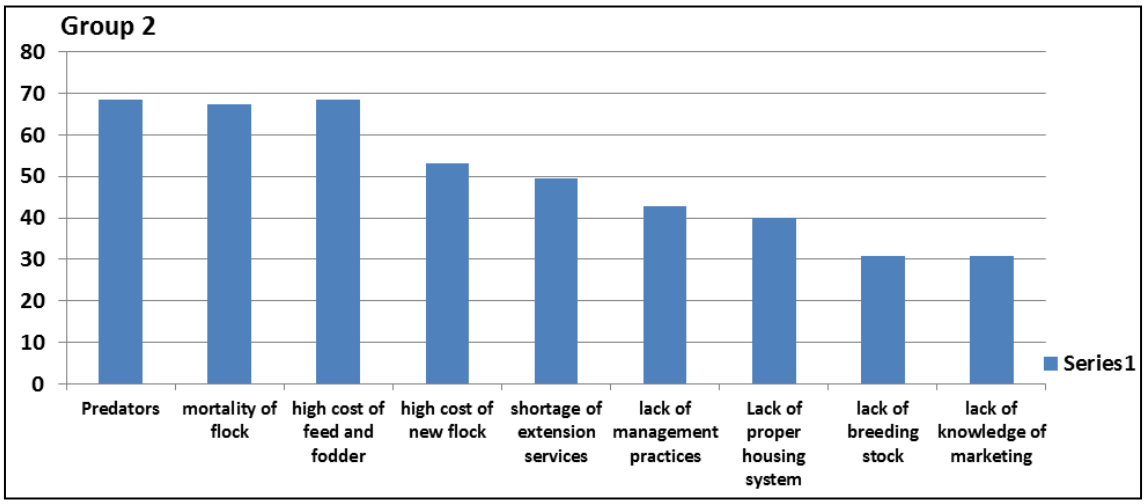

Fig 2: Constraints of Kanker Kadaknath chicken farmers compared for their order of importance based on Garrett's mean score values

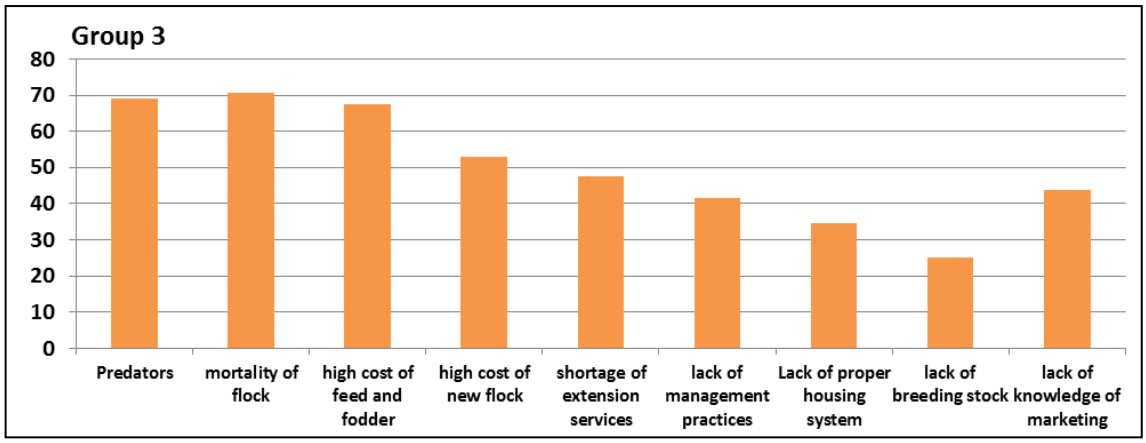

Fig 3: Constraints of Kanker Kadaknath chicken farmers compared for their order of importance based on Garrett's mean score values

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