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Garrett's ranking analysis for constraints faced by dairy farmers in adoption of improved dairy husbandry practices in Datia district of Madhya Pradesh

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Abstract

The present study was undertaken in order to understand the constraints faced by dairy farmers in the datia district of Madhya Pradesh. Garrett's ranking technique was used to rank the farmers preference of different constraints associated with adoption of improved animal husbandry practices under different category. A list of improved livestock practices under different categories i.e. breeding, feeding, housing, milking and health was prepared. Similarly; constraints for the same improved practices were also listed. Out of 90 dairy farmers contacted, the study revealed that lack of own capital was the highest significant constraints under housing practices (MGS 68.02) followed by lack of finance facility (MGS 57.43). High cost of feed was the highest significant constraints under feeding practices (MGS 66.63) followed by Low availability of fodder seeds (MGS 57.67). Hard to maintain crossbreed / superior breed of dairy animals was the highest significant constraints under breeding practices (MGS 65.21) followed by Low conception rate through A.I. (MGS 58.10). Low price for milk was the highest significant constraints under milking practices (MGS 64.81) followed by High production cost of milk (MGS 59.77) and Huge cost of veterinary drugs was the highest significant constraints under healthcare practices (MGS 64.80) followed by Distant location of veterinary hospital (MGS 60.67).

Keywords: Breeding, feeding, housing, constraints, garrett's ranking

Introduction

Livestock is an integral part of India's economy and plays a multifaceted role in providing livelihood support to the rural population. India has highest milk producer with 198.44 Millian tons milk production in 2019-20 in the world but the productivity is very less (Annual report DAHD 2021-22) [1]. The average productivity of indigenous cattle, indigenous buffalo and CB cattle is only 3.36 kg, 6.41 kg and 7.22 kg per day respectively (Annual report DAHD 2021-22) [1]. It is due to non-adoption of improved dairy practices at the desired level by the farmers. Hence it become essential to increase the animal productivity rather than population. Livestock entrepreneur facing various constraints in several stages during production process under field condition. Identification of these constraints not only helpful to bridge the gap between the innovative dairy technology and its adoption by dairy farmers but improve the quantum of production as well (Rathod *et al.*, 2014) [7]. There have been no adequate studies conducted in the state of Madhya Pradesh to generate data about the constraints perceived by the dairy farmers, which deals with livestock rearing as a sole source of their livelihood. Keeping these factors in mind, the present investigation was planned to identify the constraints perceived by framers in Datia district of Madhya Pradesh with the objective to identify and ranking the most significant constraints.

Material and methods

The present Study was conducted in the Datia districts of Madhya Pradesh. Datia belongs to Bundelkhand region of MP. The cattle population of the district was 1.87 lakh while buffalo population was 1.52 lakh. There are three blocks in Datia district namely Datia, Seoda and Bhandar. Hence three village from each block was selected randomly and ten dairy farmers from each village was selected randomly. Thus, random sample of 90 dairy farmers was selected. A list of improved dairy practices under different categories i.e. breeding, feeding, housing, milking and health was listed. Simultaneously a list of constraints for adoption of improved livestock technologies under different categories i.e. housing, feeding, breeding,

Milking and health care practices was prepared. It was cross checked with experts from the Department. The information regarding constraints were collected through personal interview method. Garrett ranking technique was used to analyse the constraints. Garrett’s Ranking Technique provides the change of orders of constraints and advantages into numerical scores. The prime advantage of this technique over simple frequency distribution is that the constraints are arranged based on their severity from the point of view of respondents (Zalkuwi *et. al* 2015) [11]. Hence, the same number of respondents on two or more constraints may have been given different rank. Garrett’s formula for converting ranks into percent is as below:

$$\text{Per cent position} = \frac{100 (R_{ij} - 0.5) / N_j}{N_j}$$

Where R = Rank given for the ith variable by jth respondents
 N = Number of variable ranked by jth Respondent

The per cent position of each rank was converted into scores referring to the table given by Garrett and Woodworth (1969) [2]. For each factors, the scores of individual respondents were added together and divided by the total number of the

respondents for whom scores was added. These mean scores for all the constraints was arranged in high to lower order and accordingly rank were allotted to the constraints.

Results and discussion

Housing practices constraints

Data in Table 1 revealed that lack of own capital was assigned 1st, 2nd and 3rd preferences by 38, 22 and 12 respondents respectively. Similarly 22, 17 and 30 respondents given 1st, 2nd and 3rd preference to lack of finance facility respectively and 11, 10 and 11 respondents given 1st, 2nd and 3rd preference to high bank interest rate respectively. Table 2 revealed that lack of own capital was the highest significant constraints under housing practices (MGS 62.08) followed by lack of finance facility (MGS 57.43), high establishment cost (MGS 51.74), high bank interest rate (MGS 47.46) lack of sufficient space (MGS 45.68) and Lack of skilled labour (MGS 34.61). Hence allotted rank 1st, 2nd, 3rd, 4th, 5th and 6th respectively. Princejot *et al.* (2015) [6] reported that lack of capital followed by high cost of construction was the main housing constraints. Narmatha *et al.* (2010) [5] also reported that high capital demand as major constraint in adoption of modern housing practices.

Table 1: Frequency of Preference associate with Housing Practices Constraints

Preference	1 st	2 nd	3 rd	4 th	5 th	6 th
Lack of own capital	38	22	12	9	2	7
Lack of finance facility	22	17	30	12	3	6
High bank interest rate	11	10	11	32	10	16
Lack of sufficient space	7	6	20	23	20	14
High Establishment cost of dairy shed	9	28	14	11	23	5
Lack of skilled labour	3	7	3	3	32	42

Table 2: Garrett’s ranking for Housing Practices Constraints

Preference	Total Garrett score (TGS)	Mean Garrett score (MGS)	Rank
Lack of own capital	5587	62.08	I
Lack of finance facility	5169	57.43	II
High bank interest rate	4271	47.46	IV
Lack of sufficient space	4111	45.68	V
High Establishment cost	4657	51.74	III
Lack of skilled labour	3115	34.61	VI

Feeding practices constraints

Table 3 revealed that high cost of feed was assigned 1st, 2nd and 3rd preference by 48, 19 and 15 respondents respectively. Similarly lack of knowledge of balance feed was preferred by 14, 16 and 30 respondents respectively and Lack of availability of fodder crop seeds were given 1st, 2nd and 3rd preference by 17, 31 and 21 respondents respectively. Table 4 revealed that High cost of feed was the highest significant constraints under feeding practices (MGS 66.63) followed by Low availability of fodder seeds (MGS 57.67), Lack of knowledge of balance feed (MGS 55.02), Lack of knowledge

for round the year fodder cultivation (MGS 42.82), Lack of green fodder round the year (MGS 42.10) and Lack of awareness about straw treatment (MGS 34.71). On the basis of mean Garrett score these constraints were ranked 1st, 2nd, 3rd, 4th, 5th and 6th respectively. Present finding was conformity with the findings of Princejot *et al.* (2015) [6] as well as Rathod *et al.* (2011) [7] who reported that high price of concentrate mixture was the main constraint faced by majority (84.4%) of farmers followed by non-remunerative price of milk (82.2%).

Table 3: Frequency of Preference Associate with Feeding practices Constraints

Preference	1 st	2 nd	3 rd	4 th	5 th	6 th
High cost of feed	48	19	15	5	1	2
Lack of knowledge of balance ration	14	16	30	22	5	3
Lack of fodder crop seeds	17	31	21	10	8	3
Lack of green fodder round the year	2	5	21	29	7	26
Lack of awareness about straw treatment	4	7	2	3	31	43
Lack of knowledge for round the year fodder cultivation	5	12	1	21	38	13

Table 4: Garrett’s ranking for Feeding Practices Constraints

Preference	Total Garrett score (TGS)	Mean Garrett score (MGS)	Rank
High cost of feed	5997	66.63	I
Lack of knowledge of balance ration	4956	55.07	III
Lack of fodder crop seeds	5190	57.67	II
Lack of green fodder round the year	3789	42.10	V
Lack of awareness about straw treatment	3124	34.71	VI
Lack of knowledge for round the year fodder cultivation	3854	42.82	IV

Breeding practices Constraints

Data in Table 5 revealed that Hard to maintain crossbreed / superior breed of dairy animals was assigned 1st 2nd and 3rd preference by 35, 34 and 10 respondents respectively. Similarly Low conception rate through A.I. was preferred 22, 19 and 23 respondents respectively. While Lack of availability of insemination time were given 1st 2nd and 3rd preference by 15, 12 and 21 respondents respectively. Table 6 revealed that Hard to maintain crossbreed / superior breed of dairy animals was the highest significant constraints under breeding practices (MGS 65.21) followed by Low conception rate through A.I. (MGS 58.10), Lack of availability of AI

worker on time (MGS 54.14), Lack of superior Pedigree bulls for natural service (MGS 46.30), Repeat breeding problems in dairy cattle (MGS 43.63) and Lack of knowledge of heat detection (MGS 38.08). On the basis of mean Garrett score constraints ranked 1st 2nd, 3rd, 4th, 5th and 6th respectively. Prince jot *et al.* (2015) [6] also reported that Inadequate facilities of artificial insemination (AI) center were the major constraint followed by high prices of the imported semen straw (62.2 per cent), unsatisfactory results of AI (MGS 48.8 per cent), lack of staff at Government hospital (MGS 44.4 per cent) and inexperienced staff at AI centers (MGS 33.3 per cent).

Table 5: Frequency of preference associate with breeding practices constraints

Preference	1 st	2 nd	3 rd	4 th	5 th	6 th
Low conception rate through A.I.	22	19	23	13	9	4
Repeat breeding problems in dairy animals	3	8	27	16	6	30
Lack of availability of AI worker on time	15	12	21	32	3	7
Lack of knowledge of heat detection	7	7	4	4	28	40
Lack of superior Pedigree bulls for natural service	8	10	5	20	40	7
Hard to maintain crossbreed / superior breed of dairy animals	35	34	10	5	4	2

Table 6: Garrett’s ranking for breeding practices constraints

Preference	Total Garrett score (TGS)	Mean Garrett score (MGS)	Rank
Low conception rate through A.I.	5229	58.10	II
Repeat breeding problems in dairy animals	3927	43.63	V
Lack of availability of AI worker on time	4873	54.14	III
Lack of knowledge of heat detection	3427	38.08	VI
Lack of superior Pedigree bulls for natural service	4167	46.30	IV
Hard to maintain crossbreed / superior breed of Milch animals	5869	65.21	I

Milking Practices Constraints

Data in Table 7 revealed that Low price for milk was assigned 1st 2nd and 3rd preference in constraints by 43, 23 and 11 respondents respectively. Similarly High production cost of milk was preferred 1st 2nd and 3rd preference by 26, 33 and 11 respondents respectively. Lack of knowledge in clean milk production were given 1st 2nd and 3rd preference by 15, 21 and 31 respondents respectively. Table 8 revealed that Low price for milk was the highest significant constraints under milking practices (MGS 64.81) followed by High production cost of

milk (MGS 59.77), Lack of knowledge in clean milk production (MGS 55.57) Lack of knowledge in making value added dairy products (MGS 44.94) Lack of preservation facilities for milk (MGS 38.70), and High cost of utensils (MGS 35.21). Hence these constraints allotted rank 1st 2nd, 3rd, 4th, 5th and 6th respectively. The findings are in agreement with Maity and Sidhu (2001) [4] and Jaya laxami *et al.* (1997) [3] who have also reported low price of milk as a major constraint

Table 7: Frequency of preference associate with milking practices constraints

Preference	1 st	2 nd	3 rd	4 th	5 th	6 th
Low price for milk	43	23	11	7	3	3
High cost of machine and utensils	1	2	1	20	34	32
Lack of preservation facilities for milk	3	4	10	11	38	24
Lack of knowledge in clean milk production	15	21	31	13	3	7
Lack of knowledge in making dairy products	2	7	26	30	7	18
High production cost of milk	26	33	11	9	5	6

Table 8: Garrett's ranking for milking practices constraints

Preference	Total Garrett score (TGS)	Mean Garrett score (MGS)	Rank
Low price for milk	5833	64.81	I
High cost of machine and utensils	3169	35.21	VI
Lack of preservation facilities for milk	3483	38.70	V
Lack of knowledge in clean milk production	5001	55.57	III
Lack of knowledge in making dairy products	4045	44.94	IV
High production cost of milk	5379	59.77	II

Healthcare Practices Constraints

Table 9 revealed that huge cost of veterinary drugs was assigned 1st, 2nd and 3rd preference by 41, 24 and 12 respondents respectively. Similarly Distant location of veterinary hospital was preferred 1st, 2nd and 3rd preference by 27, 36 and 9 respondents respectively. While High Incidence of mastitis were given 1st, 2nd and 3rd preference by 16, 18 and 35 respondents respectively. Table 10 revealed that Huge cost of veterinary drugs was the highest significant constraints under healthcare practices (MGS 64.80) followed by Distant location of veterinary hospitals (MGS 60.67), High Incidence of mastitis (MGS 55.93), No timely vaccination (MGS 43.87), Lack of knowledge of diseases preventive measure (MGS

37.10), and High outbreak of diseases (MGS 36.63). Hence these constraints allotted rank 1st, 2nd, 3rd, 4th, 5th and 6th respectively. Somvanshi S.P.S. *et al.*, (2017) [10] reported that Charges for medical assistance levied by veterinary staff (MGS 69.16) and Knowledge & awareness about diseases & Vaccination was the major healthcare constraints. Princejot *et al.* (2015) [6] also reported that non-availability of adequate veterinary services was the major healthcare constraints followed by non-availability and high cost of medicines. Rathod *et al.* (2011) [7] also highlighted the non-availability of adequate veterinary services and high cost of medicine as major constraints among health care services.

Table 9: Frequency of preference associate with healthcare practices constraints

Preference	1 st	2 nd	3 rd	4 th	5 th	6 th
High Incidence of Mastitis	16	18	35	13	1	7
Huge cost of veterinary drugs	41	24	12	8	4	1
No timely vaccination	1	7	24	29	10	19
Lack of knowledge of diseases preventive measure	3	3	2	16	40	26
Distant location of veterinary hospital	27	36	9	9	3	6
High outbreak of disease	2	2	8	15	32	31

Table 10: Garrett's ranking for Healthcare Practices Constraints.

Preference	Total Garrett score (TGS)	Mean Garrett score (MGS)	Rank
High Incidence of Mastitis	5034	55.93	III
Huge cost of veterinary drugs	5832	64.80	I
No timely vaccination	3948	43.87	IV
Lack of knowledge of diseases preventive measure	3339	37.10	V
Distant location of veterinary hospital	5460	60.67	II
High outbreak of disease	3297	36.63	VI

Conclusion

Dairying is not a layman's business and it has a lot of constraints to make it worthy. With present findings it can be concluded that lack of own capital was the highest significant constraints under housing practices (MGS 62.08), High cost of feed was the highest significant constraints under feeding practices (MGS 66.63), Hard to maintain crossbreed / superior breed of dairy animals was the highest significant constraints under breeding practices (MGS 65.21), Low price for milk was the highest significant constraints under milking practices (MGS 64.81) and Huge cost of veterinary drugs was the highest significant constraints under healthcare practices (MGS 64.80).

References

- Annual Report DAHD GOI 2021-22 available at https://dahd.nic.in/document/annual_report.
- Garret HE, Woodworth RS. Statistics in Psychology and Education. Vakils, Feffer and Simons Pvt. Ltd., Bombay; c1969. p. 329.
- Jayalaxmi G, Shailaja S, Sobhana G. Constraints experienced by women entrepreneurs. J Ext. Edu. 1997;8: 1752-1754.
- Maity M, Sidhu DS. Adoption of clean milk production and health care practices: A study among dairy farm women. J Dairying Foods Home Sci. 2001;20:232-234.
- Narmatha N, Manivanna A, Uma V, Pandiyan C. Socio economic and psychological problems associated with poor adoption of livestock and poultry enterprise. Tamilnadu J Vet. Anim. Sci. 2010;6:210-214.
- Singh Princejot, Bhatti JS, Hundal JS, Kansal SK. Constraints faced by farmers in adoption of dairy as entrepreneurship. Haryana Vet. 2015;54 (1):67-69.
- Rathod PK, Landge S, Nikam TR, Vajreshwari S. Socio-personal profile and constraints of dairy farmers. Karnataka J Agric. Sci. 2011;24:619-621.
- Sharma PK, Shekhawat BS, Chaudhary MK. Knowledge of Dairy farmers about improved Animal Husbandry practices in Kheda District of Gujrat, J Krishi Vigyan Kendra; c2016. p. 49-53.
- Singh Kinjulck C, Singh Sanjay, Singh Chandrajit Pandey, Ajay Kumar Mishra MK. Constraints Faced by the Farmers at Different Marketing Channels in Madhya Pradesh. International J of Ext. Educ. 2021;17:89-92.
- Somvanshi SPS, Kulmi GS, Shaktawat RPS, Singh HP, Singh Durga, Tripathi SP, *et al.* Problems faced by dairy

farmers for feed resources and feeding practices in mandasaur district of M.P. Progressive Research: An International Journal. 2017;12(4):512-514.

11. Zalkuwi J Comparative analysis of technical efficiency of sole sorghum and sorghum mixed with cowpea production systems in Guyuk local Government Area of Adamawa state, Nigeria. International Journal of innovative Research and Studies. V. 2015;2(12):558-566.