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Management practices and constraints faced by crossbred cattle owners in Chalisgaon tehsil of Jalgaon district of Maharashtra

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Abstract

The field experiment was conducted to evaluate the “Effect of soil and foliar supplementation of nitrogen, boron and salicylic acid on growth and yield of cucumber (*Cucumis sativus* L.) in alfisols of Konkan (M.S.)” at Research and Education Farm, Department of Agricultural Botany, College of Agriculture, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Dist. Ratnagiri (M.S.) during the Summer season of 2018. The experiment was laid out in Randomized Block Design (RBD) comprising ten treatment combinations replicated thrice, where the effect of soil and foliar supplementation of nitrogen, boron and salicylic acid either alone or in combinations applied along with the recommended dose of fertilizers (135:60:30 NPK kg ha⁻¹) and an absolute control (to judge the fate of native nutrients) were studied. The study further revealed that the treatment receiving the application of recommended dose of fertilizer (135:60:30 kg ha⁻¹) + Foliar spray of nitrogen through urea (1 %) + Soil application of boron through borax @ 2 kg ha⁻¹ + Foliar spray of salicylic acid (0.2 %) was recorded the highest fruit yield (231.22 q ha⁻¹) and yield attributing characters like number of fruits per vine (7.00) and weight of fruit i.e., 1.98 kg per vine as well as growth parameters viz. vine length (407.00 cm) and number of branches per vine (14.22) of Cucumber in alfisols of Konkan (M.S.).

Keywords: Cucumber, boron, yield, quality, konkan

Introduction

Indian agriculture without livestock is inconceivable idea, along with the crop improvement programme, there is an urgent need of improving livestock and agriculture, Livestock as it is considered as backbone of Indian agriculture. Next to agriculture, livestock play a significant role in maintaining a strong agricultural economy in India. livestock provides much employment opportunities to the large number of landless labourers and marginal farmers. Livestock also produces milk, manure and draft power. The cattle are major integrate component of the Indian dairy farming. In India cattle is commonly reared in small scale farms, large scale farms and for domestic milk production. Increasing the population of cattle, there is need of adoption of good management practices and new dairy farming practices is necessary. System of rearing of cattle in India is older than even its agriculture. Milch cattle were known even in Vedic times, when cow was regarded as “Kamdhenu” and thus commanded the greater respect from all. Later on, man settled down to the agriculture, cattle come to be used as draft animals. In India livestock rearing is traditional and based on socio-economic condition of farmers due to low availability of quality feeds with poor feeding practices. Animal Husbandry and Dairy development play a predominant role in the rural economy in supplementing the income of rural households, particularly the landless, small and marginal farmers. It also provides subsidiary occupation in semi-urban areas and people living in drought prone areas, where crop output may not sustain the family. According to 20th Livestock census (2019) the total livestock population consisting of Cattle, Buffalo, Sheep, Goat, Pig, Horses, Mules, Donkeys, Camels, Mithun and Yak in the country is 535.78 million. India ranks first in livestock population which contributes near about 17.64 per cent of world livestock population. It also possesses the of the 302.79 million total bovine population. India has 192.49 million cattle out of which 50.43 million are crossbred and exotic. Indigenous and non-descript cattle population 142.11 million. Buffalo population in country is 109.85 million.

Material and Methods

The present investigation was carried out by randomly selecting 200 cattle owners from ten villages were selected randomly and from each village 20 farmers were selected and were classified in five different groups i.e., landless, marginal (up to 1 ha), small (1 to 2 ha), medium (2 to 8 ha) and large (above 8 ha) and livestock population were also classified on the basis of herd size.

The data regarding various management practices and constraints encountered while non-adopting recommendation feeding and management practices were collected through a comprehensive questionnaire was prepared to collect information by personal interview.

Results and Discussion

The result of this investigation was presented and discussed in the light of research work conducted so far, in this chapter under following heads.

1. Management practices adopted by Crossbred cattle owners.
2. Constraints in feeding and management practices.

Management practices adopted by crossbred cattle owners

The data with regards to management practices are presented in Table 1.

Table 1: Management practices adopted by Crossbred cattle owners

Sr. No.	Management practices	Landless	Marginal	Small	Medium	Large	Total
1.	Cattle shed						
a.	Type of housing						
I	Grass	6 (75)	52 (58.42)	46 (60.52)	7 (41.17)	2 (20)	113 (56.5)
II	Asbestos sheets	2 (25)	37 (41.57)	30 (39.47)	10 (58.82)	8 (80)	82 (43.5)
III	Total	8 (100)	89 (100)	76 (100)	17 (100)	10 (100)	200 (100)
b.	Type of flooring						
I	Kaccha	5 (62.5)	53 (59.55)	43 (56.51)	8 (47.05)	1 (10)	110 (55)
II	Pucca	3 (37.5)	36 (40.44)	33 (43.42)	9 (52.94)	9 (90)	90 (45)
III	Total	8 (100)	89 (100)	76 (100)	17 (100)	10 (100)	200 (100)
c.	System of housing						
I	Open system	5 (62.5)	46 (51.68)	41 (53.94)	6 (35.29)	2 (20)	95 (47.5)
II	Closed system	3 (37.5)	43 (48.31)	35 (46.05)	11 (64.70)	8 (80)	105 (52.5)
III	Total	8 (100)	89 (100)	76 (100)	17 (100)	10 (100)	200 (100)
d.	Use of disinfectants	3 (37.5)	36 (40.44)	31 (40.78)	8 (47.05)	7 (70)	85 (42.5)
e.	Management of calf & adult						
I	Separate	1 (12.5)	23 (25.84)	18 (23.68)	6 (35.29)	7 (70)	55 (27.5)
II	Combine	7 (87.5)	66 (74.15)	58 (76.31)	11 (64.70)	3 (30)	145 (72.5)
III	Total	8 (100)	89 (100)	76 (100)	17 (100)	10 (100)	200 (100)
2.	Health and Sanitation						
I	Washing cattle	2 (25)	36 (40.44)	34 (44.73)	9 (52.94)	6 (60)	87 (43.5)
II	Washing udder before milking	8 (100)	89 (100)	76 (100)	17 (100)	10 (100)	200 (100)
III	Regular cleaning of shed	8 (100)	89 (100)	76 (100)	17 (100)	10 (100)	200 (100)
IV	Washing floor	2 (25)	69 (77.52)	53 (69.73)	15 (88.23)	9 (90)	148 (74)
V	Vaccination	7 (87.5)	73 (82.02)	62 (81.57)	15 (88.23)	8 (80)	165 (82.5)
VI	Grooming	6 (75)	76 (85.39)	59 (77.63)	13 (76.47)	7 (70)	161 (80.5)
3.	Breeding						
	Methods of mating						
I	Natural	4 (50)	24 (26.96)	19 (25)	6 (35.29)	1 (10)	54 (24)
II	Artificial Insemination	4 (50)	65 (73.03)	57 (75)	11 (64.70)	9 (90)	146 (73)
III	Total	8 (100)	89 (100)	76 (100)	17 (100)	10 (100)	200 (100)

Cattle shed

Type of housing

In the present study (Table 1), the dairy cattle owners of large group were (20 %), medium cattle owners (41.17 %), small (60.52 %), marginal (58.42 %) and landless group (75 %) reared the animals in Grass type of housing. Whereas, the dairy cattle owners from large sized group (80 %), medium (58.82 %), small (39.47 %), marginal sized group (41.57%) and landless (25 %) provided asbestos sheets type of housing to the animals. At an overall level, 56.50 per cent dairy cattle owners reared the animals in Grass type of housing, while 43.5 per cent cattle owners provided the Asbestos sheets type of housing.

Type of flooring

It was revealed from the Table, 62.5 per cent cattle owners from landless sized group provided kaccha flooring in the shed followed by marginal (59.55 %), small (56.51 %), medium (47.05 %) and large sized cattle owners group (10.00 %). At an overall level, 55.00 per cent crossbred cattle owners

were having kaccha flooring resulting in unsanitary condition in the shed. Probably this might be due to financial constraints. Whereas, the maximum dairy cattle owners from large sized group (90.00 %) followed by medium (52.94 %), small (43.42 %), marginal sized group (40.44 %), and landless (37.50 %) provided pucca type of flooring to the animals. At an overall level, 45.00 per cent dairy cattle owners reared the animals in pucca type of flooring.

System of housing

It was observed from table 1, open house system was adopted by landless followed by small, marginal, medium and large cattle owners to the tune of 62.5 per cent, 53.94 per cent, 51.68 per cent, 35.29 per cent and 20 per cent respectively. While close housing system were used by large followed by medium, marginal, small and landless cattle owners to the tune of 80 per cent, 64.70 per cent, 48.31 per cent, 46.05 per cent and 37.5 per cent respectively. At an overall level 47.50 per cent crossbred cattle owners used open housing system whereas 52.5 per cent used closed housing system. These

findings are in agreement with observations of Kochewad *et al.* (2013)^[6] who observed that open house used by 74.55 per cent cattle owners and close housing used by 25.45 per cent cattle owners.

Use of disinfectants in shed

It was revealed from the Table 1, as regards with use of disinfectant in shed or health control out of total 70 per cent cattle owners of large group had used disinfectant in shed, followed by medium (47.05%), small (40.78%), marginal (40.44%) and landless (37.50%) cattle owners, respectively. At an overall, 42.50 per cent crossbred cattle owners were using disinfectant in sheds.

Management of calf and adult

It is revealed from table 1, out of 200 Crossbred cattle owners from each type of land holding adopted by separate calf management by 70 per cent, 35.29 per cent, 25.84 per cent, 23.68 per cent and 12.5 per cent of large, medium, marginal, small and landless category of cattle owners respectively. The overall adoption was 27.50 per cent among 200 selected cattle owners. Similarly, combine calf management by 87.5 per cent (landless), 76.31 per cent (small), 74.15 per cent (marginal), 64.70 per cent (medium) and 30 per cent (large). The overall adoption was 72.5 per cent among 200 selected cattle owners.

Health and sanitization

Washing of cattle

It was observed from table 1, the washing of cattle was practiced in all categories of respondents. Large group (60 %) followed by medium (52.94 %), small (44.73 %), marginal (40.44 %) and landless (25 %) were washed their cattle.

Washing of udder before milking

All cattle owners were (100%) adopted washing of udder before starting of milking to avoid dust and dung particles entry in the milk (Table 1). Out of 200 Crossbred cattle owners, washing of udder before milking were practiced by all cattle owners. Kishore *et al.* (2013)^[5] observed that about 49.16 per cent cattle owners washed their animals by splashing water manually.

Regular cleaning of shed

It was observed from the Table 1 that, the all of the cattle owners (100.00%) adopted regular cleaning of shed (200 cattle owners).

Washing of floor

It was observed from the Table 1 that, overall, 74.00 per cent

crossbred cattle owners were adopting washing of floor regularly. The washing of floor was adopted by large sized cattle owners (90.00%), medium (88.23%), small (69.73%), marginal (77.52%) and landless (25%) cattle owners regularly.

Vaccination

It was revealed from the Table 1 that, at an overall level 82.5 per cent crossbred cattle owners adopted vaccination against the diseases while 17.50 per cent cattle owners were not adopting the vaccination of the animals. The trend in adopting vaccination was more in medium (88.23%) followed by marginal (82.02%), small (81.57%), large (80%) and landless (75.00%).

Singh *et al.* (2012)^[13] who observed that vaccination against diseases by 26.50 per cent dairy cattle owners

Grooming

It was observed from the Table 1 that, overall 80.5 per cent crossbred cattle owners were adopting grooming, while 19.5 per cent cattle owners were not adopting this practice at an overall level. Majority of the marginal cattle owners (85.39%) were adopting grooming followed by small (77.63%), landless (75%), large (70%) and medium (76.47%) cattle owners regularly.

Breeding

Methods of breeding

There are two methods of cattle breeding, natural breeding and artificial insemination.

It was observed from table 1 that, majority of cattle owners of landless group (50%) adopted natural services followed by marginal (35.29%), marginal (26.96%), small (25%) and large (10%) cattle owners. At an overall level 24 per cent crossbred cattle owners adopting natural method of breeding.

These results are more or less comparable with Gupta *et al.* (2008) who observed that, natural services were adopted by (96.00%) of cattle owners.

Majority of large size group (90%) cattle owners adopted artificial insemination followed by small (75%), marginal (73.03%), medium (64.70%) and landless (50%). At an overall 73 per cent crossbred cattle owners adopting artificial insemination method of breeding.

Constraints in feeding and management practices

The constraints in feeding and management practices experienced by crossbred owners was discussed and recorded critically and presented in table no 5.

Table 2: Constraints in feeding and management practices

Sr. No.	Constraints	Landless	Marginal	Small	Medium	Large	Total
1.	Financial constraints	8 (100)	89 (100)	76 (100)	17 (100)	10 (100)	200 (100)
I	High cost of concentrate	8 (100)	89 (100)	71 (93.42)	16 (94.11)	6 (60)	190 (95)
II	High cost of green fodder	8 (100)	86 (96.62)	74 (97.36)	9 (52.94)	1 (10)	178 (89)
III	High cost of mineral mixture	8 (100)	89 (100)	76 (100)	17 (100)	10 (100)	200 (100)
IV	Lack of loan facility	8 (100)	83 (93.25)	63 (82.89)	8 (47.05)	4 (40)	166 (83)
2.	Technological constraints						
I	Lack of scientific knowledge	7 (87.5)	81 (91.01)	69 (90.78)	9 (52.94)	4 (40)	170 (87.5)
II	Lack of technological guidance	7 (87.5)	81 (91.01)	62 (81.57)	6 (35.29)	2 (20)	158 (79)
3.	Infrastructural constraints						
I	Lack of chaff cutter	8 (100)	81 (91.01)	71 (93.42)	12 (70.58)	3 (30)	175 (87.5)
II	Lack of storage facility	7 (87.5)	72 (80.89)	68 (89.89)	7 (41.16)	2 (20)	156 (78)
4.	Personal interest						
I	Lack of personal interest	6 (75)	58 (65.16)	56 (73.68)	12 (70.58)	6 (60)	138 (69)

5.	Situational constraints						
I	Inadequate land holding	8 (100)	89 (100)	58 (76.31)	0 (0)	0 (0)	155 (77.5)
II	Lack of irrigation facility	8 (100)	73 (82.02)	63 (82.89)	11 (64.70)	2 (20)	157 (78.5)
III	Shortage of green fodder	8 (100)	52 (58.42)	49 (64.47)	3 (17.64)	1 (10)	113 (56.5)
IBV	Non availability of labor	1 (12.5)	39 (32.59)	35 (46.05)	9 (52.94)	10 (100)	94 (47)
V	Non availability of veterinary hospital	4 (50)	49 (55.05)	38 (50)	9 (52.94)	5 (50)	105 (52.5)
VI	Non availability of agro industrial by product	8 (100)	89 (100)	76 (100)	17 (100)	10 (100)	200 (100)

Financial constraints

High cost of concentrates

From the above Table 2, the constraints related to feeding of Crossbred cattle owners were high cost of concentrates faced by landless, marginal, medium, small and large group of cattle owners was 100 %, 100 %, 94.11 %, 93.42 %, 60 % respectively. At an overall 95 per cent cattle owners observed high cost of concentrates in feeding animals. It is indicated from the above finding that high cost of concentrates in feeding of Crossbred cattle owner is major constraints faced by cattle owners. This result comparable with Raskar YM, *et al.* (2017) ^[10] reported that, overall, 93.33 per cent cattle owners faced high cost of concentrates in feeding animals. This results also comparable with Sabapara, *et al.* (2012) ^[11] reported that, high cost of feed was faced by 91.00 per cent cattle owners, Lokhande, *et al.* (2012) ^[8] also reported that, 86.36 per cent of respondents were faced by high cost of concentrates and Kavathalkar, *et al.* (2007) ^[14] reported that, high costs of concentrates were faced by 88.88 per cent cattle owners.

High cost of green fodder

From the above Table 2 it was observed that, the constraints of Crossbred cattle owners were high cost of green fodder faced by landless, small, marginal, medium, large group of cattle owners was 100 %, 97.36 %, 96.62 %, 52.94 % and 10.00 % respectively. The overall 86.66 per cent crossbred cattle owners faced problem of high cost of green fodder. Kavathalkar *et al.* (2007) ^[14] reported that, 79.25 per cent cattle owners were faced by high cost of green fodder.

High cost of mineral mixture or mineral bricks

From the above Table 2 it was observed that, the constraints of crossbred cattle owners were high cost of feeding mineral mixture or mineral bricks to their animals faced by landless, marginal, small, medium and large group cattle owners was 100 %, 100 %, 100 %, 100 % and 100 % respectively. The overall 100 per cent crossbred cattle owners faced problem of high cost of mineral mixture or mineral bricks.

Lack of loan facility

The result as evident from the Table 2 revealed that, the major constraint faced by the cattle owners was lack of communication. Majority of cattle owners of landless (100%), followed by marginal group (93.25 %), small (82.89 %), medium (47.09 %) and large (40 %) group were faced problem of lack of loan facility. The overall 83 per cent cattle owners observed problem of lack of loan facility.

Technological constraints

Lack of scientific knowledge

From the above Table 2, the constraints faced by Crossbred cattle owners were lack of scientific knowledge faced by majority of cattle owners in marginal (91.01 %), small (90.78 %), landless (87.50 %), medium (52.94 %) and large (40 %) group. The overall 87.5 per cent of Crossbred cattle owners were observed lack of scientific knowledge. Raskar YM, *et al.*

(2017) ^[10] observed that, overall 57.1 per cent of Crossbred cattle owners involved lack of scientific knowledge. These results similarly matched with present study.

Lack of technical guidance

From the above Table 2, the constraints faced by majority of cattle owners in marginal group (91.01%) followed by landless (87.50 %), small (81.57 %), medium (35.29 %) and large (220 %). The overall 79.00 per cent of Crossbred cattle owners were observed lack of technical guidance. This result were similarly matched with Raskar YM, *et al.* (2017) ^[10] revealed that, overall constraints faced by 88.33 % Crossbred cattle owners had lack of technical guidance.

Infrastructural constraints

Lack of chaff cutter

From above table 2, lack of chaff cutter were the major constraints perceived by the Crossbred cattle owners. Majority of cattle owners of landless group followed by small, marginal, medium and large group with 100 per cent, 93.42 per cent, 91.01 per cent, 70.58 per cent and 30 per cent respectively.

Lack of storage facility

It is seen from the Table 2 that, constraints involved under infrastructural group were lack of storage facility in majority of cattle owners of small (89.89 %) followed by marginal (80.89 %), landless (87.5 %), medium (41.16 %) and large (20 %) group were faced problem of lack of storage facility. The overall 78 per cent cattle owners observed problem of lack of storage facility.

Personal interest

The results under personal constraints group are furnished in Table 2. The constraints included under personal group as shown in the above table, were also responsible up to some extent for non-adoption of scientific recommendations in feeding and management of dairy animals in Chalisgaon tahsil.

Lack of interest

From the Table 2, the constraints faced by cattle owners were lack of interest. Majority of cattle owners of landless group followed by small, medium, marginal and large group with 75 per cent, 73.68 per cent, 70.58 per cent, 65.16 per cent and 60 per cent respectively were shown lack of interest in feeding and management of cattle. The overall 69 per cent cattle owners observed lack of interest in feeding and management of cattle.

Situational constraints

Inadequate land holding

From the Table 2, the constraints of Crossbred cattle owners is inadequate land holdings faced by majority of cattle owners in landless group (100 %), followed by marginal (100 %), small (76.31 %), medium (0 %) and large (0 %) group. The

overall constraints faced by 77.50 per cent of Crossbred cattle owners was inadequate land holding.

Lack of irrigation facility

From the above Table 2, the constraints faced by majority of cattle owners in landless (100), and small (82.89), marginal (82.02 %), medium (64.70) and large (20 %) group. The overall constraints observed by 78.50 per cent Crossbred cattle owners were lack of irrigation facility.

Shortage of green fodder

From the above Table 2, the constraints Crossbred cattle owners were shortage of green fodder faced by majority of cattle owners in landless group (100 %), followed by small (64.47 %), marginal (58.42 %), medium (17.64 %) and large (10 %) group. The overall constraints faced by 56.5 per cent Crossbred cattle owners were shortage of green fodder.

Non availability of labour

From the Table 2, the constraints cattle owners were non availability of labour faced by majority of cattle owners in large (100 %) followed by medium (52.94 %), small (46.05 %) and marginal (32.59 %) group. The overall constraints faced by 47 per cent of Crossbred cattle owners were non availability of labour. Lokhande *et al.* (2012)^[8] observed that, non-availability of labour was perceived as very serious problem.

Non availability of veterinary care hospitals

It is apparent from the table, the veterinary hospitals are ill equipped, lacking facilities for treatment, vaccines and medicines. Majority of cattle owners in marginal, medium, landless, small and large size with 55.05 per cent, 52.94 per cent, 50 per cent, 50 per cent and 50 per cent respectively. The overall 52.5 per cent crossbred cattle owners were faced problem of non-availability of veterinary care hospital. Similar results reported by Raskar YM, *et al.* (2017)^[10] that, majority cattle owners of medium, small, marginal, landless and large size with 83.33 per cent, 77.18 per cent, 64.15 per cent, 66.66 per cent and 0.00 per cent respectively. The overall 65.83 per cent crossbred cattle owners were faced problem of non-availability of veterinary care hospital.

Non availability of agro-industrial by product

From the above Table, the constraints faced by Crossbred cattle owners were non availability of agro-industrial byproduct by majority of large (100 %), medium (100%), marginal (100 %), landless (100%) and small (100%) cattle owners. The overall (100 %) per cent of cattle owners were faced problem of non-availability of agro-industrial by product.

Conclusion

Lack of commercial approach towards livestock rearing avoids harvesting maximum milk potential. There are very less number of farmer's follows urea treatment and silage preparation. With regards to management practices, all of the crossbred cattle owners adopted regular cleaning of shed. Half of the respondents reared animals in Katcha flooring and majority of cattle owners were adopted closed system of housing. Nearly half of respondents were using disinfectant in shades and with respect to breeding most of cattle owners were adopting artificial insemination method of breeding. In financial constraints involved high cost of concentrates, green fodder, mineral mixture and lack of loan facility. Technical

constraints involved the lack of scientific knowledge and technical guidance. In situational constraints involved inadequate land holding, lack of irrigation facility, shortage of green fodder, non-availability of labour and non-availability of veterinary hospitals. Infrastructural constraints involved the lack of chaff cutter, communication, storage facility.

References

1. Anonymous. Livestock census report; c2019.
2. Babu KR, Rao RK. Studies on food and feeding habits of mugil cephalus (Linnaeus, 1758) east coast off Andhra Pradesh, India. SENRA Academic Publishers, British Columbia. 2013 Oct;7(3):2499-2504.
3. Devasena B, Ramana JV. Technology adoption regarding feeding management of crossbred cattle reared in crop-livestock system in chittoor district. Indian J. Dairy Sci. 2015;60(6):408-412.
4. Dhaliwal APS, Dhillon GS. Management practices followed by dairy farmers in rural and urban areas of Bathinda district in Punjab. Journal of Krishi Vigyan. 2017;6(1):124-127.
5. Kishore K, Mahender M, CH Harikrishna. A study on buffalo management practices in Khammam district of Andhra Pradesh. Buffalo Bulletin. 2013 Jun 1;32(2):97-119.
6. Kochewad SA, Singh VK, Singh MP. Dairy Cattle Management Practices Followed by Farmers of East Ganga Canal Command Area of upper Gangetic Plains of India. Indian J. Dairy Science. 2013;66(5):418-423.
7. Kumar Y, Shukla SK. Constraints faced in adoption of improved management practices by rural and urban weaker section milk producers in Bulandshahar district of U.P. Research Journal of Animal Husbandry and Dairy Science. 2017;8(1):13-19.
8. Lokhande JP, Jha SK, Vaidya MD. Constraints perceived by the dairy farmers in adoption of scientific dairy farming practices. J. Dairying, Food & H.S. 2012;31(1):42-46.
9. Mircha R, Dua K, Randhawa SS, Afzal Y, Mir AQ. Feeding, supplement status and common health problems of dairy animals in Moga district of Punjab. Indian Journal of Animal Research. Jun 2012;46(2):193-195.
10. Raskar YM, Mane NG, Motghare AB, Raskar SS. Feeding and management practices followed by crossbred cattle owners in chandur railway tehsil of Amravati district. Bulletin of Environment, Pharmacology and Life Sciences. 2017;6(Special issue 4):575-578.
11. Sabapara GP, Desai PM, Singh RR, Kharadi VB. Breeding and health care management status of dairy animals in the tribal area of South Gujarat. Indian Journal of Animal Science. 2010;74(9):997.
12. Simul AI, Akfh Bhuiyan, Alam MK, Sarkar MM, Rahman MM. Feeding and management practices of Red Chittagong cattle in two selected upazilas of Chittagong district. Bang. J. Anim. Sci. 2012 Jun 1;41(1):35-40.
13. Singh NK, Singh H, Haque M, Rath SS. Prevalence of parasitic infections in cattle of Ludhiana district, Punjab. Journal of parasitic diseases. 2012 Oct;36(2):256-9.
14. Kavathalkar NG, Patil SR, Kankhare DH, Desale RJ, Mane SH. Constraints in adoption of scientific recommendations in feeding of dairy animals in Nagpur district. Indian Dairyman. 2007;59(12):51.