

**FEEDING AND MANAGEMENT PRACTICES OF
DAIRY ANIMALS IN UDGIR TAHSIL OF LATUR
DISTRICT**

BY
UDMALE ANIL BAPU
B.Sc. (Agri.)

MASTER OF SCIENCE
(Agriculture)

IN
ANIMAL HUSBANDRY AND DAIRY SCIENCE
(ANIMAL HUSBANDRY)

DEPARTMENT OF ANIMAL HUSBANDRY AND DAIRY SCIENCE
COLLEGE OF AGRICULTURE, LATUR
VASANTRAO NAIK MARATHWADA KRISHI VIDYAPEETH
PARBHANI : 431 402 (MS), INDIA
2020

**FEEDING AND MANAGEMENT PRACTICES OF
DAIRY ANIMALS IN UDGIR TAHSIL OF LATUR
DISTRICT**

BY
UDMALE ANIL BAPU
B.Sc. (Agri.)


DISSERTATION

**Submitted to the
Vasantao Naik Marathwada Krishi Vidyapeeth
in partial fulfilment of the
requirement for the award of the degree of**

MASTER OF SCIENCE
(Agriculture)

IN
ANIMAL HUSBANDRY AND DAIRY SCIENCE
(ANIMAL HUSBANDRY)

**DEPARTMENT OF ANIMAL HUSBANDRY AND DAIRY SCIENCE,
COLLEGE OF AGRICULTURE, LATUR
VASANTRAO NAIK MARATHWADA KRISHI VIDYAPEETH
PARBHANI : 431 402 (MS), INDIA
2020**

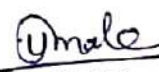


Affectionately
Dedicated
To
My beloved
Parents

CANDIDATE'S DECLARATION

*I, hereby declare that this thesis
or part thereof,
has not been previously submitted
by me or other person to this or
any other university for a
degree or diploma.*

Place : Latur
Date : 30 /09 /2020


(A. B. Udmale)
Reg. No. 2018A/18ML

Dr. B. M. Thombre
M.Sc. (Agri.), Ph.D. (LPM)
Associate Dean and Principal
College of Agriculture, Ambajogai
Vasantrao Naik Marathwada Krishi Vidyapeeth,
Parbhani: 431 402 (MS), INDIA

CERTIFICATE I

This is to certify that **Mr. UDMALE ANIL BAPU** has satisfactorily prosecuted his course work and research for a period of not less than four semesters and that the thesis entitled "**FEEDING AND MANAGEMENT PRACTICES OF DAIRY ANIMALS IN UDGIR TAHSIL OF LATUR DISTRICT**" submitted by him is the result of original research work and is of sufficiently high standard to warrant its presentation to the examination.

I also certify that the thesis or a part there of has not been previously submitted by him for a degree of any university.

Place: Latur

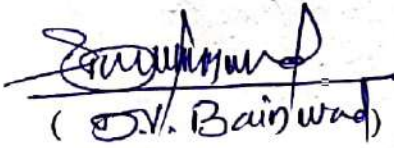
Date: 30 /09 /2020


(B. M. Thombre) 30.09.2020

**Research Guide and Chairman
of Advisory committee**

CERTIFICATE II

This is to certify that the thesis entitled "FEEDING AND MANAGEMENT PRACTICES OF DAIRY ANIMALS IN UDGIR TAHSIL OF LATUR DISTRICT" submitted by Mr. UDMALE ANIL BAPU to the Vasantnao Naik Marathwada Krishi Vidyapeeth, Parbhani in fulfilment of the requirements for the degree of MASTER OF SCIENCE (Agriculture) in the subject of ANIMAL HUSBANDRY and DAIRY SCIENCE (ANIMAL HUSBANDRY) has been approved by the student's advisory committee after oral examination in collaboration with the external examiner.

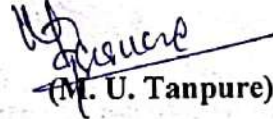


External Examiner



Research Guide and Chairman
of Advisory Committee

Members of Advisory Committee:

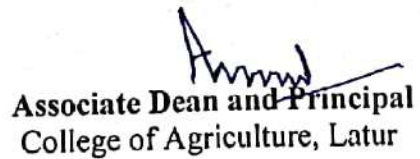


(A. T. Shinde)



(P. V. Padghan)

Associate Dean (PG)
College of Agriculture
VNMKV, Parbhani



Associate Dean and Principal
College of Agriculture, Latur

PLAGIARISM CLEARANCE CERTIFICATE

This is to certify that thesis entitled "FEEDING AND MANAGEMENT PRACTICES OF DAIRY ANIMALS IN UDGIR TAHSIL OF LATUR DISTRICT" submitted by Mr. UDMALE ANIL BAPU Reg. No. 2018A/18ML has been properly examined by using URKUND: Anti Plagiarism Software.

No sentence, equation, diagram, table, paragraph or section has been copied verbatim from previous work unless it is placed under quotation marks duly referenced. The work presented is original and own work of the researcher (i.e. there is no plagiarism). No ideas, process, result or words of other have been presented as researcher's own work.


Signature of Student

A. B. Udmale


Signature of Research Guide

Dr. B. M. Thombre

Urkund Analysis Result

Analysed Document: Udmale Anil M.Sc pdf.pdf (D80179820)
Submitted: 9/29/2020 12:08:00 PM
Submitted By: bmthombre@gmail.com
Significance: 9 %

Sources included in the report:

Neha More MSc. PDF.pdf (D79609576)
Nikhil Devade.doc (D79710493)
LPM_Ankit Kumar_2020.pdf (D65811496)
https://www.researchgate.net/publication/325119214_Prevaling_Feeding_Practices_of_Dairy_Animals_Followed_by_Dairy_Farmers_in_the_Operational_Area_of_Dairy_Vigyan_Kendra_Vejalpur

Instances where selected sources appear:

34

ACKNOWLEDGEMENT

A goal is a milestone which a youngster dreams and successful achieves only with the blessing and the guiding light of.....

Towards the end of my endeavour, it's my privilege to extol all those who have directly or indirectly helped me to accomplish this research work.

*It gives me a great pleasure, pride and privilege to quote heartily indebtedness with deep sense of gratitude and respect onward and heartfelt thanks to my Research Guide and Chairman, Advisory Committee **Dr. B. M. Thombre**, Associate Dean and Principal, College of Agriculture, Ambajogai suggesting need based research project and for his valuable guidance, constant encouragement, timely suggestions, keen interest, constructive criticism, painstaking efforts and co-operation in present study. The great influence to my educational work is of sound technical knowledge and discipline. I feel extremely honored for the opportunities bestowed upon me to work under his versatile guidance. My glossary sinks below zero to express emotions towards him for his outlook generosity of mind, simplicity and friendliness in understanding my problems with patience par excellence and keen interest right from selection of research problem to the final shaping of this dissertation.*

*I mention heart full gratefulness thanks to members of my advisory committee, **Dr. P. V. Padghan**, Associate professor, Department of Animal Husbandry and Dairy Science, College of Agriculture, Latur, **Dr. A. T. Shinde**, Associate Professor, Department of Animal Husbandry and Dairy Science, College of Agriculture, Latur, **Prof. M. U. Tanpure**, Assistant Professor, Department of Animal Husbandry and Dairy Science, College of Agriculture, Badnapur, who provided intellectual stimulation, valuable counsel and comments during investigation. I mention heart full gratefulness thanks to **Dr. G. K. Londhe**, Head, Department of Animal Husbandry and Dairy Science, VNMKV, Parbhani.*

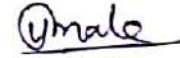
*It is my pleasure to express my gratefulness to The **Dr. A. S. DHAWAN**, Vice-chancellor, VNMKV, Parbhani, **Dr. D. N. Gokhale**, Director of Instruction and Dean (F/A), VNMKV, Parbhani, **Dr. Sayed Ismail Sayed Ibrahim**, Associate Dean (PG) VNMKV, Parbhani, **Prof. H. B. Patil** and **Dr. A. P. Suryavanshi**, Associate Dean and Principal, College of Agriculture, Latur for providing necessary facilities during the course of investigation.*

Parents teach us to dream, to try with our feet on the ground and slights on the sky. My father Shri. Bapu Ramchandra Udmale, Mother Sau. Lata Bupu Udmale for their inexhaustible source of inspiration throughout my life, their blessing love and affection has brought the cherished dream to reality. I take this opportunity to express my affection and obligation to my loving brother Amol Udmale, my Dearest sister Shital Udmale for encouragement and assistance in building my educational career.

Last but never least it is difficult to list all those to whom I express my gratitude for their good will and moral support during my academic attainments through nobody is mentioned, none is forgotten too.

Place: Latur

Date: 30 / 09 / 2020



(A. B. Udmale)

(Reg. No. 2018A/18 ML)

CONTENTS

Chapter	Title	Page No.
1	INTRODUCTION	1-3
2	REVIEW OF LITERATURE	4-19
3	MATERIAL AND METHODS	20-29
4	RESULTS AND DISCUSSION	30-50
5	SUMMARY AND CONCLUSION	51-54
6	LITERATURE CITED	i-viii
7	THESIS ABSTRACT	ix-x
8	APPENDIX	xi-xiv
9	VITA	xv

LIST OF TABLES

Table No.	Title	Page No.
1	Livestock population of the Udgir tahsil in Latur district	21
2	List of selected villages from Udgir tahsil of Latur district (N= 120)	22
3	Category of farmers on the basis of age group	22
4	Category of farmers on the basis of education level	23
5	Category of farmers on the basis of land holding	23
6	Category of farmers on the basis of number of dairy animals	23
7	Category of farmers on the basis of animal breed	24
8	Category of farmers on the basis of type of family	24
9	Category of farmers on the basis of occupation	24
10	Gap of adopted feeding management practices over recommended practices by landless category of farmers	25
11	Gap of adopted feeding management practices over recommended practices by marginal category of farmers	25
12	Gap of adopted feeding management practices over recommended practices by medium category of farmers	25
13	Gap of adopted feeding management practices over recommended practices by large category of farmers	26
14	Gap of adopted feeding management practices over recommended practices by overall category of farmers	26
15	Category of farmers on the basis of facility expectation	27
16	Category of farmers on the basis of constraints faced	27
17	List of village selection from Udgir tahsil	30
18	Frequencies showing categories of farmers according to age	31
19	Frequencies showing education level of dairy farmers	32
20	Number of dairy animals reared per farmer according to size of land holding	33

21	Distribution of respondents according to size of herd	34
22	Number of dairy animals kept by the farmers according to the breed of dairy animals	34
23	Distribution of farmers according to type of family	35
24	Frequencies showing occupation status of dairy farmers	36
25	Gap of adopted feeding management practices over recommended practices of cattle by landless category of farmers	37
26	Gap of adopted feeding management practices over recommended practices of cattle by marginal category of farmers	38
27	Gap of adopted feeding management practices over recommended practices of cattle by medium category of farmers	38
28	Gap of adopted feeding management practices over recommended practices of cattle by large category of farmers	39
29	Gap of adopted feeding management practices over recommended practices of cattle by overall category of farmers	40
30	Gap of adopted feeding management practices over recommended practices of buffaloes by landless category of farmers	41
31	Gap of adopted feeding management practices over recommended practices of buffaloes by marginal category of farmers	42
32	Gap of adopted feeding management practices over recommended practices of buffaloes by medium category of farmers	42
33	Gap of adopted feeding management practices over recommended practices of buffaloes by large category of farmers	43
34	Gap of adopted feeding management practices over recommended practices of buffaloes by overall category of farmers	44
35	Mean dry roughages offered to various dairy animals by group of dairy farmers	45
36	Mean green roughages offered to various dairy animals by group of dairy farmer	46
37	Mean concentrate offered to various dairy animals by group of dairy farmers	47
38	Facilities expected for dairy activities by dairy farmers	48
39	Constraints in dairying by various groups of dairy farmers	49

LIST OF FIGURES

Fig. No.	Title	In between Page No.
4.1	Distribution of farmers according to age group	31-32
4.2	Distribution of farmers according to education level	31-32
4.3	Distribution of farmers according to type of land holding	33-34
4.4	Distribution of dairy animal reared per farmer according to size of herd	33-34
4.5	Distribution of farmers on the basis of type of family	35-36
4.6	Distribution gap of feeding management practices over recommended practices of cattle at landless category of farmers	35-36
4.7	Distribution gap of feeding management practices over recommended practices of cattle at marginal category of farmers	37-38
4.8	Distribution gap of feeding management practices over recommended practices of cattle at medium category of farmers	37-38
4.9	Distribution gap of feeding management practices over recommended practices of cattle at large category of farmers	39-40
4.10	Distribution gap of feeding management practices over recommended practices of cattle at overall category of farmers	39-40
4.11	Distribution gap of feeding management practices over recommended practices of buffaloes at landless category of farmers	41-42
4.12	Distribution gap of feeding management practices over recommended practices of buffaloes at marginal category of farmers	41-42
4.13	Distribution gap of feeding management practices over recommended practices of buffaloes at medium category of farmers	43-44
4.14	Distribution gap of feeding management practices over recommended practices of buffaloes at large category of farmers	43-44
4.15	Distribution gap of feeding management practices over recommended practices of buffaloes at overall category of farmers	45-46
4.16	Distribution of farmers according to daily dry roughages offered to animals	45-46
4.17	Distribution of farmers according to mean daily green roughages offered to animals	47-48
4.18	Distribution of farmers on the basis of mean daily concentrate offered to animals	47-48

LIST OF PLATES

Plate No.	Title	In between page No.
1	Map of Maharashtra state showing Latur district	21-22
2	Map of Latur district showing Udgir tahsil	21-22
3	Interview with farmers at the time of data collection	23-24
4	Interview with farmers at the time of data collection	25-26

ABBREVIATIONS

%	=	Per cent
>	=	Greater than
@	=	At the rate
A.I.	=	Artificial Insemination
BAHS	=	Basic Animal Husbandry, Dairying and Fisheries
°C	=	Degree Celsius
DCP	=	Digestible crude protein
DM	=	Dry matter
e.g.	=	Exempli Grantia
<i>et al.</i>	=	And others
etc.	=	Etceteras
Fig.	=	Figure(s)
GOI	=	Government of India
Ha	=	Hectare(s)
HF	=	Holstein Friesian
Hrs	=	Hours
ISFR	=	Indian State of Forest Report
i.e.	=	That is
Kg	=	Kilogram(s)
MMT	=	Million Metric Tone
MHa	=	Million Hectare
No.	=	Number(s)
Per.sq. kms	=	Per square kilometer
TDN	=	Total digestible nutrient
Temp.	=	Temperature
TMR	=	Total mixed ration
UP	=	Uttar Pradesh
VNMKV	=	Vasantrao Naik Marathwada Krishi Vidyapeeth
viz.,	=	Videlicet (namely)

A decorative graphic consisting of a vertical line on the left and a horizontal line at the bottom, both composed of a dark green line and an orange line. A green shamrock is positioned at the intersection of these lines.

Introduction

CHAPTER -I

INTRODUCTION

Livestock is a critical component of nearly 1 billion people's livelihood and food security in the developing world, accounting for about 40.00 per cent of the global value of agricultural production. Livestock accounts for 15.00 per cent of total food energy, 25.00 per cent of dietary protein and certain micronutrients that are not available from plants. Livestock is a source of income, food security, and reputation and social standing in the rural community. According to varying weather conditions, feeds are either inaccessible in adequate quantities or are available but of such low quality that they do not provide enough nutrition. Access to conventional feed supplies is further limited as the grazing land area decreases and cropping extends to marginal areas. The primary forage fodder source for livestock was previously natural pasture grazing land. At this time, the size and quality of communal grazing land, such as species diversity, vigor and palatability, have been drastically reduced over the past five years in all areas. This is due to the rapid growth of the population of the country as land demand for crop cultivation increases. In the field of research, livestock is an essential part of the farming method (Salo *et al.* 2017).

Over 65.00 per cent of India's population still lives in rural India and most of them depending on agriculture for their livelihood. More than 75.00 per cent of them, however, are small and marginal landholders who are deprived of fertile soils and water for irrigation and even landless, relying on livestock for additional income. In many arid and semiarid regions in the world, livestock is the only source of livelihood and cattle and buffaloes are prominent among them. We are now at the livestock production, and the opportunity to turn this sector into a lucrative sector should not be overlooked in order to allow millions of small farmers and rural poor to earn a living. Dairy farming has provided many small and marginal farmers with secondary employment and an additional source of income. Together with crop husbandry, livestock keeping maximizes agricultural production and knows the animals' nutritional requirements. This can lead to infections, loss of productivity and therefore, economic losses if the animal is fed wrongly. Maximum yield with minimal cost and stress for animals is the purpose of an ideal feeding system. This can be done by correctly handling the feeding of dairy animals (Baloda *et al.* 2018).

Feeding is the constitutes cost item in milk production. It is therefore, critical that feed costs be at the lowest possible level in order to make output profitable. The selection of proper feed using the right combination of feed, the supply of sufficient feed with other relevant practises are some of the ways in which farmers will be encouraged to feed their livestock more economically, and will increase the quantity. Maharashtra's total dry matter availability in 2011 was 58620 ('000 MT) and Maharashtra's total dry matter requirement in 2011 was 65527 ('000 MT) The total livestock population in Latur district, viz. Cattle 92852; Buffalo 23333 and Goat 26006. The Latur district has a total milk production of 158 ('000 MT) (Anonymous, 2012). The total availability of dry matter is 2219 ('000 MT) and requirement of total dry matter in Latur district is 1712 ('000 MT) (Anonymous, 2015).

For all humans, milk is an vital component of diets as it is rich in essential amino acids that are most likely to be lacking in vegetable protein dependent diets. While, milk is a high-cost source of protein and fat compared to vegetable sources, it is readily available in developing countries especially in the more affluent urban areas. Therefore, improving the production of milk is an important instrument for improving the quality of life, particularly for rural people in developing countries. Milk production systems are complex in tropical countries. The systems at one extreme are similar to those in most developed countries and are based on "high quality feed" cows with high genetic potential, including fodder crops / silages and concentrated grain and protein. Milk output is extremely high per cow and technical inputs are high. Systems used by the vast majority of small farmers in developed countries, based on low inputs and relatively low output per cow, are at the other extreme. These small-farmer systems vary from those in which cows or buffaloes are fed to beef cattle grazing tropical pastures once daily on crop residues, agro-industrial by-products and roadside grass, with the calf having access to the dam for the other half of each day. The pastures available for these 'dual-purpose' animals in these latter systems are typical of most tropical grasslands and are relatively poor in protein and digestibility. In different parts of the world, any possible method between these extremes is utilized. Nevertheless, small farmers with low milk production systems have the greatest potential for development and are the focus of most aid programs. The strategies for raising milk production from cows / buffaloes fed on tropical pastures, crop residues or fibrous agricultural by-products are discussed in the discussion presented here. Total production is poor on these feed commodities, animals reach puberty at a late age (sometimes 4 years) and the inter-

calving period is wider typically 18-24 months, resulting in a limited number of dairy animals being at any time in milk in a national herd (Leng, 1989).

In Latur district Udgir is developing tahsil with a large number of livestock. Livestock feeding practices study in the Udgir tahsil rural area was considered. The Udgir tahsil region is 736.26 sq.km, spread over 98 villages. The farmers in this region cultivates various crops such as soybean, jowar, wheat, tur, black gram, mug and cotton. As animal fodder, the by-products of these crops are used. Through using such food in the livestock diet, there is enormous scope to increase the production of milk. With this view, the survey was conducted in Udgir tahsil with the following objectives.

- 1) To study the feeding status of dairy animals
- 2) To find out the gap between recommended feeding practices and adopted feeding practices
- 3) To study the constraints in feeding and management practices

A decorative graphic on the left side of the page. It consists of a vertical line on the left and a horizontal line at the bottom, both composed of two parallel lines: a dark green line on the outside and an orange line on the inside. At the intersection of these lines is a green shamrock with three leaves.

*Review of
Literature*

CHAPTER -II

REVIEW OF LITERATURE

The review of literature has been presented at three parts, first deals to study the feeding status of dairy animals, second deals to find out gap between recommended feeding practices and adopted feeding practices, and third deals to study the constraints in feeding and management practices. Review of literature presented under following heads.

2.1. To study the socio economic status of farmers, feeding and management status of dairy animals

2.2. To find out gap between recommended feeding practices and adopted feeding practices

2.3. To study the constraints in feeding and management practices

2.1. To study the socio economic status of farmers, feeding and management status of dairy animals

Saha *et al.* (1991) reported that ration of dairy cattle was composed of restricted quantity of low cost concentrate and straw as a bulk. In addition, if and when available in amounts much less than the requirement, roadside / field grasses were also fed.

Shirsat *et al.* (1991) studied the survey of five villages in Parbhani district and concluded that majority of (95.00 per cent) respondent were feeding cotton seed cake to milking animal. At the time of milking, (90.83 per cent) respondents were feeding concentrate, whereas 68.33 per cent of respondents provided green fodder in proportion to milk production.

Tripathi (1991) reported that the feed resources and nutrients available vis-a-visa the requirement for the population of cattle and buffaloes indicated a huge deficit of concentrates (86.97 per cent), greens (72.53 per cent), DCP (74.83 per cent) and TDN (42.11 per cent).

Paliwal *et al.* (1992) stated that quite a good number of agro industrial by-products have been explored as on gradient of concentrate mixture of compounded cattle feed cheaper access to different types of livestock for nutrients.

Belli and Manjula (1997) concluded that majority of *Gavali's* (63.33 per cent) twice a day, fed their livestock and nearly 51.00 per cent of *Gavalis* spent 5 to 8 hours each day in grazing.

Lall *et al.* (1998) studied the feeding status of lactating Murrah buffaloes maintained by large, marginal, medium, small and landless farmers in Faizabad district. They

reported that the average concentrate, green fodder and dry fodder was fed to buffaloes round the fed year. However, their availability varied significantly ($P < 0.01$) between seasons, from 1.09, 22.24 and 6.25 and kg / h / d. The average DM, DCP and TDN supplied throughout the year to the animal averaged 12.15 ± 0.25 , 0.53 ± 0.03 , 6.43 ± 0.16 kg/h/d, respectively.

Singh *et al.* (1998) reported that the landless, marginal, small, medium and large farmers were observed to fed concentrate 2.86, 4.08, 4.71, 5.06 and 11.20 kg, where as they feed 13.36, 13.60, 12.60, 13.75 and 17.55 kg green fodder, respectively. It was found that large farmers fed significantly substantially ($P < 0.01$) large amount of green fodder and focused on their animals compared to landless and marginal farmers.

Patil and Kamble (2002) suggested that, a buffalo weighing on an average 400 to 450 kg body weight required 6 to 7 kg dry fodder and 10 to 15 kg green fodder. Milking buffaloes required concentrates @ 50.00 per cent of the milk production in addition to 1 kg concentrates for maintenance purpose. The nutrients available from this ration complete with the requirement of DCP as 0.832 to 1.138 kg and TDN as 6.11 to 8.05 kg per buffalo.

Kalyankar *et al.* (2004) carried out investigation in 5 villages of Parbhani district in Maharashtra to study the adoption of dairy management practices by the farmers rearing Marathwadi buffaloes. They observed that animals were mainly kept on Bajra and Jowar straw. Only buffaloes were given concentrate blend during milking time. All respondents preferred natural service facilities.

Gangil and Dabas (2005) conducted their study in Udham Singh Nagar district of Uttaranchal to determine the socio-economic profile of livestock farmers and evaluate the influence of socio-economic factors on the level of livestock farmers' knowledge and training needs. Research showed that the most farmers were of middle age group, followed by the elderly and young age groups.

Kumar *et al.* (2005) concluded that 85.00 per cent of cases, i.e. majority of farmers cultivated fodder for their animals and the main feeding system was stall feeding. The concentrate was fed to lactating buffaloes by almost all farmers. For the livestock, only 6.25 per cent of respondents used loose housing. In the animal shed, 60.00 per cent had mud flooring. Hygienic conditions were not met in the majority of cases.

Bainwad *et al.* (2007) observed that the top farmers provided 8.60 kg of green fodder, 5.22 kg of dry fodder and 3.19 kg of concentrate to milking buffaloes. Per cent of farmers before milking adopted cleaning of udder, milk utensils and shed floor. They were also well aware of (95.00 per cent) acceptance of vaccination to buffaloes.

Chinchwade *et al.* (2008) studied the management practices followed at private buffalo farmers. The field survey investigation revealed that the majority of buffalo dairy farms in Pune city, Maharashtra, India were operated by middle-aged, primary trained owners mostly with marginal herd size on a commercial basis with an annual income of more than one lakh. Overall, farm owners fed average 22.70 kg of green fodder, 12.80 kg dry fodder and 4.50 kg concentrate to their buffaloes daily. Though most of them susceptible to fed their milk buffaloes 30 to 50 ml of mustard oil cake daily in order to increase their milk fat content, essential signs of heat were the bellowing and discharge of mucus from the vulva. These buffaloes were mostly found in the heat during the winter season, while, maximum calving's were observed in the rainy season.

Kalyankar *et al.* (2008) assessed the buffalo rearing practices of Maharashtra state divided in nine agro-climatic zones. In order to pick the sample household, a multistage stratified sampling technique was used. From the analysis, it was noticed that group feeding in the state seems to be more adoptive. The roughage feed includes both green and dry in all areas. The primary practice of feeding buffaloes was grazing. In most cases, the feeding of mineral blends was not observed. The household was well aware of adopting preventive disease vaccination process. The various management practices were largely followed by the large percentages of the household in different areas of Maharashtra state.

Garg *et al.* (2010) concluded that calcium (Ca) content in straws of ragi, groundnut and soybean was high (0.97 per cent), whereas, straws of sorghum and paddy had low (0.23 per cent) level. In green fodder, the Ca content was 0.38 per cent. The concentrated ingredients in Ca were especially low (0.22 per cent). In green fodders and crop residues, the phosphorus content was 0.19 and 0.14 per cent, respectively, however, higher in concentrate components as 0.67 per cent. In roughage and concentrate ingredients, the magnesium content was 0.38 per cent and 0.32 per cent, respectively. In concentrate components 0.13 per cent and crop residues as 0.12 per cent, sulphur content was deficient. In diet of animals, cobalt was deficient.

Khan *et al.* (2010) conducted survey at Jabalpur (Madhya Pradesh) and reported that the digestibility of CP, DM and EE of pelleted ration was significantly higher ($P < 0.05$) than significantly of total mixed ration (TMR) and the digestibility in total mixed ration group was higher ($P < 0.05$) than that of conventional ration. There was no influence of dietary treatments on the yield of fat-corrected milk (FCM), so it was concluded that pelleting

was a realistic densification process for enhancing nutrient intake and the use and production of milk in dairy cows.

Avinashilingam *et al.* (2011) reported that majority of tribal households followed feeding livestock and watering to the animals (50.88 per cent regular and 33.33 per cent sometime), cutting of grass (56.86 per cent regular and 17.65 per cent sometime), straw chopping (58.82 per cent regular and 11.71 per cent sometime) and animal grazing (52.94 per cent regular and 21.97 per cent sometime) in district of Nilgiri of Tamil Nadu.

Waykar *et al.* (2012) studied the various management practices adopted at the farmer's level to estimate the maintenance cost, gross and net income and net profit per liter. A total of 22 farmers were divided into three groups, namely: centered on the land holdings, small, medium and large, consisting of 18 each in 4 villages in Patur tahsil. Buffalo owners have been shown to be well aware of health care practices. Buffalo farmers were more conscious of the production of clean milk and small feeding gaps in terms of green fodder and concentrate in buffalo farmers, and profitable buffalo rearing was found.

Mutimura *et al.* (2013) conducted the study and observed that Napier grass was major feed used at the rainy season which was accounted for 20.00 per cent of the feeds. Household waste (0.10 per cent), Groundnut shells (1.10 per cent), maize stover (8.00 per cent) and roadside grass (10.50 per cent) were the least used feed tools. The high variability of feed resources suggests the country's scarcity of feed products. The most purchased food during the rainy and wet seasons were maize bran 11.00 per cent, commercial concentrate 9.60 per cent and rice bran 8.90 per cent. Interestingly, multipurpose trees (MPTs) were harvested from neighbouring farms free of charge and accounted for up to 2.60 per cent of feed resources.

Mali and Ligade (2014) studied the socio-economic profile of dairy and non-dairy farmers and reported that (51.39 per cent) non-dairy farmers (54.17 per cent) dairy farmers belonged to old age, medium annual income (50.00 per cent and 43.06 per cent), respectively, educated up to high school level (26.39 per cent and 27.78 per cent), respectively, big size of land holding (48.61 per cent and 100 per cent), respectively, high economic motivation (100 per cent and 51.39 per cent), respectively. Education, annual income and economic motivation showed a strong and meaningful link between the 5.00 per cent likelihood level and the level of information. Land holding, milk experience and subsidiary occupation showed a strong and significant ($p < 0.01$) relationship likelihood stage.

The other two factors, namely age and family size, did not create significant relationship with the level of knowledge.

Rajat and Girin (2014) studied lactating cattle of Mizoram and concluded that lower intake of protein, dry matter and energy might be the reason for low productivity of lactating cattle under rural management in Mizoram. Another contributing factor to the low productivity of dairy cows in Mizoram may also be lower digestibility of nutrients.

Muhammad *et al.* (2015) studied the feed stuffs role in enhancing the productivity of milch animals in Pakistan- existing scenario and future prospect. They concluded that, the productivity of milch animals in Pakistan was much low as compared to their known high potential. One of the main reasons behind the poor performance of milk animals was nutrition. The feed tools were roughage and concentrate, dairy animals were (29.00 per cent and 33.00 per cent) deficient in total digestible nutrients (TDN) and crude protein (CP). There was a dire need to initiate a breeding program to produce quality seed of forage crops and an extension program should be launched to make farmers aware of latest production technology of forage crops. In the forage supply chain, forage trees such as moringa must be integrated. Rangelands must be protected from over use and a governing body must be formed to scientifically manage the rangelands in order to increase milk production by improving the productivity of milk animals.

Chavan *et al.* (2016) conducted the study in peri-urban areas of three districts of Marathwada region of Maharashtra in peri-urban area to assess the status of scientific feeding practices by selecting 150 buffalo dairy entrepreneurs. The study showed that the majority of respondents had a medium degree of adoption of various components of scientific feeding practices, viz. balanced diet 98.00 per cent, use of mineral, vitamin mixture for high milk production 98.00 per cent, calf feeding management 64.67 per cent, recommended feeding for breeding 62.67 per cent, use of different feed ingredient in animal diet 62.67 per cent, fodder production of high yielding variety 50.67 per cent while, low level in fodder treatment 96.67 per cent and use of green fodder 45.33 per cent. Maximum extent of adoption was observed in use of balance diet practice while, minimum extent of adoption was in fodder treatment area. The average acceptance rates for respondents in scientific buffalo feeding practices were 28.67, 64.00 and 07.33 per cent, respectively in the low, medium and high groups. The adoption index of various scientific feeding practices, such as the use of various feed ingredients in animal diets, healthy diet, green fodder, development of high yielding fodder varieties, treatment of fodder, management of calf feeding, prescribed feeding

for breeding, mineral use, vitamin mixture (for high milk production) were 41.23, 64.00, 64.37, 50.00, 6.08, 41.20, 18.20, 17.22 per cent, respectively.

Yadav *et al.* (2017) conducted the assessment of the production and requirement of fodder in India using secondary data from NATP and 19th livestock census. The findings showed that the requirement for fodder in India was 583.66 MMT of dry fodder and 883.95 MMT of green fodder, while, the projected production of fodder was 355.93 MMT of dry fodder and 664.73 MMT of green fodder. Therefore, to reduce the current gap of 218.22 MMT of green fodder and 227.73 MMT of dry fodder, it is important to take appropriate policy and research level steps to improve existing fodder resources. The study's results enable the country's policymakers to optimize the benefits of livestock production in the design of trade strategies.

Jadhav *et al.* (2020) Studied feeding practices followed by periurban dairy farmers in Surat district. Data were collected with the help of a well structured pretested interview schedule from 200 periurban livestock farmers. Stall feeding of dairy animals was followed by majority of the respondents and 58.00 per cent of the respondents fed their animals twice in a day. Majority of the respondents fed paddy straw non leguminous green fodder and compounded cattle feed. Great majority of the respondents offered feed concentrate based on the quantity of milk production.

2.2. To find out the gap between recommended feeding practices and adopted feeding practices

Raut and Amble (1969) conducted survey covering Delhi city and its suburban area and reported the standard of daily ration for a non descript dairy cow as 1.67, 4.44 and 0.58 kg green, dry and concentrate, respectively. In suburban areas, the undescribed milk buffalo was fed 5.75, 4.74 and 2.32 kg of green, dry and concentrated, respectively.

Khupse *et al.* (1980) noted that below 40.00 per cent of respondents adopted practices such as inoculation, cleaning with smooth and dry cloth after birth, providing antibiotics through milk and, artificial insemination practices.

Nayak and Mitra (1983) reported that the quantity of DM intake per cow was varied from 9.90 to 11.23 kg in different seasons and no significant variation between breeds but dry matter in winter was significantly higher in summer and rainy season. During the rainy season, the smallest amount of DM intake was observed.

Ingole *et al.* (1987) observed that majority of owners fed only dry fodder and concentrates to their animals indicating improper feeding practices. This was due to the high

ration cost which prohibited adequate animal feeding, just 40.00 per cent of owners feed crossbred cattle with concentrate.

Balain and Rathi (1988) reported that a cow yielding 8.00 kg milk requires 40-50 kg of green fodder with 1-2 kg of *kadbi/wheat* straw. For high milk producing cows (> 10 kg) 50-60 kg berseen/lucerne/oats green with 2-4 kg of concentrate mixture sustains the production capacity, beyond 8 kg of milk, concentrate mixture supplementation is beneficial and is ultimately necessary to fulfil nutrient requirements.

Chatterjee and Singh (1989) indicated that grazing was very common practice in eastern Himalayan region for cattle and that feeding of kitchen waste 53.00 per cent, cut field grasses 61.00 per cent and various leaves of the tree 44.00 per cent to their animals.

Handa and Gill (1989) conducted survey on nutritional status of dairy animals kept by different categories of farmers in Ludhiana district of Punjab. They observed average dry fodder, green fodder and concentrate fed during the year was 5.60, 28.50 and 1.30 kg / head / day, respectively.

Dhimani *et al.* (1990) revealed that 86.50 per cent of farmers groomed their animals and 63.75 per cent farmers followed disease control measure in adopted village. Farmers in adopted villages used the right milking process, udder and hand washing before milking.

Sharma and Intodia (1991) observed that the non tribal's and tribal's had only 40.44 per cent and 14.78 per cent adoption of scientific feeding, respectively. None of tribal respondent used balanced ration to the animal, this was due to poor economic condition of farmers and unawareness about technology.

Virk and Gupta (1992) revealed that 7.00 kg of milk can be sustained by good quality green fodder when fed in abundance. For each additional 2.50 kg cow milk and 2.00 kg buffalo milk, concentrate mixture should be fed daily @ of 1.00 kg. It is advisable to completely substitute expensive cakes with guar meal in the milk animal concentrate.

Kumar (1994) reported that more milk production can be obtained by feeding the animals with concentrate rather than feeding roughages alone. Heavy feeding and good management will increase the performance of higher yielder cows tremendously.

Sejrsen and Purup (1997) reported nutritionists and subclinical acidosis to erratic feed intake by cattle feedlot managers commonly attribute metabolic digestive disturbances. This view is based on the fact that free choice of access to a high-concentrate diet will lead to acidosis after a time of feed deprivation. Whether daily variability in

voluntary intake of a high grain diet by full-fed cattle compromises health or alters ruminal pH maintenance at levels sufficiently high for optimal intake ruminal function (i.e., pH < 5.8) is less clear. Periodic abundance of available starch allows amylolytic bacteria (e.g. *Ruminobacter amylophilus*, *Streptococcus bovis*, *Lactobacillus* spp.) to proliferate and produce excessive quantities of fermentation acids.

Tomar and Thakur (2002) indicated that wheat straw and paddy straw of basmati varieties was used more predominantly feed to livestock by farmers in general whereas, by small farmers 80.97 per cent than large farmers 41.26 per cent. More number of large farmers (31.00 per cent) were grazing their livestock compared with small farmers (15.00 per cent).

Nagaraju *et al.* (2002) studied the technological gap in improved dairy farming practices among Koyas and revealed that 53.28 per cent respondents belonged to medium category of technological gap, 29.97 per cent respondents belonged to high and 16.65 per cent respondents belonged to low category of technological gap in breeding practices. The overall gap against recommended dairy farming technology was calculated to take into account breeding data, with 46.67 per cent respondents having a medium gap in dairy farming. The 18.87 and 34.46 per cent of respondents had low and high disparities in dairy farming technology, respectively.

Bharathidharan *et al.* (2007) revealed that, scientific feeding and management can help the farmers of Tamil Nadu to channelize their limited resources to maximize returns from dairy animals.

Kannan *et al.* (2011) undertaken the study and reported that ration balancing had a potential to improve milk production at Chittoor district of Andhra Pradesh and concluded had they observed synthesis of microbial proteins and the elimination of methane emissions from lactating crossbred cows.

Gautam *et al.* (2014) conducted the study and results showed that hill grazing was favoured by all farmers during the summer and stall feeding during the winter. For 165 days @ 13 hours / day in one year, ninety-eight per cent of farmers used community land for grazing. The feeding practices and strategic supplementation to augment milk production in Kargil. The migratory grazing was favored over stall feeding to increase revenue. The 17.88, 42.88 and 39.24 per cent of farmers recorded average milk production / cow / day more than 5.00, 2.50-50 and less than 2.50 lit per day, respectively. Lucerne and mulberry leaves are good protein sources, while buckwheat can be an alternative to the region's maize crop. More than 80.00 per cent of farmers did not supplemented concentrate and 20.00 per cent of the

early lactating animals offered concentrate supplementation alone, mineral mixture alone, or both which increased milk production over control by 9.82, 3.38, and 13.03 per cent respectively. The body condition score was also increased because of concentrate or mineral mixture supplementation. Due to supplementation in lactating animals, first observed estrous post partum and service per conception was declined. It was observed that feeds available locally can be used judiciously and supplementation of concentrate / mineral mixture is necessary to increase continuous milk production.

Iqbal *et al.* (2015) studied the feed stuffs role in enhancing the productivity of milch animals in pakistan- existing scenario and future prospect and they concluded that, the compared to their known high potential, the productivity of milk animals in Pakistan was much lower. A breeding programme for the production of quality seeds of forage crops needs to be implemented and an extension programme should be launched to make farmers aware of the new forage crop production technology. The feed tools were roughage and concentrate, but dairy animals were 29.00 per cent and 33.00 per cent deficient in total digestible nutrients (TDN) and crude protein (CP). In the forage supply chain, forage trees such as moringa must be integrated. To increase milk production by improving the efficiency of milk animals, rangelands need to be protected from overuse and a regulatory body must be set up to manage the rangelands on a scientific line. One of the main reasons behind the poor performance was nutrition to milk animals.

Sherasia *et al.* (2015) conducted the study on metabolites and feed conversion efficiency in lactating cows, impact of feeding balanced rations on milk production, and methane emission. By balanced feeding, costs decreased by 17.00 per cent ($P < 0.01$) and enteric methane emissions (g / d / cow and g / kg milk yield) by 14.60 and 18.10 per cent, feeding increased daily 4.00 per cent FCM yield by 0.70 kg / cow ($P < 0.05$) and intestinal microbial nitrogen flow (N) by 37.00 per cent ($P < 0.01$). Whereas, BUN level reduced ($P < 0.01$) from 18.20 to 15.00 mg/dl., FCE improved ($P < 0.01$) from 0.8 to 1.00 and microbial protein synthesis efficiency also increased ($P < 0.01$) by 63.60 per cent due to healthy ration feeding, suggesting better cow performance. The dietary consumption of protein and energy was 25.00 per cent and 12.70 per cent higher relative to the criteria, while, the intake of calcium and phosphorus was 30.00 per cent and 27.00 per cent lower, respectively. The effect of feeding balanced ration on milk production, enteric methane emission, metabolites, and efficiency of feed conversion (FCE) research showed that feeding nutritionally healthy rations had increased the output of milk.

Hole (2016) studies the management practices followed by cattle and buffalo owners in Latur tahsil and reported that 53.33 per cent cattle and buffalo owners belongs to middle age groups. About 30.83 per cent and 22.50 per cent of cattle and buffalo owners were trained at primary and secondary levels, respectively. Approximately 45.00 per cent of the owners of cattle and buffalo belong to small family sizes (1 to 5 members), and 31.67 per cent to the medium family size (5 to 8 members). The 28.33 per cent were illiterate and 18.34 per cent were educated up to college level and 23.33 per cent of the owners were of large family size (more than 8 members).

Suleiman *et al.* (2016) studied the characteristics of dairy farming and its effect on milk production: case study of Unguja island of Zanzibar, Tanzania. A dairy farmer was described as having, on an average, seven dairy cattle (range 1-31) and two lactating cows (range 1-8). The average number of lactating cows in the West district was higher (2.4) compared to Central (1.9) and North B (1.8). There was a greater average herd size of 7.5 in the West district, followed by North B with 7.3 and Central with 6.2 cows per farm, however, the difference was not statistically significant. Approximately 86.00 per cent of farmers supplied their lactating cows with maize bran, pollard or a mixture of the two as supplement feed, a practices that also varied significantly between the study districts ($P < 0.05$). The range daily milk production per cow per day was 7.6 ± 3.6 liters. In the West district, the average milk production was higher (8.00 / liters / day) compared to Central (7.20 / liters / day) and North B (6.90 / liters / day), and the disparity between districts was statistically important ($P < 0.05$). The difference was statistically significant ($P < 0.05$). More than two-thirds (72.00 per cent) of the farmers surveyed kept crossbred dairy cattle, most of which (65.00 per cent) were handled by an intensive grazing method. For their dairy animals, just 61.00 per cent of respondents had built sheds. It was concluded that milk farming on Unguja Island operates under poor farm management, poor hygiene and inappropriate milking techniques that need to be improved in order to maximize the quality and quantity of milk production.

Wanapat *et al.* (2017) reported farm feeding strategies to increase the production of milk in lactating dairy cows. The objective of this study was to investigate the impact on the output of lactating dairy cows of tropical legumes (*Phaseolus calcarus*) blended with ruzi grass feeding. The 88 lactating dairy cows from 22 smallholder dairy farms in northeast of Thailand were allocated to the respective dietary treatments. Ammonia nitrogen concentration were enhanced ($P < 0.05$). In addition, the feeding of tropical legumes mixed with ruzi grass in this study might have increased milk production and milk protein.

Importantly, this milk revenue was demonstrated by an economic analysis. Four cows were chosen from each farm and divided into two separate feeding groups: ruzi grass and *P. calcarus* mixed with ruzi grass (1:1 ratio). With a 1:2 ratio of concentrate diet to milk yield, all cows were fed with roughage ad libitum.

Baloda *et al.* (2018) concluded that dairy animals inherit certain genetic potentialities which could be exploited fully by proper feeding and management. The main objective of holding dairy animals was to turn feed into high-quality human food, i.e. milk. The key of a profitable dairy operation was proper feeding, as feed costs account for more than half of the overall milk production costs. However, this conversion could be effectively made, the concepts of nutrition that can be further improved by superior breeding, good health and professional management can be implemented socially and politically.

Kuterovac *et al.* (2019) studied the milk composition data, milk fat percentage (g/100ml), milk protein percentage (g/100g) and milk urea content (mg urea/dl) of 50,000 individual milk samples of cows under milk recording and were used to evaluate nutritional status of dairy cows on Croatian farms. Using milk analysis results it is possible to estimate major problems in dairy cow nutrition, predict and prevent possible metabolic and reproductive disturbances. Analysis of average values of milk components indicates that most of the animals (60.00 per cent) had a ration well balanced in energy and fibre, but ration protein deficiency could be a major characteristic of nutrition of considerable number as 61.50 per cent of cows.

2.3. To study the constraints in feeding and management practices

Kulkarni *et al.* (1990) observed and identified the constraints in the adoption of dairy practices as non-availability of loan facility 100 per cent, lack of awareness 94.59 per cent, milk costs 79.35 per cent and veterinary aid centre non-availability 69.50 per cent, lack of preservation facility 100 per cent, lack of money and 100 per cent.

Rajendra and Prabhakaran (1992) conducted study at Dharampuri district in Tamilnadu and they concluded that animals were fed based on the milk production only (26.67 per cent) of farmers. The dry animals were not adequately fed by the majority of the family. Similarly, farmers did not paid much attention to feeding pregnant cows, suggesting a lack of knowledge of the scientific feeding of dairy cattle.

Shinde *et al.* (1998) observed constraint of farmers as lack of credit for purchasing dairy animals (92.50 per cent) non availability of training facilities in their village

(94.00 per cent). The lack of irrigation facilities for green fodder production (77.50 per cent) was a major constraint for them.

Misra and Pal (2003) revealed that inadequacy of technical knowledge (40.30 per cent) poor organization support (28.60 per cent) and lack of financial resources (20.10 per cent) were the major constraints for the dairy sector. Owing to a shortage of training facilities for rural dairy farmers, advances in dairy science had hardly percolated to the village level.

Singh *et al.* (2004) concluded that the major constraints of livestock owners were shortage of feeds and fodder during dry season, traditional feeding practices, poor productivity of livestock, poor resources for expansion, fragmented and low land ownership.

Singh and Chauhan (2006) studied the main constraints in adoption of scientific dairy farming practices. Animal feeding constraints were low accessibility and high costs of compound feed, mineral mixture and fodder seeds, which were connected to limited financial resources. High cost of feeds and fodders and poor resources for raising fodder crops.

Kavathalkar *et al.* (2007) observed that the major constraints involved by dairy farmers were high cost of concentrates with 88.88 per cent intensity, high cost of green fodder, non-remunerative milk prices, high labour costs, high mineral mixture costs, and weak economic conditions.

Heere and Choudhari (2008) concluded that feed and fodder availability was one of the great problems for keeping lactating animals. Most of the crossbred cows were currently holding on crop residues of wheat straw, sorghum stover, bajra stover, etc. Another issue was grazing and recurrent droughts in arid and semiarid areas. One of the realistic and feasible ways to increase the nutritional value of crop residues dependent diet was low and safe nitrogen content of these crop residues from cakes with formaldehyde.

Shisode (2009) conducted the study at the dairy cattle of *Rajarambapu Patil Sahakari Dudh Sangh Ltd.*, Islampur as regards to owners constraints expressed some remedial steps such as training, exhibition, brain storming, sessions, poster presentation, radio talks on *Doordarshan* can be taken to impart information to them to pursue new animal management practises to increase the milk yield.

Dhaka *et al.* (2011) conducted a survey on 250 farmers in Bundi district of Rajasthan and revealed that the major constraints in limiting the productivity of livestock were analyzed by using rank based quiet method and reported inadequate knowledge 76.25 per cent, lack of supply and low quality feed and fodder (69.15 per cent), high incidence of

disease 68.35 per cent, poor genetic potential of animals 75.40 per cent, non-availability of support. Time resources 62.25 per cent, inadequate support for extension 35.45 per cent, long calving periods 36.65 per cent and repeat breeding 28.50 per cent and to minimize informal dialogue with scientists, key informants and progressive farmers on these limitations of livestock productivity.

Thakre *et al.* (2011) studied the constraints in adoption of scientific recommendation in feeding of dairy cattle. It was proposed that it could be taken up to increase animal productivity as far as breed improvement concerns local non-descript animals, improvement could be made by superior germplasm crossbreeding and artificial insemination. In the study the efforts were made to enquire the constraints in several steps. Adoption of scientific recommendation in feeding dairy cattle in Sindewahi tahsil in Chandrapur district of Maharashtra was studied. Economic, situational, infrastructural, professional, organisational and technological factors were the key constraints involved in feeding milk animals. It was recorded from the investigation that the implementation of scientific advice in the animal feeding sector was weak. In small, landless, marginal, medium and large farmers, the strength of constraint was very high.

Kumar *et al.* (2012) recorded that most respondents viewed a lack of information about scientific management and health care of dairy animal practices as significant restriction in implementing improved dairy farming practices. The major constraints involved in scientific dairy farming were non functional veterinary medicine availability in Government hospitals, Artificial Insemination center, timely unavailability of vaccine, repeat breeding, cash or food crop choices rather than fodder crops and lack of knowledge of prescribed feeding practices, lack of fodder seeds, high yielding varieties, low availability and high compound feed prices, mineral mixture and lack of veterinary doctors. They mentioned that effective methods were used to mitigate these constraints in milk development in the field of technology transfer related to the scientific practices of milk farming in the region.

Taylor *et al.* (2012) in Udaipur district of Rajasthan studied the tribal milk producers with a sample of 80 household constraints. The results showed that the key constraints faced by tribal farmers were the lack of year-round availability of green fodder, insufficient knowledge of scientific feeding of dairy animals and repeat breeding of animals. They also found that there was a shortage of pedigreed bulls for natural services, low animal milk productivity and a lack of scientific accommodation, etc.

Sabapara *et al.* (2012) revealed constraints of tribal dairy animal owners of South Gujarat as the high cost of building materials and feeds. The list of major constraints were regarding the breeding, milking, and health care of dairy animals, lack of understanding and knowledge of the dairy owners etc.

Reddy *et al.* (2013) noticed the constraints faced by the farmers as low price to milk. The main health weaknesses were ingredients, high incidence of repeat breeding, lack of ample grazing land, high cost and non availability of feed and vaccines in time, lack of appropriate medicines in hospitals and incidence of mastitis.

Yadav *et al.* (2014) conducted the study of tribal livestock owners and constraints of livestock management practices in Banswara district of Rajasthan and concluded that 93.67 per cent of constraints faced was high cost of treating animal diseases and the prevalence of diseases among livestock owners was 35.99 per cent.

Dhindsa *et al.* (2014) studied problems and constraints of dairy farming in Fatehgarh Sahib district of Punjab and reported significant constraints as lack of green available, high feed and fodder prices and less dry fodder supply round the year.

Ghugre (2014) conducted the study at Nanded district (MS) and found the constraints related to dairy animals as inadequate availability of green fodder 58.50 per cent, use of silage and urea treatment for dry fodder 59.00 per cent, effect of high cost of food supply 64.00 per cent, lack of veterinary hospital availability 26.00 per cent, artificial insemination 14.50 per cent, lack of own pasture land 51.00 per cent and availability of animal purchase credit 75.00 per cent.

Kumar *et al.* (2014) studied the productive performance of crossbred dairy cows and constraints faced by dairy farmers in Mekelle, Ethiopia and observed constraints faced by dairy farmers as fodder unavailability across the year 72.00 per cent which was the key constraint followed there, disease incidence 58.00 per cent, inadequate feed awareness 56.00 per cent, high feed and feed storage costs 67.00 per cent, lack of timely AI 47.00 per cent, capital shortage 46.00 per cent, seasonality 43.00 per cent in demand lack of veterinary services 43.00 per cent, for milk at 40.00 per cent, high medication and treatment costs at 39.00 per cent, difficult heat detection at 36.00 per cent, low milk prices at 50.00 per cent and lack of credit facilities at 32.00 per cent.

Nale (2014) worked on constraints at Parbhani district (MS) and reported constraints related to effect of high cost of fodder on its supply 60.50 per cent, inadequate availability of green fodder 68.00 per cent, use of silage and urea treatment for dry fodder

77.50 per cent, availability of animal purchase credit 72.00 per cent, lack of veterinary hospital availability 27.50 per cent, lack of artificial insemination, lack of own pasture land 43.00 per cent.

Narayan *et al.* (2014) studied the constraints faced by milk producer households in Banaswara district of Rajasthan with a sample of 90 households. Garrett's ranking methodology was used to analyze the results. Findings indicated high costs dry fodder, of green fodder and concentrate were major constraints in animal feed faced by milk producer households.

Mooventhan *et al.* (2016) conducted the study at the tribal dairy farmers perceived importance, level of awareness and constraints in the adoption of good feeding practices using exploratory factor analysis. The results of the adoption indicated that approximately 24.66 per cent of the respondents cultivated varieties of cumbu napier green fodder such as CO 3, CO (CN) 4 and Oh CO (BN) 5. Study concluded that about one-fourth of the tribal farmers (27.67 per cent) were aware of green fodder varieties and nearly half (43.00 per cent) of the respondents were aware of the value of feeding colostrum to calves with proper timing and quantity. Regression analysis found that variables such as age, occupational status, farm size, milk output, and social engagement had a positive and essential link with good feeding practices. Analysis of constraints showed that the majority (75.70 per cent) of tribal farmers expressed the higher cost of mineral concentrates, Vitamin and mixtures supplements as the core constraints in animal feed management.

Salo *et al.* (2017) studied the constraints of improved forage adoption in Anelemo Woreda, Hadiya Zone, Ethiopia. The major constraints were shortage of forage seeds 13.50 per cent for improved forage production, a lack of land (28.80 per cent), a lack of awareness and adopted inadequate extension services. The main problem in the study region was the lack of livestock feed (88.00 per cent and water shortages 12.00 per cent). The incorporation of improved forage crops and with the framework for soil and water conservation is therefore the best opportunity to increase the adoption of this technology.

Sabale *et al.* (2018) studied the different constraints in feeding, production and marketing, technical and health related, and showed that the majority of problems was supply of insufficient green fodder for farmers. In the case of Camp, this was more to all farmers in the livestock fodder camp. Whereas, the use of antibiotics and mineral mixtures in feed was (18.75 per cent and 13.75 per cent), respectively. In the case of production and marketing

constraints, the problems faced by 83.00 per cent of respondents was irregular milking of cows and buffalo. Whereas, 68.25 per cent of respondents faced a long dry spell problem and 90.50 per cent of respondents faced a low milking rate problem in an animals.



*Material and
Methods*

CHAPTER -III

MATERIAL AND METHODS

The information on cattle and buffalo from the area under study in relation to socio-economic status, feeding practices and restrictions followed by farmers. This chapter of the present investigation is divided under appropriate heads.

3.1. Information about place of work

Data for the current investigation, entitled “Feeding and Management Practices of Dairy Animals in Udgir Tahsil of Latur District” were collected from different farmers specially who are rearing the cattle and buffaloes in Udgir tahsil of Latur district in Maharashtra state being prepared to collect information by personal interview with individual farmers.

3.2. General information about Udgir Tahsil

3.2.1. Geographical situation

Udgir is a tahsil in the district of Latur in the state of Maharashtra. It belongs to the region of Marathwada and is situated in the administrative division of Aurangabad. It is located 60 km from the district headquarters to the east and 492 km from the state capital of Mumbai to the south. Udgir tahsil is bordered to the west by Karnataka and Nalegaon taluka, to the east by Karnataka and to the west by Nilanga tahsil. The tahsil Udgir is located between the longitudes of 18 ° 23 north and 77 ° 07 east. It lies roughly in the eastern part of the Marathawada region. The height of this region is close to 389 m. (1,276 feet) from the mean sea level.

3.2.2. Climate

Except during the South-West monsoon season, the climate of Udgir tahsil is generally dry. The temperature of the Udgir tahsil varies according to season, it touches as high as 41 °C to 43 °C while, it goes down during the winter season, as low as between 5 °C and 9 °C. December is the coldest month, with a minimum daily mean temperature of 13 °C and a maximum daily mean temperature of about 29 °C.

3.2.3. Rainfall

In the monsoon season most of the rainfall occurs from June to September. The precipitation varies from 8.0 to 596 millimetre per month (0.45 to 67.28 in). The average annual rainfall is 26.60 inches (710 millimeter).

3.2.4. Crops

Agriculture being a seasonal occupation does not provide to those dependent on it with full-time employment. This seasonal nature of tahsil farming is due to the dependence of monsoon and insufficient irrigation facilities. It provides a favourable condition, leading to kharif and rabi crops being harvested. The crop grown from Kharif are Jowar (*Sorghum bicolor*), Cotton (*Gossypium sp*), Soybean (*Glycine max*), and Bajra (*Pennisetum typhoideum*). In Rabi are Jowar (*Sorghum bicolor*) and Safflower (*Carthamus tinctorius Linn.*). The main source of food for cattle was dry sorghum fodder.

3.2.5. Livestock population

The agricultural economy depends on cattle as well. Farming is performed by bullocks activities, such as ploughing, harrowing, sowing, etc. Cows are maintained for milk production. For meat, manure and wool purposes, sheep are kept. For milk, meat and manure purposes, goats are kept. As per the survey conducted by tahsils species-wise livestock population is as given below.

Table 1: Livestock population of the Udgir tahsil in Latur district

Sr. No.	Species	Population
1	Indigenous cattle	37892
2	Crossbreed cattle	60551
3	Buffalo	7560
	Total	106,003

3.2.6. Feed and fodder

Fodder consists of sugarcane tops, *maize*, *Jowar kadbi*, *Bajara* straw, pulse husk, pulse crop leaves and stalks, etc. Jowar and green maize are given to livestock in many locations.

3.3. Methods of sampling and size of sample

a) Random sampling techniques were used to collect the data for the study research in Udgir tahsil.

b) **Selection of villages:** The random selection of 10 villages were made with 12 dairy farmers in each village in Udgir tahsil .



Plate 1. Map of maharashtra state showing Latur district



Plate 2. Map of Latur district showing Udgir tahsil

Table 2: List of selected villages from Udgir tahsil of Latur district (N = 120)

Sr. No.	Name of Village	No. of farmers
1.	Lohara	12
2.	Chighali	12
3.	Bhakskheda	12
4.	Dewarjan	12
5.	Umarga	12
6.	Waygaon	12
7.	Hanumantwadi	12
8.	Her	12
9.	Karkheli	12
10.	Kardkhel	12

From randomly selected each village the 12 numbers of farmers were identified. The total sample size consisted therefore was 120 farmers. A 'Personal Interview' technique was followed by a questionnaire to collect the data of each dairy. A standard questionnaire perform as adopted by National Bureau of Animal Genetics Resources Karnal, Hariyana was prepared and taken for survey.

3.4. Classification of farmers on the basis of socio-economic status

The following categorization of selected dairy farmers was made by age.

3.4.1. Age group

Table 3: Category of farmers on the basis of age group

Sr. No.	Age group (year)	Frequency	Percentage
1	20-30		
2	31-40		
3	41-50		
4	51-60		
5	>60		

3.4.2. Educational level

Table 4: Category of farmer category on the basis of educational level

Sr. No.	Level of education	Frequency	Percentage
1	Illiterate 0		
2	Primary 1-4		
3	Middle 4-7		
4	Secondary 7-9		
5	Higher secondary 10-12		
6	Graduate 13-15		
7	PG 16-17		
8	Ph.D. >17		

3.4.3. Land holding

The following categorization of chosen dairy farmers was made according to their land holdings.

Table 5: Category of farmers on the basis of land holding

Sr. No.	Land holding (ha)	Frequency	Percentage
1	Landless 0		
2	Marginal 1 -2		
3	Medium 3 -5		
4	Large >5		

3.4.4. Based on number of dairy animal

Categorization of selected dairy farmers according to the number of animals owned by them as follows.

Table 6: Category of farmers on the basis of number of dairy animals

Sr. No.	No. of animals owned by dairy farmers	Buffaloes		Cows			
		Frequency of buffalo owned by farmers	%	Frequency of crossbreed owned by farmers	%	Frequency of indigenous owned by farmers	%
1	1-2						
2	3-4						
3	5-6						
4	>6						



Plate 3. Interview with farmers at the time of data collection

3.4.5. Animal breed

Categorization of selected dairy farmers according to the breed of animal was as follows.

Table 7: Category of farmers on the basis of animal breed

Sr. No.	Name of buffalo breed	Frequency	%	Cow					
				Name of crossbreed cow	Frequency	%	Name of indigenous breed	Frequency	%
1	Marathwadi								
2	Jaffrabadi								
3	Murrah								

3.4.6. Family size

Categorization of selected dairy farmer according to their family size was as follows.

Table 8: Category of farmers on the basis of type of family

Sr. No.	Type of family	Frequency	Percentage
1	Single member 0-1		
2	Nuclear family 1-6		
3	Joint family >7		

3.4.7. Occupation

Categorization of selected dairy farmers according to their occupation was as follows.

Table 9: Category of farmers on the basis of occupation

Sr. No.	Occupation	Male	Female	Children	Frequency	Percentage
1	Dairy					
2	Dairy + service					
4	Dairy + business					
5	Dairy + agriculture					
6	Dairy + poultry					
7	Dairy + agriculture + service					
8	Dairy + agriculture + business					
9	Dairy + Poultry + agriculture					

3.4.8. Gap of adopted feeding management practices over recommended practices by landless category of farmers

Table 10: Gap of adopted feeding management practices over recommended practices by landless category of farmers

Sr. No	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/ animal (Kg)	Quantity/ animal (Kg)	Quantity/ animal (Kg)
1	Dry fodder			
2	Green fodder			
3	Concentrates			

3.4.9. Gap of adopted feeding management practices over recommended practices by marginal category of farmers

Table 11: Gap of adopted feeding management practices over recommended practices by marginal category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/ animal (Kg)	Quantity/ animal (Kg)	Quantity/ animal (Kg)
1	Dry fodder			
2	Green fodder			
3	Concentrates			

3.4.10. Gap of adopted feeding management practices over recommended practices by medium category of farmers

Table 12: Gap of adopted feeding management practices over recommended practices by medium category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/animal (Kg)	Quantity/animal (Kg)	Quantity/animal (Kg)
1	Dry fodder			
2	Green fodder			
3	Concentrates			



Plate 4. Interview with farmers at the time of data collection

3.4.11. Gap of adopted feeding management practices over recommended practices by large category of farmers

Table 13: Gap of adopted feeding management practices over recommended practices by large category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/ animal (Kg)	Quantity/ animal (Kg)	Quantity/ animal (Kg)
1	Dry fodder			
2	Green fodder			
3	Concentrates			

3.4.12. Gap of adopted feeding management practices over recommended practices by overall category of farmers

Table 14: Gap of adopted feeding management practices over recommended practices by overall category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/ animal (Kg)	Quantity/ animal (Kg)	Quantity/ animal (Kg)
1	Dry fodder			
2	Green fodder			
3	Concentrates			

3.4.13. Facility expected by farmer

Selected dairy farmer categorization according to the expectation of the facility as follows.

Table 15: Category of farmers on the basis of facility expectation
 Categorization of the chosen dairy farmers according to the limitations

Sr. No.	Facility expect for dairy activity	Landless	%	Marginal	%	Medium	%	Large	%	Total	%
1	Easy loan facilities										
2	Availability of crossbred animal										
3	Timely receipt of milk sale										
4	Insurance of animal										
5	Veterinary facilities										
6	Ensured supply of feed and fodder										
7	Disease diagnostic facilities at doorstep										

3.4.14 Constraints

Table 16: Category of farmers on the basis of constraints faced

Sr. No.	Constraints	Landless	%	Marginal	%	Medium	%	Large	%	Total	%
1	Feeding animal due to scarcity of feeds										
2	Health care management										
3	Calf rearing										
4	Reproductive problem										
5	High cost of animal feed										
6	Unavailability of veterinary aids										
7	Unavailability of pasture land										
8	Unavailability of proven sire										
9	Disposal of milk										

3.5. Feeding status

Under following heads, the present picture and means of feeding the buffalo, crossbred cattle, have been studied.

3.5.1. Grazing

The grazing system based on availability of grazing land in the village and the availability of farmers with their own grazing land has been investigated.

3.5.2. Stall feeding

Most farmers adopted stall feeding to offer all kinds of feed, self-grown or purchased, green or dry fodder, to their milking crossbred animals. The survey was conducted to collect data on the type and quality of fodder.

3.6. Preventive measures

Provided well ventilated and proper housing, provided balanced nutritious diet, hygiene and sanitation of animal houses, regular and routine vaccination schedule, avoid entry of outsiders within the farm premises.

3.6.1. Tagging

It is process of giving identification to animals.

3.6.2. Dehorning

The process of removing the horns of livestock cattle, sheep, goat are sometimes dehorned for economically and safety reasons.

3.6.3. Chaffing of fodder

It is process of cutting fodder into smaller size pieces.

3.6.4. Preservation of fodder

Fodder is usually conserved as hay or silage. Some forage crop can either be grown exclusively for hay or silage production being set aside for fodder preservation.

3.7. Culling

It is process of removal of unwanted animal.

3.7.1. Housing

Adequate space, proper ventilation, good drainage, plenty of light, protection from predators and adverse climate, dry fodder.

3.7.2. Clean milk production

Milk as whole, clean lacteal secretion complete milking healthy milch animals excluding that obtained 15 days before or 5 days after calving and containing prescribed per cent of fat SNF.

3.7.3. Cleaning

Individual animals regularly clean themselves and put their fur feather or other skin coverings in good order.

3.7.4. Sanitation

It is killing of microorganisms or for sterilization.

3.7.5. Weighing

To measure the animal body weight.

3.7.6. Watering

The animal of water pure drinking body good quality.

3.7.7. Milk utilization and production


The sweet whey originates from cheese manufacturing or from industrial casein production where the casein is coagulated at PH of 6.6-6.5.

3.7.8. Processing of fodder

It is process of cutting roughages especially fodder crops into smaller size pieces soaking of feed and fodder in water removes dustiness and softens the course feed material.

3.8. Statistical method

The data collected were classified and tabulated in accordance with the objectives concerned and a simple tabular analysis was carried out to analyses the data, where only frequency and percentage were estimated to be redundant (Panse and Sukhatme, 1967).



*Results and
Discussion*

CHAPTER -IV

RESULTS AND DISCUSSION

Animal feeding is prime importance to animal health and productivity. It is generally agreed that when fed at low levels, animals fail to prove their full genetic potential for higher production. Feeding is the most costly item in the production of milk. The production of milk is therefore associated with the feeding status of lactating animals. The investigation on “Feeding and Management Practices of Dairy Animals in Udgir Tahsil of Latur District” was carried out by interviewing 120 respondents in 10 villages with the following objective:

- 4.1. To study the feeding status of dairy animals
- 4.2. To find out the gap between recommended feeding practices and adopted feeding practices
- 4.3. To study the constraints in feeding and management practices

In view of this and as a part of study following 10 villages from Udgir tahsil were selected Table 17.

Table 17: List of villages selected from Udgir tahsil

Sr. No.	Name of villages
1	Lohara
2	Chighali
3	Bhakaskheda
4	Dewarjan
5	Umarga
6	Waygaon
7	Hanumantwadi
8	Her
9	Karkheli
10	Kardkhel

The results of this investigation are presented and discussed in this chapter under following heads.

4.1. Socio – economic status of dairy farmers

This contains the names of the milk producer, age, level of education, type of milk, farm worker according to livestock, quantity of milk animals and nationality, ownership, family size and family employment.

4.1.1. Age

The farmers of research have been categorized into different age groups and the findings are provided in Table 18.

Table 18: Frequencies showing categories of farmers according to age

Sr. No.	Age group	Frequency	Percentage
1.	20-30	21	17.50
2.	31-40	44	36.66
3.	41-50	29	24.16
4.	51-60	17	14.16
5.	> 60	9.0	7.50
	Total	120	100

The Table 18 showed that maximum number of farmers were observed between the age group 31 to 40 years age with 36.66 per cent, followed by the age groups 41 to 50, 20 to 30, 51 to 60, and above 60 with 24.16, 17.50, 14.16 and 7.50 per cent, respectively. The potential explanations for this may be that farmers in between ages of 31-40 were more willing to involve and enthusiastic about earning extra income from milk production. Similar results were reported by Gangil and Dabas (2005) and Mali and Ligade (2014).

However, those beyond this range were the helping hands to the family i. e. some were engaged in grazing their animals, while age one do watch the animals in absence of working persons. Present results coincide with the finding of Thombre and Pawar (1993).

4.1.2. Level of education

Information on the level of education of dairy farmers under research can be found in Table 19.

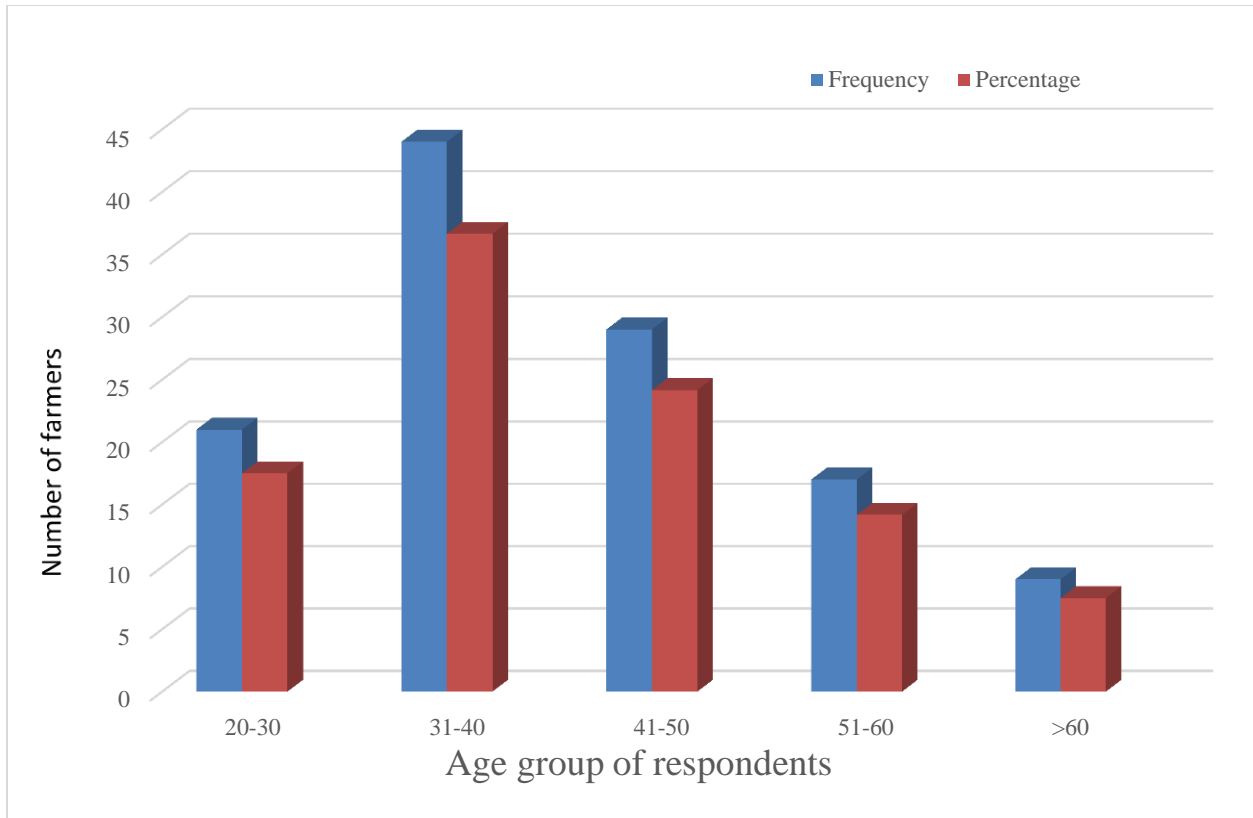


Fig 4.1. Distribution of farmers according to age group

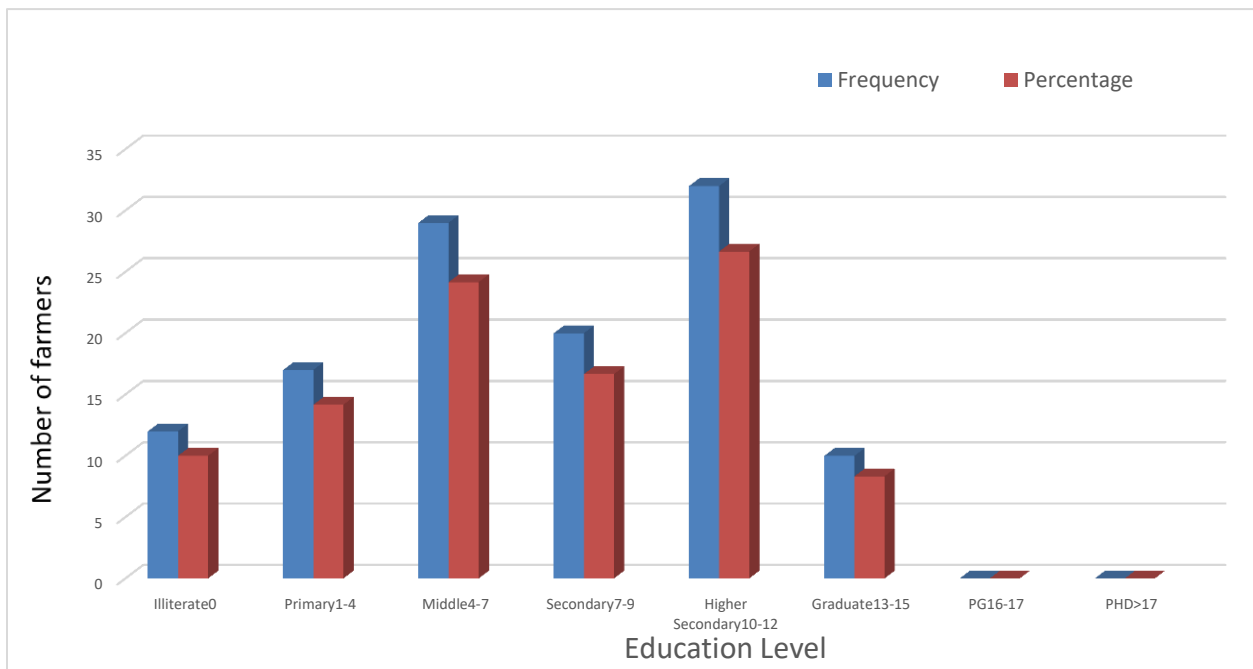


Fig 4.2. Distribution of farmers according to education level

Table 19: Frequencies showing education level of dairy farmers

Level of Education	Frequency	Percentage
Illiterate 0	12	10.00
Primary 1-4	17	14.16
Middle 4-7	29	24.16
Secondary 7-9	20	16.66
Higher secondary 11-12	32	26.66
Graduate 13-15	10	8.33
PG 16-17	0	0.00
Ph.D. >17	0	0.00
Grand total	120	100

From Table 19 results, the impression is whether higher secondary 11-12 standard education was taken by the highest farmers. At degree (8.33) and minimum farmers were at PG and Ph.D educational level. Based on their level of schooling, the farmers surveyed were grouped into different categories. The largest per centage of farmers was found after higher secondary as middle, secondary, primary, graduate, PG, and Ph.D. As 24.16, 16.66, 14.16, 8.33, 0.00 and 0.00 per cent, respectively. The present finding was in conformity with Shinde *et al.* (1998).

4.1.3. Number of dairy animals reared per farmer according to size of land holding

Provides statistics on the number of dairy animals each farmers in different land keeping classes at Table 20.

Table 20: Number of dairy animals reared per farmer according to size of land holding

No. of dairy Animals	Categories					Total	Per cent
	I	II	III	IV	V		
	Landless 0(ha.)	Marginal 0 -1(ha.)	Small 1-2(ha.)	Medium 2-5(ha.)	Large >5(ha.)		
1	2	10	13	15	6	46	38.33
2	2	11	12	10	5	40	33.33
3	0	4	3	0	2	0.9	7.50
4	1	3	5	7	0	16	13.33
5	0	1	2	2	1	0.6	5.00
>6	0	1	0	1	1	0.3	2.50
Total	5 [4.16]	30 [25.00]	35 [29.16]	35 [29.16]	15 [12.50]	120	100

(Figures in parentheses shows the percentage of farmers in respective categories)

Table 20 indicates that the proportion of farmers in the I, II, III, IV and V groups, namely landless, marginal, small, medium and large farmers, were 4.16, 25.00, 29.16, 29.16 and 12.50 per cent, respectively. It was also noted that the landless group had a smaller number of dairy animals compared to the other groups. Similar observations were observed by Jadhav (1973) and Baxi (1999). It is seen from the Table that maximum farmers hold one dairy animal per capita at 38.33 per cent, followed by two, four, three, five and greater than six animals as 33.33, 13.33, 7.50, 5.00 and 2.50 per cent, respectively.

It was observed from the above table that the highest number of dairy farmers had 1-2 cows. It is reasonably seen that the dairy farmers mainly owned one or two milk animals in this area. This may be due to an economic situation that may not allow large numbers of dairy animals to be housed. The results found were equivalent to Sonwane *et al.* (2002).

4.1.4. Distribution of dairy animals

The composition of farmers by herd size is given in Table 21.

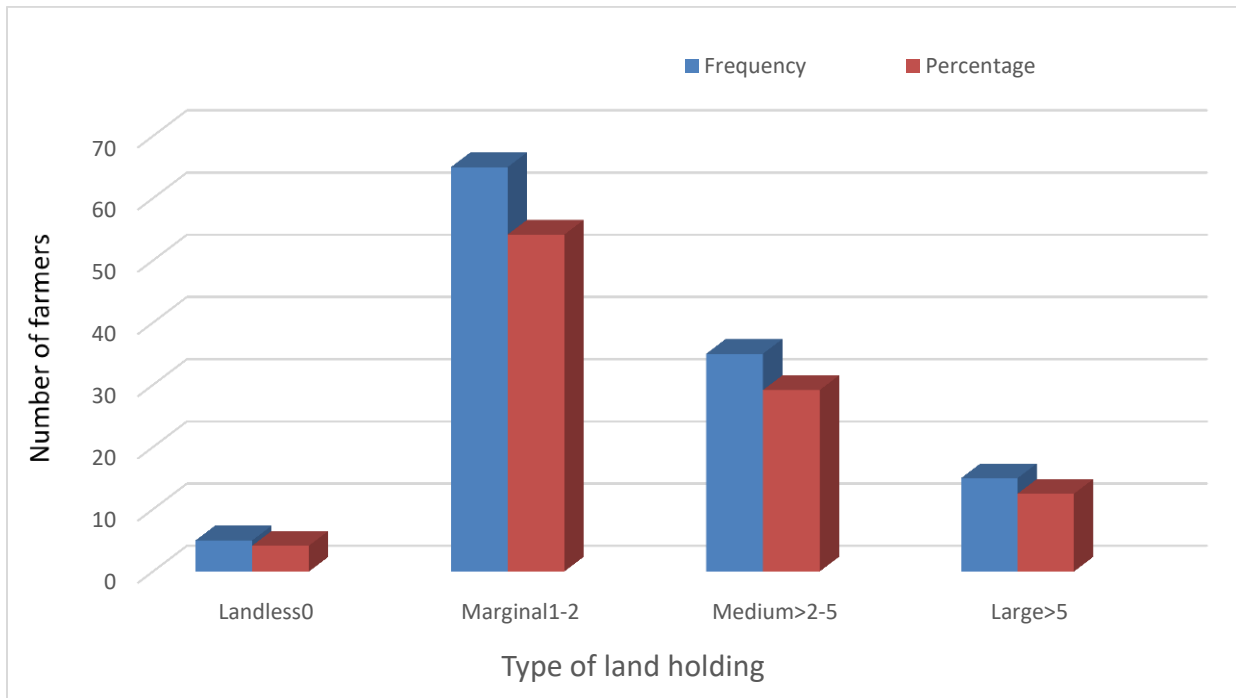


Fig 4.3. Distribution of farmers according to type of land holding

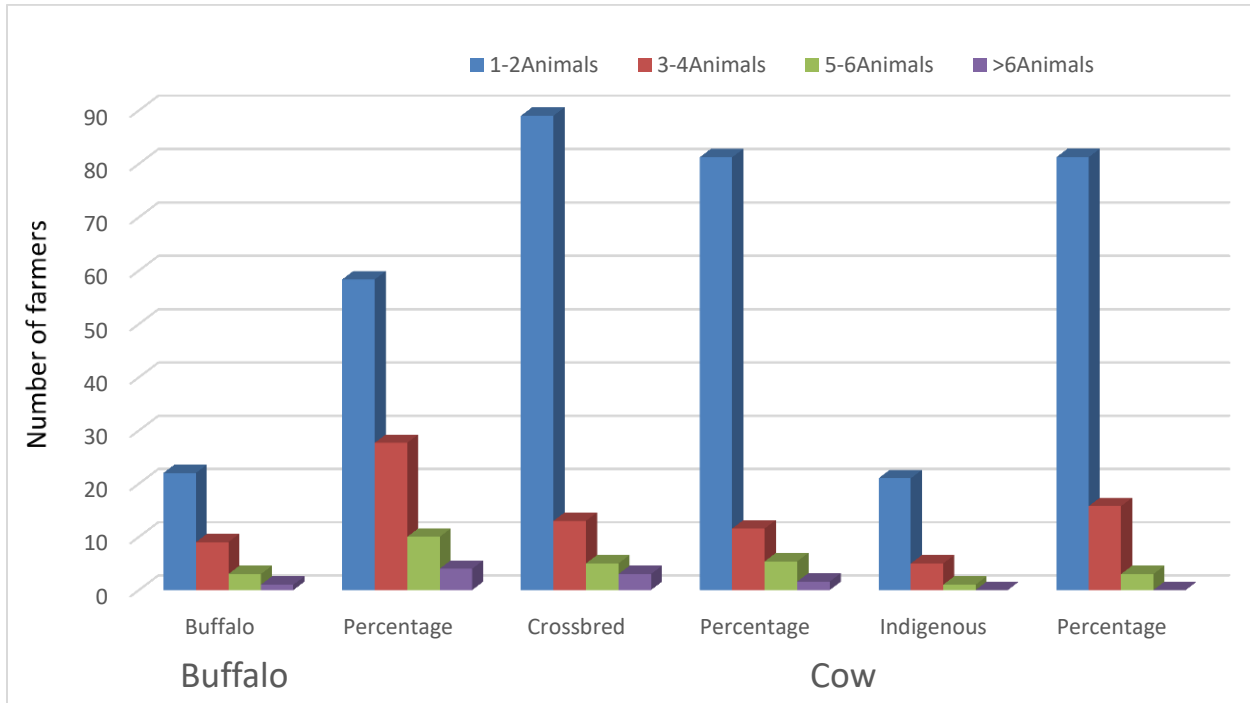


Fig 4.4. Distribution of dairy animals reared per farmer according to size of herd

Table 21: Distribution of respondents according to size of herd

Category of dairy animals	Buffaloes		Cows			
	Frequency	Percentage	Crossbred	Percentage	Indigenous	Percentage
1-2 Animals	22	58.33	89	81.22	40	80.23
3-4 Animals	9	27.67	13	11.78	6	15.77
5-6 Animals	3	10.00	5	5.40	1	4.00
>6 Animals	1	4.00	3	1.60	0	0

(Figures in parentheses showing the percentage of animals in respective categories)

The findings in Table 21 showed that the overall number of dairy farmers included 1-2 buffaloes of all different kinds (58.33 per cent) and cows (80.23 per cent), 3-4 buffalo (27.67 per cent), 5-6 animals (10.00 per cent) and more than 6 animals (4.00 per cent). The estimates for cows were 3-4 cows (15.77 per cent), 5-6 cows (4.00 per cent) and really no farmer had more than 6 cows.

4.1.5. Category of dairy farmers based on breed of dairy animal

Describes the information relating to the dairy animal breeds of dairy farmers are given in Table 22.

Table 22: Number of dairy animals reared by the farmers according to the breed of dairy animal

Name of buffalo breed	Frequency	Percentage	Name of cow breed	Frequency	Percentage
Marathwadi	25	64.54	HF cross	95	55.65
Murrah	8	28.46	Jersey cross	15	11.35
Jaffrabadi	2	7.00	Deoni	20	14.20
-	-	-	Red Kandari	10	6.60
-	-	-	Non descript	17	12.20

From Table 22 the details revealed that only 35 farmers rear buffaloes out of 120 respondents, about which the highest number of farmers held Marathwadi buffalo

(64.54 per cent) followed by Murrah buffalo (28.46 per cent) and Jaffrabadi (7.00 per cent).

Also 95 farmers out of 120 respondents were holding their cows from HF crossbred, 6.60 per cent farmers kept Red Kandhari and 12.20 per cent Non descript. Whereas, Jersey crossbred, HF crossbred and Deoni per centage was 11.35, 55.65, 14.20 reared by dairy farmers.

4.1.6. Family size

Social status (number of members of the family) is dependent. Group size is an important factor related to the availability of labour for the development of crops and livestock. In big families, leaders have to work hard to earn more resources for family expenses according to the Shinde *et al.* (1998). In view of this the information was obtained, summarized and presented in Table 23.

Table 23: Distribution of farmers according to type of family

Type of family	Total no. of members	Male	Female	Children
Single Member	-	-	-	-
Nuclear Family	378 (65.66)	107 (30.50)	115 (40.52)	156 (48.56)
Joint Family	251 (34.34)	69 (19.50)	70 (19.48)	112 (41.44)
Total	629 (100)	176 (25.00)	185 (30.00)	268 (45.00)

(Figures in parenthesis shows percentage of number of family members)

It is shown through Table 23 that the majority of farmers were in the nuclear family. It is shown that the male contribution is approximately 25.00 per cent, whereas, that of children and women were around 45.00 and 30.00 per cent, respectively. The Table shows that largest community is in nuclear families of 65.66 per cent followed by joint family with 34.34 per cent, no a single member and no community with a specific close relative where included. The current research was assisted by the results of the Chatterji (1989) and Dhammu and Gill (2002).

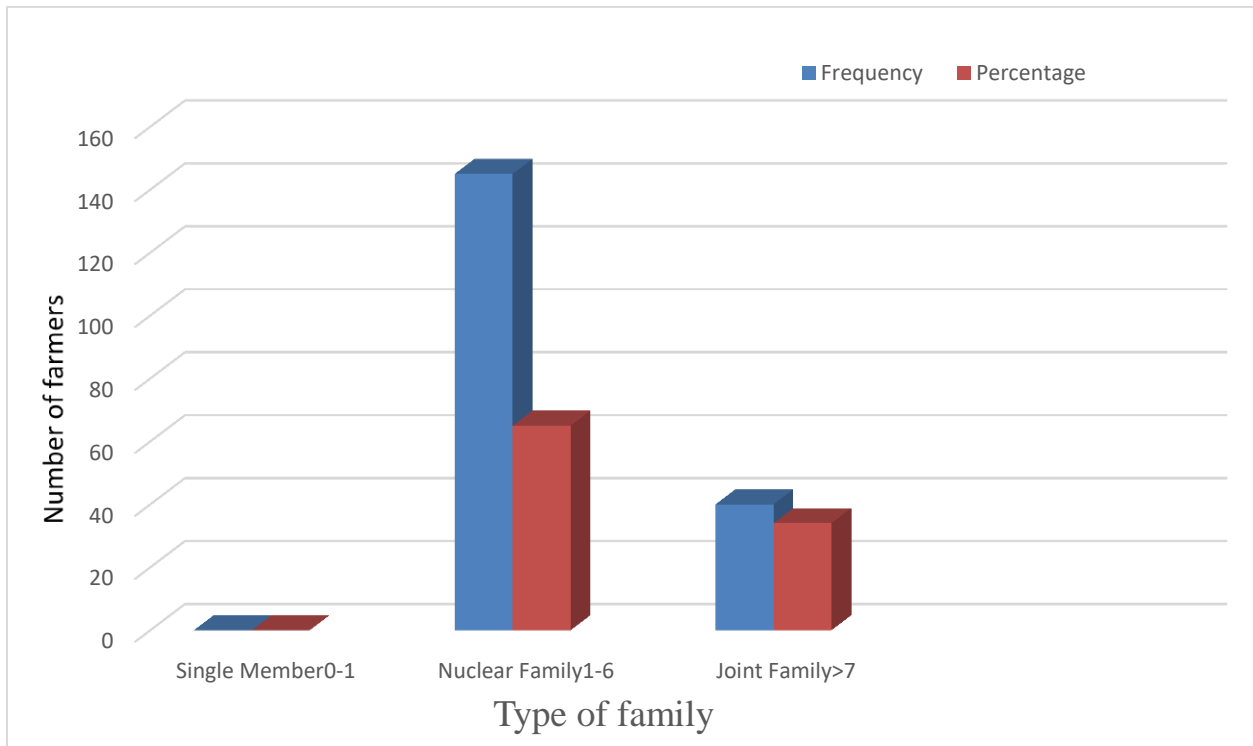


Fig 4.5. Distribution of farmers on the basis of type of family

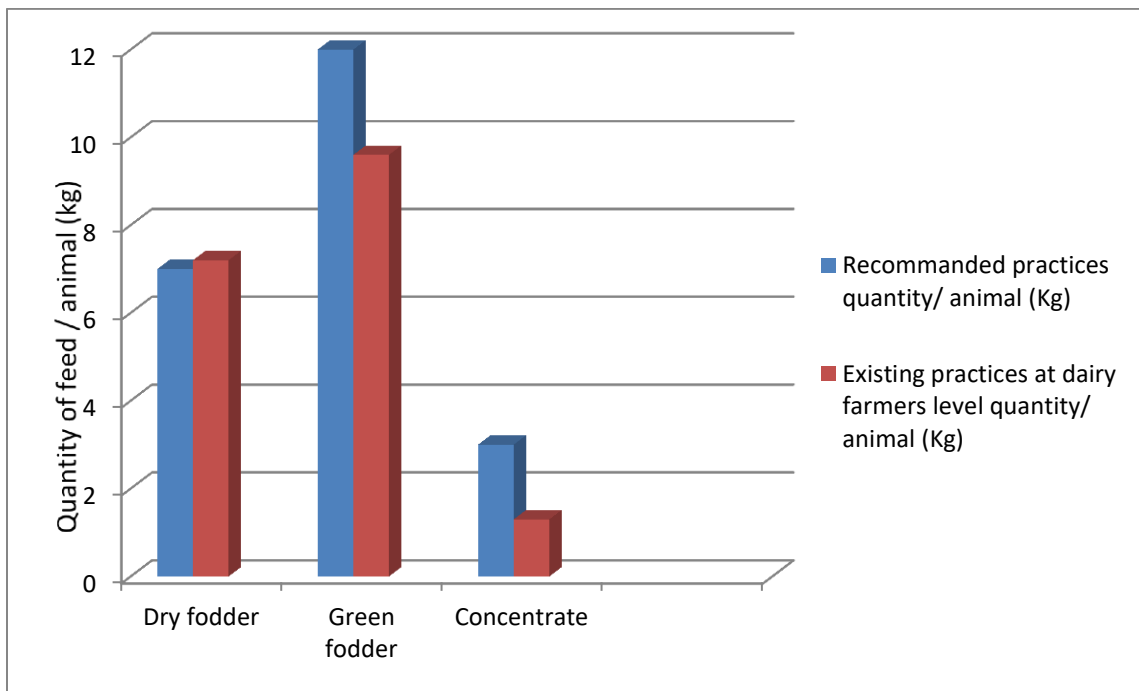


Fig 4.6. Distribution gap of feeding management practices over recommended practices of cattle at landless category of farmers

4.1.7. Occupation

The biggest remain of life in researched rural area was dairy farming, that is only suited as an economic practice. Consequently sector of poor people has been the dairy industry Mote *et al.* (1997). The data relating to the employment of the animal owners is shown in Table 24.

Table 24: Frequencies showing occupation status of dairy farmers

Occupation	Male	Female	Children	Frequency	Percentage
Dairy	4	3	0	3	2.50
Dairy+Service	-	-	-	-	-
Dairy+Business	-	-	-	-	-
Dairy+Agriculture	137	161	4	95	79.16
Dairy+Poultry	-	-	-	-	-
Dairy+Agriculture+Service	11	10	0	8	6.66
Dairy+Agriculture+Business	22	20	0	14	11.68
Dairy+Poultry+Agriculture	-	-	-	-	-

Table 24 indicates that the highest number of dairy owners as 79.16 per cent who were also involved in agriculture. The dairy has also been a subsidiary occupation of the family farm. Just 2.50 per cent of milk producers depend entirely on milk, while zero per cent of dairy farmer were also are engaged in service and business, whereas, some dairy farmers were engaged in service and business (6.66 and 11.68 per cent) besides basic agriculture. Similar results were reported by Walthare *et al.* (1992).

4.2. Gap of feeding management practices over recommended practices of cattle

In India, use of non-nutritious feed such as straw and other crop waste and by-products of agricultural crops level is high for livestock. In this context, assessing the present position of feeding practices is important.

Sarap *et al.* (2012) reported three groups of overall gap feeding practices over suggested practices. The 7.26, 6.50 and 0.98 kg of dry fodder, green fodder and concentrate, respectively was fed to cattle daily. The dry fodder was fed more to the extent of 3.71 per cent over the recommended feeds. A wide gap was noticed in practiced of feeding of concentrates 72.00 per cent and green fodder (56.66 per cent) over recommended practices.

4.2.1: Gap of adopted feeding management practices over recommended practices of cattle by landless category of farmers

Details on the gap between feeding planning activities and recommended practices of the various forms of landless communities is shown in Table 25.

Table 25: Gap of adopted feeding management practices over recommended practices by landless category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/animal (kg)	Quantity/animal (kg)	Quantity/animal (kg)
1	Dry fodder	7.00 (100)	7.20 (102.85)	+0.20 (2.85)
2	Green fodder	15.00 (100)	9.60 (64.00)	-5.40 (36.00)
3	Concentrates	3.00 (100)	1.30 (43.33)	-1.70 (56.67)

(on an average body weight of 300 kg)

It was observed from Table 25 that, in the case of landless farmers, current feeding activities were adopted by livestock owners. They fed dry fodder, green fodder and concentrate as 7.20, 9.60 and 1.30 kg per days, respectively to their cows. While, the recommended quantities of feed were 7.00, 15.00 and 3.00 kg dry fodder, green fodder and concentrates per day, respectively. The dry fodder was fed more to the extent of 2.85 per cent over recommendation. There was even a large gap in feeding green fodder (36.00 per cent) and concentrates (56.67 per cent) to cattle in case of landless cattle category.

4.2.2: Gap of adopted feeding management practices over recommended practice of cattle by marginal category of farmers

The existing practices followed by livestock owners level in case of marginal farmers is given in at Table 26.

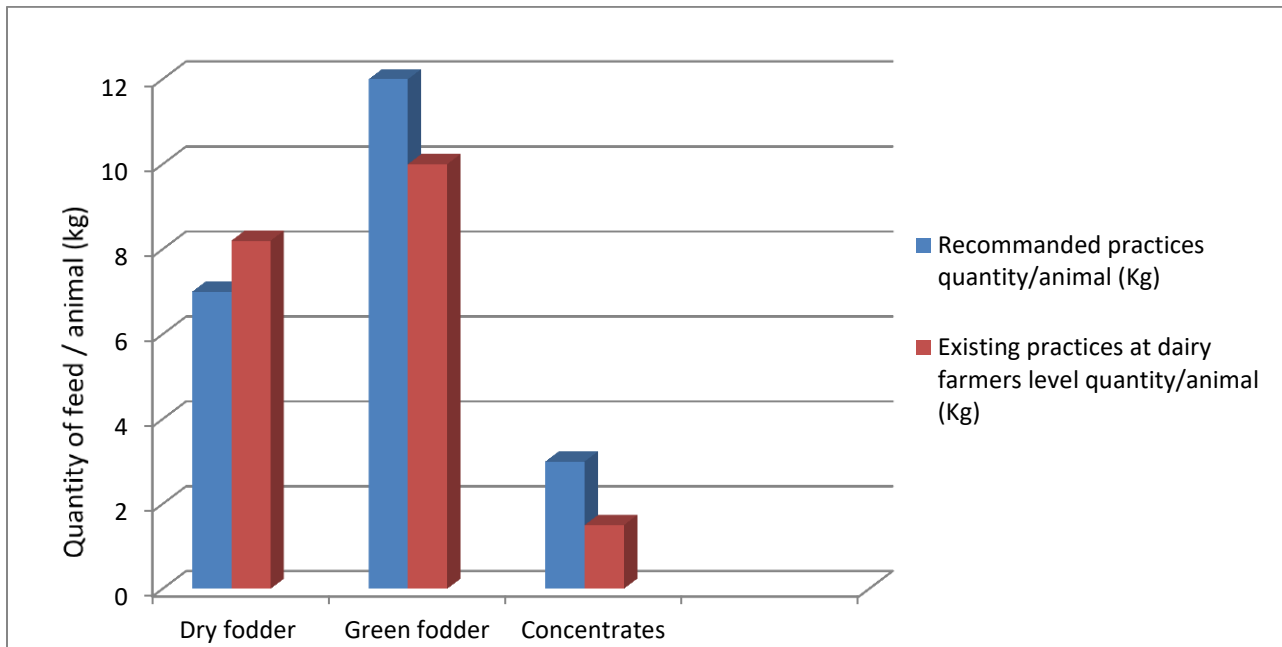


Fig. 4.7. Distribution gap of feeding management practices over recommended practices of cattle at marginal category of farmers

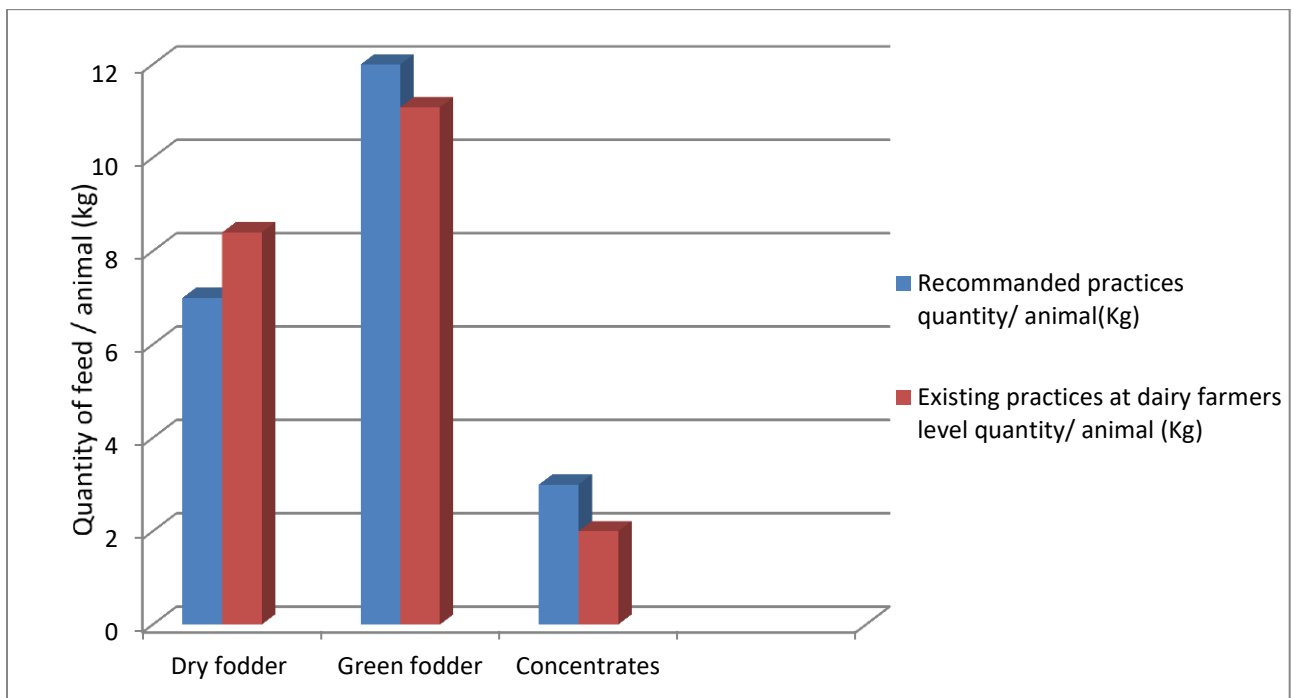


Fig. 4. 8. Distribution gap of feeding management practices over recommended practices of cattle at medium category of farmers

Table 26: Gap of adopted feeding management practices over recommended practices of cattle by marginal category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/animal (kg)	Quantity/animal (kg)	Quantity/animal (kg)
1	Dry fodder	7.00 (100)	8.20 (117.14)	+1.20 (17.14)
2	Green fodder	15.00 (100)	9.80 (65.33)	-5.20 (34.67)
3	Concentrates	3.00 (100)	1.50 (50.00)	-1.50 (50.00)

(on an average body weight of 300 kg)

It was observed from Table 26 that farmers fed dry fodder to the extent of 8.20 kg per day as against 7.00 kg per day recommended feed indicating 17.14 per cent more over recommended practices. Whereas, green fodder and concentrates were fed 9.80 kg and 1.50 kg per day as against 15.00 and 3.00 kg per day as recommended feeds, respectively. Thus a wide gap of 34.67 and 50.00 per cent in case green fodder and concentrates was observed respectively at the farmers level in case of marginal category of farmers.

4.2.3. Gap of adopted feeding management practices over recommended practices of cattle by medium category of farmers

Continuation of current activities led by the rate of livestock owners in the situation of medium farmers is shown in Table 27.

Table 27: Gap of adopted feeding management practices over recommended practices of cattle by medium category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/animal (kg)	Quantity/animal (kg)	Quantity/animal (kg)
1	Dry fodder	7.00 (100)	8.40 (120.00)	+1.40 (20.00)
2	Green fodder	15.00 (100)	10.20 (68.00)	-4.80 (32.00)
3	Concentrates	3.00 (100)	2.00 (66.66)	-1.00 (33.34)

(on an average body weight of 300 kg)

It is seen from Table 27 that, the existing feeding practices followed by livestock owners in case of medium farmers to 8.40, 10.20 and 2.00 kg per day dry fodder, green fodder and concentrates, respectively in case of cows. While, the recommended quantities of feed were 7.00, 15.00 and 3.00 kg dry fodder, green fodder and concentrates per day, respectively. The dry fodder was fed more to the extent of 20.00 per cent over recommendation. However there was a wide gap in feeding green fodder (32.00 per cent) and concentrates (33.34 per cent) in case of medium category of farmers.

4.2.4. Gap of adopted feeding management practices over recommended practices of cattle by large category of farmers

Ongoing through the existing practices followed by livestock owners in case of large farmers is given Table 28.

Table 28: Gap of adopted feeding management practices over recommended practices of cattle by large category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/animal (kg)	Quantity/animal (kg)	Quantity/animal (kg)
1	Dry fodder	7.00 (100)	9.72 (138.85)	+2.72 (38.85)
2	Green fodder	15.00 (100)	10.40 (69.33)	-4.60 (30.67)
3	Concentrates	3.00 (100)	2.40 (80.00)	-0.60 (20.00)

(on an average body weight of 300 kg)

It is observed from Table 28 that existing feeding practices followed by livestock owners in case large farmers was 9.72, 10.40 and 2.40 kg per day dry fodder, green fodder and concentrate, respectively. While in case of large farmers category 38.85 per cent extra dry fodder was fed to cattle than recommended practices. However, there was wide gap in feeding green fodder (30.67 per cent) and concentrates (20.00 per cent) in case of large category farmers.

4.2.5. Overall gap adopted of feeding management practices over of cattle by recommended practices of farmers

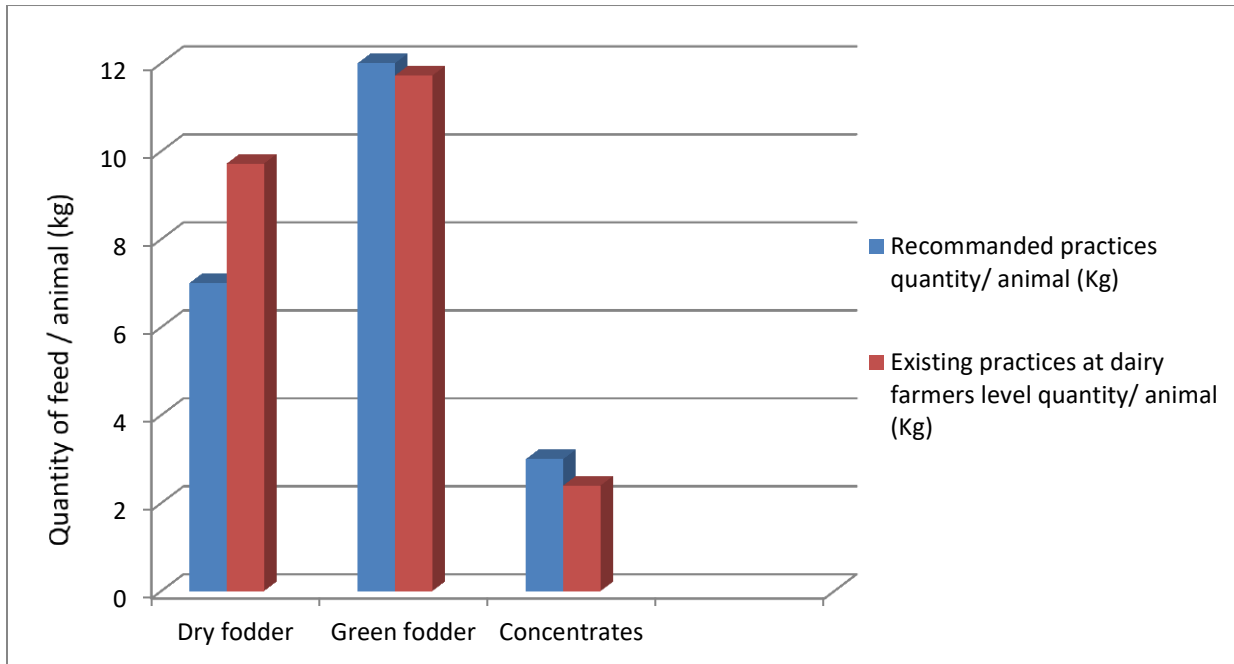


Fig. 4.9. Distribution gap of feeding management practices over recommended practices of cattle at large category of farmers

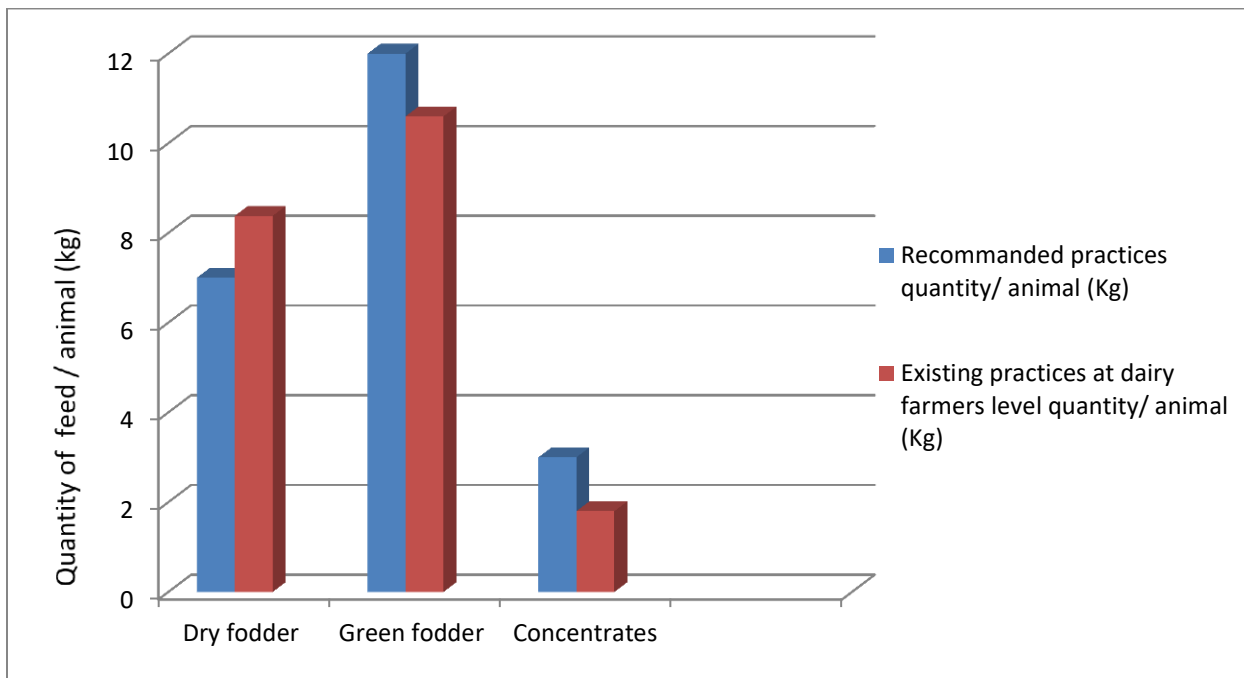


Fig. 4.10. Distribution gap of feeding management practices over recommended practices of cattle at overall category of farmers

Data on overall gap of feeding management activities are described in the Table 29.

Table 29: Gap of adopted feeding management practices over recommended practices of cattle by overall category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/animal (kg)	Quantity/animal (kg)	Quantity/animal (kg)
1	Dry fodder	7.00 (100)	8.38 (119.71)	+1.38 (19.71)
2	Green fodder	15.00 (100)	10.00 (66.66)	-5.00 (33.34)
3	Concentrates	3.00 (100)	1.80 (60.00)	-1.20 (40.00)

(on an average body weight of 300 kg)

It was indicated from Table 29 that the dairy farmers fed their cows with overall of green fodder as 10.00 kg, dry fodder as 8.38 kg and concentrates as 1.80 kg. They fed overall dry fodder as 19.71 per cent extra in green fodder 33.34 per cent and concentrates 40.00 per cent whereas less than recommended quantity having wide gap. To fulfill this gap the dairy farmers should be aware about importance of balanced diet, cultivation of fodder crops in case of cattle category. The above finding was similar with Sarap *et al.* (2012).

4.3. Gap of feeding management practices over at recommended practices of buffaloes

In India, small and poor quantity foods feeding including the straw and other residue then by-products of agricultural production is largely offered to for livestock.

Sarap *et al* (2012) reported overall difference feeding practices of three groups over recommended practices. In total, 7.26, 6.50 and 0.98 kg dry fodder, green fodder and concentrate, was feed daily to cattle respectively. To a greater degree, the dry fodder was supplied over the prescribed feeds by 3.71 per cent. In the feeding of concentrate 72.00 per cent and green fodder 56.66 per cent higher having large gap at existing feeding management practices over recommended practices.

4.3.1. Gap of adopted feeding management practices over recommended practices of buffaloes by landless category of farmers

Data on the gap of feeding management practices of buffaloes in different types of landless groups are provided in Table 30.

Table 30: Gap of adopted feeding management practices over recommended practices of buffaloes by landless category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/animal (kg)	Quantity/animal (kg)	Quantity/animal (kg)
1	Dry fodder	8.00 (100)	9.00 (112.50)	+1.00 (12.50)
2	Green fodder	15.50 (100)	9.50 (61.29)	-6.00 (38.71)
3	Concentrates	2.50 (100)	1.75 (70.00)	-0.75 (30.00)

(on an average body weight of 300 kg)

Table 30 indicate existing feeding practices followed by livestock owners and recommended practices in case of landless farmers. They fed 9.00, 9.50 and 1.75 kg day as dry fodder, green fodder and concentrates, respectively per buffaloes. While, the recommended quantities of feed were 8.00, 15.50 and 2.50 kg dry fodder, green fodder and concentrates per day, respectively. The dry fodder was fed more to the extent of 12.50 per cent over recommendation. However there was a wide gap in feeding green fodder by 38.71 per cent and concentrates by 30.00 per cent to buffaloes in case of landless category of farmers.

4.3.2. Gap of adopted feeding management practices over recommended practices of buffaloes by marginal category of farmers

Continuation of current activities accompanied by the stage of livestock owners in the category of marginal farmers is shown in Table 31.

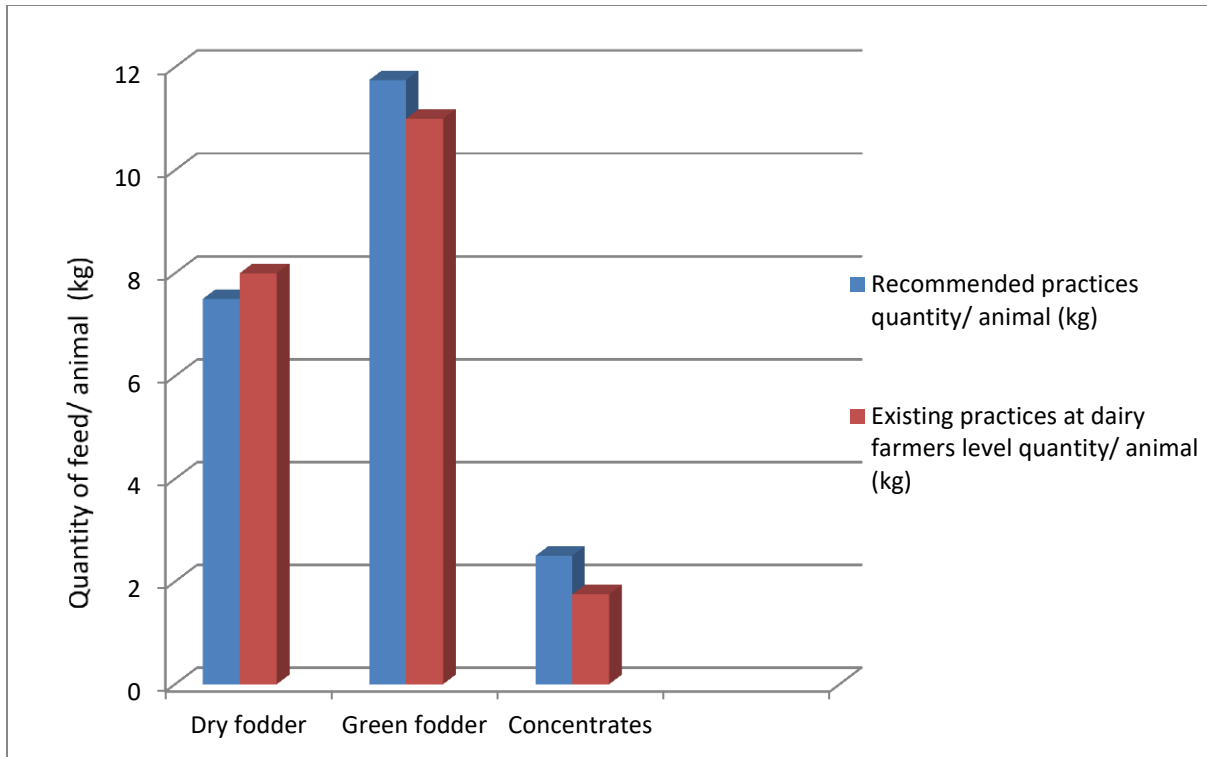


Fig. 4.11. Distribution gap of feeding management practices over recommended practices of buffaloes at landless category of farmers

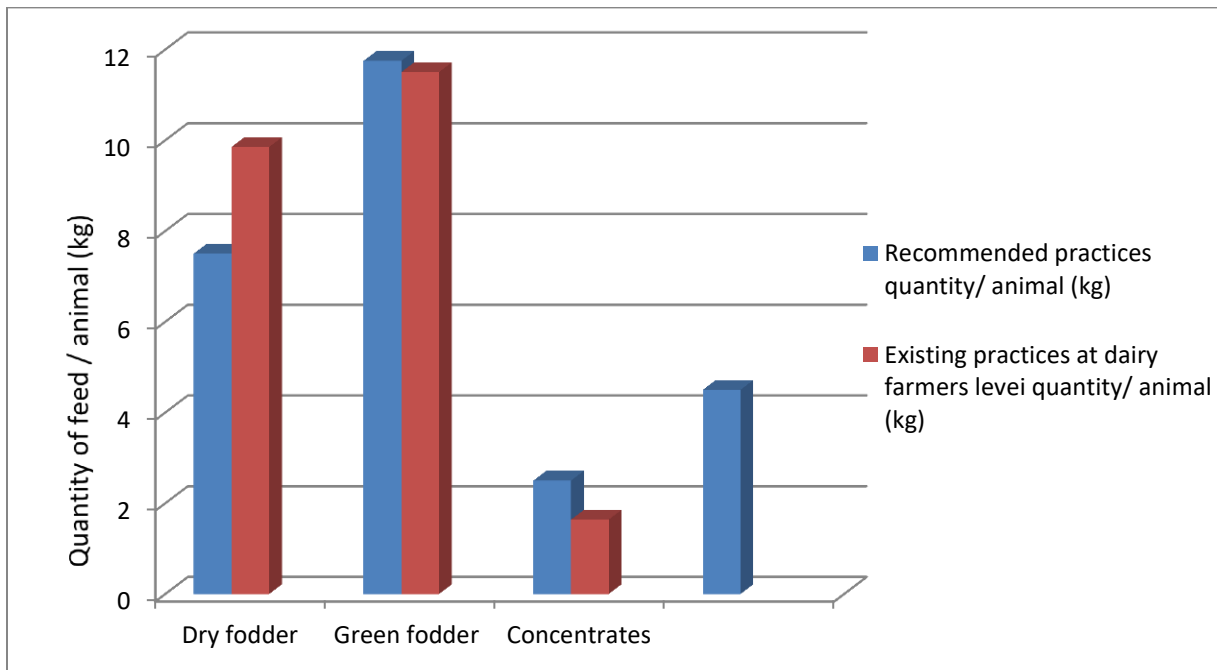


Fig. 4.12. Distribution gap of feeding management practices over recommended practices of buffaloes at marginal category of farmers

Table 31. Gap of adopted feeding management practices over recommended practices of buffaloes by marginal category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/animal (kg)	Quantity/animal (kg)	Quantity/animal (kg)
1	Dry fodder	8.00 (100)	9.50 (118.75)	+1.50 (18.75)
2	Green fodder	15.50 (100)	10.00 (64.51)	-5.50 (35.49)
3	Concentrates	2.50 (100)	1.64 (65.60)	-0.86 (34.40)

(on an average body weight of 300 kg)

It was observed from Table 31 that farmers fed dry fodder to the extent of 9.50 kg per day as against 8.00 kg per day recommended feed indicating 18.75 per cent more over recommended practices. Whereas, green fodder and concentrates were fed @10.00 kg and 1.64 kg per day as against 15.50 and 2.50 kg per day as recommended feeds, respectively. Thus a wide gap of 35.49 and 34.40 per cent in case green fodder and concentrates was observed, respectively at the farmers level in case of buffaloes.

4.3.3. Gap of adopted feeding management practices over recommended practices of buffaloes by medium category of farmers

Continuation of current activities accompanied by the amount of livestock owners also in situation of medium farmers at Table 32.

Table 32: Gap of adopted feeding management practices over recommended practices of buffaloes by medium category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/animal (kg)	Quantity/animal (kg)	Quantity/animal (kg)
1	Dry fodder	8.00 (100)	10.00 (125.00)	+2.00 (25.00)
2	Green fodder	15.50 (100)	10.20 (65.80)	-5.30 (34.20)
3	Concentrates	2.50 (100)	2.05 (82.00)	-0.45 (18.00)

(on an average body weight of 300 kg)

It was seen from Table 32 that, the existing feeding practices followed by livestock owners in case of medium farmers to 10.00, 10.20 and 2.05 kg per day dry fodder, green fodder and concentrates, respectively in case of buffaloes. While, the recommended quantities of feed were 8.00, 15.50 and 2.05 kg dry fodder, green fodder and concentrates per day, respectively. The dry fodder was fed more to the extent of 25.00 per cent over recommendations. However, there was a wide gap in feeding green fodder as 34.20 per cent and concentrates as 18.00 per cent in case of buffaloes.

4.3.4. Gap of adopted feeding management practices over recommended practices of buffaloes by large category of farmers

Continued by current activities followed by the amount of livestock owners in case of large farmers at Table 33.

Table 33. Gap of adopted feeding management practices over recommended practices of buffaloes by large category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/animal (kg)	Quantity/animal (kg)	Quantity/animal (kg)
1	Dry fodder	8.00 (100)	11.00 (137.50)	+3.00 (37.50)
2	Green fodder	15.50 (100)	11.20 (72.25)	-4.30 (27.75)
3	Concentrates	2.50 (100)	2.22 (88.80)	-0.28 (11.20)

(on an average body weight of 300 kg)

It was observed from Table 33 that existing feeding practices followed by livestock owners in case large farmers worked out to 11.00, 11.20 and 2.22 kg per day dry fodder, green fodder and concentrate, respectively. While, in case of dry fodder 37.50 per cent extra fodder was given over recommended practices in case of buffaloes. However, there was wide gap in feeding less green fodder by 27.75 per cent and concentrates by 11.20 per cent in case of buffaloes.

4.3.5. Overall gap of adopted feeding management practices over of buffaloes by recommended practices of farmers

Data on the gap of feeding management practices of overall category is provided in Table 34.

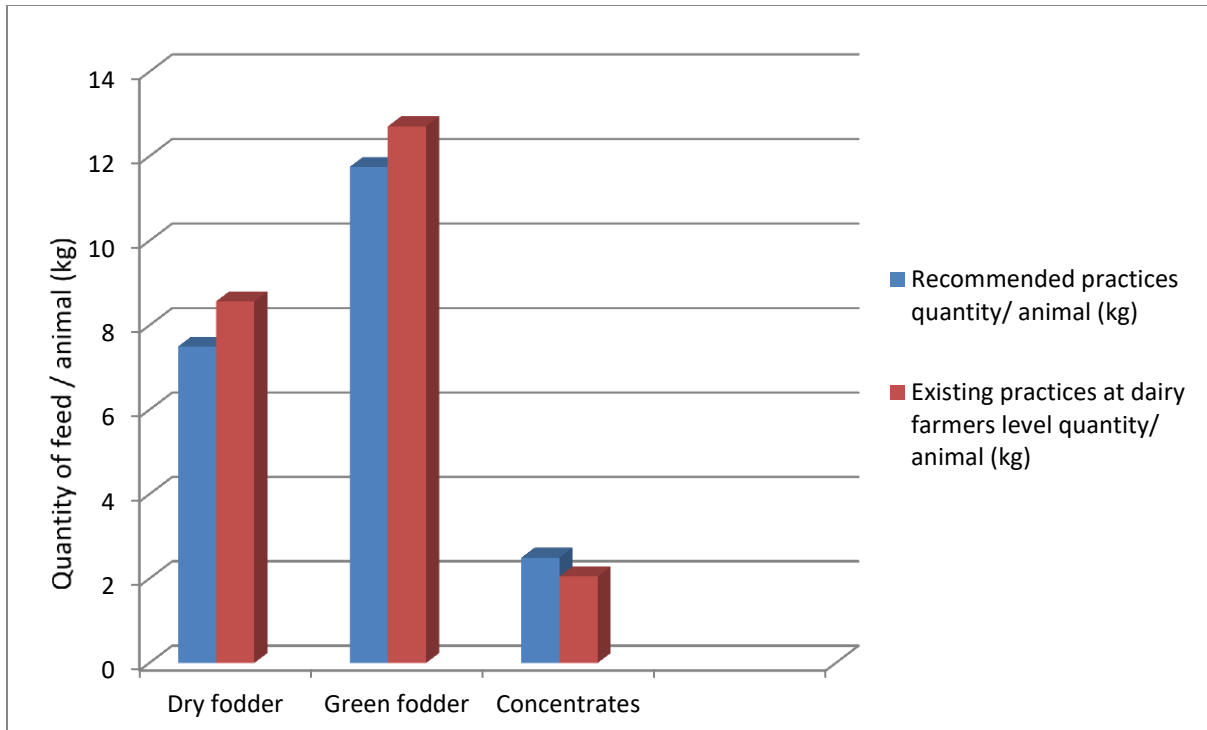


Fig. 4. 13. Distribution gap of feeding management practices over recommended practices of buffaloes at medium category of farmers

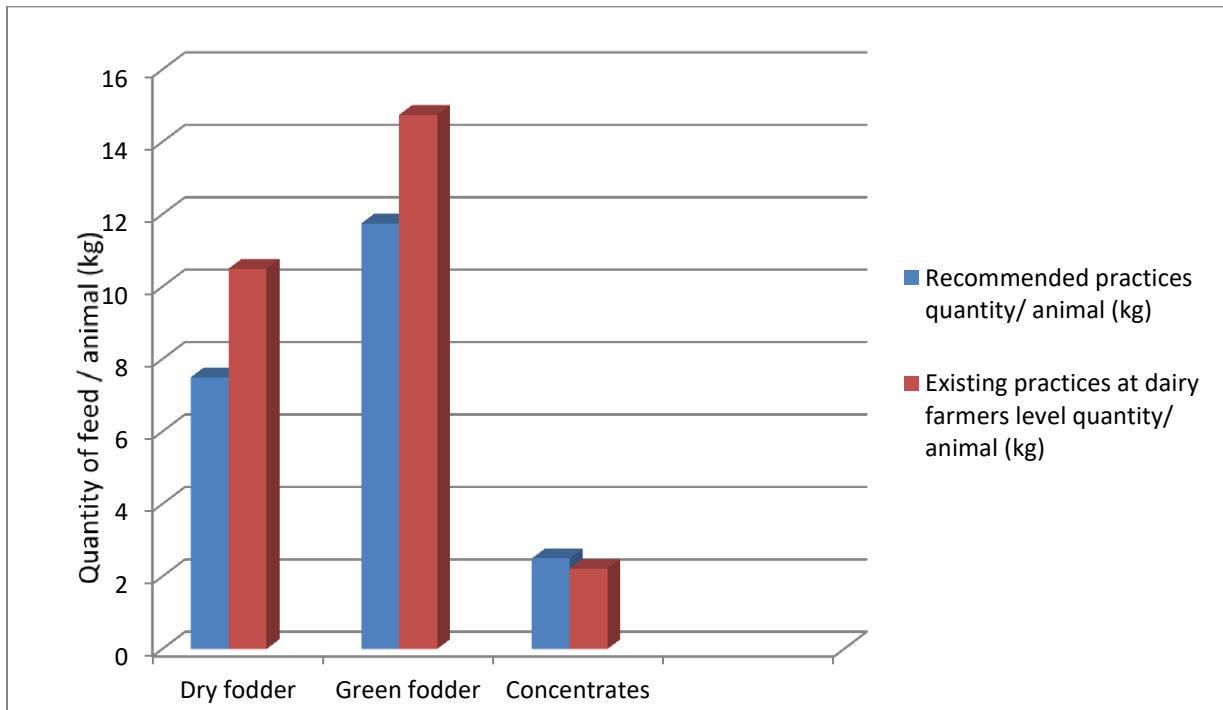


Fig. 4.14. Distribution gap of feeding management practices over recommended practices of buffaloes at large category of farmers

Table 34: Gap of adopted feeding management practices over recommended practices of buffaloes by overall category of farmers

Sr. No.	Feed items	Recommended practices	Existing practices at dairy farmers level	Feed management gap
		Quantity/animal (kg)	Quantity/animal (kg)	Quantity/animal (kg)
1	Dry fodder	8.00 (100)	9.90 (123.75)	+1.90 (23.75)
2	Green fodder	15.50 (100)	10.17 (65.61)	-5.33 (34.39)
3	Concentrates	2.50 (100)	1.91 (76.40)	-0.59 (23.60)

(on an average body weight of 300 kg)

It was indicated from Table 34 that the dairy farmers fed their buffalo with green fodder 10.17 kg, dry fodder 9.90 kg and concentrates 1.91 kg. They fed overall extra dry fodder as 23.75 per cent. Wide gap has also observed in green fodder as 34.39 per cent and concentrates 23.60 per cent. To fulfill this gap the dairy farmers should be aware about importance of balanced diet, cultivation of fodder crops in case of buffaloes. Above findings was similar with Sarap *et al.* (2012).

4.4. Feeding status

Sufficient supplies of feed and fodder are a critical factor influencing animal performance. The composition of wheat in cattle and buffalo in comparison to the hereditary strengths of the animals to the quality and quantity of forage and feed allowed by the animals therefore deciding the current status of farmers feeding practices.

4.4.1. Grazing

Ruminant receive part or most of the feed required by grazing. Large ruminants take approximately 54-60.00 per cent of the dry matter from agricultural waste. Data on dairy animal grazing is given below.

4.4.2. Grazing distance

In order to obtain profit economically animal grazing is important. The distance between the feeding area and the animal shed is feeding distance. Common grazing regions used in rural areas are land and indigenous pasture bunds. The animals were to walk 0.5 to 3 km. There were no reserved grasslands or common

grasslands. The animals were taken into the field and allowed on the field borders and low lying fields to graze typical grasses.

4.4.3. Type of grazing

Wild pasture and field bunds were widely used as a grazing region. Dairy producers usually used field bunds as a grazing region. Around 85.00 per cent of holders took their those animals for grazing on government bunds and only 15.00 per cent of farmers took them on farmer field. The use and availability of border and field grasses in study area was reported by Saha *et al.* (1991).

4.4.4. Time of grazing

Essentially at 10:00 am-11:00 am in the morning all dairy farmers took their animals for grazing returns during the evening at 5:00 pm-6:00 pm. Animals have been involved in grazing for some 6-7 hours. Similar practice had also been reported by Belli and Manjula (1997).

4.4.5. Stall feeding

During the investigation it was found that dairy farmers fed their animals either dry fodder (purchased or homegrown) or green fodder according to availability.

4.4.6. Feeding dry roughages

During the investigation it was seen that dairy farmers fed their animals either dry fodder (purchased or homegrown) and green fodder as per availability.

Table 35: Mean dry roughages offered to various dairy animals by group of dairy farmers

Types of farmers	Mean daily dry roughages offered (kg /animal)		
	Buffalo	Crossbred cows	Indigenous cows
Landless	7.05	9.20	5.05
Marginal	7.80	10.40	5.30
Medium	8.50	10.25	6.55
Large	9.40	10.70	7.85

Table 35 shows that 7.05, 7.80, 8.50, and 9.40 kg, respectively dry roughage was given to one milk buffalo by landless, marginal, medium and large farmers each. Similar practices was observations was reported by Lall *et al.* (1998).

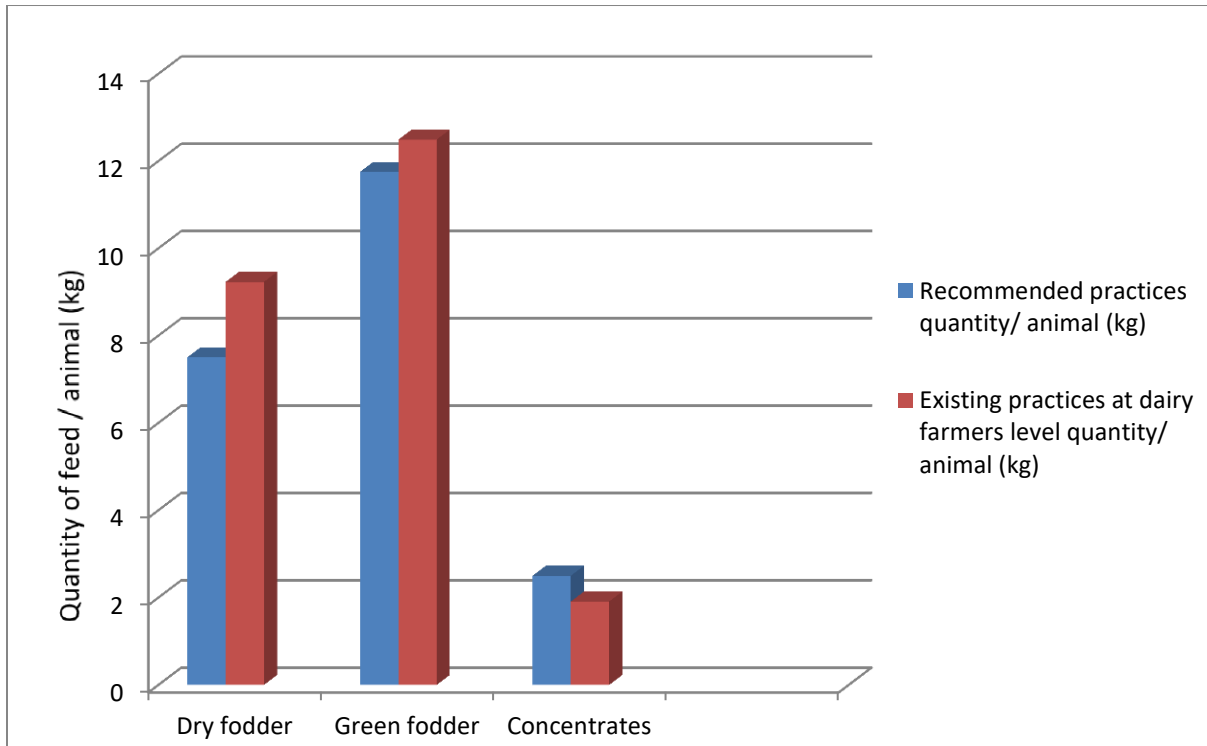


Fig. 4.15. Distribution gap of feeding management practices over recommended practices of buffaloes at overall category of farmers

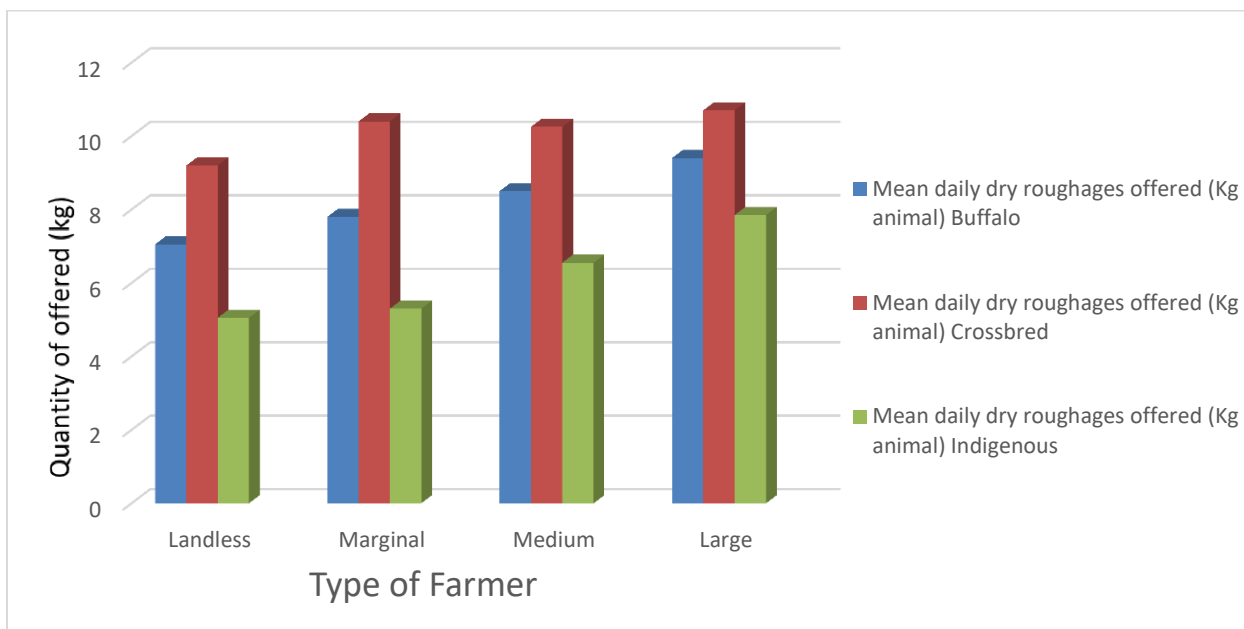


Fig 4.16. Distribution of farmers according to daily dry roughages offered to animals

The quantity of dry roughage offered to crossbred cows by landless, marginal, medium and large farmers became 9.20, 10.40, 10.25 and 10.70 kg, respectively each. The amount of dry roughage given daily from large and medium-sized producers to crossbred cows was significantly different. Also reported similar results by Jadhav (1973).

Table 35 shows that all dairy farmers provided roughage in the ranges of 5.05 to merely 7.85 kg per day were the most overlooked among the different forms of dairy animals. Further landless farmers provided nearly to half of the roughage given by a large farmers. One buffalo can get dry roughage in the range of 7.05 to 9.40 kg / day compared to crossbred cows having a minimum of 9.20 to maximum of 10.70 kg / day.

4.4.7. Feeding green roughages

Recent information on the quantity of green roughage feeding by landless, marginal, medium and large farmers to milk cows and buffalo were compiled for analysis of the results and describes the findings in Table 36.

Table 36: Mean green roughages offered to various dairy animals by group of dairy farmers

Types of farmers	Mean daily green roughages offered (kg/animal)		
	Buffalo	Crossbred cows	Indigenous cows
Landless	9.95	12.20	6.45
Marginal	10.50	13.40	7.82
Medium	12.70	13.20	8.50
Large	13.20	13.70	10.60

This could be observed that the landless farmers fed buffalo had less green roughage relative to all others. Buffalo of large farmers obtained the largest amount of green roughage.

The Table 36 shows that the indigenous cows were mostly among the different forms of milk animals by all the farmers offering green roughage in the range of 6.45 to merely 10.60 kg per day. In contrast to crossbred cows getting a minimum of 12.20 to a maximum of 13.70 kg / day, and each buffalo obtained get roughage in the range of 9.95 to 13.20 kg / day.

4.4.8. Feeding concentrate

Farmers to fed concentrate to their milk animals. Data gathered and introduced for this dimension in Table 37.

Table 37: Mean concentrate offered to various dairy animals by group of dairy farmers

Types of farmers	Mean daily concentrate offered (kg/animal)		
	Buffalo	Crossbred cows	Indigenous cows
Landless	1.50	2.10	0.50
Marginal	1.70	2.05	1.00
Medium	2.00	2.70	1.40
Large	2.30	3.00	1.70

A landless farmer provided their buffaloes with 1.50 kg of concentrate, whereas, marginal 1.70, medium 2.00 and large 2.30 kg. The statistical analysis showed that the concentrate feeding by large farmers was substantially higher than that of the remaining farmers. Marginal farmers certainly fed their buffaloes with less concentrates than landless farmers. The farmers told during the survey that there was no sufficient amount of concentrate fed in relation to the quantity of daily milk produced by (Singh *et al.* 1998). In contrast with all these results the current finding is very poor, recorded which landless, marginal, medium and large farmers feeding 2.10, 2.05, 2.70 and 3.00 kg concentrate daily, collectively. Concentrates obtained by crossbred animals was 2.10 to 3.00 kg daily irrespective of their production performance. Give little more importance by Kumar *et al.* (2005).

4.4.9. Feeding preserved roughages

This was found by personal experience that 120 dairy farmers did not informed the process of preserving roughage of either silage or hay.

4.5. Adoption of management practices

4.5.1. Cleaning tools of trying to milk sanitization the hands until milk production then washing until going to milk the teats. That farmers adopted artificial insemination. Much of the livestock were supported by farmers at a particular time. When synthetic paper was coated dried feed was preserved inside an empty field.

4.5.2. Not really single dairy farmer fed minerals and vitamins in the correct ratio to their animals in the survey region. Nutrient deficit damage to wildlife across the continent in a

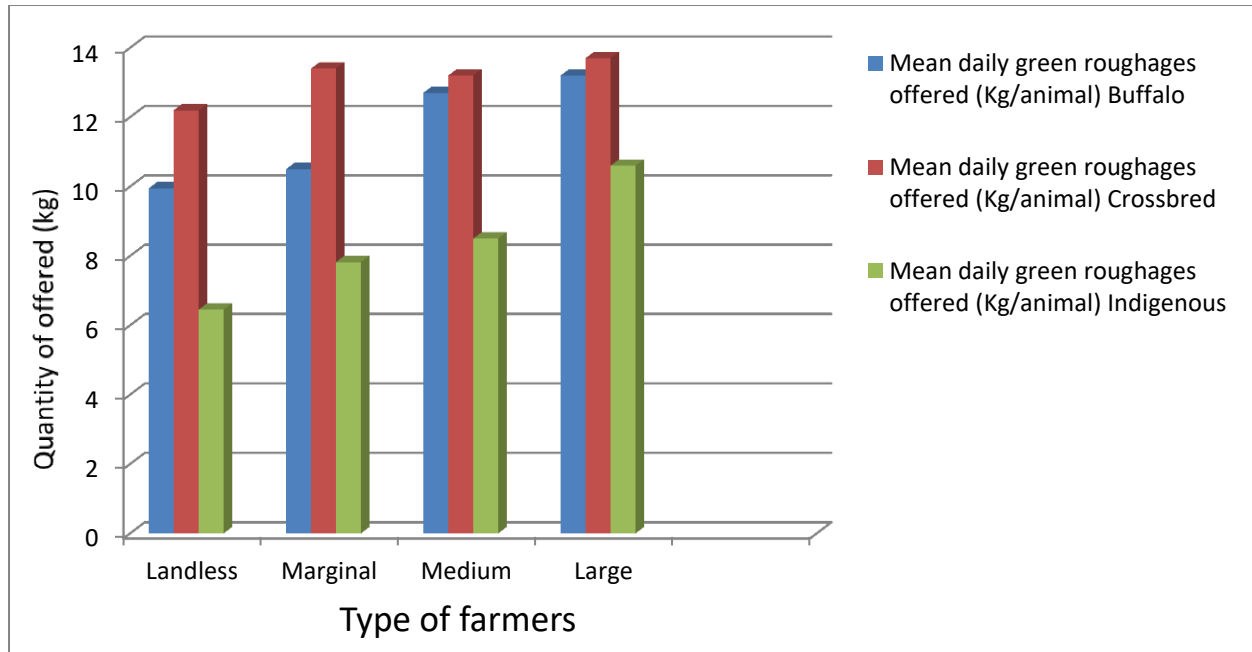


Fig. 4.17. Distribution of farmers according to mean daily green roughages offered to animals

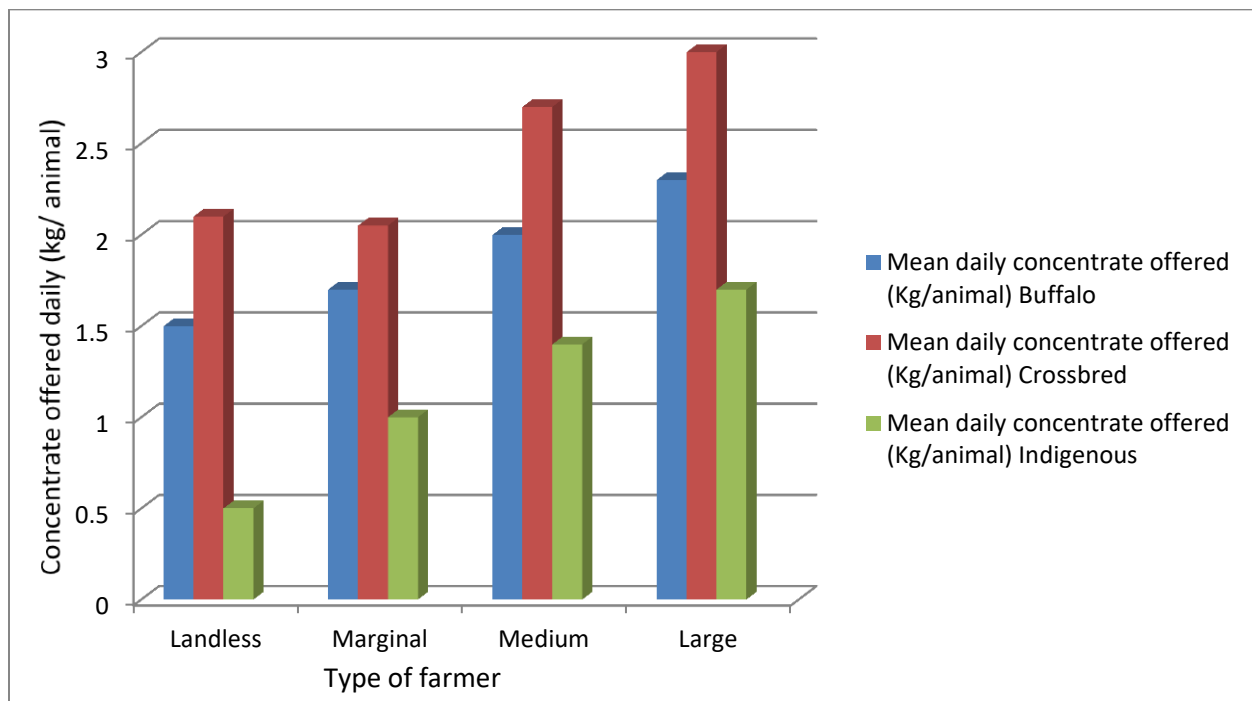


Fig. 4.18. Distribution of farmers on the basis of mean daily concentrate offered to animals

variety of ways (Garg *et al.* 2010). However, common salt was the only mineral often used in the survey region. It is added to water and drained and fed to dairy animals on dry fodder. Such nutrient feeding process was not performed periodically but as per requirements. From the results 60.00 per cent of farmers were seen to feed their animals with salt. Similar outcomes were also found by Dhimani *et al.* (1990).

4.5.3. Even then 82 out of 120 dairy farmers used jaggery for their animals but sometime after the calving and not maximum pump mostly during lactation, urea supplementation was also uncertain to animal.

4.6. Facility expected for dairy activity

At the time of personal interview of farmers data was obtained on about their social status and expectation about dairy activity as easy availability of loan for dairy development, supply of crossbred animals and timely milk sale from collection centre, insurance of the animals. Result of this study is shown in following Table: 38.

Table 38: Facilities expected for dairy activities by dairy farmers

Sr. No.	Facility expect for dairy activity	Landless	Marginal	Medium	Large	Total
1	Easy loan facilities	5 (100)	56 (86.15)	30 (85.71)	6 (40.00)	97 (79.35)
2	Availability of crossbred animal	4 (80.00)	55 (84.61)	32 (91.42)	7 (46.66)	98 (75.67)
3	Timely receipt of milk sale	5 (100)	60 (92.30)	30 (85.71)	10 (66.66)	105 (86.16)
4	Insurance of animal	3 (60.00)	33 (50.76)	18 (51.42)	8 (53.33)	62 (53.87)
5	Veterinary facilities	4 (80.00)	36 (55.38)	21 (60.00)	10 (66.66)	71 (65.51)
6	Ensured supply of feed and fodder	5 (100)	61 (93.84)	31 (88.57)	10 (66.66)	107 (87.26)
7	Disease diagnostic facilities at door step	5 (100)	58 (89.23)	28 (80.00)	8 (53.33)	99 (80.64)

(Figures in parenthesis shows percentage of respective farmers)

The results of this research indicated that the maximum number i.e. 97 (79.35 per cent) dairy farmers expected easy loan facilities because of need to purchase feed, fodder and healthy animals. Thereafter 107 (87.26 per cent) dairy farmers expect ensured supply of feed and fodder because scarcity of feed and

fodder found round the year, 105 (86.16 per cent) responded to timely receipt of milk sale whereas, 98 (75.67 per cent) expected availability of crossbred animals for higher milk production. The 99 (80.64 per cent) dairy farmers expected disease diagnostic facilities at door step. The 71 (65.51 per cent) dairy farmers expected veterinary – AI facility for animal health care and management, and remaining 62 (53.87 per cent) dairy farmers expected insurance of animals to avoid mortality loss.

4.7. Constraints in dairying

The information of limitations in dairy production by every milk farmer were recorded and provided in Table 39.

Table 39: Constraints in dairying by various groups of dairy farmers

Sr. No.	Constraints	Landless	Marginal	Medium	Large	Total
1	Feeding animal due to scarcity of feeds	4 [80.00]	37 [56.92]	21 [60.00]	10 [66.66]	72 [65.89]
2	Health care management	4 [80.00]	52 [80.00]	32 [91.42]	6 [40.00]	94 [72.85]
3	Calf rearing	4 [80.00]	55 [84.61]	33 [94.28]	6 [40.00]	98 [74.72]
4	Reproductive problem	5 [100]	40 [61.53]	22 [62.85]	9 [60.00]	76 [71.09]
5	High cost of animal feed	4 [80.00]	38 [58.46]	22 [62.85]	10 [66.66]	74 [66.99]
6	Unavailability of veterinary aids	3 [60.00]	34 [52.30]	19 [54.28]	8 [53.33]	64 [54.97]
7	Unavailability of pasture land	2 [40.00]	20 [30.76]	15 [42.85]	6 [40.00]	43 [38.40]
8	Unavailability of proven sire	2 [40.00]	20 [30.76]	18 [51.42]	6 [40.00]	46 [40.54]
9	Disposal of milk	4 [80.00]	60 [92.30]	30 [85.71]	10 [66.66]	104 [81.16]

(Figures in parenthesis shows percentage of respective farmers)

It was observed from Table 39 that about 94 (72.85 per cent) of the farmers had constraints in health care management. Then the problem of high cost of animal influencing on the social-economical status of farmer were observed in about 74

(66.99 per cent) in studied villages. Feeding animals due to scarcity of feeds round the year had been faced by 72 (65.89 per cent) respondents. In case of veterinary care hospital 63.50 per cent of respondents faced the problem. The 40.54 per cent had faced problem of unavailability of proven sire. About 76 (71.09 per cent) dairy farmers faced the reproductive problems for their cattle. The similar results were reported by Kulkarni *et al.* (1990) and Tomar and Thakur *et al.* (2002).



*Summary and
Conclusions*

CHAPTER -V

SUMMARY AND CONCLUSIONS

The present investigation was carried out in order to study the “Feeding and Management Practices of Dairy Animals in Udgir Tahsil of Latur District” of Maharashtra state. The sample consists of 120 farmers from 10 villages which were selected randomly. The objectives of study were as follows:

- 5.1. To study the feeding status of dairy animals
- 5.2. To find out the gap between recommended feeding practices and adopted feeding practices
- 5.3. To study the constraints in feeding and management practices

The findings are as below.

5.1. Socio-economic status of dairy farmer

5.1.1. Age

The dairy farmers belonged to the 20-30, 31-40, 41-50, 51-60 and > 60 age groups at the time of data collection with 17.50, 36.66, 24.16, 14.16 and 7.50 per cent, respectively. Number of farmer 21, 44, 29, 17, 9.0 higher in dairy production was shown by the age group among 31-40. This may be explained by the fact that agriculture is a recurring revenue-generating sector that adds significantly to family income.

5.1.2. Level of education

From selected villages the maximum farmers engaged were having higher secondary with education 26.66 per cent, followed by middle, secondary, primary, Illiterate and graduate with 24.16, 16.66, 14.16, 10.00 and 8.33 per cent, respectively. Reason of maximum people educated least standard is lack of interest, their low economic status and lack of encouragement etc.

5.1.3. Number of dairy animals kept per farmer according to size of land holding

Five groups were listed including landless farmers, marginal farmers, small farmers, medium-sized farmers and large farmers. The dairy farmer landless 5.0, marginal 30, small 35, medium 35, large 15 of farm animals as landless farmers

(4.16 per cent), marginal (25.00 per cent), small (29.16 per cent), medium (29.16 per cent) and large (12.50 per cent).

5.1.4. Distribution of dairy animals

The maximum number of animals owned by 120 farmers was 58.33 per cent of the 1-2 number buffalo and 55.65 per cent of the cows. Many farmers included cows that are indigenous. The outcome trend showed that in order to satisfy the needs of the dairy animals and for extra funding farmers primarily maintained buffaloes and cows for milk production.

5.1.5. Family size

That family equivalent of a small dairy farmer is 5.50, the largest percentage of farmer were under the nuclear family (65.66 per cent), followed by joint family (34.34 per cent) and there no single farmer under single member of the family.

5.1.6. Occupation

The highest (79.16 per cent) population was engaged in dairy + agriculture. Whereas, 11.66 per cent farmers were engaged in dairy + agriculture + business and 2.50 per cent engaged in dairy and 6.66 per cent were engaged in dairy + agriculture + services category.

5.2. Gap of feeding management practices over recommended practices of cattle

The wide gap recorded in feeding and management practices in cattle for green fodder and concentrate as 33.34 and 40.00 per cent, respectively. The ultimate disparity was found in grazing management practices of cattle. The surplus dry fodder for milk cattle was fed to the degree of 19.71 per cent over specified feeding practices.

5.2.1. Gap of feeding management practices over recommended practices of buffaloes

The average difference in feeding management strategies for buffaloes were observed as 34.39 and 23.60 per cent for green fodder and concentrate, respectively. The surplus dry fodder was fed to the degree of 23.75 per cent over the prescribed feeding practices for milk buffaloes.

5.3. Feeding status

Dairy animals were fed on average 10-16 kg of green roughage in the form of jowar, grass, bajra and 4-8 kg of dry roughages in the type of *kadbi* and specific livestock being made accessible to dry grass. The farmers permitted their livestock to graze in the forest and in desert land during the day.

5.4. Adoption of management practices

Cleaning tools of trying to milk sanitization the hands until milk production then washing until going to milk the teats. That farmers adopted artificial insemination. Much of the livestock were supported by farmers at a particular time. When synthetic paper was coated dried feed was preserved inside an empty field.

5.5. Facility expected for dairy activity

Maximum number of farmers expected timely milk sale 105 (86.16 per cent). About 107 (87.26 per cent) dairy farmers expected ensured supply of feed and fodder because scarcity of feed and fodder round the year. The 97 (79.35 per cent) dairy farmers expected easy loan facilities for purchase of feed and fodder and purchasing healthy animals. Whereas, 98 (75.67 per cent) farmers expected availability of crossbred animals for higher milk production. The 99 (80.64 per cent) dairy farmers required disease diagnostic facilities at door step. The 71 (65.51 per cent) dairy farmers expected veterinary – AI facility for animal health care and management. The least number of dairy farmers 62 (53.87 per cent) expected insurance of animal.

5.6. Constraints

Limitations considered in the specific location by the dairy farmers were the nutrition of the livestock because of scarcity of feeds (65.89 per cent), disposal of milk (81.16 per cent), unavailability of proven sire (40.54 per cent), high cost of animal feed (66.99 per cent), unavailability of pasture (38.40 per cent), and reproductive problems (71.09 per cent). The farmers perceived problems in calf rearing (74.72 per cent), unavailability of veterinary aids at farmers door step (54.97 per cent) and in health care management (72.85 per cent).

CONCLUSIONS

It has been concluded from the present investigation that,

- 1) The majority of farmers belonged to the 31-40 years age category.
- 2) Higher secondary education and secondary education were the stages of employment for many other families.
- 3) The largest of the managers of livestock belong to a group of marginal land ownership.
- 4) The majority of dairy producers have HF crossbred animals.
- 5) The population increase belongs to the family structure and is active in dairy + agriculture.
- 6) The highest size of dairy farmers would have easy loan facilities for improved animal husbandry and improved efficiency.
- 7) The main limitation experienced to selected villages by dairy producers as the scarcity of quality feed.
- 8) The gap between recommended feeding management strategies of majority in buffaloes reported as 34.39 and 23.60 per cent for green fodder and concentrates respectively.
- 9) The dry fodder was feed to the degree 23.75 per cent over most of the prescribed feeding practices in milk buffaloes.



Literature Cited

LITERATURE CITED

- Anomymous, 2012. Livestock Census, 2012. Maharashtra State.
- Anomymous, 2015. Livestock Census. Dairying in Maharashtra, A Statistical Profile, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Government of India.
- Avinashilingam, V., Singh, U. and Kumar. 2011. Ascertainning the Role Performed by Paniya Tribal Households in Breeding, Feeding, Health Care and Management Practices of Dairy Farming. *Indian J. Anim. Sci.*, **81** (9): 977-980.
- Bainwad, D. V., Deshmukh, B. R., Thombre, B. M. and Chauhan, D. S. 2007. Feeding and Management Practices Adopted by Buffalo Owners Under Watershed Area. *Indian J. Anim. Res.*, **41** (1): 68-70.
- Balain D. S. and Rathi, S. S. 1988. Care and Management of Milch Cows-Some Useful Tips. *Dairy Guide.*, **10** (10-12): 33-36.
- Baloda, S., Sihag, S., Kumar, R. and Shunthwal, J. 2018. Feeding Practices of Lactating Buffaloes in Gurgaon District of Haryana. *Indian Res. Int. J. Sci.*, **7** (4): 1417-1423.
- Baxi, R. M. 1999. Nutritional Status of Milch Animals in Nagpur Tehsils. MSc. (Agri) *thesis* submitted to Dr. PDKV, Akola.
- Belli, R. B. and Manjula, N. 1997. Adoption of Dairy Management Practices of Tribal Gavalis. *Maharashtra J. Exten. Edn.* **16**: 137-142.
- Bharathidharan, S., Walli, T. K. and Balakrishnan, V. 2007. Feed Resources and Feeding Practices in Tamilnadu and the Scope for Nutritional Interventions for Increasing the Productivity of Dairy Animals. *Indian Dairyman.*, **59** (6): 39-45.
- Chavan, S. R., Deshmukh, D. S., Manish Sawant and Gangane, G. R. 2016. Adoption of Scientific Feeding Practices by Buffalo Dairy Entrepreneurs in Peri-Urban Area. *Int. J. Advanced Res.*, **4** (2): 1275-1280.
- Chatterjee, J. and Singh, L. 1989. Impact of Dairy Co-operatives on Production, Consumption, and Marketing Surplus of Milk. *Indian Dairyman.* **41** (7): 57-64.

- Chinchwade, M. S., Chavan, K. D. and Bhoite, U. Y. 2008. A Study on Management Practices Followed by at Private Buffalo Farms in the Vicinity of Pune City. *J. Maha. Agri. Universities.*, **33** (3): 383 - 386.
- Dhaka, B. L., Chayal, K. and Poonia, M. K. 2011. Identification of Constraints Limiting the Productivity of Livestock and Strategies for its Improvement in Bundi District of Rajasthan. *Indian J. Anim. Sci.*, **81** (1): 94-96.
- Dhammu, A. S. and Gill, M. S. 2002. Profile and Knowledge of Dairy Farmers with Special Reference to Repeat Breeding in Punjab State. *Rural India*. Nov-Dec: 247-250.
- Dhimani, P. C., Singh, N. and Yadav, B. L. 1990. A Study of Dairy Cattle and Buffalo Management Practices in Adopt and Non-Adopted Village of Hissar District (Haryana). *Indian J. Anim. Prod. Mang.* **6** (2): 84-89.
- Dhindsa, S. S., Nanda S. and Kumar B. 2014. Problems and Constraints of Dairy Farming in Fatehgarh Sahib District of Punjab. *Society for Sci. Dev. In Agric. and Tech.*, **9** (1): 250-252.
- Gangil, D. and Dabas, Y. P. 2005. Effect of Socio-Economic Variables on the Level of Knowledge and Training Needs of Livestock. *Kurukshetra.*, **53** (4):11-15.
- Garg, M. R., Bhanderi, B. M. Biradar, S. A. Kukreja, J. L. and Sherasia, P. L. 2010. Dietary Mineral Status of Lactating Buffaloes in Kolhapur District of Maharashtra State in India. *Ital. J. Anim. Sci.*, **6** (2): 484-487.
- Gautam, M. Kakati, B. K., Mukesh, Bhakat, and Mughal, A. H. 2014. Feeding Practices and Strategic Supplementation to Augment Milk Production in Kargil. *Indian J. Anim. Nutr.*, **31** (3): 306-31.
- Ghuge, S. S. 2014. Studies on Feeding Management Practices Adopted for Cattle in Sugarcane Pockets of Nanded District. M.Sc. (Agri.) *Thesis* Submitted to VNMKV, Parbhani (MS).
- Handa, M. C. and Gill, R. S. 1989. Nutritional Status of Dairy Animals Kept by Different Categories of Farmers in Punjab State. *Indian J. Anim. Nutr.*, **6** (1): 38-43.
- Heere, L. B. and Choudhari, J. L. 2008. Effect of Feeding Formaldehyde Treated Cake on Milk Yield and Composition of Lactating Crossbred Cow. *Indian. J. Dairy Sci.*, **61** (2): 116-117.

- Hole M. R. 2016. Studies on Management Practices Followed by Cattle and Buffalo Owners in Latur Tahshil. M. Sc. (Agri.) *thesis* submitted to Vasanttrao Naik Marathwada Krushi Vidyapeeth, Parbhani.
- Ingole, N. P., Saigaonkar, P. B. and Kothekar, M. D. 1987. Adoption of Improved Animal Husbandry Practices by Owners of Crossbred. *Mah. J. Ext. Edu.* **6** (3) 225-227.
- Iqbal, M. A. Asif Iqbal, Nadeem, A., Haroon, Z. K. and Rana, N. Abbas. 2015. A Study on Feed Stuffs Role in Enhancing the Productivity of Milch Animals in Pakistan- Existing Scenario and Future Prospect. *Global Veterinaria.*, **14** (1): 23-33.
- Jadhav, R. A. 1973. Studies on the Nutritional Status of Cattle and Buffaloes in Extention Block. Agril. College, Parbhani. M.Sc. Agri. *Thesis* submit to MAU, Parbhani.
- Jadhav, S. J., Durgga, R., Pansuriya, J. H. and Chaudhary. 2020. Feeding Practices of Dairy Animals in Periurban Areas of Surat District. Gujrat. *Int. J. Res.*, **1** (3): 20-25.
- Kalyankar, S. D., Chavan, A. A., Khedkar, C. D. and Kalyankar, S. P. 2008. Studies on Management Practices of Buffaloes in Different Agro Climatic Zone of Maharashtra. *Indian J. Anim. Res.*, **42** (3):157-163.
- Kalyankar, S. D., Gujar, B. V. Patange, D. D. Patil G. R. and Londhe, G. K. 2004. Adoption of Dairy Management Practices of Marathwadi Buffaloes in Their Home Tract. *Indian J. of Dairy Sci.*, **57**. (6):421-423.
- Kannan, A., Garg, M. R. and Kumar. 2011. Effect of Ration Balancing on Milk Production, Microbial Protein Synthesis and Methane Emission in Crossbred Cows Under Field Condition in Chittoor District of Andhra Pradesh. *Indian J. Anim. Nutri.*, **28** (2): 117-123.
- Kavthalkar, N. G., Patil, S. R., Kankhare, D. H., Desale, R. J. and Mane, S. H. 2007. Constraints in Adoption of Scientific Recommendations in Feeding of Dairy Animals in Nagpur District (Maharashtra). *Indian Dairyman.*, **59** (12): 51-55.

- Khan, S. R., Singh, S. K. and Mudgal vishal. 2010. Effect of Feeding Complete Ration on the Performance of Lactating Crossbred Cows. *India J. Anim. Nutri.* **27** (3): 261-264.
- Khupse, T. S. Dhuimal, V.P. and Nimbalkar, S.P. (1980). Adoption of Improved Dairy Management Practices. *Livestock Advisor.*, **11** (6): 11-14.
- Kulkarni, V. V., Bhopale, R. S. and Chede, P. N. 1990. Constraints in Adoption of Dairy Technologies by Dairy Farmers. *Maha. J. Extn. Edu.*, **9** (8): 137-140.
- Kumar N. 1994. Tips for Higher Milk Yield from Dairy Cattle. *Dairy Guide.*, **16** (1-3): 12-13.
- Kumar, M. Mehla, R. K. and Chandra, R. R. 2005. Feeding and Housing Management Practices of Nili-Ravi Buffalo Under Field Conditions. *Indian J. Dairy Sci.*, **58** (5): 376-378.
- Kumar, S., Kumar, B., Kumar, R. and Gopal, S. 2012. Farmers Opinion to Reduce the Constraints in Scientific Dairy Farming Practices. *Indian J. Anim. Sci.*, **82** (7): 762-766.
- Kumar, N., Tkui, K., Tegegne, D. T. and Mebratu, A. T. 2014. Productive Performance of Crossbred Dairy Cows and Constraints Faced by Dairy Farmers in Mekelle, Ethiopia. *IOSR J. Agriculture and Veterinary Science.* 2319-2380.
- Kuterovac, K., Balas, S., Gantner, V. and Jovanovac, S. 2019. Evaluation of Nutritional Status of Dairy Cow Based on Milk Analysis Results Chitter District of Andhandra Pradesh. *Italian J. Anim. Sci.*, **5** (9): 56-85.
- Lall, S. N., Varma, D. N. and Singh, S. P. 1998. Nutritional Status of Lactating Murrah Buffaloes Kept by Different Categories of Farmers in Eastern U.P. *Indian J. Anim. Nurt.*, **15** (1): 44-47.
- Leng R. A. 1989. Feeding Strategies for Improving Milk Production of Dairy Animals Managed by Small Farmers. *Tropics.* 82.
- Mali, N. G. and Ligade, D. N. 2014. The Socio-Economic Status of Livestock Farmers: A Micro Level Study of Donaj Village in Mangalwedha Tahsil of Solapur District (Ms). *ISSN.* **3** (3): 21-26.

- Misra, R. K. and Pal, P. K. 2003. Prospectus and Constraints of Dairying in Rural Bengal, a Case Study. *Indian Dairyman.*, **55** (12): 55-59.
- Mote, M. G. Tambat, R. V. and Chudhari, M. R. 1997. Influence of Selected Characteristics of Dairy Farmers on Milk Production. *Maharashtra J. Extn. Edu.* **16**:235-240.
- Mooventhan, P., Kadian, K. S., Senthilkumar, R., Manimaran, A., Meena, B. S. and Karpagam, C. 2016. Assessment of Tribal Dairy Farmers Perceived Importance, Level of Awareness and Constraints in the Adoption of Good Feeding Practices. *Range Management and Agroforestry.* **37** (1): 98-110.
- Muhammad A. I., Asif I., Nadeem A., Haroon Z. K., and Rana N. A. 2015. A Study on Feed Stuffs Role in Enhancing the Productivity of Milch Animals in Pakistan Existing Scenario and Future Prospect. *Global Veterinaria.* **14** (1): 23-33.
- Mutumura, M., Lussa, A. B., Mutabazi, J., Myambi, C. B., Cyamweshi, R. A. and Ebong, C. 2013. Status of Animal Feed Resources in Rwanda. *Tropical Grasslands – Forrajes Tropicales.* **1.** 109–110.
- Nagaraju, D. P., Ramaiah, G. Sankhala and Fulzede, R. M. 2002. A Study on Technological Gap in Improved Dairy Farming Practices Among Koyas. *The Andhra Agri. J.* **49** (1 and 2): 115-121.
- Nale, G. S. 2014. Studies on Feeding Management Practices Adopted for Cattle in Sugarcane Pockets of Parbhani District. *M.sc. (Agri.) Thesis Submitted to VNMKV, Parbhani (Maharashtra).*
- Narayan, L., Meena, G. L. and Upadhyay, B. 2014. Constraints Analysis of Dairy Farming in Banswara District. *Indian. J. Extn. Educ. & R.D.* **22**: 81-84.
- Nayak, D. P. and Maitra, D. N. 1983. Efficiency of Nutrient Utilization For Milk Production in Crossbred Cows Under Hot and Humid Agroclimatic Condition. *Indian J. Dairy Sci.*, **36** (2):134-140.
- Panse, V. G. and Sukhatme, P. V. 1967. Statistical Methods for Agriculture Workers. *4th Edn.* ICAR, New Delhi.
- Paliwal, V. K., Gupta, P. C. and Sagar, V. 1992. Unconventional Feed Resources for Livestock Feeding. *Livestock Advisor.* **17** (3): 6-8.

- Patil, B. N. and Kamble, D. K. 2002. Dubhatya Janawaransathi Santulit Aahar (Balanced Ration for Milking Animals), Kisan Shakti, Kolhapur. *Animal Husbandry and Dairy Special*. **5** (1): 47-55.
- Rajendran, K. and Prabhakaran, R. 1992. Current Status and Problems in Feeding and Breeding Management of Milch Animal. *Indian Dairyman.*, **44** (6): 276-278.
- Rajat, B. and Girin Kalita. 2014. Nutritional Status of Lactating Dairy Cattle Under Rural Feeding Management in Mizoram. *J. Hill Agriculture.*, **5** (2): 122-127.
- Raut, K. C. and Amble, V. N. 1969. Cost of Milk Production: Investigation of Agricultural Statistic, I.C.A.R., New Delhi, Agriculture situation in India., **23** (2): 1434-1436.
- Reddy, V. A., Raghunandan, T., Kumar, M. K. and Prakash, G. M. 2013. Studies on the Socio- Economic Profile and Constraints Faced by the Farmers Rearing Jersey x Sahiwal Cows in Chittoor District of Andhra Pradesh. *Int. J. Sci, Environment and Technology*. **2** (3): 404-409.
- Sabale, T. D., Chauhan, D. S. and Jagdale, V. Y. 2018. Studies on Feeding and Management Practices Adopted in Livestock Fodder Camps During Drought in Wadwani and Dharur Tehsil of Beed District. *Int. J. Chem. Studies.*, **6** (4): 2403-2409.
- Sabapara, G. P., Desai, P. N., Singh, R. R. and Kharadi, V. B. 2012. Constraints of Tribal Dairy Animals Owners of South Gujrat. *Indian J. Anim. Sci.*, **82** (5): 538-542.
- Saha, R. C., Basu, S. B. and Kale, M. M. 1991. Response of High Yielding Crossbreed Cow and Low Cost and Standard Feeding. *Indian J. Dairy Sci.*, **44** (1): 33- 42.
- Salo, S., Tadesse, G. and Haylemeskel, D. 2017. Survey on Constraints of Improved Forage Adoption in Anelemo Woreda, Hadiya Zone, Ethiopia. *Agri. Res. & Tech: Open Access J.*, **12** (2): 2471-6774.

- Sarap, K. W., Chavan, S. D., Shelke, R. R., Pawar, R. V., and Janorkar, H. P. 2012. Animal Husbandry Practices Followed by Cattle Owners in Karanja Tehsil of Washim district. *Res. J. Anim. Husbandry and Dairy Sci.*, **3** (1): 5- 12.
- Sejrsen, K. and Purup, S. 1997. Influence of Prepuberal Feeding Level on Milk yield Potential of Dairy Heifers. *J. Anim. Sci.*, **75** (5) :828-835.
- Sharma, F. L. and Intodia, S. L. 1991. Technological Gap in Adoption of Improved A.H. Practices. *Maharashtra J. Extn.*, **10** (2): 128-132.
- Sherasia, P. L., Phondba, B. T., Hossain, S. A., Patel, B. P. and Garg, M. R. 2015. Impact of Feeding Balanced Rations on Milk Production, Methane Emission, Metabolites and Feed Conversion Efficiency in Lactating Cows. *Indian J. Anim. Res.*, **50** (4): 505-511.
- Shinde, V. G., Sangale, G. K. and Dikale, R. N. 1998. Factor Associated with Adoption of Dairy Farmers. *Maha. J. Extn. Edu.*, **17** (9): 109-117.
- Shirsat, R. A., Dakhore, K. M. and Dikle, R. N. 1991. Adoption of Improved Dairy Management Practices by Cattle Owners. *Maharashtra J. Extn. Edu.* **13** (2): 227-238.
- Shisode, M.G. 2009. The Constraints Expressed by the Dairy Cattle Owners. *Rajarambapu Patil Dudh Sangh. Indian J. Field Vet.*, **5** (1): 70-75.
- Singh, A. K., Vidyarthi, V. K. and Verma, D. N. 1998. Nutritional Status of Buffaloes in Rural Areas of Azamgarh District of U.P. *Indian J. Anim. Nutr.*, **5** (2): 126-128.
- Singh, P. R., Singh, M. and Jaiswal, R. S. 2004. Constraints and Strategies in Rural Livestock Farming in Almora District in Hilly Uttaranchal. *Indian J. Anim. Res.*, **38** (2): 91-95.
- Singh, M. and Chauhan, A. 2006. Constraints Faced by the Dairy Owners in Adoption of Scientific Dairy Farming Practices. *Indian J. Dairy Sci.*, **59** (1): 49-51.
- Suleiman, T. S., Mdegela, R. H. and Karimuribo, E. D. 2016. Characteristics of Dairy Farming and Its Effect on Milk Production: A Case Study of Unguja Island of Zanzibar, Tanzania. *Livestock Rese. For Rural Development.* **28**: 174.

- Taylor, R., Meena, G. L., Sharma, L. and Sharma, F. L. 2012. Constraints Faced by the Tribal Farmers in Dairy Farming in Udaipur District. *Raj. J. Extn. Edu.*, **20**: 187-189.
- Thakre, V. M., Shelke, R. R. and Gubbawar, S. G. 2011. Constraints in Adoption of Scientific Recommendation in Feeding of Dairy Cattle. *Res. J. of Anim. Husbandry and Dairy Sci.*, **2** (1&2): 86-89.
- Thombre, B. M. and Pawar, B. R. 1993. Profile Study of Crossbred cattle Owners in Maharashtra. *Maharashtra J. Extn. Edu.* **12**:369-370.
- Tomar, S. K. and Thakur, S. S. 2002. Feed Resources, Feeding Practices, Milk Production and Disposal Pattern in Karnal District (Haryana). *Indian J. Dairy Sci.*, **55** (5): 306-309.
- Tripathi, A. K. 1991. Availability of Nutritional Resources in the Eastern Region and Their Effective Utilization of Benefit Dairy Farmers. *Indian Dairyman.* **42** (12): 554-561.
- Virk, A. S. and Gupta, P. C. 1992. Feeding Practices of Calves, Heifers, Pregnant and Lactating Dairy Animals. *Dairy Guide.*, **14** (4-5): 13-14.
- Walthare, R. D., Lohakare, S. V. and Zinjarde, R. M. 1992. Impact of Different Factors Production. *Maharashtra J. Extn. Edu.*, **11** (8): 245-252.
- Wanapat, M., Foiklang, S., Kampanat, P., Chainarong, P., Thiwakorn, A., Thitima, N. and Sungchhang, K. 2017. On-farm Feeding Interventions to Increase Milk Production in Lactating Dairy Cows. *Tropical Anim. Health and Prod.*, **49** (4): 829-833.
- Waykar, V. K., Shelke, R. R., Chavan, S. D., Janokar, O. H. and Sakate, S. B. 2012. Study of Feeding and Management Practices Followed by Buffalo Owners in Patur Tahsil. *Rese. J. Anim. Husbandry and Dairy Sci.*, **3** (1): 34-40.
- Yadav, M., Jagadeeswary, E., Satyanarayan, V., Kiran, K. and Mohankumar, S. 2017. Fodder Resource Management in India- A Critical Analysis. *International J. Livestock Res.*, 158-165.
- Yadav M. L., Rajput D. S., Chand S. and Sharma N. K. 2014. Studies on Constraints in Livestock Management Practices Perceived Tribal Livestock Owners of Banswara District of Rajasthan. *Indian Res. Ext. Edu.*, **14** (4): 37-41.



Thesis Abstract

THESIS ABSTRACT

- a) Title of the thesis : **“FEEDING AND MANAGEMENT PRACTICES OF DAIRY ANIMALS IN UDGIR TAHSIL OF LATUR DISTRICT”**
- b) Name of student : **UDMALE ANIL BAPU**
- c) Degree to awarded : M.Sc. (Agriculture)
- d) Year of award of degree : 2020
- e) Major subject : Animal Husbandry
- f) Total number of pages in the thesis : 54
- g) Total number of words in thesis abstract : 378
- h) Signature of the student : **A. B. UDMALE**
- i) Signature, name and Address of Research Guide : **Dr. B. M. Thombre**
Associate Dean and Principal,
College of Agriculture, Aambajogai
VNMKV, Parbhani
- j) Signature, name and Address of forwarding authority : **Dr. G. K. Londhe**
HEAD
Dept. of Animal Husbandry and Dairy Science,
Vasanthrao Naik Marathwada Krishi Vidyapeeth,
Parbhani: 431402 (MS), India

ABSTRACT

The present investigation entitled “Feeding and Management Practices of Dairy Animals in Udgir Tahsil of Latur District” was undertaken to study the social status of farmers, different package of practices for feeding dairy animals with constraints in feeding to find out the gap between recommended and adopted feeding practices the 12 farmers from each 10 villages were selected to study in Udgir tahsil of Latur district with objective to study the feeding status of dairy animals, to find out the gap between recommended feeding practices and adapted feeding practices and to study the constraints in feeding and management practices. The data were collected from 120 respondent in 10 villages of Udgir tahsil. The study revealed that 4.16 per cent of the respondents were landless, 54.16 per cent of the respondents were marginal farmers, 29.16 per cent medium farmers, 12.50 per cent of the respondents were large farmers. Majority of livestock owners reared indigenous animals (64.78 per cent) followed by crossbreed (87.45 per cent) animal. All the farmers provided feed and fodder as decided by state government i.e. large animals were feed with 14 kg green fodder, 8 kg dry fodder and 0.500 gm concentrates. Whereas, small animals were feed with 8 kg green fodder, 3 kg dry fodder and 0.250 gm concentrates. In management practices vaccination and health checking of animals were followed by 50-65 per cent, while cleaning and sanitation of camp and animals practiced by 70.00 per cent. Artificial insemination technique was followed by 72.00 per cent farmers, whereas, 32.50 per cent of respondent followed mating of animals. In production performance, the majority of cow i.e. 45.00 per cent yielded 2.10 to 4.0 liters milk per day whereas, majority of buffalo i.e. 33.00 per cent yielded 4.10 to 6.00 liters milk per day. In constraints, feeding constraints, production and marketing constraints, of milk technical constraints and health related constraints were faced by farmers in livestock management. Various facilities like easy loan facility, availability of pasture land, insurance of animal, timely receipt of payment is expected by farmers. Hence, it may be concluded that there is need to demonstrate scientific feeding and management practices, management of fodder and water for summer season which is need for exploiting optimum milk production and proper management of livestock.



Appendix

- 4) Large farmer (more than 5 ha).
(NIC.DIT.MCIT.GOI –Std. classification for size of holding)

5. Family size :

Type of Family	Total no. of members	Male	Female	Children
Single member				
Nuclear family				
Joint family				

(Niranjan *et al.*1998)

6. Family occupation :

A) Main occupation of the farmer

Activities	No. of persons engaged		
	Male	Female	Children
Dairy			
Dairy + Service			
Dairy + Business			
Dairy + Agriculture			
Dairy + Poultry			
Dairy + Agriculture + Service			
Dairy + Agriculture + Business			
Dairy + Poultry + Agriculture			

B) Production and utilization status

1) Milk production status

S.N.	Particulars	Buffalo	Cow		
			Crossbred	Indigenous	Non descript
1.	Daily milk yield/ animal (kg)				
2.	Total milk production / family / day (kg)				
3.	Mean lactation period (Days)				

2) Milk utilization status

S. N.	No. Particulars	Buffalo	Cow			Total
			Crossbred	Indigenous	Non descript	
1.	Quantity of milk consumed (Home)/day/(Kg)					
2.	Quantity of milk sold/day (kg)					

3) Ways of milk marketing and price

S. N.	Particular	Yes/No	Price (Rs.)
1.	To milk co – operative society		
2.	Regular customers		
3.	Consumers		
4.	To private level processor		
		Total	

4) Means of milk transport

1. By walk :
2. On cycle :
3. On motor cycle :
4. Through vehicle :

C) Feeding status

i. Grazing

- a) Distance from Cattle yard : Km
- b) Type of grazing : 1) Pastures 2) Bunds 3) Others
- c) Hours of grazing : hours
- d) Grazing area available :
- e) Types of pasture available :
in the grazing land
- f) Backyard cultivation of fodder : area (ha)

ii. Stall feeding

S.N.	Quantity of feed offered (kg.)		Buffalo	Cow		
				Crossbred	Indigenous	Non descript
1.	Roughages	Green				
		Dry				
2.	Concentrates	Energy rich				
		Protein rich				

I) Purchased / Home grown

II) Whether chaffed or fed as such

III) Fed during milking Yes / No

5. Preserved roughages

- a) Whether fed or not : Yes/No
- b) If fed, type : Silage / hay
- c) Quantity (kg) :
- d) Fed : Before milking / After milking

6. Source of fodder during scarcity :

D) Adoption of management practices

- a) Are you aware of recommended feeding practices : Yes/No
If no, reason:
- b) Do you enrich the low quality fodder : Yes /No
If yes (Which fodder and method)
- c) Do you use the processing for food grains : Yes /No
If yes, name:
- d) Do you use the silage : Yes /No
- e) Do you use supplements for increasing milk production : Yes/No
If yes (Specify i.e. use of urea / jaggary / mineral mixture)
- f) Do you use any stimulants for letting down of milk : Yes/No
- g) Which means do you adopt to storage the dry fodder
I) Open air II) under shed III) Quantity IV) Period of storage
- h) Is there any vet. Clinic available in the village : Yes / No
If yes (Private / Government clinic)
- i) How regularly supply of milk is maintained :
- j) Other management practices:
 - 1. Colostrum feeding to new born calf :
 - 2. Rearing method of calf :
 - 3. Vaccination :
 - 4. Type of housing :
 - 5. Culling :
 - 6. Breeding of animals : AI/NS

E) Which facilities do you expect for dairy activities?

State the reason in order of priority

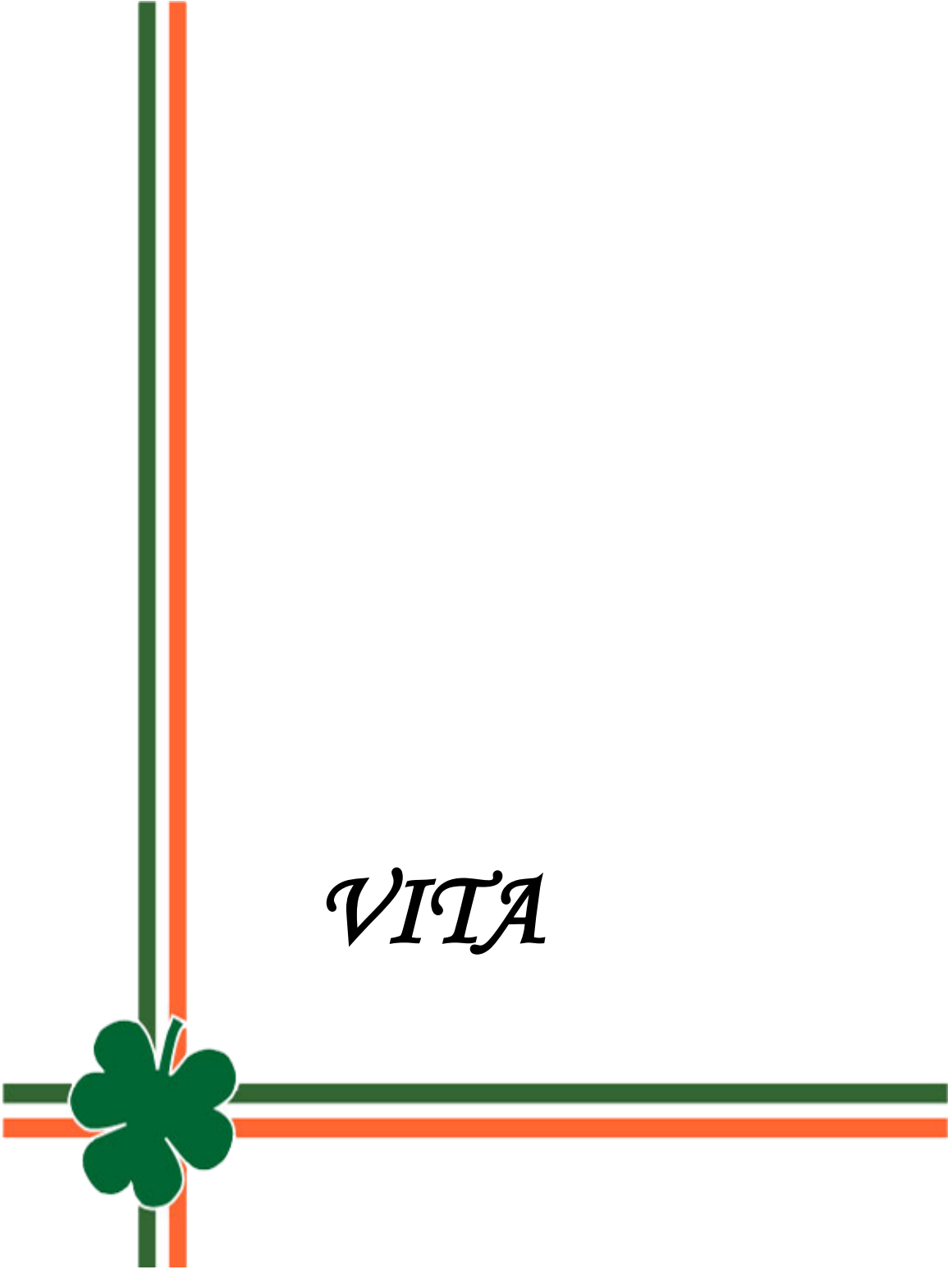
- a) Easy loan facilities
- b) Availability of Crossbred animal
- c) Timely receipt of milk sale from collection centre
- d) Insurance of animal
- e) Veterinary – AI facilities
- f) Ensured supply of feed and fodder
- g) Disease diagnostic facilities at door step

F) Do you provide special care / facilities for crossbred cow :

G) Major constraints in dairying

Constraints in

- 1. Feeding the animals due to scarcity of feeds
- 2. Health care management
- 3. Calf rearing
- 4. Reproductive problems
- 5. High cost of animal feed
- 6. Unavailability of Vet. Aids at farmer's door step
- 7. Unavailability of pasture lands
- 8. Unavailability of proven sire/breeding bull at farmer fields
- 9. Disposal of milk



VITA

VITA

Mr. Udmale Anil Bapu

A candidate of the degree of

MASTER OF SCIENCE (AGRICULTURE)

In

ANIMAL HUSBANDRY AND DAIRY SCIENCE

(ANIMAL HUSBANDRY)

2020

Title of the thesis: “Feeding and Management Practices of Dairy Animals in Udgir Tahsil of Latur District”

Major field: Animal Husbandry and Dairy Science
(Animal Husbandry)

Biographical informtions:

Educational data:

1. Passed S.S.C. from New English School, Takali (Khandeshori) in 2010
2. Passed H.S.C. from, Nutan Uchha Mahavidyalay, Mirajgaon in 2012
3. Received the degree of Bachelor of Science (Agriculture) at College of Agriculture, Sonai under MPKV, Rahuri in 2017
4. Secured P.G. seat at College of Agriculture, Latur through MCAER entrance exam in 2018

Birth Date : 9th January 1994

Present Address: Udmale Anil Bapu
At./Post. Bhabulgaon (Khalsa), Tal. Karjat, Dist. Ahmednagar
Pin: 414401, (MS) India
Mobile No.: 9623227706
Email: *aniludmale111@gmail.com*