

## **PATTERN OF DAIRY INPUT PROCUREMENT, OUTPUT DISPOSAL AND FEEDING IN TRIBAL REGION OF UDAIPUR DISTRICT OF RAJASTHAN**

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### **ABSTRACT**

The present study was conducted in tribal region of Udaipur district of Rajasthan on pattern of dairy input procurement, output disposal and feeding. In all 80 tribal farmers were selected randomly. The results of the study indicated that 100 per cent, 68.75 per cent and 50 per cent farmers were feeding dry fodder, green fodder and concentrates respectively, to milch animals. Government hospitals provided vaccination but medicines had to purchase from private shops. Largely family female workers were engaged in different activities of dairy farming. The average daily quantity of green fodder, dry fodder and concentrates fed per milch buffalo were 2.25 kg, 7.75 kg and 0.55 kg while corresponding figures for for milch cows were 1.90 kg, 6.25 kg and 0.45 kg. Green fodder and concentrates were not fed to dry animals by the tribal farmers. On an average, 32 per cent of total milk production was sold only to local consumers. All farmers taken away or leaving their animals for grazing for period of 5-8 hours in a day. On an average, 73.75 per cent, 50 per cent and 52.50 per cent farmers were feeding dry fodder, green fodder and concentrates, respectively, once in a day.

### **INTRODUCTION**

Livestock in general and dairying in particular is emerging as a driving force in the growth of agricultural sector in India. Dairying in India has been considered to be playing a crucial role in Indian economy. Dairying is an important sector for the diversification of agriculture as well as source of income on regular basis for rural poor, especially for small and tribal marginal farmers.

On the one hand, in dairy farming, adequate and timely availability of quality inputs is a crucial for increasing milk production and efficient milk production system. On the other hand, the milk must be quickly disposed off to fetch remunerative price to the milk producers. Dairy inputs procurement, output disposal and feeding of animals are very critical issues from the perspective of dairy development which influence milk production. Moreover, input procurement, output disposal and feeding pattern differs from region to region and district to district due to difference in availability of crop residues &

other feeds and marketing system. Therefore, keeping this in view, present study was carried out with the specific objectives to assess: (i) the pattern of dairy input procurement, (ii) the pattern of output disposal and (iii) the pattern of feeding of animals.

### **RESEARCH METHODOLOGY**

The study was conducted in tribal region of Udaipur district of Rajasthan as it has the largest tribal population. The two tehsils were selected randomly from Udaipur district on the basis of maximum tribal population. Two villages from each tehsil were selected randomly. Thereafter, 20 tribal farmers were randomly selected from each village. In all 80 tribal farmers were selected randomly as respondents for the present study. The selected farmers were interviewed personally with the help of a well structured interview schedule in order to get relevant information. Then, the data collected were tabulated and analyzed using simple statistical tool to interpret the results.

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## RESULTS AND DISCUSSION

### Dairy Input Procurement

Dairy farming requires, mainly, four inputs i.e. feed & fodders, veterinary services & medicines, labour and milch animals & dairy equipments.

### Feed and fodders

The milk producers generally feed three types of feed inputs to milch animals viz., dry fodder, green fodder and concentrates as shown in Table 1. In the study area, maize was predominant cereal crops; its crop residue is fed as dry fodder. On an average, 90 per cent farmers were making dry fodder from crop residues at their fields and rest of the farmers (10%) were purchased dry fodder from other farmers in the

same village (Table 2). These farmers (10%) were purchased dry fodder yearly in bulk quantity on cash payment basis.

The tribal farmers did not grow green fodder on their fields because of fragmented and small size of land holdings. Hence, only fresh grasses were fed to animals in the place of green fodder. On an average, 68.75 per cent farmers were feeding green fodder to milch animals and collected it from the common property resources (CPRs). The major sources for collecting green grasses were forests, wastelands, common grazing land, roadside, own farm and banks of ponds in the study area. There was no license fee or taxes for collecting grasses or leaving animals for grazing in these areas. Sirohi and Bhowmik (2009) were also reported similar findings.

**Table 1: Sources of feed input procurement**

Particulars	Homegrown	Purchased	Common Property Resources (CPRs)	Total
Dry fodder	72 (90.00)	8 (10.00)	-	0 (100.00)
Green fodder	-	-	55 (68.75)	55 (68.75)
Concentrate	42 (52.50)	-	-	42 (52.50)

Figures in parentheses are percentage of total households

**Table 2: Dry fodder procurement**

Items	Particulars	Dry fodder
Source of purchase	Other farmers	8 (10.00)
	Dairy cooperative societies	-
	Village market	-
Mode of purchase	Cash	8 (10.00)
	Kind	-
Frequency of purchase	Weekly	-
	Fortnightly	-
	Monthly	-
	Yearly	8 (10.00)
Method/quantity	Small	-
	Bulk	8 (10.00)

Figures in parentheses are percentage of total households.

Out of the total sample households, on an average, 52.50 per cent farmers were feeding concentrate to milch animals. Further, these farmers (52.50%) were prepared concentrate at their home. Tribal farmers were not found to purchase concentrate from market. Different ingredients were used in different

proportions among different seasons depending upon their availability for the preparation of home made concentrate mix. Cottonseeds, Maize seeds and Barely seeds were common ingredients used in the preparation of home made concentrates.

### Veterinary services and medicines

The farmers dependent on Government hospitals as well as private veterinary practitioners for veterinary services & medicines. The availability of medicines, vaccines, artificial insemination (AI) & services were observed very poor. For the medicines, farmers had to depend on private shops as the state departments did not provide all types of medicines at free of cost at veterinary hospitals. Further, private veterinary practitioners in the study area were also existed. In emergency cases, these practitioners attend the suffered animals on payment basis. In fact, they take service charges between Rs. 150-200 per visit, besides cost of medicines.

**Labour**

Labour is one of the important dairy inputs in dairy farming in rural areas. The labour comprised of hired and family labour. However, hired labour was not engaged in the dairy activities in the study area. Hence, labour comprised of only family labour. In dairy farming largely female workers were engaged. On an average, 2 hours and 30 minutes of labour per day per household was devoted for various operation related to dairy farming such as bringing green as well as dry grasses, feeding, grazing, cleaning cattle shed & animals, milking and making milk products etc. Almost similar observations were also reported by Sirohi and Bhowmik (2009).

**Milch animals & dairy equipments**

Milch animals were generally purchased by tribal farmers from village itself (62.50%) followed by nearby village (37.50%). Any kind of animal fairs and markets were not organized by state Government for the purpose of buying and selling the milch animals in study area. Adoption of crossbred and superior breeds of milch animals was observed to be very poor by the tribal farmers (less than 10 per cent). It was observed that non-descript breeds of milch animals are pre-dominant in the study area. The price of local milch cow with average daily milk of 1.5-2.0 litres ranged from Rs. 7000-8000, while it was somewhat higher for buffalo (Rs. 20000-25000) as their average milk yield was also higher (2.5-4.0 litres). Further, price variations in milch animals at the time of purchasing were also observed according to order and stage of lactation of milch animals. Generally, the animals in the second stage of lactation or early stage of lactation were priced higher.

As regards dairy equipments, it was found that not a single farmer was used and purchased the scientific dairy equipments and structures such as chaff cutter, milk pail, water cans, measuring sets, mangers, chain and scientific housing in the study area.

**Output disposal**

The pattern of output disposal is discussed under two sub-sections i.e. milk and dung.

**Utilization and disposal of milk**

The success of dairy farming depends upon the marketing facilities available to the producers. Since milk is a highly perishable commodity, it requires quick disposal or conversion into products at the farm level. The Table 3 indicates that 32.34 per cent of the total milk production was marketed and the remaining 68.66 per cent milk consumed directly. Kumar (2006) and Yogi *et al.* (2007) were reported contradictory observations. In the study area, it was found that milk was disposed only to the unorganized marketing channels viz., tea shopkeepers and local consumers. Organized marketing channel (dairy cooperative society) was not found in operation in the study area. This might be due to low milk production. Low milk production might be due to improper & inadequate feeding and rearing of non descript breeds of milch animals.

**Table 3: Average production, consumption and marketed surplus of milk**

Particulars	Litres/day/household
Production	4.20(100.00)
Consumption	2.86 (68.66)
Marketed surplus	1.34 (32.34)

Figures in parentheses are percentage of total milk production.

**Disposal of dung**

The dung produced on the sample farm was used as manure in the agriculture fields and as fuel in the domestic work. On an average, 35 per cent farmers were used dung as preparing dung cake and rest of farmers (65%) used it as manure. Few farmers were selling dung directly to other farmers and obtained price of dung around Rs. 110/quintal. Thus, it is worthwhile to point put that tribal farmers were more aware about proper utilization of dung. This might be due to low utilization of costly chemical fertilizers.

### Feeding Pattern of Milch Animals

Green fodder, dry fodder and concentrates were the major components of feed for milch animals to supply the required roughages, nutrients and minerals. During the investigation, it was found that dry fodder and concentrate were available throughout the year but the availability of green fodder was observed in winter and rainy seasons. The green grasses were fed as green fodder. Dry fodders consisted of dry grasses, maize straw and wheat straw. Only home made concentrate mix was fed to milch animals. Feeding pattern of milch animals is discussed under five sub-sections i.e. feed intake, grazing, dry fodder, green fodder and concentrates.

### Feed intake

The average daily feed intake per milch animal for buffalo and cow is presented in Table 4. The overall average daily quantity of green fodder, dry fodder and concentrates fed per milch buffalo was 2.25 kg, 7.75 kg and 0.55 kg while corresponding figures for milch cow were 1.90 kg, 6.25 kg and 0.45 kg. Comparatively more quantity of dry fodder fed to dry animals than lactating one. Moreover, quantities of green fodder and concentrate were not fed to dry animals.

**Table 4: Average daily feed intake for milch buffalo and cow (Kg./day/animal)**

Particulars	Buffalo			Cow		
	Lactating	Dry	Overall	Lactating	Dry	Overall
Green fodder	4.50	-	2.25	3.80	-	1.90
Dry fodder	7.50	8.00	7.75	6.00	6.50	6.25
Concentrates	1.10	-	0.55	0.90	-	0.45

Thus, it can be concluded that average daily feed intake for milch buffaloes and cows was inadequate and imbalanced. This might be due to either grazing practice adopted by farmers or unawareness of tribal farmers towards balanced feed intake.

### Pattern of Grazing

Grazing of milch animals is a common practice in the study area. The pattern of grazing of milch animals is presented in Table 5. It was observed from the table that all the farmers followed grazing practice. Vijay Avinashilingam *et al.* also reported that grazing of animals was followed by almost all the respondents (98.04%). Out of total sample farmers,

75 per cent farmers taken away or leaving their animals for grazing for period of 5-8 hours in a day, 15 per cent for period of less than five hours in a day and remaining 10 per cent for period of more than eight hours in a day.

Further, it was observed that maximum farmers (71.25%) were found to be grazed their animals on common grazing land followed by roadside (18.75%) and own fields (10%). Thus, it can be inferred that the majority of farmers grazed their animals on common pasture land. This might be due to freely availability of pasture land in the study area.

**Table 5: Duration and place of grazing of milch animals**

Duration of grazing in a day (Hours)	No. of households	Place of grazing	No. of households
Less than 5	12 (15.00)	Common pasture land	57 (71.25)
Between 5-8	60 (75.00)	Roadside	15 (18.75)
More than 8	8 (10.00)	Own fields	8 (10.00)

Figures in parentheses are percentage of total households.

### Pattern of Dry fodder

Pattern of dry fodder feeding is depicted in

Table 6. The results of the table indicated that 73.75 per cent farmers were feeding dry fodder to their ani-

mals once in a day while rest of farmers (26.25%) was feeding it twice in a day. Out of total sample farmers, 62.50 per cent farmers were feeding it to their animals daily around less than 5 kg/animal, 30 per cent farmers were feeding it daily between 5-8 kg/animal and

only 7.50 per cent farmers were feeding it more than 8 kg/day/animal. Thus, it can be inferred that the majority of farmers were feeding dry fodder once in a day with less than 5 kg/day/animal.

**Table 6: Pattern of dry fodder feeding**

Frequency	No. of households	Quantity of dry fodder/day/animal	No. of households
Once	59 (73.75)	Less than 5 Kg	50 (62.50)
Twice	21 (26.25)	Between 5-8 Kg	24 (30.00)
Thrice	-	More than 8 Kg	6 (7.50)

Figures in parentheses are percentage of total households.

**Pattern of Green fodder**

Pattern of green fodder feeding is depicted in Table 7. The results of table indicated that out of 80 farmers, 68.75 per cent farmers were feeding green fodder to their lactating animals. Out of total sample farmers, 50 per cent farmers were feeding green fodder to their animals once in a day while 16.75 per cent farmers were feeding it twice in a day.

Out of total sample farmers, 60 per cent farmer were feeding green fodder to their animals daily less than 5 kg/animal and 8.75 per cent feeding it daily between 5-8 kg/animal. Thus, it can be inferred that the majority of farmers (e"50%) were feeding green fodder once in a day with less than 5 kg/day/animal

**Table 7: Pattern of green fodder feeding**

Frequency	No. of households	Quantity of green fodder/ day/animal	No. of households
Once	40 (50.00)	Less than 5 Kg	48 (60.00)
Twice	15 (18.75)	Between 5-8 Kg	7 (8.75)
Thrice	-	More than 8 Kg	-

Figures in parentheses are percentage of total households.

(v) **Pattern of Concentrates:** Pattern of concentrates fed to animals is depicted in Table 8. The results of table indicated that out of total sample farmers, 52.50 per cent farmers were feeding concentrates to only lactating animals once in a day at the

morning time. Further, 33.75 per cent farmers were feeding concentrate to lactating animals daily less than 1 kg/animal and 18.75 per cent feeding it daily between 1-2 kg/animal.

**Table 8: Concentrate feeding**

Frequency	No. of households	Quantity of concentrates/ day/animal	No. of households
Once	42 (52.50)	Less than 1 Kg	27 (33.75)
Twice	-	Between 1-2 Kg	15 (18.75)

Figures in parentheses are percentage of total households.

**CONCLUSION**

The study concluded that dry fodder was fed to milch animals by all tribal farmers while the feeding of green fodder and concentrates was observed very poor. The quantity of green fodder and concentrate was fed only to lactating animals which ad-

versely affect the health of dry and pregnant animals. Tribal farmers did not grow green fodder and they have to depend on common property resources for collection of green grasses. Government hospitals provided vaccination but medicines had to purchase from private shops. On an average, 32 per cent of total milk production was sold to local consumers

only due to low milk production. The majority of farmers were fed dry fodder, green fodder and concentrate to their milch animals once in a day. This might be due to adoption of animal grazing practice by tribal farmers.

The study emphasizes that tribal milk producers are not fully aware about quantity as well as quality of dairy feed inputs and feeding pattern that go in the process of milk production. Adequate attention should be paid to promote cow and buffalo up gradation. Scientists, KVKs and Dairy Development officers must periodically conduct training and awareness programmes with respect to green fodder production practices, rearing of superior breeds of milch animals, balanced feeding and pattern of feeding etc., to boost up level of milk productivity of animals at tribal households in the study area.

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