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COMPARATIVE COSTS OF MILK PRODUCTION IN RELATION TO THE STRENGTH OF MILCH CATTLE IN A DAIRY FARM: A CASE STUDY OF SHRIGONDA TEHSIL

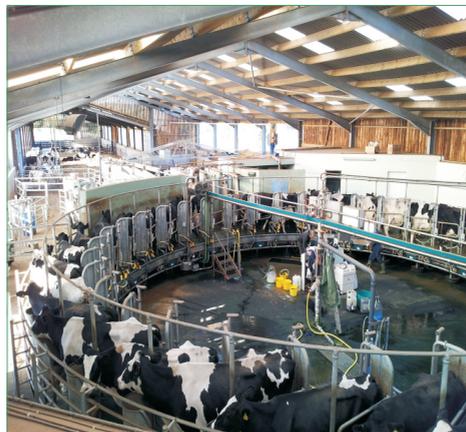
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ABSTRACT

The present work attempts to analyze and compare the cost of production of milk and income derived from dairy activity with respect to cows herds in Shrigondatahsil. The cost structure of five herds from the irrigated areas and five from the non-irrigated areas was



examined.

Among all the factors of cost of production, cost of feed and fodder is very significant. The proportion of expenditure on feed and fodder ranges from 50.48 to 55.91 percent in the total cost of production. The labour expenditure is second important item of cost of milk production. It varies from 20.33

to 22.92 percent of total cost of production. In small size herds the percentage of expenditure on labour was high as compared to large herds. The small dairy farmers generally take the help of family and do not use outside labour. As the size of herd increases the net profit per day per animal also increases.

KEYWORDS : Dairy farmers, herd size, cost of production, feed and fodder, labour, replacement cost and miscellaneous expenses.

INTRODUCTION

Milk production in India is predominantly the domain of small farmers in mixed farming system. Dairy enterprise plays a very vital role in the rural economy of India. It provides income and employment, not only to the workers section of the society, but also to the farming community of the country in general.

The cost of production mostly depends on factors like breed of cows, feeding practice, herd

management, geographical set of conditions etc. All these factors together affect the cost of production. Among all these factors, the herd management is the most important factor. The nature and ways of practicing the dairy activity differs from place to place and from community to community.

STUDY AREA:

Study area is located in the southern drought prone zone of Ahmednagar district. The tahsil is situated partly in Bhima, Ghod and Kukdi river basins. The latitudinal extends from 18° 27' 18" to 18° 51' 54" North and longitudinally extends 74° 23' 24" to 74° 52' East.

OBJECTIVES:

1. To study the cost of milk production in different size groups of cows (Cross breed) herds in the irrigated and non-irrigated areas in study area.
2. To find out the net profit per liter of milk and per day per animal income derived from dairy farming.

METHODOLOGY:

Initially in order to understand variations in the nature of dairy activity, Shrigondatahsil was divided into two areas such as the irrigated area and non-irrigated areas. From these two areas five herds of cows respectively were selected to assess the cost of production. While selecting these herds, preference was given to the dairy farmers who maintained records. To calculate the cost of production, necessary information was collected through the interviews.

ITEMS OF COST OF PRODUCTION :

Following are the four items of cost of production commonly used in all methods. They are:

- I. Cost of fodder and feed
- II. Labour Cost
- III. Replacement cost
- IV. Miscellaneous Cost

The expenditure on feed and fodder, labour wages, replacement cost and miscellaneous expenses are the major items of cost of production in dairy farming. Among the above four items of cost, replacement and miscellaneous expenses were reported for the whole year by the dairy farmers. However, for the cost of production, daily expenditure was required, therefore, to find-out the daily expenditure on these two items, annual expenditure was divided by 365 days which gives cost per day in each size- groups. The percentage share of expenditure on each item is also found out to identify the importance of the above items.

It has been observed from table 1.1 that, the cost of feed and fodder recorded maximum i.e. 55.31 percent among the cows (herd size up to 23) and lowest was 50.48 percent of the same herd size in irrigated area. As compared to this the maximum cost of feed and fodder was 55.91 percent and lowest was 52.89 percent in non-irrigated areas of study region.

The highest cost of feed and fodder lies in non-irrigated area is due to non-availability of green fodder in summer and drought conditions. The farmers belongs to these region have to purchase it or make it available from elsewhere which costs higher.

Labour cost depends on herd size. Larger the herd size lesser the labour cost. The observation states that (table 1.1) in irrigated area the maximum labour cost goes up to 22.92 percent for small herd size (1- 5 cows) which drastically declines up to 20.11 percent for the herd size of 23 cows

in irrigated area. The same observation was recorded in non-irrigated region also.

Another important aspect of total cost of production is the cost of replacement. It ranges between 5.52 percent and 4.18 percent in irrigated area. Whereas it lies between 6.25 percent and 4.24 percent for non-irrigated area. Generally the cost of replacement does not show any co-relation with herd size at all.

Miscellaneous cost includes purchase of milk canes, fodder cutter, transportation cost, veterinary expenses and interest on capital invested. Which discloses that in general the highest cost was incurred in small herd size both in irrigated and non-irrigated region. It miscellaneous cost generally declines with increasing herd size.

Table 1.1: Total cost of maintenance of milk animals in the different size group

Sr No	Size Group	Total Animals in the herds	Expenditure on feed & fodder (Rs.)	percentage of expenditure on food & fodder	Labour Wages (Rs.)	percentage of expenditure on labour	Replacement cost (Rs.)	percentage of expenses on replacement	Miscellaneous expenses (RS.)	Percentage of expenses Miscellaneous expenses	Total cost (per day) (Rs.)	Per day per animal cost of production (Rs.)
Irrigated Area												
1	01-05	5	331.5	50.66	150	22.92	27.39	4.18	145.47	22.23	654.36	130.87
2	6-10	9	584	51.39	260	22.88	57.83	5.08	234.38	20.62	1136.21	126.24
3	11-16	12	751.5	50.48	325	21.83	82.19	5.52	329.97	22.16	1488.66	124.05
4	16-20	18	1090	52.68	450	21.75	87.67	4.23	441.26	21.33	2068.93	114.94
5	21-25	23	1375	55.31	500	20.11	123.28	4.95	487.67	19.61	2485.95	108.08
	Total	67	4132		1685		378.36		1638.75		7834.11	
	%			52.74		21.50		4.82		20.91		116.92
Non -Irrigated Area												
1	01-05	5	310	53.38	130	22.38	24.65	4.24	116.08	19.98	580.73	116.14
2	6-10	9	545	52.89	225	21.83	54.79	5.31	205.47	19.94	1030.26	114.47
3	11-15	12	700	53.29	300	22.84	82.19	6.25	231.23	17.6	1313.42	109.45
4	16-20	18	1025	54.99	400	21.46	104.1	5.58	334.76	17.96	1863.86	103.54
5	21-25	25	1375	55.91	500	20.33	123.28	5.01	461.64	18.76	2459.92	98.39
	Total	69	3955		1555		389.01		1349.18		7248.19	
	%			54.56		21.45		5.36		18.61		105.04

(Source: Calculated and Compiled by researcher)

INCOME- EXPENDITURE ANALYSIS :

After calculating the per day cost of production with respect to each size – group of cows, an attempt has been made to find – out the per liter cost of production. By calculating the per liter cost of milk, comparison among different size- group of cows is possible. With the help of per liter cost of milk, net profit from milk was calculated for the income- expenditure analysis.

To findout the per liter cost of production in each size- groups information regarding the daily total cost of production and the milk yield is required. Daily total cost of production with respect to each size – group of cows is already calculated. Information regarding the total yield in cows herd was collected from the dairy farmer during the field- work. All the big herd dairy farmers keep the record of milk yield but the small dairy farmer generally do not keep the records of milk yield.

It is pointed out that theper liter cost of production is not the same in all size- groups of the cows. The per liter cost of production mainly depends on the total yield and the total cost of production with respect to each size- group. Higher milk yield can reduce the per liter cost of production but low yield and higher cost of production resulted in the small profit margins.

The average yield with cost per liter milk was calculated with respective herd size group, and the observation were displayed in the table no.1.2.It can be seen from the table 1.3 that the net cost of production incurred Rs.12.75 per liter with a profit of Rs.5.43 for the herd size of 5 cows.

The profit goes on increasing with herd size and it has reached up to Rs.7.26 for the herd size 23 cows. In case of non-irrigated area same trend is repeated according to herd size group.

It is common observation of study area that could be concluded in short herd size (of milching animal) increases the cost of production decreases with increasing profit of the dairy farmers.

Table 1.2 : Total Yield in Each Size -group, Average Yield and cost of production per liter of Milk in Cows Herd.

Size Group	Total Animals in the herd	Total Yield (Annual) (liters)	Average milk production per day (liters)	Total cost of production per herd(Rs.)	Net cost production on per liter (Rs.)	Sale price per liter (Rs.)	Net Profit per liter (Rs.)
Irrigated Area							
01-05	5	18980	52	654.36	12.57	18	5.43
6 to 10	9	34675	95	1136.21	11.96	17.25	5.29
11 to 15	12	47450	130	1488.66	11.45	17.4	5.94
16 to 20	18	69350	190	2068.93	10.88	17.8	6.92
21 to 25	23	91250	250	2485.95	9.94	17.20	7.26
Total	67			7834.11			
Non -Irrigated Area							
01-05	5	16425	45	580.73	12.9	18.1	5.2
6 to 10	9	31025	85	1030.26	12.12	17.9	5.77
11 to 15	12	41975	115	1313.42	11.42	17.85	6.37
16 to 20	18	62050	170	1863.86	10.96	18.1	7.14
21 to 25	25	83950	230	2459.92	10.69	17.95	7.25
Total	69			7248.19			

(Source: Calculated and Compiled by researcher)

DAILY INCOME :

Here, an attempt has been made to find – out the daily income from dairy farming with respect to each size- group of cows in the Shrigondahsil.

In dairy farming, income is mainly received from the following items:

1. Income from milk.
2. Income from dung.
3. Income from calves.

For the purpose of this study, daily income from dairy farming is calculated as follows.

- i. The income from milk is calculated by considering the annual milk and net profit per liter of milk each size – group of cows.
- ii. For the cow's dung, current rate of sale is taken into consideration.
- iii. Calves are also main source of income in dairy farming. One year – calves selling price is considered for this calculation in each size- group of cows.
- iv. The income from these three items is annual. After adding the income from these three items, it was divided by 365 days, to find out daily income from dairy activity.

Dairy is such economic activity which not only provides or supplies the income from milk but also it incurred the income from calves and also cow dung (as a good organic manure and source of energy by burning cow dung or goober slurry is used as a raw material to generate goober gas / cakes as a fuel in rural areas)

Table no.1.3 shows that the income incurred from dairy activity from different herd groups. In the irrigated area the herd of 5 cows gives annual income from milk of Rs.10306, along with Rs.15000 from cow dung and Rs.4000 from sailing of calves of 1 year age.

Ultimately it gives daily income of Rs.334.41 which counts daily Rs.66.8 per cow. This pattern of income shows rising trend with increasing herd size also in case of non-irrigated areas.

Table 1. 3 : Income from Dairy activity : Cows Herds (2015)

Size Group	Annual milk yield (liter)	Net profit per liter (Rs.)	Total Income from milk(Rs.)	Income from dung (Rs.)	Income from calves (Rs.)	Total income (Rs)	Daily income (Rs.)	per day per animal income (Rs.)
Irrigated Area								
01-05	18980	5.43	103061.4	15000	4000	122061	334.41	66.81
6-10	34675	5.29	183430.75	28000	20000	231430.75	634.05	70.45
11 -15	47450	5.94	281853	34000	24000	339853	931.1	77.59
16 -20	69350	6.92	479902	50000	30000	559902	1533.97	85.22
21 -25	91250	7.26	662475	65000	37000	764475	2094.45	91.06
Total			1710722.15	192000	115000	2017722.15		
%			84.78	9.51	5.69	100		82.50
Non-Irrigated Area								
01-05	16425	5.2	85410	20000	10000	115410	316.19	63.23
6 - 10	31025	5.77	179014.25	30000	18000	227014.25	621.95	69.1
11 -15	41975	6.37	267380.75	45000	25000	337380.75	924.33	77.02
16 -20	62050	7.14	443037	60000	40000	543037	1487.77	82.65
21 -25	83950	7.25	608637.5	88000	65000	761637.5	2086.67	83.46
Total			1583479.5	243000	158000	1984479.5		
%			79.79	12.24	7.96	100		78.79

(Source: Calculated and Compiled by researcher)

CONCLUSIONS :

In conclusion it can be stated that the present economic analysis of milk production brings out clearly the extent to which dairy activity with respect to cows herds is profitable in irrigated and non – irrigated areas. By practicing the dairy farming, the dairy farmers get regular income from the production of milk which is not possible in case of agricultural crops.

It is common observation of study area that could be concluded in short herd size (of milching animal) increases the cost of production decreases with increasing profit of the dairy farmers.

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