C H A P T E R - IV

REVIEW OF LITERATURE

Part-I
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PERSONAL CHARACTERISTICS OF MILK PRODUCERS

The characteristics of a man govern in his thinking
and acts. Dairy farmers are influenced by socio-economical
aspects and personal characteristics considering dairy as
business, some of the important personal characteristics like
age, education, occupation and size of land holding were
studied in this part of study. Hence, references regarding
these characteristics of co-operative milk producers have
been reviewed.

1.   Age :- Anonymous (1)*- 1972 in his study of working
        of the dairy societies and their impact as the socio-
        economic condition of their members in Dhule district,
        peported that large proportion of the members of the
        dairy societies belonged to the age category of 36
        years.

        Bodhale (3) - 1973 in his study of socio-economic
        survey of Mang comunity, reported that 39 % respondents
        were in the age group of 30 years. Equal number of
        respondent (39 %) were in the age group of 31 to 45
        years while 22 % respondent were above 45 years.

    (* Numbers in the bracket ( ) - shows the name of the
       Authur mentioned in Bibliography.)

Patil (14)- 1973 in his study of some characteristics of the members of the dairy co-operative societies and problems faced by them in dairy development noticed that majority of the members were in the age group of 31 to 45 years. Further, he reported that 3/4th of the members belonged to the age groups of 31 to 61 years.

2.   Education : Anohymous-(1)-1972 reported that 73 % of the members were illterate. Nearly half of them were educated. Up to IVth Standard and less then 1 % received College Education.

Dodhale (3)-1973- found that 46 % respondents were literate 43% had education up to IVth Standard and 11% had education from the V and VII Standard. None of the respondents were baove VI Standard.

Patil (14) 1973 observed that 45.5% of the members were illiterate and 54.5 % were literate.

3.   Land holding : Iya 1960 reported that apporoxmately 96% of the milk produced in India was obtained from the small holding in villages, each not exceeding 3 to 5 Kg. milk   - production per day.

Raut and Shivtar Singh (20) 1969 worked out the cost of milk production in house hold of the landless cattle owners

and small medium, and large farmers, utilising the data collected in a large scale a sample survey in Krishna Delta area of Andhra Pradesh about 54.2 % of households in the villages had bovines of these having bovines, 22 % were no cultivators, 55 % proposed landless than 2 hector and 9 % had holdings of size more than 4 hectors. They observed that feed cost which was the major component of production cost was maximum in case of bigger size land holders and minimum in case of landless cattle owners. The percentage proportion of paid labour increased and family labour decreased with the size of holdings. According to them 56 % of the milk produced in non cultivators house holds and 46% in large size holdings was sold mostly to consumers by the non culti- vators house holds and to middle man in the letter cases.

Raut et al (21) 1970 worked out the cost of produ- ction of buffalo milk in different catogeries of households utilising data collected in the large scale sample survey carried out in Dhule region of Maharashtra State. They obser- ved that the household having bovines were 10.5 % of non- cultivators 53.2 % of the small farmers owning landless than 4 hectors 4.9 % of medium class farmers possessing land up to 8 hectors and 11.4 % of large farmers having 8 hector or more land.

Dawar (5)-1975 reported that the survey conducted in Maharashtra State in 1966-67 showed that 60.1 % of the

breeders were landless 24.2 % were having 2 hectors of land
another 60.6 % possessing holding between 2.6 hector and
hardly 9.12 % had above 6 hectors land.

4.   Occupation : Singh (1949)while studying the present
position of dairy industry in Indian Union and further lines
of its development, showed that the dairying in India was
dairy is subsidiary occupation to the agricultural and
farmers generally maintain one or two cows.

Sen(1950) studied some aspects of dairy research in
India and observed that the dairying and cattle breeding
were of the immense value from the economic point of view.
They were very intimately connected with the agriculture which
was the most industry of our country. He showed thet more than
80 % of the Indian population was engaged in this occupation.

Bannerjee (1959) studied in the role of various city
milk scheme in the development in the dairy industry in India
and concluded that there were about 193 million rural milk
producers as against only 0.2 million milk producers in Urban
area.

Phodhale (3)-1973 noticed that the majority of the
respondents 62% desired to secured Govt. service to their
children 7% of the respondents expressed that their son should
be factory workers, while 21% wanted their sonss should private
prattitioners as Pleaders, Doctors, Engineers, Professors and
etc. 5% of the respondents wanted their sons should be either
leaders or farmers.

PART_II
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COST OF MILK PRODUCTION

Several studies have been carried out to work out the economics of milk production in India and abroad. Studies were also undertaken to see the profitability of Indian cattle to judge the feasibility of improvement. In Maharashtra studies were undertaken to work out the cost of milk production in different regions. A large number of factors are involved in production of milk. These, factors if not properly dealt they are responsible to bring a considerable veriation in the cost of production of milk. In order to get a broad information on this topic, the information and pertinent references are briefly reviewed in the following pages.

Nattajan(13) 1950 made in enquiry regarding milk production and distribution in the city of Madras and reported that the actual average net income was Rs.69/- per month per cow. However, it increased to Rs.83/- per month by way of adulterating the milk.

Zecherias et al (30)(1955) conducted studies in the economics of farm management with particular reference to dairy farming in Madras State by cost accounting and survey method. They reported that the overall cost for production of 1 manud of milk to be Rs.11.9 in case of survey method and Rs.10/- in case of cost accounting method. They reported that cost of production decreased with an increase in the size of holding.

Panse et al (15) (1961) studied the cost of milk production in rural and urban areas of Delhi State and observed that (i) cost of production per litre of buffalo milk was less than that of cow milk in the rural arease, in the urban areas on the other hand, cow milk was found cheaper thań the buffals milk. The main reasons being the cows maintained in urban areas were of superior calibre, their average yields being 3 times higher than that of rural areas. (ii) the major item of cost of production was feed for cows as well as buffaloes in both areas. (iii) the cost of maintaining cow in urban area was almostkx two and half times that of rural areas.

Puri and Singh(16) (1964) observed that the net production costs per Kg. of milk at dairy research institute, Karnel were 59.9 NP, 59 NP and 68.1 NP for Tharparkar,Shahiwal and Red Sindhi cows respectively with corresponding net returns for per Kg. of milk to be 1.5 NP, 1.4 NP and 1.7 NP. They also noted that average feed costs were high 42 NP, 41 NP, and 47 NP respectively, for different breeds. Concentrates farmed about 60% of the feed cost. They found that milk production costs were related to the total lactation yield. The number of days in milk and number of dry days.

Panse et al (15)(1967) studied the cost of the milk production in West Bangal and observed that, (i) the average cost per Kg. of cow milk as well as buffalo milk was low in

large size groups (ii) the cost of production per Kg. of milk
was higher for non discript cow, although maintainence cost
of non discript cow was much less. A non discript buffalo was
more economical than murrah inspite of higher milk production
of the latter. The main reason for this was high amount of
depreciation on murrah animals (iii) the cost of 1 Kg. of cow
and buffalo milk was 86 $\pm$ 2.6 paise and 90 $\pm$ 2.2 paise
respectively, (iv) the maintenance cost per day of buffalo
was Rs.4.80 and that of cow it was Rs.2.90. Feed accounted
for 65 % of the total cash urban area and 54 % of rural area.

Meenakashisundaram and Subramaniam(11) (1969) in
their stratified random sample survey of 30 holdings in
Coimbattore district worked out the input-output relationship
in cow and buffalo milk production and found that concentrates
input, for age input value of animal, and lactation length
(days) were the factors affecting milk production. It was
estimated that one percent increase in lacation length
increased the mean milk yield by 0.7 % if all other factors
were kept constant. Average and marginal value of productivite
were considered with a view to maximum profits.

Reddy and Rastogi (22) (1969) studied the economic
level of milk production in pure breeds of Tharaparkar,
Shahiwal, Red Sindhi as well as cross breed cows. It was
observed that per litre cost of cow was minimum in the range

of 2400 to 2800 Kg. of milk per lactation in pure breed cows. while in case of cross breed cows the decrease in per litre cost was maintained steadily with the higher level of milk production. The per litre costs for different breeds of cows and different levels of milk production was different.leve

Puri and Singh (16) (1969) in their study on the trends in the cost of milk production at NDRI, Karnal found that charges in the feeding schedule i.e. replacement of concetrates with green fodder have significant results on the cost of milk production. During 1966 in a similar study, net production cost was found to be 77.9, 80.9 and 92.6 paise per litre of milk for Tharparkar, Shahiwal and Red Sindhi cows respectively. A overall increase of 32.38 % over cost of 196. Feed cost per litre of milk were 48.1, 47.6 and 50.4 paise and profit margines per litre were 3.2, 3.2 and 3.4 paise respectively. It was estimated that replacement of concentrates with green fodder resulted in a decrease in the feed cost by almost 50 % feed cost accounted for 52.5 to 59.3 % of the total costs. Depreciation on animals 21.8 to 29.5 % and labour 10.7 to 12.3 %

Reddy and Jayshankar (23)-(1974)-in a survey conducted by south Regional Research Station NDRI,Bangalore, reported that the feed accounted for 40% of the total milk production cost. Here replacement and labour cost accounted

for 17 and 16.6 % respectively in cross breed dairy cattle, 21 and 20 % respectively in pure breeds. They have suggested that the cost of milk production can be reduced by selection of high yielding cross breeds, suitable breeding programme and control of diseases and efficient management.

Ram and Singh(24) (1975) in their study of comparative economics of cross breed and pure breed of cow observed that the cost of milk production was 95% per litre in the cross breed compared to 148 paise in the pure breed. Feed cost was most important compnent followed by labour and replacement cost. They study further reveled that the per litre cost decreased with the increased level of milk production. The overall profit per day in a cross breed cow was Rs.5.29 while it was Rs.0.19 in pure breed. The optimum level of which per litre cost was minimum, found to be 13.07 litres in the cross breed and 8.40 litres in the pure breed.

Waghmare and Diskalkar (29)-(1975)-reported in their study in Mahad Taluka Konkan Region that the average cost of maintaining buffalo was observed to be Rs.272.67 per annum and that of cow was Rs.255.36. The per litre cost of milk production of buffalo was Rs. 1.25 and that of cow milk was 1.75. It was observed that on average concentrate accounted for 31.95 % of the total cost followed by family labour 27.42%. Depreciation and interest on fixed capital together accounted for Rs.21.64 % of the total cost.

Ram et al (25) (1976) in their study on profitable level of milk production in different breeds of cattle concluded that with increasing level of milk production the fixed cost remained constant. The veriable cost per cow per day showed a positive correlation with the level of milk yield. Assuming a sale price of milk at Rs.1.20 per litre the brak even level of milk production was 2400 litres in cross breed. Red sindhi and Tarparkar cattle and 2800 litres in Shahiwal.

Geogge and Chokshi(8)-(1977)-in their study on dairy development decision at farm level in 6 villages located at different distances from Ahmadbad city observed that the average cost of maintenance of cow in milk was Rs.6.40 per day Rs. 2.73 on purchased item and 3.67 Rs. on home produced item. The cost of per cow varied between Rs.5.8 for families, with one cow of Rs.7.27 for families with 2 cows. The average cost of maintenance of dry cow was Rs.4.22 most of which was on home produced items Rs.4.01.

Patel et al (17)-(1978)-studied the economic cross breed cattle at the Indo Swis cattle project, Kerla and they obtained the following results for the brown Swiss cross breed cows (BSC) Gradec cows (GC) and non descript cows (NDC). The per litre cost of milk production was Rs.1.26, 1.56, 2.38 for BSC, GC and NDC in palins respectively. In higher range it x was 0.67. 0.81 and 0.98 for BSC, GC, NDC respectively.

Thiswas under extension area under control area the cost of milk production per litre was 1.85 and 1.82 GC and NDC respectively in plains and Rs.1.30 and 0.75 for GC and NDC in higher range.

Chopra and Katyal(4) -(1980)-in their study on input output relationship in milk production and employment - potential reported that average maintenance cost(input) of a cow and buffalo was Rs.860.50 and 1623.22 respectively. The veriable cost constituted 4/5th of the total cost Roughages and con entrates were the main items of input, accounting for 60 % of the total cost of production. The fixed cost accounted for 1/5th of total cost. The averages annual milk of cow and buffalo was 5.98 qunitals and 10.26 respectively. The average cost of milk production per quintal in respect of cow was Rs.143.85, 158.25 for buffalo. The net profit for per Kg. of milk worked out to.0.24 paise and 0.28 paise for a cow and buffalo respectively.

Rao/Singh(26)-(1980)-in their study on investment cost and return from dairy farming with different cross breed cows revealed that assets structure plays vital role in ascertaining the productivity of dairy enterprise, although the investment does not very much with different cross breed animals foilowed by the cattle sheds and stores, dairy and watering equipments which accounted for about 65, 26.8 and 2 %

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of the total investment respectively. Feed and human labour accounts for above 52 and 19 % for HL crosses and 56 and 18% for BL crosses and 54 and 20% for JL corsses of the total cost respectively. It was interesting to observe that the net income per month per milk cow was positive in all the breeds and was highest for HL corssed amongst all the breeds.

Reddy et al (27)-(1980)-in their economic analysis entreprises reported that the cost of maintenance cross breed cows, local cow and local buffalo was Rs.2339/-,1198/-, 1535/- for small farmers Rs.2658/-, 1126/-, and Rs.1433/- for medium, formers and Rs.2628/-,and 1055/- and 1372/- for large farmers respectively. The cost of maintenance gross returns and net returns were maximum for cross breed cows for all three types of farmers followed by local buffalo and local cow. The net returns were maximum Rs.1318-48 for alrge farmers and the least Rs.1086/- for small farmers parecross breed cow per lactation. In case fof a local cow large and medium farmers reliased and return of Rs.243/- as against Rs.201/- reliased by small farmers. The net returns for local buffalo was maximum for medium farmers Rs.327/- and least for small farmers Rs.264/-.

Nagesh (12) (1981) in his analysis of economic of milk production of Bangalore reported that the total cost of maintenance per day per animal amounted to Rs.7.03,2.43 and

2.46 for cross breed cows and buffalo respectively. Cost of
production per litre of milk was lowest in case of cross breed
cows Rs.1.04 followed by local cows Rs.1.48 and buffaloes Rs.1.81.
Fedd was the major item of total cost of production and
accounted for 66.77 % in case of cross breed and 77.83 % of in
case of local cows. Next to feed was the labour cost followed
by depreciation and interest charges. The input and output ratio
was highest in case of cross breed cows. 1.52 followed by
buffaloes 1.25 and local cows 1.11. The net profit per litre
of worked out to Rs.0.54, 0.45 and 0.17 in case of cross breed
cows, buffaloes and local cows respectiyely.

Sankhayan and Joshi (28)-1975 in their study on resource
productivity in milk production of cross breed and indigeneou
cows in rural area of Ludhiyana district revealed that age of
animal, stage of lactation quantity of concentrates, dry fodder
explains 82 % variations in case of indigeneous cow while 51 %
in case of cross breed cows. Higher estimates of M.V.P. of
concentrates for indigeneous and dry and green fodder for
cross breed cows indicated that farmers given more importance
to fed more concentrates to cross breeds and dry and green
fodder to Deshi cows.

Patel et al (18)-(1979)—in their study on economic of
cross breed cattle observed that the regression co-efficient
of investment in cow veriable had positive impact on daily

milk yield of Jersey X local cows. However, it had a hegative impact in case of Holstein X local cows. The regression co-efficient for green fodder and concentrates veriable were positive and statistically significant in all groups of cross breed cow. They further concluded that milk wine can be increased as genetic potential of these cows can be exploited to a large extent by feeding more of a green fodder and concentrates in the study area.

Pandye et al (19) 1980 in the stydy of milk production function concluded that dairy inpute i.e. fodder, concentrates, labour and other cosᴛ expenditure and lactation order were responsible for 40 to 85 % veriation in milk yield Fodder was the most significant production factor was followed by concen-trates.

Nagesh (12) 1981 observed that about 79.92 and 89 % variation in milk was explained by expenditure on roughes, concentrates, labour and depreciation value of animal for local cows and cross breed cows and buffaloes. Cross breed cows were more responsible to concentrates and roughes than cows and buffaloes.

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