CHAPTER II

REVIEW OF LITERATURE
A comprehensive review of literature is an essential part of any scientific investigation. In this chapter systematic attempt has been made to present a comprehensive review of all the available studies related to present investigation.

The earlier work done by different researchers in various research projects are expected to provide useful information for the present as well as the future investigation on similar aspects. The various sources of review were the books, scientific Journals, Magazines, reports and technical bulletins etc.

A brief account of the past studies related to the researches on the similar aspects was noted pertaining to the knowledge and other findings which have facilitated in carrying out the present research study, entitled "Impact of Dairy Farming on the Socio Economic Status of the Villagers of District Lucknow (U.P.)".

Marsh and Coleman (1955) found that socio-economic status was strongly associated with adoption but the relationship is less consistent when other variables were held consistent.

PEO et al (1960) Identified "lack of finance" as one of the vital causes of failure of co-operative society.

Rogers (1961) in a study with Ohio farmers reported a positive correlation between knowledge and extent of adoption of the innovation. The
early adopters are actively participating in formal organization than the late adopters.

**Neema (1961)** in his study of village co-operative society in Jabalpur, M.P. found that ignorance of co-operative ideology often led to conflict and dispute amongst the members which hampered the work of co-operative society.

**Desai (1962)** has widely described that the dairying is the most important subsidiary enterprise in the Khaira district of Gujarat state. Thus, the pattern of farming in the region is mixed with implies developing of crop production and animal husbandry to the best advantage of farmers.

**Singh (1963)** observed that the adopters of implements were from young age, had strong animals, possessed greater size of holding and were member of different organisations belong to joint families, had more number of working adults and were educated and belonged to high caste category.

**Chatterjee (1966)** on the basis of his study of multipurpose co-operative societies at Delhi concluded that low understanding of rules and activities of co-operatives by members was the reason for unsuccessful co-operative societies. He further reported that presence of communal factions, insincerity and disloyalty of members were the main factors responsible for the failure of multipurpose co-operative societies.

**Satyanarayana and Bhaskaran (1966)** concluded that a very high proportions of livestock owners (97.28 per cent) has adopted artificial breeding of cattle.

**Shah (1966)** rightly said that through a dairy co-operative as an agency of improvement and with dynamic partnership with federation, a tremendous progress was achieved in animal husbandry and co-operative extension activities.
Singh (1966) on the basis of a case study of two villagers of U.P. reported that the state election had divided the village and co-operative leader into two different groups, opposing each others of common interest.

Weiner (1967) reported that the Patels and Patidars were in fact the dominant castes in Gujarat. Similarly, evidence from Maharashtra implied that the upper caste who control sugarcane co-operatives were extending their reach to milk co-operative (Apte-1982). Existence of dominance by affluent high caste people had proved to be detrimental to growth of co-operatives (Guruswami and Chinniyan 1970).

Bhaskarna et al (1968) found that age of farmer had no appreciable association with the adoption of improved agricultural practices, but in the matter in relation of knowledge that young middle aged farmer were slightly superior to old group.

Kaura and Singh (1968) found that unfavourable attitude of farmers towards A.I. was the major cause for its non-adoption in Haryana village.

Rao (1968) studied the extent of adoption of certain selected improved animal husbandry practices in Gunture district (A.P.) and found that out of four animal husbandry practices the castration of scrub bulls was adopted by farmers, followed by disease control measures and A.I. The practices of rearing of improved, breeds of cattle was adopted the last.

Saraswath and Singh (1968) found that socio-economic status of the farmers was positively related with the extent of adoption.

Mehta (1969) reported that among the rural (primary co-operative) leaders and the salaried administrative and technical staff of these organizations, there existed mutual distrust and suspicion.
Bakshi (1970) studied the impact of Govt. milk supply scheme Jabalpur, on the dairy farmer around Jabalpur city and found that socio-economic factors like family size, size of land holding and heard size has significant influence on dairy milk production adoption of improved breeding, feeding management practices had favourable effects on 56 to 82 per cent adoptable industry, it was not associated with increase in milk production.

Chander (1970) confirmed the influence of education and adoption of A.I., He also revealed that the adopters of A.I. possessed longer size of land holding and had more number of cows and buffaloes than the non – adopters.

Srivastava (1970) reported that on the average of buffalo, in cattle development area with a dairy co-operative, produced annually 48.1 per cent more milk as compared to a contemporary buffalo in village having no dairy co-operative.

Kaber and Narang (1971) stated that cross breeding by artificial insemination was adopted by 3 to 4 times for more milk yield than local cows reduction in sexual maturity from 3.5 to 1.5 years and short calving intervals, better reproduction efficiency performance than deshi cattle.

Nakade (1971) evaluated the impact of key village scheme Jabalpur (M.P.) and indicated that the socio-economic factors i.e., age, education, land holding, social participation and duration of participation in key village, scheme had significant effect on the increase in dairy milk production. The motivating factors for adoption of improved dairy practices were subsidy, technical assistance and visit by officials.

Sinha and Sinha (1971) in a study of different adoption of dairying production found that the local substitute was most important reason reading to partial adoption of A.I. and feed mixture. Further finding was that farm size and heard size has significant association with level of adoption.
Dubey (1972) reported that executive as well as the ordinary members were not aware of the basic co-operative principles.

Dwivedi (1972) in a study of the impact of I.C.D.P. on adoption of improved animal husbandry practices around Bhind (M.P.), reported a favourable impact of I.C.D.P in influencing the farmers for adoption of improved animal husbandry practices to increase the milk yield.

George (1972) observed that the small farmer are characterized by small size of land holdings. The land holding of farmer is significantly associated with adoption behaviour of the small and marginal farmers.

Subbarogal (1972) observed that for the first time farmers had understood his inherent strength. In the areas where milk co-operative located, farmers sold their surplus milk twice daily through milk co-operatives in their respective village and got payment the same day or next day. With an assured daily income, the farmers are able to feed themselves and their cattle much better than they did in the past.

Bhattacharya (1973) emphasized that if one factor more than the other is acting as break on the speed of co-operative development in rural section is its lack of effective leadership.

Narang and Kaker (1973) experimented that milk production can be increased merely through undertaking systematic and scientific cattle development programme.

Vyas and Jodha (1973) found dairying is one of the activities for supplement the income of small man in the rural areas. They have tried to show that dairy could be used as measure to improve the conditions of rural poor.
Gupta (1974) Stress that progressive modernisation of dairying will not be possible unless the need of milk producers are kept in mind and essential technical input coupled with appropriate extension services are made available to them at their doors at optimum level.


Panikar and Bhatnagar (1974) observed a significant association between attitude and adoption of modern dairy husbandry practices.

Sharma and Nair (1974) observed from their study that attitude played a significant role in adoption behaviour of farmers.

Somjee and Somjee (1974) Carried out an investigation in Amul area to study the successful society in terms of social impact and reported that, bulk of the farmers supplemented their agriculture income by means of sale of milk and even welcomed year round income through milk business. The milk producing groups treated milk economy also as interesting economy. The panchayat became an area for the expression of one’s power and status drives where as the milk co-operative remained an organization for getting the best returns, in tangible economic terms for one’s milk output.

Balaswami (1975) explained that the majority of farmers belonged to high caste, were well educated and had high participation in social activities. They had high standard of living and enjoyed high socio-economic status, weaker section had benefited most from the sanctioning of loan of nationalized commercial bank.

Deve (1975), Patel et al. (1975), Kolla and Swami (1980) observed in their studies that the participants of more successful societies has better technical knowledge of modern technology which had direct influence on the successes of milk society.
Kakoty (1975) observed that 63 per cent of the respondents adopted improved breeds and 94 per cent improved disease control practice but adoption was very low in feeding and management practices.

Nochiappan (1975) pointed out that only few farmers having knowledge about balance feeding practices.

Patel et al. (1975) found in the case studies that low caste milk producers whose milk was turned away of co-operatives controlled by dominant castes, found a market outlet in the middleman. The Private milk traders often undertake business in village boosting dairy co-operatives among low castes.

Radhakrishnamennon and Duraiswami (1975) observed that high knowledge of small farmers about agricultural innovations having more extension contact.

Rao and Sohal (1975) analysed that the level of knowledge pertaining to dairy husbandry practices was found to the high among the members of the co-operative societies than the non-members of co-operatives.

Sinha et al. (1975) in a study entitled differential characteristics of adopter categories of A.I. around Amritsar reported that larger farm size and large herd size were significantly associated with the adoption A.I.

Subramanyam et al. (1975) reported in his study that all the farmers in the sample aware of A. I. Among them 60 per cent adopted continuously.

Tyagi (1975) in a study of factors influencing the adoption of dairy innovations by farmers of I.C. D.P Karnal (Haryana) reported that the adoption of breeding, feeding, disease, control and management practices were influenced by the herd size, knowledge, family education, farm size, sale of milk and occupation of farmers. The family size did not have any impact on the adoption of the above innovations.
Chaudhary (1976) concluded that the cross breeding which has been accepted as a national policy for increasing the milk production, need to be popularized, among the farmers; cross breeding immediately doubling the present milk production of cow, can be considered as short range gain thus obtained needed to be obtained consolidated by evolving a high yielding breed of the cow with special emphasis on the adoptability of such animals.

Dubey and Singh (1976) reported that majority of rural crossed cattle owner did not have knowledge regarding time of feeding, colostrums to calves and that of feeding mineral mixture and providing salt licks.

Hundel and Sohal (1976) experimented that excepting age, all the other personal characteristics, were significantly correlated with the adoption of improved dairy practices.

Kamat (1976) observed village faction and existence of vested interest as the weaknesses of the primary societies in regard to their totally inadequate coverage of small farmers and agricultural labourers in certain areas.

Kappse and Sohal (1976) reported that the knowledge of cattle owners about certain practices like improved fodder cultivation, balanced feeding, management practices etc was found to be very low.

Mikkilineni and Sohal (1976) manifested that adoption of the improved practices was found to be low with respect to certain practices such as balance feeding, concentrate, flooring of cattle shed, growing of improved varieties of fodder and practice of artificial insemination in the herd.

Mikkilineni and Sohal (1976) observed that the personal characteristics were found to have significant association with the adoption of improved dairy practices.
Patel and Pandey (1976) stated that facilities provided by the milk co-operative was one of the casual factor for high yields in dairy village. Apparently the various facilities provided by the milk co-operative have not only helped the farmer milk producers but also the weaker section in enhancement of milk production.

Singh (1976) found that 68 and 32 per cent of the adopter farmers had high and medium level of knowledge about A.I. respectively, while majority of non adopters had either low or medium and only 10 per cent had high level of knowledge. Overwhelming majority of the farmers (93 per cent) had adopted A.I. in cattle, to improve the breed.

The National commission on Agriculture (1976) indicated that most of the co-operative failed to develop properly. Double have been normally expressed in the efficiency of emphasising the co-operative structure for development of dairying in the country moreover, it is very clear to expect Gujarat, Maharashtra and some other states dairy co-operatives have not become a popular movement in most part of the country.

Dubey et al. (1977) reported that the milk tests and secretary were accused by the member. The executives of the milk producer co-operative societies were quite sure over triple handling. There were often found fighting with plant staff for recording low yield, low fat percentage and milk spoilage.

Gill and Singh (1977) elaborated that majority of cattle owners had known about the precautionary measures to be taken against contagious diseases, whereas, 80 per cent of dairy men had knowledge about that can be prevented by vaccination.

Khan (1978) found that socio-economic status had significant influence on both the adoption behaviour and aspirations of small and marginal farmers.
Kohli (1978) found absence of loyalty of members which hindered the growth of dairy co-operation.

Kohli (1978) reported that the following problem in dairy co-operative which hinder its growth (1) management was in handful of selected members who had no knowledge of management skill (2) lack of proper organization and coordination.

Palet (1978) reported that a crossbred was twice as expensive to rear as its local counterparts. But Apte, (1982) reported that cost of maintaining a high yielder was 80 per cent more than local cattle.

Sharma (1978) stated that maximum respondents come under the middle class socio-economic status followed by upper and lower socio-economic status.

Sohal and Tyagi (1978) reported that more than 60 per cent of cattle owner had knowledge about the recommended innovation practices.

Vaishnav (1978) found that the low yielding dams cannot always support crossed offspring, consequently there are high rate of calf mortality.

NDDB (1979) found that the secretary controlled the co-operatives for his own benefits. The milk collected was sold partly to the chilling centre and partly for his creamy business in manner Patna.

Dilip (1980) revealed that the dairy development is very significant instrument of rural development especially to rural poor.

Pawar and Bhujbal (1980) found that 55.5 per cent of the ordinary members had high knowledge level where as 44.5 per cent had low knowledge level. They further reported that 56.5 per cent of the ordinary members were high adopters.
Shah (1980) showed that under the Modern Dairy technology, high cost was involved in maintaining high yield milch animals.

Sharma (1980) found that A.I. in buffalow has been hampered because of low conception rate.

Sharma (1980) reported that non availability of high yielding variety of fodder seeds and mineral in the area. Lack of knowledge of improved feeding practices, non availability of compound feed, high cost of input etc. were main constraints in livestock production.

Sohi and Kherde (1980) elaborated that India, more than 80 per cent of cattle population is in rural areas and about 94 per cent of milk is produced by small farmers, marginal farmers and agriculture laboures.

Bhatt (1981) articulated that the reason for poor performance of dairy co-operative is that, most of these co-operative societies are in bad shape. Moreover, a viable strategy for procurement of milk through primary milk co-operative has not been evolved. Most of co-operative have lost credibility with the producers as well as primary societies of irregular and under payment of milk price.

IRMA (1981) revealed that in two superior castes the Kamma’s and Reddy’s in Guntur district of Andhra Pradesh which were battling for supremacy fight in milk co-operatives.

Pandey (1981) when he calculated the economics of milk production in rural area of Baroda district (Gujarat) concluded that the milk price paid to the producers by the co-operative were low compared to the actual production cost.

UN/FAO (1981) evaluation mission observed some of the problem in dairy co-operative which are as follows.
1- Frequent transfer of officials.

2- Excessive government intervention in financial matter like pricing.

**Balasubramaniam and Knight (1982)** reported that amongst the various reason quoted by dairy farmers for partial or non-adoption of green fodder, the limited farm size was the most important reason. Availability of Agriculture by-products less income from green fodder, non-availability of water growing green fodder and non-availability of seed were reported of other reasons for partial or non-adoption of green fodder.

**CED (1982)** observed that even those produces and supplied milk to co-operative unions did not get remunerative price for it. The price paid by Union did not cover the cost of milk production.

**Patel et al. (1982)** reported that in adopted villages of N.D. R. I. Karnal, the area under fodder crop is as high as 18 per cent. It is because of irrigated land, availability of good quality seed and high extension contact and lot of emphasis on milk production.

**George (1983)** reported that anti-caste role of KDC MPU themselves let slip instances of discrimination against untouchable caste by village milk co-operatives. Bharwards Predominantly illiterate (Cowherds! Goatherd! Shepherds) despite their repeated attempts were not allowed to become members of the dairy co-operatives.

**Hazarika (1983)** observed that most of the respondents possessed medium to high level of knowledge in feeding on health care areas, whereas in the breeding areas most of them had poor knowledge level. He concluded that fairly large number of farmers had very poor knowledge. He also observed positive and significant relationship between knowledge of dairy farmers and their occupation, family size, family education, status and breedable herd size. The contributing variables which were delineated as crucial to the adoption of improved practices were knowledge and social participation.
Jalal (1983) found dairy industry mainly existed in private as well as co-operative sectors. Private sector is characterised by exploitation of common man. It take double advantage of exploiting both the producers and consumers.

Pawar (1983) reported in the correlation analysis of pooled data that herd size, milk production, extension contact, mass media exposure and risk orientation were positively and significantly related with knowledge of the milk producers.

Punjarath (1983) found that the following factors responsible for failure of Bihar state dairy corporation.

1- Bureaucratism in the organization.

2- Failure to adhere to the elective principals an Anand pattern.

3- Lack of effective supervision of the village dairy co-operatives to prevents corruption at village level as well as at lower levels and irregularities in milk collection leading to its sourceness.

Rajaram (1983) on the basis of the village survey in Khaira district of Gujarat concluded that factional tussle affected milk co-operative societies severely.

Sayeed (1983) found that age, education, family education status, family size, herd size, land holding, extension contact, milk production and mass media exposure were greatly influencing (either positively or negatively) the knowledge, attitude and adoption level of dairy farmers. The extension contact was found to have highly positive and significant with knowledge of dairy farmers.
Kulanaiswami (1984) revealed that the co-operative milk producer union popularly known as AMUL is presented as an example of the success of dairy co-operatives and Anand Model have been accepted as a strategy for rural development and operation flood has its method in 52 districts throughout the country.

Nataraju and Channegowda (1984) reported that in Bengalore district the AI. service is free of charge this is the main reason for majority farmers adopting A.I..

Nataraju and Channegowda (1984) studies that about 49 per cent of the farmers were not adopting the feeding of recommended doses of concentrates to their animals.

Kologi et al (1985) reported that Tibetan refuges has better adoption in breeding (60.8 per cent) and health care (54.44 per cent) practices and total adoption figure is also encouraging (48.24 per cent). This higher level of adoption in this area is due to their concentration and better exposure, conviction and their own progressiveness about the modem dairying innovation. The adoption level could increase still further, if more inputs were added to their dairy development programme.

Srivastava et al. (1985) found the feeding practices of pregnant buffaloes for giving special feed and concentrate of different stages of pregnancy revealed that plenty of green fodder and concentrate as a special feed was fed by 52.66 per cent respondents as 5.33 per cent not giving feed at different stages leads to proper development of the calf. It is also reported that age was not significantly correlated with the adoption of improved dairy management practices in feeding the buffaloes, whereas education, income and herd size were found to be significantly correlated.
Agrawal and Sharma (1986) reported that 31 per cent and 10 per cent respondents of key village availed of veterinary and A.I. facility, respectively, 43 per cent received advice regarding veterinary aids from NDRI staff. These figures in non-key is 7.0, 0.2 and 1.0 per cent respectively, due to lack of such facility. The study revealed that improved dairy husbandry practices i.e. breeding, feeding and management of animal can play important role in increasing milk production potential of animal.

Bhalsal et al (1986) reported that majority of the contact farmers were in a group of medium communication behaviour.

Nataraju et al (1986) reported that adoption level of animal husbandry practices by small farmers, marginal farmers and agricultural labourers has significant difference among these categories with respect to their adoption level. 70 per cent of agricultural labours, 90 per cent marginal farmers and 98 per cent small farmers belong to the category of medium to high adoption level. Low adoption level of agricultural labour may be attributed to their low knowledge level about specific dairy coupled with lack of resources and capital investment and lack of land to cultivated green fodder.

Nataraju and Channegowda (1986) reported that low knowledge level of marginal farmers attributed to his inability to spare the working hours to seek new knowledge, lack of economic resources to match the new knowledge or his lower education level. In addition, being in the lower range of socio - economic hierarchy of the rural community.

Nataraju and Channegowda (1986) reported that there is no association between age and knowledge level of different categories of dairymen. Age is not important factor in stimulating farmer of further action and generally young farmers are exposed to mass communication.
Nataraju and Channegowda (1986) experienced that the more than 80 per cent of dairymen were familiar with improved milch breed and artificial insemination (A.I.). Majority of the small farmers than marginal farmers and agricultural laboures had known these practices.

Nataraju and Channegowda (1986) found that in adoption of breeding practices, more than 50 per cent of dairy farmer owned crossbreed cow and 72.2 per cent participated artificial insemination in cow. It is concluded that adoption of A.I. for cow was maximum, compared to other dairy practices.

Sohal et. al (1986) reported that education of cattle owners by organizing film shows, calf rally, demonstration, Dairy Melas and various campaigns to attend to specific problem such as prevention of contagious diseases, infertility treatment control of endo and ectoparasite, assisting in other input such as shed, feed, fodder and give the facility for A.I. and first aid, if these things are involved in transfer of technology then the farmer adopt dairy farming technology.

Vithal (1986) reported that the factions among villagers and caste dominance hindered the successes of dairy co-operatives.

Vithal (1986) found that the “Practices of Proxy” and “Ignorance of avocation” the success of dairy co-operatives.

Acharya et al. (1987) reported that the farmers in irrigated area kept more dairy animal than unirrigated area. Investment and per farm income are more in irrigated areas but the share of dairying in total income is higher in unirrigated areas. Buffaloes have clear income advantage over cows in both irrigated and unirrigated areas.
Ashok Kumar (1987) found that knowledge of breeding, feeding, health care, management and overall communication were positively and significantly correlated with overall adoption of dairy innovations in both cases of beneficiaries and non-beneficiaries under lab to land programme.

Goswami (1987) found that education and economic status of livestock owners had positively and significant associated with knowledge about A.I. vaccination against contagious disease, cultivation of green fodder and feeding of green fodder and concentrates. Herd size was positively and significantly correlated with knowledge level about deworming, cultivation of green fodder and feeding of green fodder and overall knowledge about animal husbandry practices.

Kunzru et al (1987) reported that the adoption of preventive vaccination against the FMD, HS, BQ is low due to animal feels restless and there is a decrease in the milk yield, through, temporarily in vaccinated animal.

Rao (1987) reported that 32 per cent respondents in study area were not adopting A.I. as against 18 per cent partial and 50 per cent complete adoption. The adoption is more in Kerala, Karnataka, Tamil Nadu, Haryana, Punjab, U.P., Gujarat, because of availability of A.I. facility in most of the villages, good market for cross breed, great demand of milk and favourable policies of the concerned state government as well as the attitude of the farmers.

Rao (1987) reported that in dry land area all the respondents (95 per cent) have turned out to be non-adopters of green fodder production.

Rao (1987) reported that 70 per cent farmers got vaccinated their animals against H.S. because veterinary institution of the concerned A.H. department arranged vaccination at negligible cost.
Rao (1987) reported that as high as 67 per cent of farmers have not adopted technology of balanced cattle feed.

Singh and Singh (1987) reported that dairying is economically feasible on landless labours and marginal farmers households. An amount of Rs. 746.35 and Rs. 943.37 can be earned by a landless labours and marginal farmers household by keeping only one buffalo on the farm. Moreover, the farmers used mainly their unemployed and underemployed family labour in managing the buffaloes.

Gupta (1988) reported that the degree of adoptability of modern techniques of A.H. has a positive relation with big family size, more education, more land holding, more no. of animals, forward caste and agriculture as the main occupation.

Hirevenkagoudar et al. (1988) found that over 56 per cent Karnataka dairy development corporation (KDDC) beneficiaries were getting 50 to 75 per cent of their family income from dairy enterprise, where as 60 to 87 per cent of non KDDC farmers were getting 25 per cent of their income from dairy enterprise. All KDDC farmers were selling milk through dairy co-operative society. Most of the small farmers and agricultural laboures in KDDC programme thought that dairy co-operative societies were the best agencies for milk marketing.

Kakote et al. (1988) reported that balanced feeding is not being adopted due to high cost and non-availability of quality feeds. It is represented that only 27 per cent of the recommended feeding technology was adopted by the tribal cattle owners.

Kaushik (1988) reported that the attitude towards dairying was positively and significantly correlated with knowledge and adoption of
scientific dairy husbandry practices of the dairy farmers in milk producer co-operative societies areas and non milk producer co-operative area.

Mascarenhas (1988) reported that one of that aspects the affect the smooth functioning on milk procurement. It was the price of milk which was still controlled by the government in Karnataka. He further reported that the society staffs were tempted to adopt to fulfill the requirements of auditing the Accounts.

Nataraju and Channegowda (1988) studied that the knowledge level of respondents increased along with the continuum of level of use of information sources. This indicate that farmers were having high use of information sources and have high knowledge about dairy innovation than farmers having less use of information sources. It is also found that adoption level increase alongwith level of usage of information sources. Farmers having more contact with extension agent and high extension participation were tend to adopt more number of innovations.

Ram (1988) studied in Jaipur district milk producers co-operative Union in Rajasthan stated that administrative structure of the union was outlined, as well as ways in which the main functions were carried out, milk collection, supply of technical farm inputs (Animal health care, breeding technology etc.) and extension programmes.

Verma (1988) observed that beneficiaries had more favourable attitude towards scientific dairy farming practices as compared to non beneficiaries.

Barman et al (1989) reported that adoption of concentrate feeding is very high among the members of the milk producer co-operative society especially in area of where the availability of green fodder is very poor.
Gopala and Maraty (1989) revealed that the majority of the respondents perceived “Low price of milk for a litre” as a main problem followed by “delay in payments”. There were no “provision for loans” to purchase cattle. But 10 per cent of respondents felt the need for loan to purchase milch animal in the programme.

Gupta et al. (1989) observed that educational constraint is one of the reasons for non-adoption. It is a fact that the rearing of cross breed cow involves complex technique like breeding, feeding and management. For this technology individual contact is must rather than groups and mass contact.

Gupta and De (1989) reported that there was non-significant difference in the technical, economical, socio-cultural and educational constraints between adopter and non-adopter in rearing cross breed cow. It may be due to fact that non-adopters might be laggards which might have played an important role in hindering to accept crossbreed cows.

Hirevenkagoudar et al. (1989) observed that majority of the farmers of Karnataka Dairy Development Corporation expressed that Doctor visited the village, once in a week, whereas 87 to 92 per cent of non-Karnataka Dairy Development Corporation expressed that Doctor visited the village regularly. It was also found that more than 80 per cent KDDC farmers not paying any service charge for vaccinating their animals whereas nearly 80–84 per cent of non KDDC farmers were paying 5-10 rupees at a time for getting their animal vaccinated.

Inmake et al (1989) found that members of large societies gained more benefits in terms of quality of milk, quantity of feed supplied, loans and veterinary facilities.
Kunzru *et. al.* (1989) reported that economic consideration constitute main constraints, perceived by livestock owners in producing fodder on their farm. The cost of seed of improved variety is very high and non-availability of credit facility is other constraint. Lack of knowledge about package of practices of improved variety of fodder crop should be emerging from their inadequate knowledge about advantage of feeding green fodder to the dairy animals and their limited contact with extension agencies.

Manipal *et. al.* (1989) reported that overall adoption of dairy innovation i.e. breeding, feeding, management and health care about 19.2 per cent were reported to high adopters. It could be said that farmers adopted more easy and less costly innovations as compared to technically complicated and more costly innovations.

Mahipal and Kherde (1989) observed that the farmers who had higher socio-economic status, maintain more number of animals, acquired more knowledge, contacted more extension agencies and have more mass media exposure and more utilization of information sources which might have ultimately resulted in higher adoption of breeding practices.

Nataraju (1989) concluded that if supplies services and technical assistance by a single agency, than farmers, even with little education, low participation in extension activities and small herd size could be approached and involved in technology adoption.

Shroti (1989) revealed the following constraints as perceived by milk producers of M.P.C.S.

**Serious Constraints:-**

1- Unsatisfactory by Law.

2- Time of milk collection was not suitable to milk producers.
Not so serious:

1- Milk procurement system was satisfactory.
2- Management committee system was not elected democratically.
3- No facility to sell small quantity of milk.
4- More milk for sample.
5- Dishonest society staff.
6- Society staff was punctual.

Shroti (1989) reported that following constraints in dairy co-operative on the basis of seriousness'.

**Very serious:**
1- Lack of technical training and guidance for growing green fodder.
2- First aid workers were not qualified and trained.

**Not so serious:** Procurement staff was untrained.

Singh et al. (1989) reported that respondent possessed medium level of adoption (60 and 70 per cent followed by low level of adoption) 31.67 and 18.33 per cent of agricultural labours and small farmers were found to have high level of adoption.

Singh et al. (1989) observed that the constraints in adoption of dairy innovation among agricultural labours viz. poor level of knowledge about A.I., high cost of cattle feed, distant location of veterinary hospital, easy availability of natural services, non-availability of improved breed in local market and lack of finance. In case of small farmers, it was poor knowledge of A.I., high cost of cattle feed, small holdings, easy availability of natured services and lack of finance. It revealed that proper knowledge about A.I., cost of cattle feed and easy availability of natural service were found to be common constraints in adoption of dairy innovation in case of both agricultural labours and small framers.
Singh et al. (1989) studied the relationship of independent variables and adoption of dairy innovation, it indicated that education, socio-economic status, herd size, social participation and extension contact have exerted positive and significant influence on adoption behaviour of both agricultural labours and small farmers. However, channel of information of various innovations has not influenced the adoption behaviour of small farmers.

Bardhan (1990) revealed that majority of the beneficiaries of operation food either belong to scheduled caste or scheduled tribe or other backward class. Many to them were agricultural labours. The co-operative membership pattern had been such the very participation ensured barriers economic inhibition and communal disease.

Dixit et al. (1990) reported that farmers of A.I. adopted village had mean attitude score 13.04 than that of farmers of non-adopted village 10.04. This indicated that the farmers of both groups differed significantly in their reaction about A.I., It concluded that the farmers of adopted village were having more favourable opinion to A.I. in buffaloes than the counter part to non-adopted village.

George and Nair (1990) studied that in Kerala, farmers opted natural service because of inadequacy of existing infrastructure and partly because of the inconvenient location of A.I. centre.

George and Nair (1990) reported that rapid adoption of cross breeding programme in Kerala was attributed to the growth in demand of milk increased return for milk production, decline in the requirement of drought animal in agriculture and expansion of the market of breed.

Krisharaj and Dubey (1990) revealed that there had been an active participation in the affairs of the society by the members of the most efficient societies. This means that their participation in meetings by way of
supporting/opposing the proposal and resolutions with proper reasoning, raising questions, giving suggestions and opinions, insisting on good minutes, not wasting time on minor details and casting vote too were high. It indicated that active discussion about the matter relating to working of the society led to the functional efficiency of the MPCS.

**Rao and Kherde (1990)** reported that to accelerate the extent of dairy production technologies, it is essential to transfer the technology with the least distortion. If massage is simple it could be transferred with less amount of distortion of the dairy farmers. On the contrary as there is a high probability of massage getting distorted in case of complex message.

**Sharma and Mehta (1990)** observed that farm income can be increased by introducing dairy in the optimum cropping plan of the farmer. Employment is also increase in both the type of farmer with the introducing of dairy i.e., cross breed cattle and this will reduce the stress on land.

**Sharma (1990)** reported that the farmers who have higher education have higher rate of adoption of the recommended practices envisaged under the programme of ICDP. It is also concluded that increase of score on educational result, increase of score on the personality traits (i.e. socio-economic status, attitude toward dairy herdsize) of farmers which in turn further promotes adoption.

**Singh et al. (1990)** reported the conception through natural service need less number of round as compare of A.I. It was found that chance of conception at first round of insemination was 36-48 and 70-92 per cent for A.I. and natural service respectively.

**Singh (1990)** reported that the average conception rate through natural service was 60.2 per cent in buffaloes and 73.8 per cent in cow under field condition. It was affected significantly by season of insemination, time of insemination and breed of animal in buffaloes but no such effect was observed in cows.
Singh et al. (1990) reported that the mixed farming with milch animal along with growing fodder crops on the same land unit generated more employment potential with uniform demand for labour throughout the year in comparison to arable farming.

Verhagen (1990) found that the poor categories i.e., the landless laboures and marginal farmers who together comprise a sizable portion of the Indian population were poorly represented in the operation flood project in comparison to their numbers. The participation of the landless poor was very modest.

Dixit and Narwal (1991) reported that farmers of A.I. adopted village were having more knowledge about A.I. than their counter part of non-adopted village. He studied that, difficulty in heat detection, non-availability of good quality semen, lack of trained inseminator, lack of facility of A.I. in village and more number of insemination is required in buffalo are the causes of dissatisfaction of farmer toward A.I. in buffalo.

Raju and Maraty (1991) reviewed the following constraints as perceived by milk producers.

- irregular supply of semen of exotic breeds,
- lack of seed of HYV’s of fodder with insufficient training on cultivation of practices.

Raju and Maraty (1991) reported that “Lack of knowledge about social participation” was responsible for the future of milk cooperatives.

Sagar (1991) found that the knowledge about contagious disease like H.S., F.M.D. and its vaccination deworming and cultivation of green fodder crops had significant relationship with productivity of which animals had greater impact on the transfer of technology programme.
Satish Kumar (1991) observed that adoption of A.I. depends upon:
- knowledge of farmer about its advantage over natural service.
- his ability in identifying the animal in heat.
- his attitude toward A.I. as well as the insemination.
- the acceptability of technical inputs, such as semen.
- A.I. equipments and technical services of an inseminator.

Sharma and Intodia (1991) reported that 63.1, 21.4 and 15.6 per cent respondents were in the medium, high and low adoption of improved A.H. practices in developed village respectively, whereas, under-developed village these figures are 56.1, 43.3 and 0.6 per cent respectively. This reveals that livestock keeper of under-developed village had adopted less improved A.H. practices than respondent of developed villages.

Babu (1992) studied that highly positive and significant relationship found between knowledge about animal husbandry practices and age, social participation, extension agent contact and mass media exposure of milk producers. Highly positive and significant relationship was also found between attitude towards dairy farming and cross breeding, vaccination against contagious disease.

Chandra and Kaul (1992) reported that in Paury Garhwal district the farmers in the project area had higher level of adoption of improved A.H. practices and on an average lesser number of dairy animal with greater per capita productivity as compared to non-project area.

Dana (1992) found that the livestock owner within medium and high level of knowledge about A.I. were having significantly favourable attitude toward A.I. in cattle. However, low level of knowledge resulted in establishing unfavourable attitude. So greater emphasis is needed in educating the livestock owners about A.I., especially on symptoms of heat, right time of insemination and practice of progeny diagnosis.
Jain and Verma (1992) reported that respondents of high socio-economic status belonged to higher caste having cultivation as a occupation, educated, big land holders with more farm power, milch animal and higher gross income, use to take lower work load as they have employed permanent or hired labour for animal husbandry activities which reduced the involvement in sampled women respondents.

Rajendra et al (1992) found that only 26.67 per cent of the sample farmer fed their milch animal based on the milk production. Majority of house holds failed to fed the dry animal properly likewise feeding of pregnant not receive much attention from the farmer indicating a lack of awareness of scientific feeding of dairy cattle. The percentage of adoption of A.I. and natural service were 85.53 and 14.7 per cent respectively. The non – adopters maintained poor conception rate and long distance to the insemination centre as reason for non – adoption.

Rao et al. (1992) reported that dairy farmers with more land and animal, having high family education status, and social participation, more extension contact and mass media exposure and high knowledge of dairy innovation are found to be better adopters of dairy technology. Similarly the dairy farmers who consume and also sell more milk were found to better adopters.

Singh (1992) reported that the participation of members from all section of societies was one of the major objective of co-operatives. There were 54 per cent backward caste groups in both more successful society (M.S.S.) and less successful society (L.S.S.) and 18 per cent members were from scheduled caste in MSS and 13 per cent in LSS. Member from general castes were 28 per cent in LSS and 33 per cent in MSS.
Singh (1992) reported that "Discrepancy in reading of fat and S.N.F. between society and Union" was the only constraint among miscellaneous constraints.

Singh and Thomas (1992) observed that adoption of newer technology in dairy enterprise 11 and 4 per cent respondents adopted the available technology of dairy farming and non-adopted villages respectively. It observed that the adoption level had a positive relation with farm size and cross breed cattle in both of villages.

Singh and Thomas (1992) observed that knowledge of newer technology in dairy enterprises was estimated and found that 37 and 14 per cent of sample household were aware of the technology in adopted and non-adopted villages respectively. 61, 30, 27, 13, per cent higher knowledge of sample household were in A.I., vaccination, improved feeding, green fodder in adopted village respectively over non-adopted village.

Singh and Thomas (1992) observed that overall 11 and 4 per cent sample households adopts the available technique of dairy farming in adopted and non-adopted village, respectively. Further, it is found that adoption level has positive relation with farm size in both type of village. It indicted that the level of adoption of newer technology was having the positive relation with economic condition of the users. The technology of cross breed cattle adoption has gained better place as compared to other technologies in both the villages.

Singh and Tyagi (1992) reported that the highest percentage of dairy farmers 47 per cent was found to have medium level of communication behaviour. On the other hand 26 per cent of the dairy farmers had high communication behaviour and they belong mostly to long and medium land holding size.
Singh and Tyagi (1992) reported that the communication behaviour of dairying farmer increased significantly with increase in landing holding size. It is found that high education, more contact with various channel and sources, outside contact increased the knowledge of dairy farmers. Farmers have more knowledge, more education, and possessed better communication behaviour.

Bairathi (1993) reported the following constraints as perceived by the milk producers of M.P.C.S. on the basis of seriousness.

- lack of technical guidance
- non availability of green fodder round the year.
- non availability of timely veterinary services.

Serious constraints

- emergency veterinary services are not available timely.
- A.I. facilities are not available timely
- lack of supply of FMD and HS vaccine even on payment.

Shreeshailaja et al. (1993) reported that majority of dairy farm women belonged to middle age group, illiterate and owned the crossbreed cows. About 57 per cent of them have 5-10 years of experience in dairying. A great majority had low social participation and medium extension. 87 per cent had low extension participation and 55 per cent have medium mass media participation, 48 per cent had medium innovation proneness and 63 per cent have low achievement motivation. Only 13 per cent of them had undergone institutional training. It is found that a large majority of farm women took decision on their own in respect of taking care of animal and fixing the time of milking. Few joint decisions were taken on aspect such as selection of breed, selection of produce and spending pattern of income.
Ram Chandra et al (1994) conducted a study in Haryana, West Bengal and Himachal Pradesh and reported that 15.35 per cent and 50.84 per cent respondents who were having low and medium level of adoption of dairy innovations were largely illiterate. The factors of knowledge and attitude were found to have equal contribution for adoption of new technology. It was also reported that women have been considered as a supporting worker but denied from the responsibilities and benefits of independents decisions making in livestock enterprise.

Singh et al. (1994) reported that mixed farming along with growing fodder crops on the same land unit generated more employment potential with uniform demand for labour throughout the year in comparison to arable farming.

Singh (1994) In his study of constraints in milk production as perceived by the milk producers in Meerut U.P. found that member milk producers of M.P.C.S. who were having higher education, large herd size and selling more milk to M.P.C.S. were satisfied with working of M.P.C.S. in comparison to their counterpart who were having on education or low education smaller herd size and selling less quantity of milk to the M.P.C.S.

Singh (1994) reported the following perceived constraints by the milk producer members:-

(1) Bad behaviour of executive committee toward members.
(2) Preference of the drought animals over milch animals.
(3) Lack of confidence in cooperation.

Yadav (1995) concluded that maximum respondents had good or average level of knowledge, rest belonged to poor and very poor level of knowledge regarding improved animal husbandry practices, only 3.33 per cent respondents had very good level of knowledge regarding improved animal husbandry practices.
Yadav (1998) reported that the respondents who had higher socio-economic status were greater adopters and those who had lower socio-economic status were lower adopters of improved animal husbandry practices.

Naresh Chandra (2000) find out in his study that the knowledge of cattle owner about the selected practices of dairy farming knowledge, regarding feeding habits of animals (50.00 per cent), breeds of cows and buffaloes (48.75 per cent), milking of animals (48.75 per cent), disease and vaccination of animals (43.75 per cent), making of fodder and balanced feed (43.75 per cent) respectively. While 65.00 per cent were having the knowledge of dairy management practices, 62.50 per cent artificial insemination, 58.75 per cent feeding of youngs, respectively.

Naresh Chandra (2000) reported that maximum dairy farmers were found under good level of adoption, i.e. breeds of cows and buffaloes (46.25 per cent), milking of animals (46.25 per cent) disease and vaccination of animals (42.50 per cent), making of fodder and balanced feed (42.50 per cent), respectively. While 71.25 per cent artificial insemination, 62.51 per cent dairy management practices, 57.50 per cent feeding of youngs, 53.75 per cent feeding habits of animals.

Naresh Chandra (2000) Concluded that dairy farming is the present day need of the villagers. Dairy owners have some problems of dairy farming such as economical, Infra-structural, which are responsible for the commercial dairy farming.