

CAPACITY BUILDING OF SCHEDULED CASTE RURAL WOMEN THROUGH PROCESSING OF MILK AND MILK PRODUCTS

By

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2009

Dedicated to
My adorable
Father
Late Shri Mohar Singh
&
Loving mother
Smt. Rajbala



CERTIFICATE – I

This is to certify that this dissertation entitled, “**Capacity Building of Scheduled Caste Rural Women Through Processing of Milk and Milk Products**”, submitted for the degree of M.Sc., in the subject of **Home Science Extension Education** of Chaudhary Charan Singh Haryana Agricultural University, Hisar, is a bonafide research work carried out by **Monika Yadav (2007HS200M)** under my supervision and that no part of this thesis has been submitted for any other degree.

This assistance and help received during the course of investigation have been fully acknowledged.

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CERTIFICATE – II

This is to certify that this dissertation entitled, “**Capacity Building of Scheduled Caste Rural Women Through Processing of Milk and Milk Products**”, submitted by **Monika Yadav (2007HS200M)** to the Choudhary Charan Singh Haryana Agricultural University, Hisar in partial fulfillment of the degree of M.Sc., in the subject of **Home Science Extension Education** has been approved by Student’s Advisory Committee after an oral examination on the same.

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CHAPTER-I

Introduction

“Untouchability shut all door of opportunities for betterment in life for Untouchables. It does not offer Untouchables. It does not offer an untouchable any opportunity to move freely in society, it compels him to live in dungeons and seclusion; it prevents him from educating himself and following a profession of his choice.”

Dr. B.R. Ambedkar

India is not only a union of 27 States, but it is also a union of 5,000 castes. The castes, which were the elite of the Indian society, were classified as high castes. The other communities were classified as lower castes or lower classes. The lower classes were listed in three categories. The first category is called Scheduled Castes. This category includes in it communities who were untouchables. In modern India, untouchability exists at a very low extent. The untouchables call themselves Dalit, meaning depressed. Until the late 1980s they were called Harijan, meaning children of God. This title was given .untouchables within them. The population of India, as per 2001 Census, is 1,028,737,436 of which 166,635,700 (16.2%) are Schedule castes. Today scheduled caste account for sixteen percent of India's population. Where as in case of Haryana, total population is 21, 144, 564 of which 4, 091, 110 (19.3%) total Scheduled castes population of Haryana has been categories in 37 Castes (Annexure-I).

A majority of the SC population (78.5%) of the state is residing in rural areas. There is meager improvement in the socio-economic condition of scheduled caste in the past 50 years. What so ever has done is not enough when compared to non- scheduled castes of course, much more needs to be done. The urgent need is to have a national sample survey on scheduled caste. There is no proper survey to give the correct number of scheduled caste women in India. They are generally scattered in villages and they are not a monogamous group. About 75 percent of scheduled castes live below poverty line. From the time immemorial they worked like slaves, sold as commodities resulting in their social discrimination, economic deprivation and educational backwardness. The Work Participation Rate (WPR) of SC population is said to be for males 22.25 percent and for females 25.98 percent.

The contribution of SC women to the economic development of our country is significant especially in the agricultural sector. They are exploited by the higher caste landlords. They are paid very marginal salary for the hard work in the field for the whole day. In leather industries the tanning process is considered to be an unclean job which is done only by socially backward class. Traditional artistes get very more benefit because the middleman exploits them. The condition of scavenger and sweepers is very deplorable and they are the most vulnerable sectors among SC. The working condition is very poor and the remuneration is also very poor. To enhance the status of SC population in India, government of India has made various efforts. One of the most commendable efforts done by government is starting Special Component Plan which was introduced under 6th five year plan. Under Special Component Plan all the development departments are implementing scheme for scheduled caste related to income generation, drinking water, roads, nutrition, horticulture, agriculture, village and small industries, animal husbandry, veterinary science, sericulture etc.,

besides constructing community halls at Harijana colonies. It was found that under Swarnjayanti Gram Swarozgar Yojana (SGSY) 2.26 lacs swarozgaris were assisted upto sept. 2001, of which 1.15 lack were SCs.

It is strange but true that despite various governmental efforts made for the welfare of SC population, the socio-economic status yet to be improved to a satisfactory extent. Hence, they need to be motivated and require capacity building support which will improve their ability to manage their own resources.

Capacity building is defined as the "process of developing and strengthening the skills, abilities, processes and resources that organizations and communities need to survive, adapt, and thrive in the fast-changing world." (Philbin, 1996) Capacity Building is much more than training and human resource development, the process of equipping individuals with the understanding, skills and access to information, knowledge and training that enables them to perform effectively. Capacity building through economic enterprises is the first and foremost strategy suggested to integrate scheduled caste women and youth into ómainstreamô Indian society. However, due to inadequate exposure, they are unable to ascertain the enterprise for self employment.

It has been observed that there is a lot of scope for processing of milk and milk products. Milk is the major constituent for the production of khoa. It is a very profitable venture for the beginners. It has been reported that the fixed cost in the production of khoa was nominal and accounted for about one per cent of the total cost of production. Net cost of the production of khoa to be producers of khoa was estimated at Rs. 33.66 at an average in whole year, marketing margins for producers in all the seasons was found to be highest among all market channels. Marketing cost of khoa amounted to more than 2 Rs./kg and formed at least 6 per cent of the net cost to the producer during the whole year (Kumar *et. al.* 1995).

Agriculturists and nutritionists have generally agreed that developing the processing of milk and milk products is the fastest means of bridging the protein deficiency gap presently prevailing in the country. It is also a promising source of additional income and quick returns from investment. The FICCI survey identified the sectors that have recorded a high growth rate between 10 per cent- 20 per cent include milk products (10%), traditional/ unorganized milk products (10%), organized branded milk products(15%), khoa/chhana based sweets (10%), butter (10%) and 12 per cent for curds and curd products (FICCI ò Food and Beverages Surveyö2006).

A number of projects, especially directed at families below the poverty line (BPL) are in various stages of implementation. Processing of milk and milk products with just peripheral institutional support has the potential to supplement the income of poor rural households, especially those of landless labourers and marginal farmers. Processing of milk and milk products model empowers women, gives a semblance of financial security to famished households and, in many instances, has also proven to be the financial mainstay of the family. It is obvious that villagers can not adopt industrial approach to processing of milk and milk products because of lack of proper knowledge or training and resources. Therefore present study has been planned with the following objectives:

1. To identify the problems and socio-economic deprivations faced by scheduled caste-families.
2. To organize training on processing of milk and milk products and assess its impact on capacity building of Scheduled Caste women.
3. To explore the acceptability of processing of milk and milk products enterprise for income generation.

Scope of study

The present study is an attempt to explore the acceptability of processing of milk and milk products technology for economic empowerment i.e. developing entrepreneurship and starting income generating projects in rural areas for SC families. Since no study has been conducted so far on such aspects, therefore, this study will provide data base and important scientific information about the prospects of processing of milk and milk products technology for income generating. The finding of the study will help the planners and educational institution (engaged in research, development and transfer of technology) and rural fabricators to streamline their programs for optimum benefits.

Limitations of the study

The study being a student's project was conducted on a limited geographical area and thus it is likely to have all the limitations inherent in a student's research project such as financial, manpower and time. Therefore, generalization of the finding of the study may be made with these considerations.

CHAPTER-II

Review of Literature

A comprehensive review of past studies is necessary in any research endeavour. Besides reviewing the previous work done in the related fields of the study, the main function of citing review of literature is to provide base for developing a framework, provide insight into methodology and suggest operational definitions of concepts and finally to work out a basis for interpretation of findings.

Thus a brief resume of past researches, relevant to the present study has been incorporated in this chapter. Keeping in view the objectives of the study, the review has been presented under the following sub-heads:

- 2.1 Consumption pattern of milk and milk products
- 2.2 Viability of processing of milk and milk products technology
- 2.3 Impact of training on capacity building of women
- 2.4 Acceptability of processing of milk and milk products enterprise for income generation

2.1 Consumption pattern of milk and milk products

Gupta and Kaur (1995) reviewed the consumption pattern of milk and milk products in union territory of Chandigarh in different income level households and revealed that 44.55 per cent of milk was used by households as a tea whitener,

30.54 per cent was consumed as liquid milk and 14.75 per cent was utilized as curd and 10.16 per cent as butter. Consumption of milk products increased with income. In all income groups, figures were highest for curd, followed by butter and paneer and lowest for ghee, with the poor income group reporting consumption of paneer or ghee.

Aneja (1997) reported that khoa is an indigenous dairy product, consumed by large section of population. In India, about 6,00,000 tonnes of khoa is being annually produced utilizing about 7% of the total milk produced.

Banerjee (1997) found that about 50.55 percent of milk (approx. 42 million tonnes) produced is converted by the traditional sector (halwais) into a variety of India.

Rani *et al.* (1999) found that the consumption level of milk and milk products was influenced by increase in income and educational level of the head of the household. The expenditure on milk and milk products was also found to be increased with increase in income and educational level of the head of the household. The vegetarian habit of consumption was also found to effecting the milk consumption level positively. Milk and Milk products were found to be income elastic commodities. Increase the literary level and imparting more information about the nutritive value of milk products would certainly increase the consumption of milk even among the low-income groups.

On an average about 6.5 per cent of the milk produced in India is utilized for khoa production (Alam, 1999).

Singh (2000) conducted a survey to study the consumption pattern of milk products in Vijaywada. The results revealed that 11 per cent of the total income

per month was on milk and milk products, particularly, fluid milk and *ghee*. The per capita expenditure on milk and milk products increased with income level.

Dairy farming is an occupation of about 70 million families in India. It is predominantly the domain of landless laborers, small and marginal farmers who generally keep 2-3 animals under mixed farming system. Dairy farmers keep animals to obtain milk for their family consumption and surplus is sold. (Chand and Gosain, 2002)

Jhala and Singh (2002) concluded that small farmers own more cattle and produces more milk than the marginal farmers. Milk was used mainly for ghee production. Butter milk was consumed in liquid form and also used for preparation of *Rab*, which forms the staple diet of the tribes.

Nicholson *et al* (2004) examined gross household cash income, gross non-agricultural income, consumption of dairy products, time allocated to cattle related tasks, number of labourers hired and total wage payments to hired labourers. The number of dairy cows owned had a large and statistically significant impact on household cash income; each cow owned increased income by at least 53 percent of the mean total income of households without dairy cows. Dairy cow ownership also increases consumption of dairy products by 1.0 litre per week, even though most of the increase in milk production was sold. The number of dairy cows had no significant effect on total labour for cattle-related tasks.

Singh and Kalra (2004) observed that economic status, season, occupation, food habits and education level affects the consumption pattern significantly. As the economic status improved, the percentage share of expenditure on dairy products decreased from 22 to 18 percent. The per capita milk and milk products consumption expenditure in winter was highest i.e Rs 280, followed by summer Rs 247 and rainy season Rs 239. Service class spent highest (Rs 279), the

corresponding figures for business and labour classes on milk and milk products consumption being Rs 44 and Rs 132 respectively. It was also observed that per unit expenditure on dairy products was more in vegetarian families than in non-vegetarian families by Rs 32. Total family budget per consumer unit has increased from Rs 664 to Rs 1565 with increase in the education level of the people, and accordingly, the expenses on dairy food products also increased, varying from Rs 144 to Rs 284. It showed that family budget of educated families were at least double to that spend by illiterate families. Consumption pattern of milk products increased with increase in family budget.

As per the report of International Dairy Federation (IFD) (2006), Milk which is delivered to dairies is increasingly used for the production of liquid dairy products, Cheese and whole milk powder.

Dairy India (2008) report regarding production, consumption and exports of milk and dairy products, starting from an analysis of the economic and social environment, the report looks at drivers and impediments of growth of dairy sector in India. It gives statistics and insights into domestic market dynamics of liquid milk, dairy fats (butter and ghee), curd, processed cheese, table butter as well as for traditional Indian dairy products like khoa, paneer, chhana etc. The report has forecast of production, consumption and exports for years up to 2012.

2.2 Viability of processing of milk and milk products technology

Mittal (1998) revealed that the benefit-cost ratio, break-even points and broken-even analysis of the total paneer making, chhana making and khoa making were found to be significant-indicating that the investment in the selected units is economically Profitable, thus making the projects economically viable. But the margin of safety was highest in paneer, indicating that investment in this activity for income generation is most suitable as it involves less risk.

Dahiya and Singh (1999) stated that dairy farming, once a subsidiary occupation and a means of bear subsistence in rural areas, is now emerging as an important agro- business.

Increasing demand for milk products present a great opportunity for the organized dairies in the country to modernize and scale-up the production. A GCMMF ñ TCF survey report has given projected demand of ghee, paneer, shrikhand, rasogolla, and gulabjamun to be 200, 16, 5.7, 6 and 5.9 thousand metric tones by the year 2009. (Misra, 2000)

Chandan *et al.* (2002) found that the raw material costs of shrikhand, rasogolla, gulabjamun, khoa sweets (peda, burfi, kalankand), sandesh and paneer is 29 percent, 33 percent, 34 percent, 35 percent, and 65 percent of the sale price, respectively. For western dairy products comparative costs are relatively much higher varying from 7-80 percent.

Patil (2002) reported that the market for Indian milk products is estimated to be to the tune of Rs. 250 billion. This facts under lines the significance of traditional dairy products in the national economy.

Milk and milk products are rated as one of the most promising sectors in the food promising sectors in the food processing industry growing segment of the Indian dairy industry. A rough estimate based on extrapolated data of five selected cities (Ahmedabad, Bangalore, Delhi, Mumbai and Kolkata), puts the national market for traditional sweets between Rs. 250,000 and 300,000 million in 1997-98 (Vaswani, 2002).

Mahuya *et al.* (2006) found that profit per piece of sandesh, Malai chamcham, kesar chamcham, carrot chamcham, Herbal chamcham, suji laddoo,

kaju burfi, carrot Rasa madhuri, herbal Rasandhuri was Rs 2-2.5, 1.5-2, 2-2.5, 2-2.5, 2.5-3, 2-2.2, 2-2.2, 2.5-3, 2.5-3 respectively.

The FICCI survey identified the sectors that have recorded a high growth rate between 10 per cent include milk products (10%), traditional/ unorganized milk products (15%), khoa /chhana based sweets (10%), butter (10%) and 12 per cent for curds and curd products (FICCI 'Food and Beverages Survey' 2006).

Dairy India (2007) reported that the estimated size of India's dairy sector in 2005 is placed at Rs 227,340 crore (valued at consumer prices). The largest contributor to this is liquid milk (at Rs 82,835 crore), followed by ghee (Rs 22,980 crore), Khoa/chhana/paneer (Rs 24,100 crore), milk powder (Rs 4,680 crore), table butter (Rs 770 crore), Cheese/edible casein (Rs 975 crore) and other products such as ethnic sweets, ice-cream, etc (Rs 9,100 crore)

Khare, A.(2007) found that milk is the lifeline of Indian economy and India dairy-animals play the important role in increasing countries income and employment generation. Rural women can get much more profit by manufacturing some of the products which are more popular and easy to handle at cottage level such as sweet curd, lassi, salted spiced butter milk etc. These milk products are more popular among the people of all ages due to its taste, therapeutic quality and nutritional value. Second thing is that these are more profitable than directly sold milk. For example, one liter of milk costing approx. Rs. 10-12/kg (in Village) can produce 750-800 gm sweet curd costing approx. Rs. 24-26, thus in this way it become more profitable than directly sold milk.

Kumar (2007) suggested that importance of traditional dairy products can be realized from the fact that they have huge market size estimated at Rs.1,02,800 crores, the share of individual products being chhana and khoa based sweets, Rs. 51,700 crores, ghee/makhan, Rs. 31,000 crores, fermented products (dahi,

chakka, Shrikhand), Rs. 18,000 crores and paneer, Rs. 2,100 crores. The value of khoa and chhana based sweets put together is about double the value of milk handled by the organized dairy sector.

2.3 Impact of training on capacity building of women

Verma and Dahiya (1994) revealed that the impact of post-harvest technology trainings on farm women was estimated to the extent of 50.81 per cent. This is moderately high and speaks of the significant impact achieved through action oriented training.

Nutrition education brought a significant gain in knowledge and improvement in cooking practices. (Kaur and Sehgal, 1995)

Srivastava *et al.* (1996) concluded that there was significant impact of training on the extent of knowledge, adoption and diffusion of improved agricultural practices.

Sharma (1997) reported high change towards papad and wadi makers of 17.8 per cent respondents while 29.3 per cent respondents had medium change in attitude after conducting demonstration cum training.

Fifty per cent respondents had favourable and 13.7 percent had strongly favourable attitude towards mushroom production technology at pre-exposure stage. At post-exposure stage nearly equal number of respondents had strongly favourable (38.75%) and favourable (37.50%) attitude towards mushroom cultivation technology (Mehta 1996, Anita 2000).

Sah (2001) reported that training had significant influence and the most important means to accomplish the ends in terms of changing the behavioural dimensions of the clients. Impact was relatively more on the cognitive domain as compared to the affective dimension of behaviour of the trainees.

Narvankar *et al* (2002) found that there was significant difference in the mean knowledge score before treatment and immediately after treatment in all the selected extension teaching methods that is "Audio cassette" (t-value = 11.1249), "Slide show" (t-value = 15.5677), "Leaflet" (t-value = 15.5669), "audio cassette + Leaflet" (t-value = 13.3552) and "Slide show + Leaflet" (t-value = 20.5137).

Sunita (2002) concluded that the most of the respondents had high impact of training on adoption feasibility of grape products (45.0%) followed by medium (40.0%). Difference between pre and post exposure mean score of knowledge on grape products was highly significant at 0.05 per cent level of probability.

Sain (2003) observed that the difference between pre and post exposure, mean score of knowledge and attitude towards pearl millet was highly significant at 0.05 per cent of probability.

Ahuja and Mohammed (2006) found that women after getting training in quilting and durries making adopted it, for house hold purpose, increase in income, gain in knowledge, skill and confidence.

Jain and Verma (2007) revealed that respondents succeeded in changing their attitude at the post-exposure level. Significant change in attitude regarding all the selected messages of animal husbandry practices was observed in all the selected districts of Haryana state.

Joseph and Padaria (2007) showed that due to maize training programme the knowledge level of farmers was increased for practices like weeding, fertilizer application, plant protection measures and harvesting. The impact of the training programme was also evident by significant increase in yields.

Panwar *et al.* (2007) concluded that majority of the respondents had middle age, nuclear family, illiterate and farming as their main occupation. After

exposure of training package the net knowledge gain was highest in aspect of infant bathing and lower in infant health. Findings further indicate that respondents' age, education and ordinal position of the infant influences the gain in knowledge, whereas respondents, type of family, income, caste, occupation and mass media exposure did not influence on the gain in knowledge.

Khurana *et al.* (2007) revealed that the multimedia kit was useful in enhancing the knowledge level of young farmers in various aspects of agricultural technology. There was significant gain in knowledge in case of training on dairy farming, poultry farming and bee keeping. The gain in knowledge scores ranged from 0.37 to 0.61, 0.38 to 0.59 and 0.42 to 0.56 respectively.

Riar and Gill (2007) conducted a study to evaluate the functioning of self-help groups in terms of their impact on the members. As a result of group formation there was increase in number of entrepreneurial unit in different enterprises viz. bee keeping, dairy farming, mushroom cultivation etc. There was also significant increase in yield of various crops. As a result of these changes there was significant increase in overall income of the farmers.

Sasidhar and Suvedi (2007) revealed that the half (50%) of participants gained a moderate amount of knowledge (answered 14 to 26 out of 39 questions correctly), 25.68 per cent gained a high amount of knowledge (answered 27 or more out of 39 questions correctly) 24.32 per cent gained a low knowledge (answered fewer than 13 of 39 question correctly). The corresponding knowledge levels for non-participants were 36.49 per cent, 24.32 per cent and 39.19 per cent respectively.

Ajaz-ul-Islam (2008) reported that the majority of the beneficiaries (58.14%) was experienced high level of impact and rest 41.86 per cent fell in

medium impact level among landless. No beneficiary was found having low level of impact in Social Forestry Programme.

Deepti (2008) observed that the mean scores of attitudinal in a change for all the aspects of drudgery reducing technologies were better among the experimental group than the control group but statically the difference in attitude was not significant for improved wood stove, *patra* with platform and multipurpose trolley.

Sharma *et al.* (2008) found that farmers of watershed-1 and watershed-2 adopted soils and water conservation practices up to 36.32 and 65.21 per cent, respectively. A bumper crop was seen in the field of participating farmers which explain the positive impact of people's participation in the crop production practices. The extent of adoption of horticulture and forestry practices was 46.51 and 62.88 per cent among the farmers of watershed-1 and watershed-2 respectively. Pasture development and vaccination of animals were adopted comparatively higher than other animal practices in the area. Positive impact of participatory approaches in adoption of watershed practices had been observed.

Nutan (2009) observed the impact of training regarding various messages related to nursery rising of women in terms of knowledge and attitude. The overall impact of training was found to be of moderate level i. e 62.68 per cent. The gain in knowledge was found to be of high level i.e. 72.55 per cent. The change in attitude was found to be high level that i.e. 70.0 per cent.

2.4 Acceptability of processing of milk and milk products enterprise for income generation

Mital (1998) found that 66 per cent respondents perceived paneer making as most feasible among various dairy products.

Verma (1998) revealed that majority of respondents (82%) had moderate acceptability of soft toys for income generation.

Anita (2000) conducted a study in four villages of Hisar district, Haryana state and found the mushroom technology profitable (mean score 3.5, Ist rank), cultural compatible (mean score 3.45, IIrd rank), situational compatible (mean score 3.35, IIIrd rank), simple to adopt (mean score 3.20, IVth rank), easy to try (mean score 3.15, Vth rank) before its final adoption in order of sequence by majority of the respondents. Overall feasibility mean score was 3.33 /4.00.

Most of the respondents perceived feasibility of grape chutney as profitable (48.3%), cultural compatible (63.3%), simple to make (53.3%), most compatible in situational compatible (48.3%) and most triable (55%) by rural women of Hisar district (Sunita, 2002).

Sain (2003) found that majority of the respondents had high (86%) over all acceptability of pearl millet based products for households consumption and income generation. The most of respondents had moderately high symbolic adoption (42%) and willingness to adopt pearl millet based products for home consumption (70 %).

Sharma *et al.* (2006) in their study on the impact of milk and milk products on the profitability of dairying found that fresh milk was least profitable. Reasons for attending training revealed that 68 per cent trainees registered themselves in these training as per their own interest followed by 45 per cent to learn skill, 31 per cent trainees for self employment, 25 per cent joined for utilization of time and 20 per cent of them joined under influence of family members.

Dabur and Kapoor (2007) carried out a study to assess the feasibility of processing of milk at home as an entrepreneurship for rural women. 100 litres of

milk was processed in the laboratory into milk beverages, khoa based sweets, and its economic viability was calculated considering the fixed cost and variable cost. The result indicated that converting milk into milk beverage and khoa based sweets and marketing it into nearby urban markets, could earn a profit margin of Rs. 8.33 per litre of milk handled or rupees 2,500 per month. Shelf life of beverage was found to be 28 days whereas khoa based sweets could be stored for two weeks with good acceptability.

Mittal *et al.* (2007) conducted a study to workout the economic feasibility of paneer production for income generation. Information on cost and benefits was collected from several entrepreneurs. Economics for paneer was calculated at three different levels so that the interested persons can start the unit at the level which suits their economic conditions. To assess the economic feasibility of the units two major indicators i.e. benefit- cost ratio and break- even point were used. The results revealed that the average cost of production of paneer at small, medium and large scale was Rs.34462, 81520 and 157380, respectively. Gross return was Rs. 42900, 107250 and 214500, respectively having percentage profit of 24.48, 31. 56 and 36.29 respectively which show that profitability increase with production level.

Kaur *et al.* (2007) revealed that 45.83 per cent of members were in medium adoption category closely followed by high adoption category (45%) and low adoption category (9.17%) for breeding. Where as for feeding, 64.17per cent were in medium adoption category, followed by high respondents (28.33%) and low adoption category (8.34%) for management practices. As related to health, majority of respondents (88.33%) were in medium category followed by high adoption category. Extension contacts were highly significant with adoption of dairy farming practices.

Ghosh *et al.* (2008) reported that adoption of vaccination was highly correlated with all the socio-psychological and communication variable in both Member of Cooperative Society (MCS) and Non- Member of Cooperative Society (NMCS). On path analysis, innovation proneness and knowledge about deworming had come out to be the key variables that directly indirectly influence the adoption of vaccination in MCS and NMCS, respectively.

A fore said literature indicate that most of the studies have been conducted on consumption pattern of milk and milk products by various income groups, assessing viability and acceptability of milk products like paneer, chhana, ghee, curd, khoa etc by farm women.

Literature also revealed many studies on various entrepreneurial activities related to agriculture and animal husbandry by farm women. But none of the study was found related to organizing trainings for rural for scheduled caste women on processing of milk and milk products especially flavoured milk, sweet lassi, cream etc and assessing its impart on their capacity building and acceptability of the technology for adoption.

Thus, in the present study all these parameters have been incorporated for exploration (fig-1).

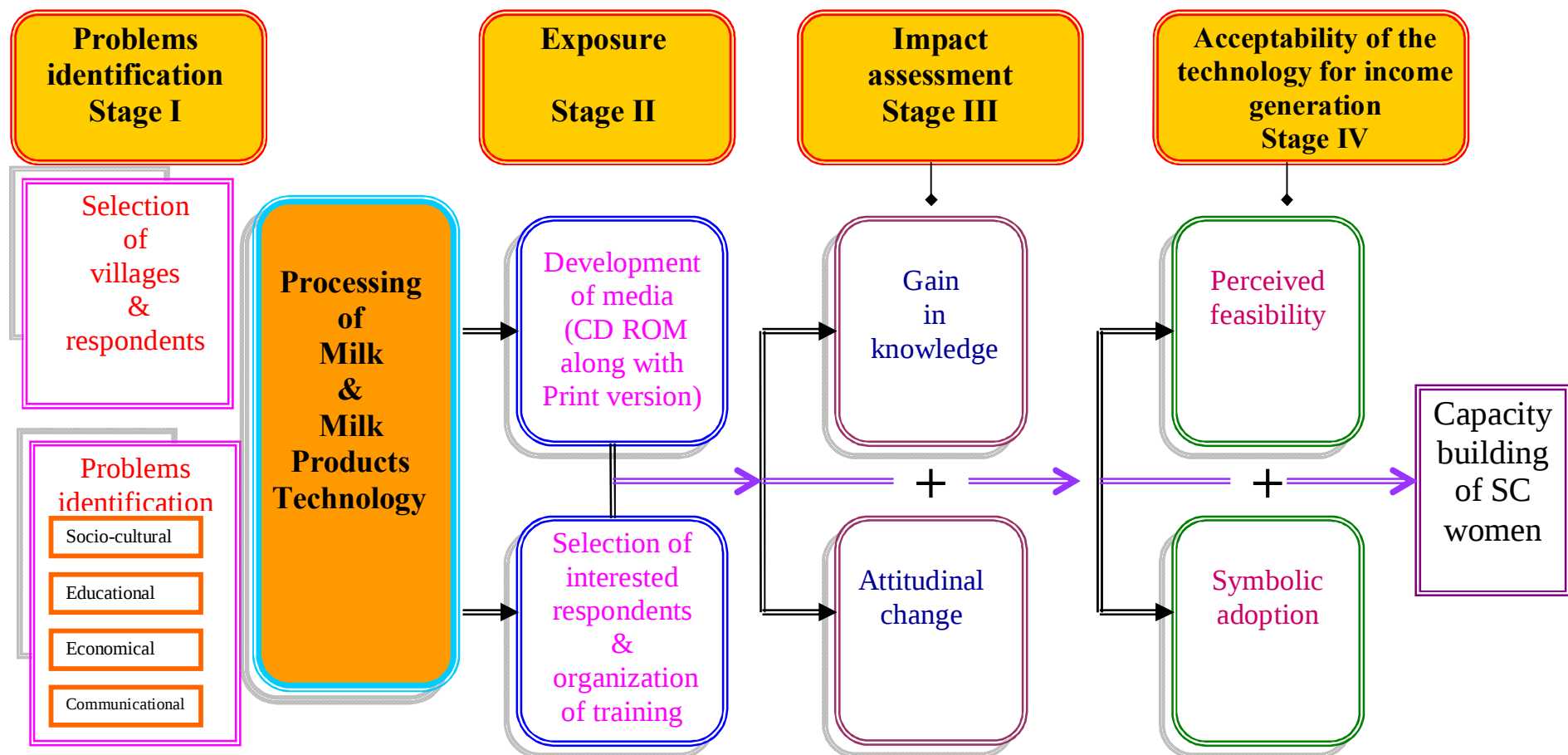


Fig-1 : Conceptual frame work of the study

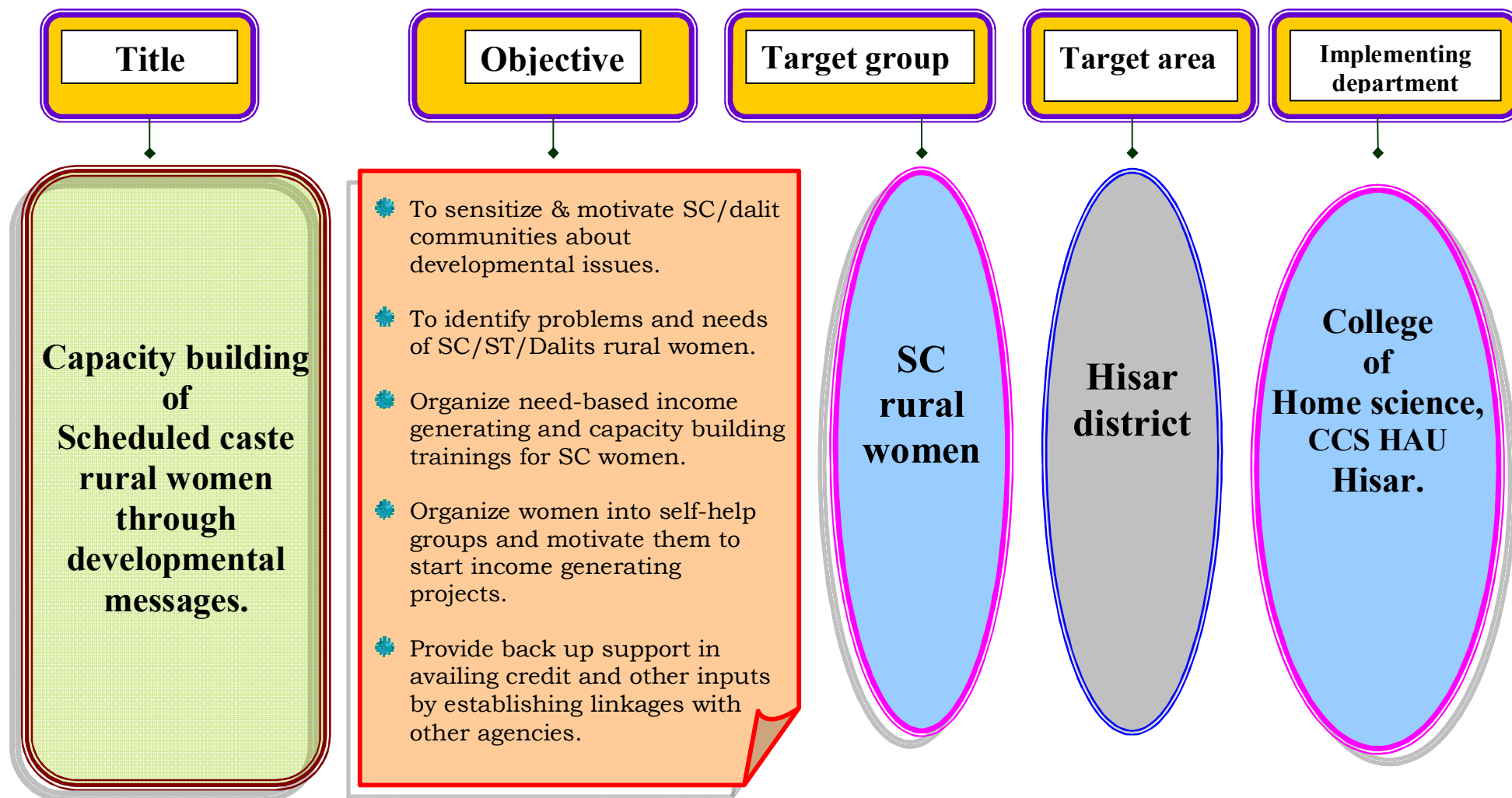


Fig 2 : Conceptual frame work of the SC project running in the department

CHAPTER-III

Materials and Methods

Methodology is of great importance in any scientific enquiry as the reliability and validity of the facts primarily depend upon the system of investigation. This chapter precisely describes the methodological steps, tools and instruments adopted in conducting the present investigation which have been presented in accordance with the objectives as:

- 3.1 Identification of problems faced by scheduled caste-families.
- 3.2 Organization of training on processing of milk and milk products technology.
- 3.3 Assessing the impact of training and acceptability of the technology for income generation.

3.1 Identification of problems

For identifying the problems and socio-economic deprivations, the research procedure has been described under the following heads.

- 3.1.1 Locale of study
- 3.1.2 Sampling procedure

3.1.1 Locale of study

The study was conducted purposively in Hisar district, Haryana state as the study was the part of one of the project of the department entitled óCapacity



Fig, 3 : Map showing selected villages of Hisar District

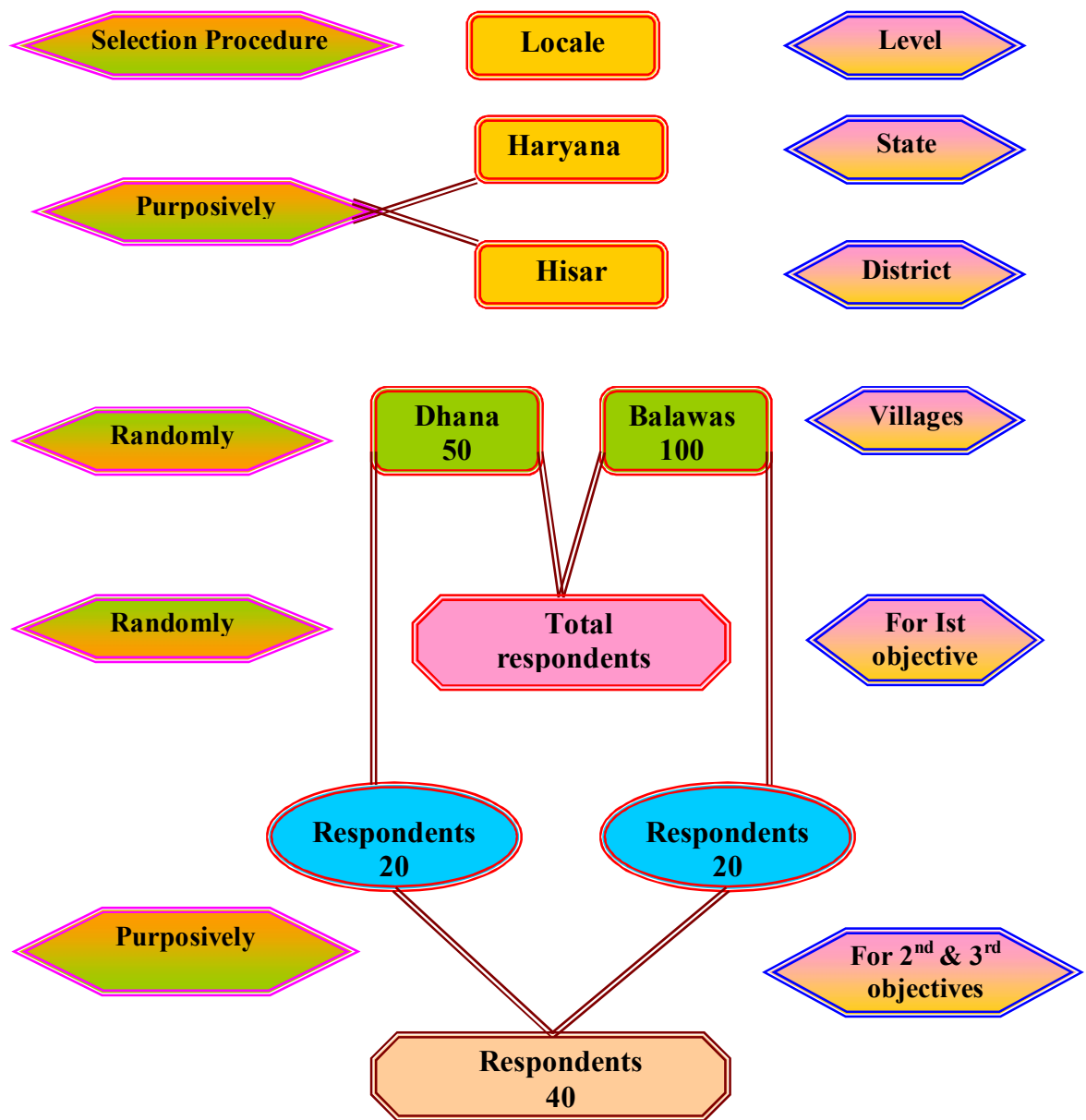


Fig 4 : Sampling Procedure

building of Scheduled caste rural women through development messages operating in the Hisar district (fig 4) Secondly, all the technical facilities were available at CCS HAU, Hisar for organization of training on processing of milk & milk products technology.

3.1.2 Sampling procedure

3.1.2.1 Selection of villages

From Hisar district, two villages viz: Dhana Khurd and Balawas were selected randomly from Hansi and Hisar block respectively.

3.1.2.2 Selection of respondents

To study the problems and socio-economic deprivations of scheduled caste women, a list of all the scheduled caste families from both the villages was prepared with the help of sarpanch. Out of that list 50 per cent families i.e. 50 from Dhana Khurd and 100 from Balawas which totalled to 150 were interviewed randomly.

3.2 Organization of training on processing of milk and milk products technology.

3.2.1 Development of media

3.2.2 Organization of training

3.2.1 Development of media

A interactive CD ROM in Hindi on various messages on processing of milk and milk products technology along with printed version (manual) was prepared in consultation with scientists from the department of Animal products Technology (APT), College of Animal Science, CCS HAU, Hisar and relevant literature. Various messages included in the CD ROM were: importance and food

value, production and preservation of milk, testing adulteration in milk, preparation of various milk products how to start milk processing unit and its limitation, packaging, loaning and marketing of milk products. Interactive CD ROM was developed with the help of computer professional using Flash animated software.

3.2.2 Organization of training

Out of the 150 families selected from both the villages for the first objective, only 20 interested women per village having milch animals were selected purposively to form group for organizing the trainings. Thus there were total 40 women into 2 groups. 6 days training for the respondents of both the villages on the processing of milk & milk products was organized separately in collaboration with Department of Animal products Technology (APT), College of Animal Science, CCS HAU, Hisar. 6 products namely; khoa, paneer, chhana, flavoured milk, cream and sweet lassi were taught during the training. Besides demonstrations were organized on testing fat and adulteration in milk and lectures on various topics viz; role of women in dairying, importance of milk in human diet, how to produce clean milk, composition of milk, laws and legislation related to dairy enterprise were also delivered by the scientists of APT department. Hindi version(manual) of the CD ROM was distributed to the ladies during the training programme as reference material for future use.

3.3 Assessing the impact of training and acceptability of the technology for income generation.

Methodological steps adopted for assessing impact of the training and acceptability of the technology are given below:

3.3.1 Variables and their measurement

3.3.2 Construction of interview schedule

3.3.3 Data collection

3.3.4 Analysis of data

3.3.1 Variables and their measurement

I Independent Variables

A. Socio economic and personal variables

Variables	Instrument used
- Age	Chronological age
- Type of family	 Schedule developed
- Size of family	
- Family education status	
- Occupation	
- Marital status	
- Average monthly income	
- Material possession	
- Land holding	
- Milch animal	
- Type of milch animal	

B. Communicational variables

- Social participation	SES scale of Kulshrestha (1980)
- Outside urban contact	Narwal (1981)
- Mass Media exposure	Kaur (1986)

C. Psychological Variable

- Entrepreneurial motivation Singh (1991)
- Risk orientation Risk Preference
Scale of supe (1969)
- Economic motivation Self rating scale
Moulik (1965)

II Dependent Variables

A. Impact of training

- Gain in knowledge Schedule developed
- Change in attitude Dogra (1988)

B. Acceptability of the technology

- Perceived feasibility of technology Rogers (1983)
- Symbolic adoption Schedule developed

I Independent Variables

Age : Age was operationalized as the chronological age of the respondents, a round number at the time of interview. The difference between maximum and minimum age of respondents was divided into three categories :

Category	Score
18-30 Years	1
31-45 years	2
Above 45 years	3

Marital Status : It refers to socially sanctioned union of a man with woman in relation of husband and wife. The respondents were categorized as unmarried, married and widow and scores assigned were:

Category	Score
Unmarried	1
Married	2
Widow	3

Education : It was operationalized as the number of years of formal education acquired by the respondent at the time of enquiry and scores assigned were:

Category	Score
Illiterate	1
Primary	2
Matric	3
Senior secondary	4

Family type : It means whether it is a nuclear or a joint family. Nuclear family is composed of members of only one person and includes minor and dependents parents and children only. Joint family refers to one which is two or more brothers families. Scores assigned were as follows:

Category	Score
Joint	1
Nuclear	2

Family size : It refers to the total number of members in the family whether it is nuclear or joint. Scores assigned were as follows:

Category	Score
Small (upto 3 members)	1
Medium (4 to 6 members)	2
Large (more than 6 members)	3

Main Occupation : It indicates the head of family's means of livelihood.

Category	Score
Agriculture labour	1
Service	2
Farming	3
Business	4

Family income : It was operationalised as the actual monthly income earned by the respondent's family. Categories formed and scores assigned were as follows:

Category	Score
Less than to Rs. 5000	1
Rs. 5001 to 8000	2
Rs. 8001 to 12000	3
More than Rs. 12001	4

Type of houses : It was operationalized as the type of material used for the construction of house. Categories formed and scores assigned were as follows:

Category	Score
Kaccha	1
Kaccha-Pucca	2
Pucca	3

Land holding : Actual land possessed by the respondents were categories into different categories and relative scores assigned to different categories were as follows:

Category	Score
No Land	1
Less than 5 acres	2
Between 5-10 acres	3
More than 10 acres	4

Milch Animals : This refers to number of milch animals possessed by the respondents. Categories formed and scores assigned were as follows:

Category	Score
No animal	1
Upto 2 animals	2
3 to 4 animals	3
More than 4 animals	4

Type of animals : It means type of milking animals possessed by the respondents. Categories formed and scores assigned were as follows:

Category	Score
Cow	1
Buffalo	2
Crossbred cow	3

Material Possession : It was operationalised in terms of household and improved agricultural implements, goods and facilities for transportation possessed by the family of the respondents. Categories formed and scores assigned were as follows:

Categories	Range
Low	0-4
Medium	5-9
High	10-14

B. Communication variables

Mass media exposure : It refers to the degree to which respondents were exposed to mass media such as radio, television, exhibitions, magazines and newspaper for obtaining various type of information (Kaur,1986).

Out side/urban contact : It has been operationally defined as the contacts of an individual with the persons of urban areas/the visits performed by respondents outside the village for social and personal reasons.

C. Psychological Variables

i) Entrepreneurial motivation : It has been operationalized as the energizing forces affecting entrepreneurial performance of the respondents. It was measured by using scale developed by Singh (1991). The aggregate scores of the motivation level of the respondents were categorized.

Categories	Range
Low	6-10
Medium	11-14
High	15-18

ii) Risk Orientation : It refers to respondents risk taking capacity and courage to face various types of problems encountered. This was measured by using risk preference scale developed by Supe (1969). The score consisted of six statements. The responses were obtained under three point rating scale as agree, undecided and disagree with scores of 3, 2 and 1 respectively. The obtained scores were then categorized as under:

Categories	Range
Low	6-10
Medium	11-14
High	15-18

iii) Economic Motivation : It was operationalized as occupational success in terms of profit maximization and relative values placed by women on economic ends. This was measured by using economic motivation scale developed by Moulik (1965) and obtained aggregate scores were categorized:

Categories	Range
Low	6-10
Medium	11-14
High	15-18

II Dependent Variables

Assessing the impact of the training and acceptability of the technology for income generation were the dependent variables.

A) Impact of training

The impact of training was assessed in terms of gain in knowledge and change in attitude of the beneficiaries towards processing of milk and milk products technology.

Knowledge

Knowledge has been operationalised as the amount of correct information possessed by the respondents regarding various messages of the processing of milk and milk products technology. Knowledge was measured with the help of developed inventory. Comprehensive close ended statements were prepared and compiled in consultation with relevant literature and subject matter specialists. Due care was taken to include pertinent information for all the messages.

The respondents on the Knowledge inventory were asked to reply on each item under dichotomous response categories correct, incorrect or 'yes' or 'no'. The correct and 'yes' replies were scored one and incorrect and 'no' replies were

given the zero score. Aggregate scores were computed message- wise as well as overall Knowledge score.

Rural women's response on Knowledge test obtained before the onset of training and after they were imparted training. On the basis of obtained scores knowledge level, knowledge gain, knowledge index and knowledge gap were computed.

Knowledge Level

Pre- exposure knowledge level

It refers to aggregate scores obtained by the respondents on knowledge Inventory before the onset of training.

Post –exposure knowledge level

It means aggregate scores obtained by the respondents on the same knowledge Inventory after imparting the training.

Knowledge gain

Post exposure knowledge scores – Pre exposure knowledge scores = knowledge gain.

Knowledge gain Index

Knowledge gain index of each respondent was measured by taking knowledge gain scores and computed by using the following formula:

$$KGI = \frac{KGO}{KGM} \times 100$$

Where,

KGI = Knowledge gain index

KGO = Obtained knowledge gain score

KGM = Maximum obtainable knowledge gain score

The minimum score of knowledge gain index was 30 and the maximum was 85 percent. The respondents were categorized into three categories.

Categories	Range (Percent)
Low	30-48
Medium	49-67
High	68-85

Knowledge Gap

Obtainable score - Obtained score = Knowledge gap

Knowledge gap was assessed before and after the women exposed to training in order to determine the reduction in knowledge gap.

Pre-exposure knowledge gap

Maximum obtainable score - obtained pre exposure knowledge scores = pre-exposure knowledge gap.

Post-exposure knowledge gap

Maximum obtainable score - obtained post-exposure knowledge scores = post-exposure knowledge gap.

Attitude

It occurs when an individual forms a favorable or unfavorable attitude towards the innovation.

Thurstone (1946) defined attitude as the degree of positive or negative affect associated with some psychological object. By psychological object he meant any symbol, phrase, ideas etc. towards which people can differ with respect to positive or negative affect. In the present study, interpretation of attitude was the same as suggested by Thurstone.

In order to measure the attitude of rural women towards processing of milk and milk products technology, scale already developed by Dogra (1988) was modified according to the requirement of the study. Nineteen items were taken and each item in a scale was provided with 3 response categories i.e. agree, undecided and disagree, scoring 3, 2 and 1, respectively for positive statements and vice-versa for negative statements. The total scores of the respondents on the attitude scale was obtained by adding the scores, overall the individual items in the scale.

Rural women response on attitude scale was obtained before and after training. On the basis of obtained scores attitude level and attitudinal change were calculated.

Pre and post exposure attitude level

Pre-exposure attitude refers to aggregate scores obtained by the respondents on attitude scale before organizing the training .Where as post exposure attitude level of the respondents was analysed by summing up the scores obtained by the respondents on the same attitude scale after imparting training. Accordingly the respondents were categorized into three categories separately for pre and post-exposure attitude level.

Attitude Change

Post-exposure attitude scores - Pre-exposure attitude scores = Attitude change.

The respondents on the basis of change in attitude divided into three:

Categories	Range
Low	18-21
Medium	22-25
High	26-29

Impact assessment index (IAI)

Impact assessment index was worked out by taking into account two dimensions viz., knowledge gain and attitudinal change. On three point continuum their frequencies were computed and presented in $3 \times 3 \times 3$ table. The cell depict the scores obtained by subtracting pre from post exposure scores on the two dimensions.

The impact assessment index was thus computed with the help of formula given below:

$$IAI = \frac{\sum f_i \times c_i}{N \times X \times Y} \times 100$$

Where,

IAI = Impact assessment index

f_i = Frequency in i^{th} cell

c_i = Cell scores of i^{th} cell

(product of corresponding scale value as presented in parentheses on two dimension in table).

N = Total number of respondents

X = Highest scale value on X dimension

Y = Highest scale value on Y dimension

B. Acceptability of the technology

It was assessed in terms of perceived feasibility and symbolic adoption of the technology for income generation.

Feasibility of the technology

Perceived feasibility in the present context has been defined as the extent to which scheduled caste rural women perceived the processing of milk and milk products technology as relatively advantageous, physically and culturally compatible, simple and triable. The perceived feasibility was tested on five attributes of innovation. These are as follows;

a) Relative advantage : It refers to degree to which the technology was perceived better and advantageous in terms of economic gains. The responses were obtained under the five point rating scale as:

5	4	3	2	1
Most profitable	Profitable	Some what profitable	Least profitable	Not at all profitable

b) Physical compatibility : This has been operationalized as the degree to which on innovation as consistent with needs/situations of the receivers in relation to technology processing. The respondents were required to give their answer on a five point rating scale varying from most compatible to least compatible.

5	4	3	2	1
Most compatible	Compatible	Some what compatible	Least compatible	Not at all compatible

c) Cultural compatibility : This has been taken as the degree to which an innovation was in agreement with beliefs and value of the respondents.

The five points of the scale and respective scores were as below:

5	4	3	2	1
Most suitable	Suitable	Some what suitable	Least suitable	Not at all suitable

d) Simplicity : This was operationalized as the degree to which the technology is perceived as relatively easy/difficult to understand and use.

The five points of the scale and respective scores were as below:

5	4	3	2	1
Very simple	Simple	Neither simple nor complex	Least complex	Not at all complex

e) Triability : This has been taken as the degree to which the technology may be experimented on a limited basis.

The five points of the scale and respective scores were as below:

5	4	3	2	1
Most triable	Triable	Some what triable	Least triable	Not at all triable

To assess the feasibility of the technology, mean scores were computed for each product.

Symbolic adoption

Symbolic adoption has been operationalized as the extent to which the recipients (women) of technology, at first stage grasp and make mental decision to take the technology into use.

Symbolic adoption was assessed through inventory developed for this purpose. The score of one and zero were assigned for affirmative and negative responses, respectively. The total scores of the respondents on the symbolic adoption were obtained by adding the scores, overall the individual items in the schedule.

Rural women responses on symbolic adoption schedule were obtained before the onset of training and after they were exposed to training. Difference in pre and post symbolic adoption scores denoted the change in symbolic adoption level of rural women towards processing of milk and milk products technology. The respondents were categorized as follows:

Categories	Range
Low	0-2
Medium	3-4
High	5-6

3.3.2 Construction of interview schedule

The structured interview schedule was prepared in accordance with the methodological procedures described. Before introducing the questionnaire to the sampled respondents, it was duly pre tested on 20 non-sampled respondents. Accordingly, modification and correction were incorporated to make the instrument functional.

3.3.3 Collection of Data

For assessing the knowledge gain, attitudinal change, and change in symbolic adoption data were collected both at pre and post exposure stage where as data regarding perceived feasibility of processing of milk and milk technology were collected only after training.

3.3.4 Analysis and Interpretation of Data

The qualitative data were quantified according to the standards laid down tabulated to draw inferences. Statistical tools applied were as follows:

Tests/measures used	Purpose
Percentage	- Profile variables of respondents - Socio-cultural problems of respondents. - Assessing the pre and post exposure knowledge level, attitude level, gain in knowledge and change in attitude. - Perceived feasibility of the technology symbolic adoption and overall acceptability of the technology.
Mean score, Rank	- Perceived feasibility
Index	- Knowledge gain index - Impact index - Perceived adoption feasibility index
Paired-t test	- To find out the difference between the mean score at pre-and post-exposure knowledge, attitude and symbolic adoption.

On the basis of statistical tests, interpretation of results was done and Inferences and conclusions were drawn.

CHAPTER-IV

Results and Discussion

This chapter deals with the results of the present research in accordance with the objectives, and discussed under the following main sections :

- 4.1 Profile variable of the respondents
- 4.2 Problem of SC women
- 4.3 Knowledge level of the respondents about processing of milk and milk products technology
- 4.4 Attitude towards processing of milk and milk products technology
- 4.5 Impact assessment index
- 4.6 Perceived feasibility of processing of milk and milk products technology
- 4.7 Symbolic adoption towards processing of milk and milk products technology
- 4.8 Overall acceptability of processing of milk and milk products technology
- 4.9 Suggestions for improvement of training

4.1 Profile variable of the respondents

4.1.1 Personal and economic profile of the respondents

Data related to personal and economic profile of the respondents have been shown in Table 1 and Fig. 5.

Age : Age-wise distribution of the respondents shows that 51.34 per cent respondents belonged to 18-30 years of age followed by 31.45 years (39.33%) and the remaining 9.33 per cent respondents were observed in the 45 and above age group

Marital status : The results concerned with marital status depicted that most of the respondents were married i.e. 89.33 per cent. Only 6.00 and 4.67 per cent respondents were unmarried and widow respectively.

Education : When education of the respondents was taken into consideration, the data in this respect revealed that out of total respondents majority (65.34%) of them were illiterate followed by the primary (16.67%), middle (13.33%) and high school educated (2.66%). Only 2.00 per cent respondents were educated upto senior secondary (10+2) level.

Family type : The study indicated that out of total sample, 64.67 per cent respondents belonged to joint family system followed by nuclear family (35.33%).

Family size : The data presented in Table 1 further revealed that 64.67 per cent respondents had medium followed by large (23.33%) and small family size (12.00%).

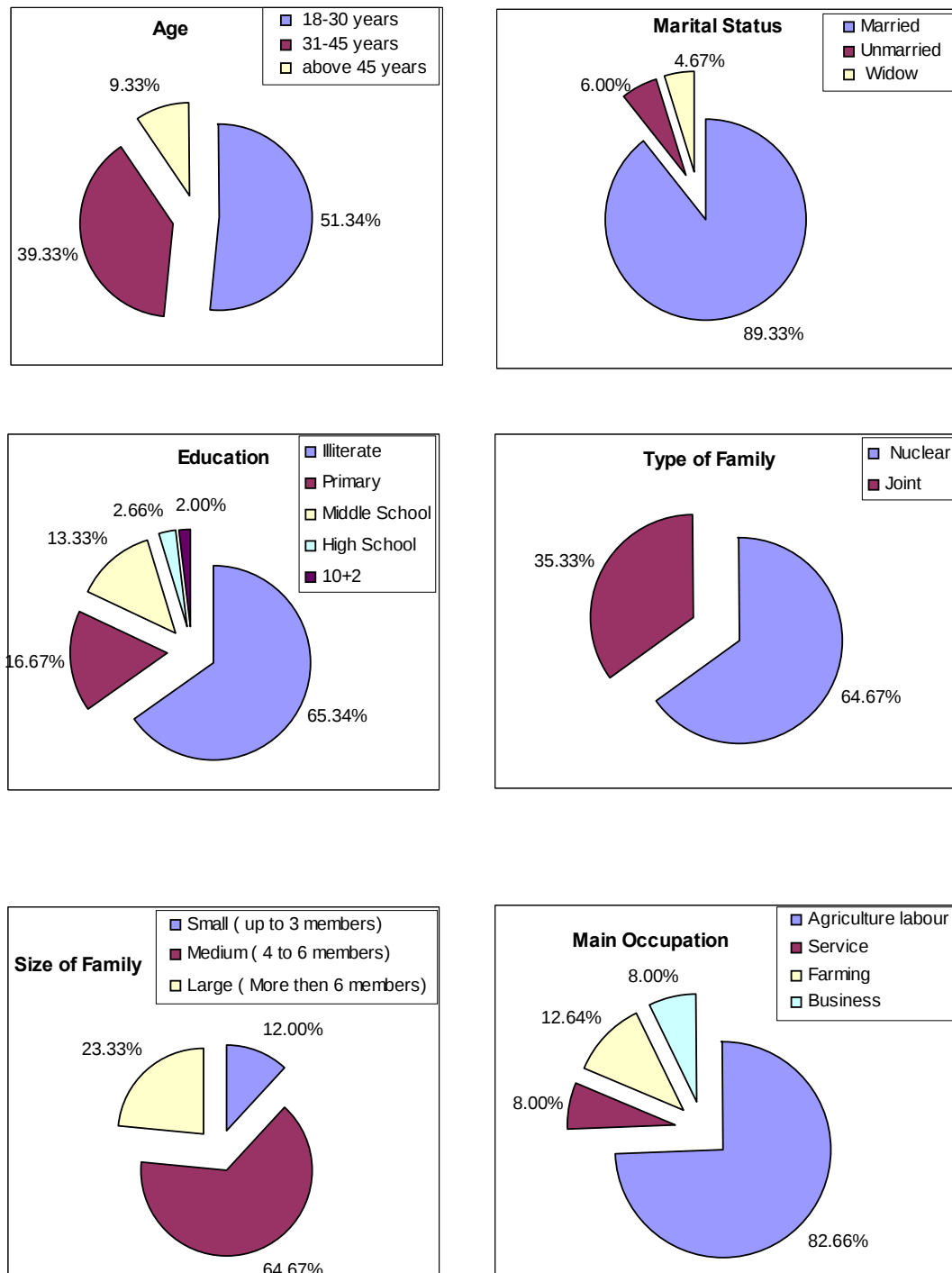
Main occupation : It is well exhibited in Table 1 that a maximum number (68.00%) of the respondents were agriculture labourers. Only 18.33, 12.66 and 12.00 per cent respondents had service, farming and business as their main family occupation respectively.

Monthly income : The study indicated that more than half of the respondents (63.33%) could earn less than Rs. 5,000/month whereas 28.00 and 7.33 per cent respondents had monthly income between Rs. 5001 to 8,000 and Rs. 8001 to 12,000. Only 2 respondents (1.33%) were having monthly income more than Rs. 12,000/month.

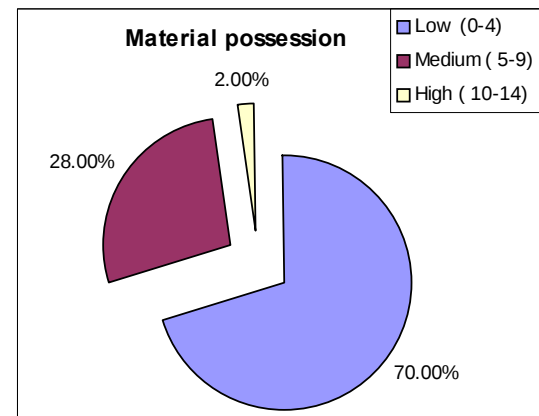
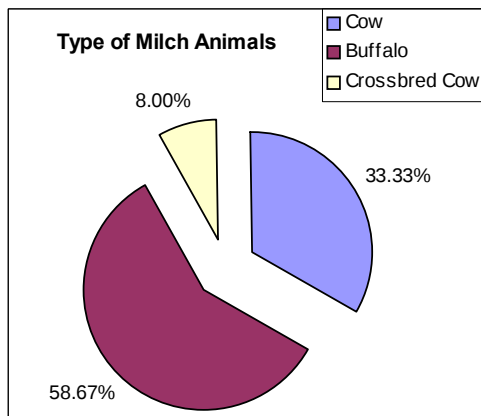
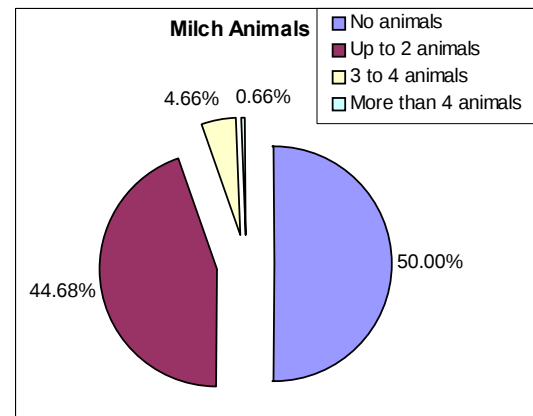
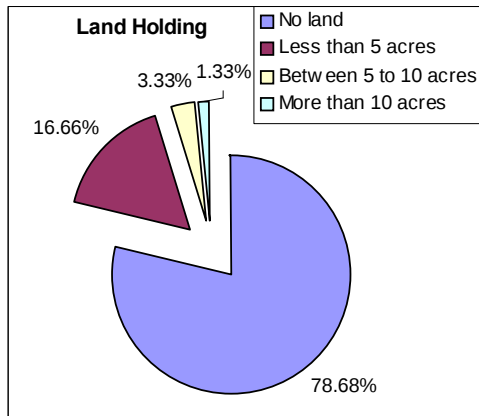
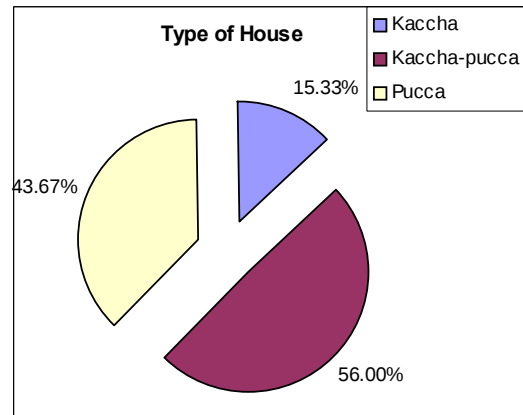
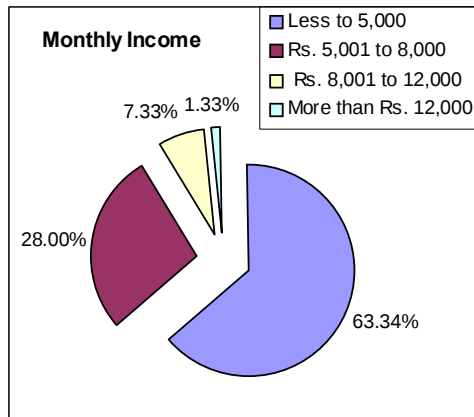
Table 1 : Personal and economic profile of the respondents

Sr. No.	Variables	Village-wise respondents		Total n=150
		Dhana (n ₁ =50)	Balawas (n ₂ =100)	
1	Age			
	a) 18-30 years	19(38.00)	58 (58.00)	77(51.34)
	b) 31-45 years	26(52.00)	33(33.00)	59(39.33)
	c) above 45 years	5(10.00)	9(9.00)	14(9.33)
2	Marital Status			
	a) Married	44(88.00)	90(90.00)	134(89.33)
	b) Unmarried	3(6.00)	6(6.00)	9(6.00)
	c) Widow	3(6.00)	4(4.00)	7(4.67)
3	Education			
	a) illiterate	27(54.00)	71(71.00)	98(65.34)
	b) Primary	11(22.00)	14(14.00)	25(16.67)
	c) Middle School	9(18.00)	11(11.00)	20(13.33)
	d) High School	2(4.00)	2(2.00)	4(2.66)
	e) Senior secondary	1(2.00)	2(2.00)	3(2.00)
4	Type of Family			
	a) Nuclear	35(70.00)	62(62.00)	97(64.67)
	b) Joint	15(30.00)	38(38.00)	53(35.33)
5	Size of Family			
	a) Small (up to 3 members)	5(10.00)	13(13.00)	18(12.00)
	b) Medium (4 to 6 members)	38(76.00)	59(59.00)	97(64.67)
	c) Large (More then 6 members)	7(14.00)	28(28.00)	35(23.33)
6	Main occupation*			
	a) Agriculture labour	41(82.00)	83(83.00)	124(82.66)
	b) Service	7(14.00)	5(5.00)	12(8.00)
	c) Farming	8(16.00)	11(11.00)	19(12.64)
	d) Business	5(10.00)	7(7.00)	12(8.00)
7	Monthly Income			
	a) Less to 5,000	38(76.00)	57(57.00)	95(63.34)
	b) Rs. 5,001 to 8,000	9(18.00)	33(33.00)	42(28.00)
	c) Rs. 8,001 to 12,000	3(6.00)	8(8.00)	11(7.33)
	d) More than Rs. 12,000	-	2(2.00)	2(1.33)
8	Type of house			
	a) Kaccha	3(6.00)	20(20.00)	23(15.33)
	b) Kaccha-pucca	27(54.00)	57(57.00)	84(56.00)
	c) pucca	20(40.00)	23(23.00)	43(28.67)

Fig. 5 : Personal and economic profile of the respondents



Contdë ..



9	Size of land holding			
	a) No land	42(84.00)	76(76.00)	118(78.68)
	b) Less than 5 acres	7(14.00)	18(18.00)	25(16.66)
	c) Between 5 to 10 acres	1(2.00)	4(4.00)	5(3.33)
	d) More than 10 acres	-	2(2.00)	2(1.33)
10	Milch Animals			
	a) No animals	21(42.00)	54(54.00)	75(50.00)
	b) Up to 2 animals	27(54.00)	40(40.00)	67(44.68)
	c) 3 to 4 animals	2(4.00)	5(5.00)	7(4.66)
	d) More than 4 animals	-	1(1.00)	1(0.66)
11	Type of Milch animals			
	a) Cow	9(31.03)	16(34.79)	25(33.33)
	b) Buffalo	18(62.07)	26(56.52)	44(58.67)
	c) Crossbred Cow	2(6.90)	4(8.69)	4(8.00)
12	Material possession			
	a) Low (0-4)	37(74.00)	68(68.00)	105(70.00)
	b) Medium (5-9)	13(26.00)	29(29.00)	42(28.00)
	c) High (10-14)	-	3(3.00)	3(2.00)

Figures in parentheses indicate percentages

*Multiple response

Type of houses : Fifty six per cent respondents had mixed houses (*kacha-pucca*).

It was followed by *pucca* (28.67%) and *kaccha* house (15.33%).

Land holding : It was found that more than half (78.68%) of the respondents had no land followed by less than 5 acres 16.66% and between 5-10 acres (3.33%) and more than 10 acres of land (1.33%).

Milch animals : Fifty per cent respondents had no milch animals and 44.68 and 4.66 per cent respondents were having upto 2 animals and 3 to 4 animals respectively, there were only one respondents (0.66%) who had more than 4 animals.

Type of milch animals : Regarding type of milch animals out of 50 per cent respondents who had milch animals, it was observed that 58.67 per cent respondents keep buffaloes, whereas 33.33 and 8.00 per cent respondents were having cows and crossbreed cows respectively.

Material possession : Data as regard material possession revealed that out of total sample, majority (70.00%) of the respondents had low material possession followed by medium (28.00%) and high material possession (2.00%).

Thus, it can be inferred that 51.33 per cent respondents belonged to 18-35 years of age. Majority of the respondents were married (89.33%), illiterate (65.33%), had nuclear family system with medium family size (64.67%). When economic variables considered, it was found that large majority (82.66%) of respondents were agriculture labourers, earn less than Rs. 5,000/month income and had low material possession (70.00%). Only 56.00 per cent have *kaccha-pucca* houses. Majority have no land (78.68%). Exactly 50.00 per cent had no milch animals and buffaloes were main source of milk.

4.1.2 Socio-psychological and communicational profile of the respondents

The data regarding socio-psychological and communicational profile of the respondents have been presented in Table 2 and Fig. 6.

Social participation : The study revealed that out of total sample, 90.67 per cent of respondents had low social participation followed by medium (9.33%).

Psychological variables

Entrepreneurial motivation : The results indicate that maximum number of the respondents i.e. 61.33 per cent had medium level of entrepreneurial motivation followed by low (24.67%) and high level (14.00%) of entrepreneurial motivation.

Risk orientation : Data pertaining to risk orientation revealed that most of the respondents viz. 64.00 per cent had medium level of risk orientation followed by low (29.33%) and high level (6.67%) of risk orientation.

Table 2 : Socio- psychological and communication profile of the respondents

Sr. No.	Variables	Village-wise respondents		Total n=150
		Dhana (n ₁ =50)	Balawas (n ₂ =100)	
1.	Social Participation			
	a) Low(1-2)	47(94.00)	89(89.00)	136(90.67)
	b) Medium (3-4)	3(6.00)	11(11.00)	14(9.33)
	c) High (5-6)	-	-	-
2.	Psychological variables			
	1) Entrepreneurial motivation			
	a) Low (6-10)	11(22.00)	26(26.00)	37(24.67)
	b) Medium (11-14)	34(68.00)	58(58.00)	92(61.33)
	c) High (15-18)	5(10.00)	16(16.00)	21(14.00)
	2) Risk Orientation			
	a) Low (6-10)	14(28.00)	30(30.00)	44(29.33)
	b) Medium (11-14)	33(66.00)	63(63.00)	96(64.00)
	c) High (15-18)	3(6.00)	7(7.00)	10(6.67)
	3) Economic Motivation			
	a) Low (6-10)	14(28.00)	29(29.00)	43(28.67)
	b) Medium (11-14)	29(58.00)	54(54.00)	83(55.33)
	c) High (15-18)	7(14.00)	17(17.00)	24(16.00)
3.	Communication variables			
	1) Outside Urban Contact			
	a) Low (0-4)	29(58.00)	56(56.00)	85(56.67)
	b) Medium (5-9)	21(42.00)	40(40.00)	61(40.67)
	c) High (10-14)	-	4(4.00)	4(26.66)
	2) Mass Media Exposure			
	a) Low (0-6)	31(62.00)	69(69.00)	100(66.66)
	b) Medium (7-13)	19(38.00)	30(30.00)	49(32.67)
	c) High (14-19)	-	1(1.00)	1(0.67)

Figures in parentheses indicate percentages

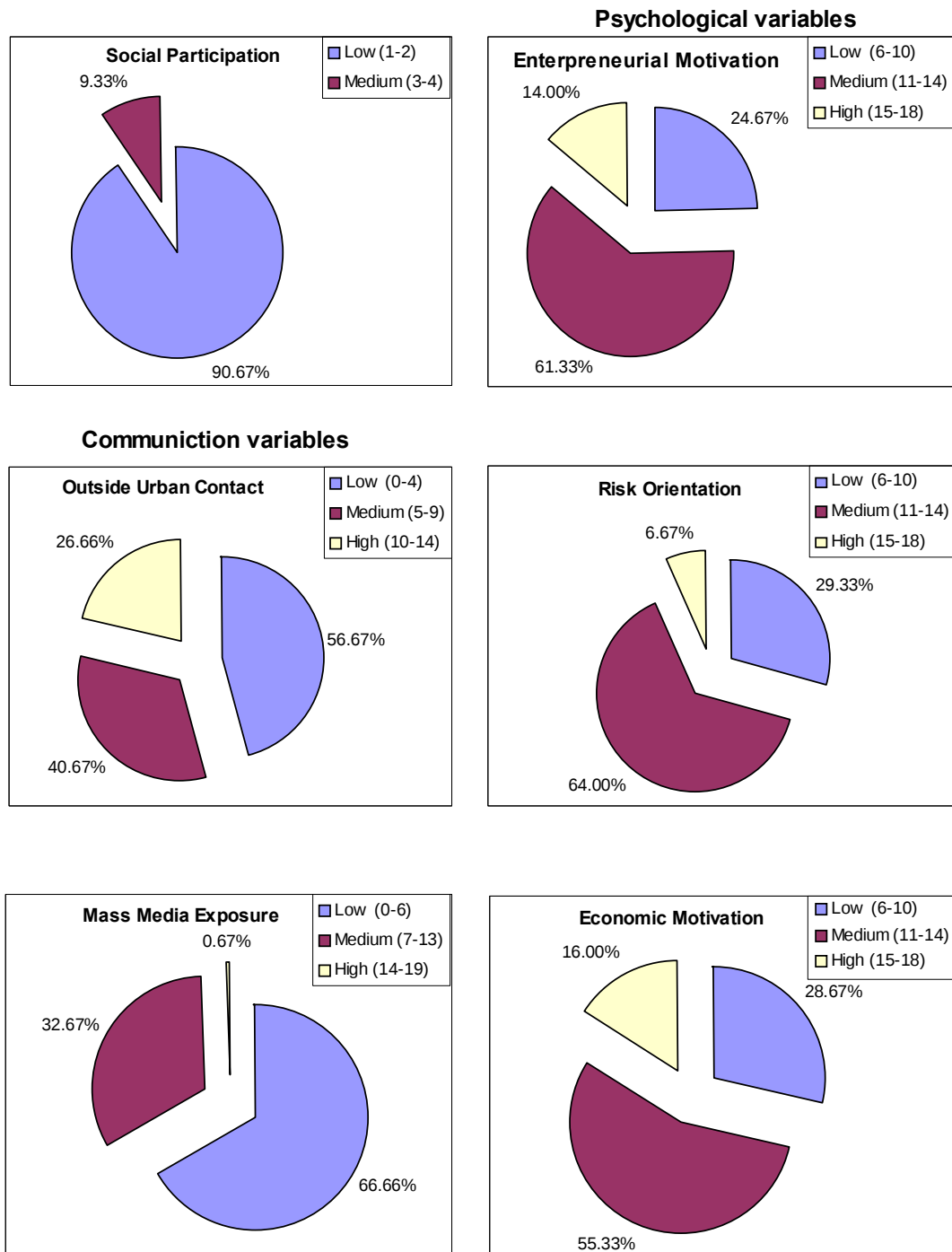


Fig. 6 : Socio-psychological and communicational profile of the respondents

Economic motivation : It was observed that 55.33 per cent of the respondents had medium level of economic motivation. 28.67 and 16.00 per cent of the respondents had low and high level of economic motivation respectively.

Communication variables

Outside/urban contact : More than half of the respondents (56.67%) had low level of outside urban contact followed by medium and high level of outside urban contact (40.67 and 26.67% respectively).

Mass media exposure : It is apparent from the data that mass media exposure of scheduled caste women was found that to be low in most of the cases (66.66%) followed by medium (32.67%) and high (only 0.67%).

It could be inferred that majority of respondents (90.67%) had low social participation (56.67%), outside urban contact (56.67%), mass media exposure (66.66%) and medium level of entrepreneurial motivation (61.33%), risk orientation (64.00) and economic motivation (55.33%).

4.2 Problem of SC women

Problem of SC women categorized were under socio-cultural, education, economical and communicational problems and results have been presented in Table 3.

Regarding socio-cultural problems, it was found that cent per cent respondents never attended any of the social function and festival of other castes. 88.67 per cent respondents reported that they were never invited in marriages by upper and middle castes. Whereas 17.33 per cent of the respondents who were mostly working as agriculture labourer in the field of higher castes sometime experienced bad behaviour by land lords.

Table 3 : Socio-cultural, educational-economical and communication problems of scheduled caste rural women

n=150			
Sr. No.	Problems	Frequency	Percentage
(A)	Socio-cultural problems		
	- Not invited in marriages by upper and middle class	133	88.67
	- Not invited in social functions and festivals by upper and middle class	150	100.00
	- Bad behaviour with women labour by land lords	26	17.33
(B)	Educational problems		
	- Time scarcity for higher education	70	46.67
	- Lack of awareness about reservation in education	81	54.00
	- Lack of motivation to girls by male member to attend school	89	59.33
(C)	Economical problems		
	- Lack of knowledge regarding income generating activities	115	76.66
	- Have knowledge about income generating activities but not motivated to start	35	23.33
	- Lack of awareness about reservation in jobs	140	93.33
	- Lack of knowledge regarding provisions of bank loans to SC women	140	93.33
(D)	Communication problems		
	- Not involvement in village decisions	82	54.67
	- Not access to modern means of communication	20	13.33

As far as educational problems were concerned, 59.33 per cent respondents reported lack of motivation to girls by male member to attend school as one of the main reasons for educational backwardness of SC girls. 54.00 per cent respondents were found to be unaware about reservation in education. Whereas

46.67 per cent respondents reported time scarcity for higher education. Regarding economical problems, data in the same table indicated that 93.33 per cent of the respondents were found to be unawareness about reservation in jobs, had no knowledge regarding provisions of bank loans to SC women (93.33%). 76.66 per cent respondents felt lack of knowledge regarding income generating activities while 23.33 per cent respondents were found to have knowledge about income generating activities but not motivated to attend any training to start entrepreneurial unit. When communicational problems were analyzed, it was clear that more than half (54.67%) of the respondents were never involved in any of the decision related to village upliftment. Further, only 13.33 per cent of the respondents had no access to modern mean of communication. Majority had access to TV, FM radio and mobile.

Availability and utilization of spared milk

Table 4 contained the information related to the availability and utilization of spared milk by the respondents of both the villages.

In general, irrespective of village, maximum number of respondents (42.50%) had 3-4 litre spared milk per day followed by 5-6 litre by 30.00 per cent respondents and only 1-2 litre by 27.50 per cent respondents.

The data further indicted that out of total respondents, maximum number of the respondents (55.00%) irrespective of village, utilized the spared milk for ghee preparation followed by sold the milk to open market (45.00%). None of the respondents were selling the milk to co-operative societies.

As regards awareness about various milk products, out of total sample, majority of the respondents (72.50%) had heard about milk products like paneer, khoa, cream and chhana but none of the were found to be aware about flavoured milk and sweet lassi prepared commercially.

Table 4 : Availability and utilization of spared milk

Sr. No.	Attributes	Village-wise respondents		Total n=40
		Dhana (n ₁ =20)	Balawas (n ₂ =20)	
1.	Availability of spared milk/day			
	1-2 litre	6(40.00)	5(25.00)	11(27.50)
	3-4 litre	9(45.00)	8(40.00)	17(42.50)
	5-6 litre	5(25.00)	7(35.00)	12(30.00)
2.	Utilization of spared milk			
	Sale to co-operatives	-	-	-
	Sale to open market	10(50.00)	8(40.00)	18(45.00)
	Ghee preparation	10(50.00)	12(60.00)	22(55.00)
3.	Ever heard about processing of milk and milk products			
	Yes	14(70.00)	15(75.00)	29(72.50)
	No	6(30.00)	5(25.00)	11(27.50)
4.	Knowledge about preparation of milk products			
	Paneer Yes	16(80.00)	18(90.00)	34(85.00)
	No	4(20.00)	2(10.00)	6(15.00)
	Sweet Lassi Yes	-	-	-
	No	20(100.00)	20(100.00)	40(100.00)
	Burfi Yes	5(25.00)	3(15.00)	8(20.00)
	No	15(75.00)	17(85.00)	32(80.00)
	Chhana Yes	-	2(10.00)	2(5.00)
	No	20(100.00)	18(90.00)	38(95.00)
	Flavoured milk Yes	-	-	-
	No	20(100.00)	20(100.00)	40(100.00)
	Cream Yes	5(25.00)	7(35.00)	12(30.00)
	No	15(75.00)	13(65.00)	28(70.00)
5.	Ever attended any training on processing of milk and milk products			
	Yes	-	-	-
	No	20(100.00)	20(100.00)	40(100.00)

Figures in parentheses indicate percentages

In respect to knowledge about preparation of various milk products, majority of the respondents (85.00%), irrespective of village, had knowledge about preparation of paneer followed by cream (30.00%). Only 20.00 and 5.00 per cent of the respondents were knowing preparation of burfi and chhana respectively in a traditional method. None of the respondents had knowledge about preparation of sweet lassi and flavoured milk. Out of total sample, cent per

cent respondents never attended any training on processing of milk and milk products.

4.3 Knowledge level of the respondents about processing of milk and milk products technology

Knowledge level about the processing of milk and milk products technology was analyzed under following sub-sections :

4.3.1 Pre and post exposure knowledge level

4.3.2 Knowledge gain

4.3.3 Knowledge gain index

4.3.4 Knowledge gap

4.3.5 Mean score of pre and post-exposure knowledge

4.3.1 Pre and post exposure knowledge level

The aggregate score of each respondents for each message related to processing of milk and milk products technology were summated. The estimation of the knowledge level was done message-wise for pre-exposure and post-exposure of training. The data are presented in Table 5.

Importance and food value : The respondents were categorized into three class-intervals i.e. low, medium and high for pre-training and post-training knowledge as given in Table 5.

It is evident from the data that majority of the respondents (82.50%) at pre-exposure stage were having low knowledge and it was followed by medium (15.00%) and high knowledge (2.50%). But after exposure 65.50, 20.00 and 12.50 per cent respondents had medium, high and low level of knowledge about importance and food value of processing of milk and milk products respectively.

Table 5 : Distribution of respondents according to pre and post exposure knowledge in processing of milk and milk products technology

Sr. No.	Message	Categories	Pre-exposure		Total	Post-exposure		Total n=40
			Dhana (n ₁ =20)	Balawas (n ₂ =20)		Dhana (n ₁ =20)	Balawas (n ₂ =20)	
1	Importance and food value							
		Low (1-7)	18(90.00)	15(75.00)	33(82.50)	3(15.00)	2(10.00)	5(12.50)
		Medium (8-15)	2(10.00)	4(20.00)	6(15.00)	14(70.00)	13(65.00)	27(65.50)
		High (16-22)	-	1(5.00)	1(2.50)	3(15.00)	5(25.00)	8(20.00)
2	Production and preservation of milk							
		Low (1-9)	16(80.00)	14(70.00)	30(75.00)	2(10.00)	2(10.00)	4(10.00)
		Medium (10-18)	3(15.00)	5(25.00)	8(20.00)	13(65.00)	9(45.00)	22(55.00)
		High (19-27)	1(5.00)	1(5.00)	2(5.00)	5(25.00)	9(45.00)	14(35.00)
3	Testing adulteration in milk							
		Low (1-3)	20(100.00)	19(95.00)	39(97.50)	9(45.00)	6(30.00)	15(37.50)
		Medium (4-5)	-	1(5.00)	1(2.50)	11(55.00)	14(70.00)	25(62.50)
4	Processing of milk products							
		Low (1-11)	16(80.00)	15(75.00)	31(77.50)	3(15.00)	2(10.00)	5(12.50)
		Medium (12-22)	3(15.00)	4(20.00)	7(17.50)	13(65.00)	10(50.00)	23(57.50)
		High (23-33)	1(5.00)	1(5.00)	2(5.00)	4(20.00)	8(40.00)	12(30.00)
5	Starting processing unit							
		Low (1-6)	16(80.00)	15(75.00)	31(77.50)	4(20.00)	2(10.00)	6(15.00)
		Medium (7-12)	4(20.00)	4(20.00)	8(20.00)	12(60.00)	10(50.00)	22(55.00)
		High (13-18)	-	1(5.00)	1(2.50)	4(20.00)	8(40.00)	12(30.00)
6	Packaging, loaning and marketing							
		Low (0-2)	20(100.00)	19(95.00)	39(97.50)	12(60.00)	10(50.00)	22(55.00)
		Medium (3-5)	-	1(5.00)	1(2.50)	6(30.00)	7(35.00)	13(32.50)
		High (6-8)	-	-	-	2(10.00)	3(15.00)	5(12.50)

Figures in parentheses indicate percentages

Production and preservation of milk : In respect of production and preservation message, at pre-exposure stage, 75.00 per cent of the trainees had low knowledge followed by 20.00 per cent who had medium level of knowledge and only 5.00 per cent had high level of knowledge. On the contrary 35.00 per cent had high level of knowledge followed by 55.00 per cent respondents were having medium level of knowledge and only 10.00 per cent were at low level of knowledge at post-training stage.

Testing adulteration in milk : For testing adulteration in milk message, the two categories i.e. low (1-3) and medium (4-5) were taken. Pre-exposure knowledge level of 97.50 per cent respondents was observed to be low and very small percentage (2.50%) were having high level of knowledge. But at post-exposure, the knowledge level was increased and more than half of the respondents (62.50%) had high level of knowledge and rest (37.50%) had low level of knowledge.

Processing of milk products : Regarding processing of milk products message knowledge level was categorized into low, medium, high with 1-11, 12-22 and 23-33 score categories. At pre-exposure training stage, majority of the respondents i.e. 77.50 per cent were found to have low level of knowledge. Whereas 17.50 and 5.00 per cent respondents were at medium and low knowledge level respectively. But at post-exposure stage, 57.50 per cent had medium level of knowledge. Whereas 30.00 per cent respondents had high level of knowledge. Only 12.50 per cent were having low level of knowledge.

Starting processing unit : The respondents were divided under three class intervals i.e. low (1-6), medium (7-12) and high (13-18). Results revealed that majority of the respondents (77.50%) had at low level of knowledge followed by medium (20.00%) and very small percentages (2.50%) were at high level of knowledge. But after the training, the knowledge level was increased substantially

and 55.00 per cent respondents indicated medium level of knowledge followed by high (3%) and rest (15.00%) had low level of knowledge.

Packaging, loaning and marketing : Results in the same table further indicated that more than half of the respondents (97.50%) had low level of knowledge at pre-exposure level and only 2.50 per cent were having medium knowledge. At post-exposure training stage, 55.00 per cent of the respondents still had low level of knowledge and 32.50 per cent were found to have medium level of knowledge. Only 12.50 per cent respondents had high level of knowledge.

Results lead to conclude that at post-exposure level majority of the respondents. Gained medium level of knowledge in all the messages except the message i.e. packaging, loaning and marketing where maximum respondents were in low category. Medium knowledge at post-exposure may be due to the fact that during training the respondents practiced themselves most of the steps of processing of milk and milk products technology. Similar results were stated by Mehta (1996), Sharma (1997) and Anita (2000). The reason for low knowledge about packaging, loaning and marketing may be because of more of theoretical instructions to the participants during the training who were mostly illiterate.

4.3.2 Knowledge gain

Knowledge gain with respect to difference between pre-exposure and post-exposure knowledge level of scheduled caste rural women about processing of milk and milk products technology messages is presented in Table 6 and Fig. 7.

The data revealed that maximum number of respondents gained medium level of knowledge in the message : processing of milk products (56.00%), starting processing unit (50.00%), testing the quality of milk (42.00%), importance and food value, production and preservation of milk (40.00% each) in order of sequence. Low knowledge gain was observed in packaging, loaning and marketing (67.50%), testing adulteration of milk (57.00%) and starting of

processing milk unit (47.50%). Low knowledge in messages like testing adulteration in milk, packaging, loaning and marketing may be because of illiteracy they could not fully grasp the technical language of the technology.

Table 6 : Distribution of respondents according to knowledge gain in processing of milk and milk products messages

Sr. No.	Message	Categories	Village wise respondents		Total n=40
			Dhana (n ₁ =20)	Balawas (n ₂ =20)	
1	Importance and food value				
		Low (2-4)	8(40.00)	6(30.00)	14(35.00)
		Medium (5-7)	10(50.00)	6(30.00)	16(40.00)
		High (8-10)	2(10.00)	8(40.00)	10(25.00)
2	Production and preservation of milk				
		Low (1-5)	11(55.00)	4(20.00)	15(37.50)
		Medium (6-10)	7(35.00)	9(45.00)	16(40.00)
		High (11-14)	2(10.00)	7(35.00)	9(22.50)
3	Testing adulteration in milk				
		Low (1-2)	11(55.00)	12(60.00)	23(57.50)
		Medium (3-4)	9(45.00)	8(40.00)	17(42.50)
4	Processing of milk products				
		Low (0-7)	9(45.00)	5(25.00)	14(35.00)
		Medium (8-15)	10(50.00)	12(60.00)	22(56.00)
		High (16-23)	1(5.00)	3(15.00)	4(10.00)
5	Starting processing unit				
		Low (0-5)	11(55.00)	8(40.00)	19(47.50)
		Medium (6-11)	8(40.00)	12(60.00)	20(50.00)
		High (12-16)	1(5.00)	-	1(2.50)
6	Packaging, loaning and marketing				
		Low (0-2)	15(75.00)	12(60.00)	27(67.50)
		Medium (3-5)	5(25.00)	8(40.00)	13(32.50)

Figures in parentheses indicate percentages

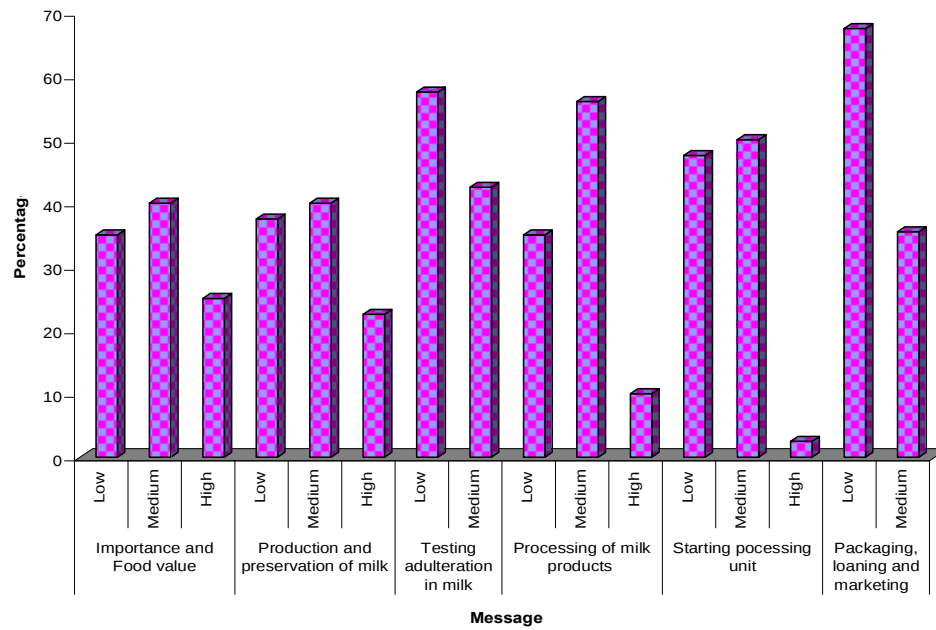


Fig. 7 : Distribution of respondents according to knowledge gain in processing of milk and milk products messages

From the above findings it can be inferred that the training on processing of milk and milk products technology helped the respondents to gain knowledge in most of the messages. Similar contentions were made by Kaur and Sehgal (1995), Ahuja and Mohammed (2006), Khurana *et al.* (2007), and Sasidhar and Suvedi (2007).

4.3.3 Knowledge gain index

Knowledge gain index was calculated with the help of formula explained in the methodology and the results are presented in Table 7 and Fig. 8.

It is noted that maximum numbers of respondents (62.50%) were found in the category of medium knowledge gain index who could secure 49-67 per cent scores. This was followed by low (20.00%) secured 30-48 per cent scores whereas only 17.50 per cent respondents were having high knowledge gain index (knowledge scores 68-85 %).

Table 7: Knowledge gain index of the respondents

Sr. No.	Categories	Village-wise respondents		Total n=40
		Dhana (n ₁ =20)	Balawas (n ₂ =20)	
1	Low (30-48%)	5(25.00)	3(15.00)	8(20.00)
2	Medium (49-67%)	13(65.00)	12(60.00)	25(62.50)
3	High (68-85%)	2(10.00)	5(25.00)	7(17.50)

Figures in parentheses indicate percentages

The overall picture of the knowledge gain index as evident from Table 7 clearly indicate that despite of the low literacy, majority of the respondents gained medium level of knowledge. This confirms that the approach followed by researcher in the dissemination of knowledge helped the respondents to reach this stage.

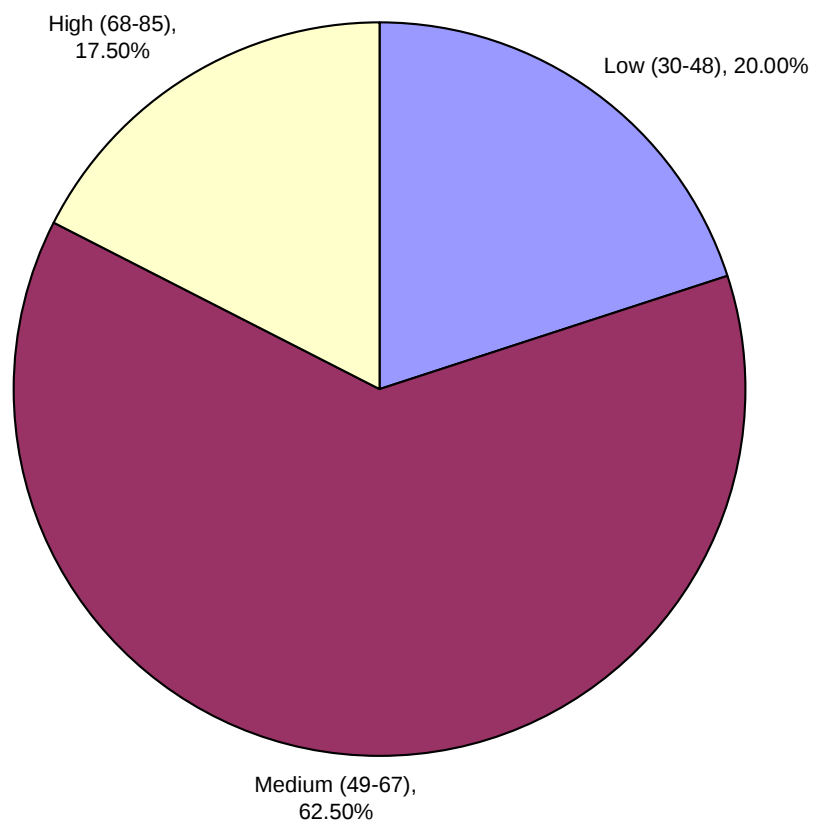


Fig. 8: Knowledge gain index of the respondents

4.3.4 Reduction in knowledge gap in processing of milk and milk products messages

Knowledge gap refers to the difference in the amount of information SC rural women possessed about different message of processing of milk and milk products and the amount of information which was given through training. Knowledge gap in the present study was assessed before and after the SC rural women were exposed to training in order to determine the reduction in knowledge gap. Analysis of the knowledge gap was done message wise and data are furnished in Table 8 and Fig. 9.

Importance and food value : At pre-exposure stage the knowledge gap with respect to importance and food value of processing of milk products was found 63.50 per cent and at post-training stage gap was reduced to 41.09 per cent. The knowledge gap difference between pre and post-exposure was found 22.41 per cent.

Production and preservation of milk : For production and preservation of milk message gap at pre-training stage was 49.37 per cent and post-exposure stage the knowledge gap was 29.55 per cent. The knowledge gap difference between pre and post-exposure of training was found to be 19.82 per cent.

Testing adulteration in milk : Regarding testing adulteration in milk message trainees knowledge gap at pre-exposure stage was 98.20 per cent. But at post-exposure stage it reduced to 49.40 per cent. The difference of 48.80 per cent in knowledge gap was observed between pre and post-exposure of training.

Processing of milk products : 41.54 per cent knowledge gap was observed at pre-training stage with respect to processing of milk products. At post-exposure stage knowledge gap was 25.24 per cent. The knowledge gap difference between pre and post-exposure was found to be 16.30 per cent.

Table 8 : Distribution of respondents according to knowledge gap reduction in processing of milk and milk products messages

n=40					
Sr. No.	Message	Maximum knowledge score	Pre-exposure knowledge gap score	Post-exposure knowledge gap score	Knowledge gap difference
1	Importance and food value	22	13.97 (63.50)	9.04 (41.09)	(22.41)
2	Production and preservation of milk	27	13.33 (49.37)	7.98 (29.55)	(19.82)
3	Testing adulteration in milk	5	4.91 (98.20)	2.49 (49.40)	(48.80)
4	Processing of milk products	33	13.71 (41.54)	8.33 (25.24)	(16.30)
5	Starting processing milk unit	18	13.91 (77.27)	7.91 (43.94)	(33.33)
6	Packaging, marketing and limitation	8	7.89 (98.62)	2.99 (49.87)	(48.75)

Figures in parentheses indicate percentages

Starting processing unit : Pre-exposure knowledge gap (77.27%) related to starting processing of milk products unit message indicated that initial knowledge of the SC rural women about aforesaid message was very low. Whereas post-exposure knowledge gap was 43.94 per cent. The knowledge gap difference between pre and post-exposure was found to be 33.33 per cent.

Packaging, loaning and marketing : With regard to practices related to packaging, loaning and marketing, knowledge gap difference was found to be 48.75 per cent between pre and post-exposure.

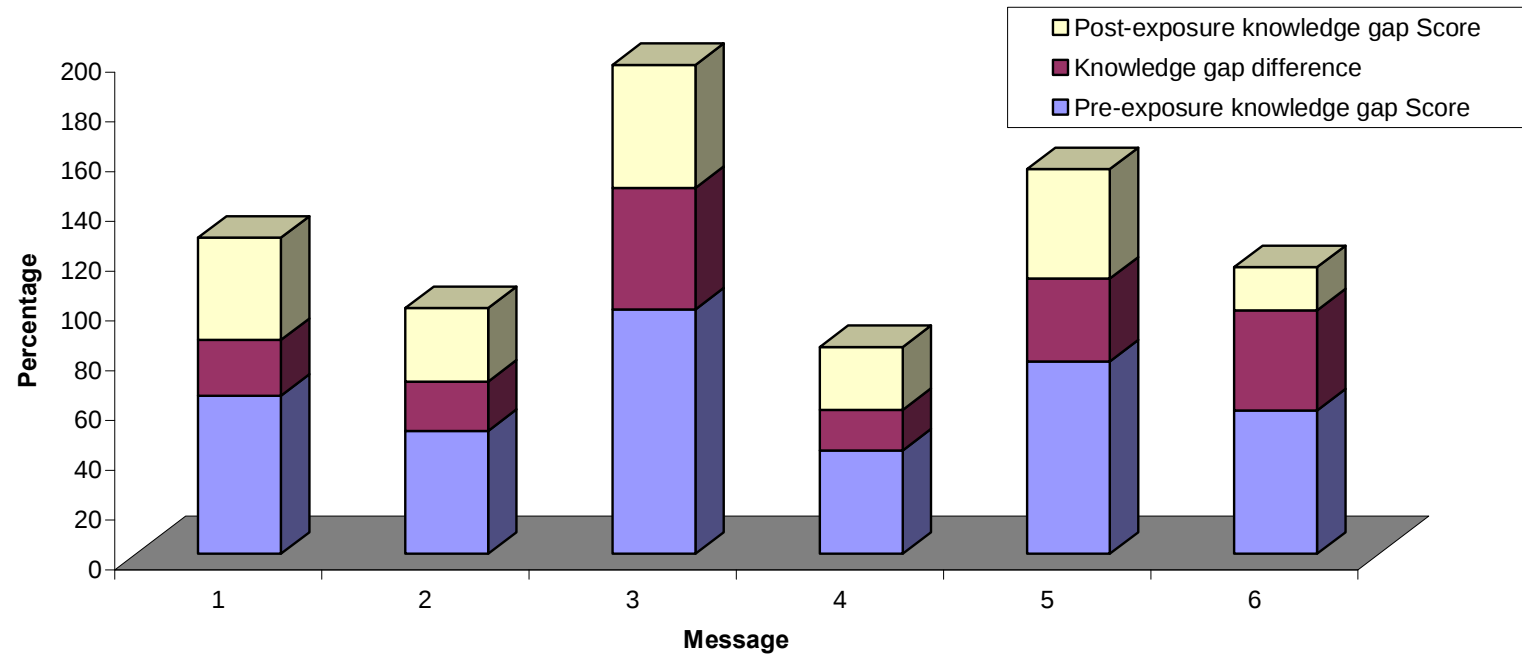


Fig. 9 : Distribution of respondents according to change in knowledge gap

The overall picture of the reduction of knowledge gap as evident from Table 8 clearly indicated that at pre-exposure stage, respondents had somewhat knowledge on various messages except testing adulteration in milk, and packaging, loaning and marketing. But at post-exposure stage wide knowledge gap still existed for these messages. The results of low gap reduction in these messages may be because of lack of practical exposure about loaning procedure, marketing testing adulteration in milk etc.

4.3.5 Mean score of pre-exposure and post-exposure knowledge

In order to statistically test the significance of gain in knowledge, the mean score of the respondents were compared before and after exposure of training by the use of paired t -test. For each respondent, the scores of each message as well as aggregate scores were commuted for pre-exposure and post-exposure knowledge. The knowledge gain mean scores of respondents and value of t -test as applied is show in Table 9.

It is evident from the table that t -values were found to be significant at 5 per cent level of significance of all the messages viz., importance and food value; production and preservation of milk; testing adulteration in milk; processing of milk products, starting processing unit, packaging, loaning and marketing as well as for aggregate scores which reveal that there was significant difference in knowledge of scheduled caste rural women at pre and post-exposure stage. It means all the respondents gained statistically significant knowledge after exposure. Similar views are evident from the research findings of Narvankar *et al.* (2002), Sunitu (2002) and Sain (2003).

Table 9 : Mean score of pre-exposure and post-exposure knowledge of respondents**n=40**

Sr. No.	Message	Pre-exposure knowledge mean score	Post-exposure knowledge mean score	Knowledge gain mean score	't' value
1	Importance and food value	6.625	12.250	5.625	14.012*
2	Production and preservation of milk	9.075	16.300	7.225	12.958*
3	Testing adulteration in milk	1.325	3.600	2.275	16.412*
4	Processing of milk products	4.900	19.050	9.150	11.743*
5	Starting processing plant	5.475	10.925	5.450	12.730*
6	Packaging, loaning and marketing	2.450	4.575	2.125	10.801*
	Overall mean score	34.850	66.700	31.850	16.340*

*Significant at 5% level

4.4 Attitude towards processing of milk and milk products technology

Attitude of the respondents towards processing of milk products technology was ascertained under following sub-sections :

4.4.1 Pre and post-exposure attitude level

4.4.2 Change in attitude about the technology

4.4.1 Pre and post-exposure attitude

Table 10 illustrates that a large number of respondents (47.50%) had unfavourable and favourable (45.00%) followed by strongly favourable (7.50%) attitude towards processing of milk and milk production technology at pre-exposure stage. But after training majority of the respondents had favourable (52.50%) and strongly favourable attitude (22.50%) towards this technology. Only 25.50 per cent respondents were having unfavourable attitude.

Thus data vividly indicate that quite a large number of respondents showed favourable attitude towards processing of milk and milk products technology at pre-exposure stage. This is probably so because interested SC rural women were selected for the training and majority were already convinced about the economic value of some of the milk products. Training further proved effective in creating more favourableness towards this technology. These findings are in line with the results stated by Mehta (1996) and Anita (2000).

4.4.2 Change in attitude about the technology

Table 11 and Fig. 10 depicted change in attitude of the trainees towards processing of milk and milk products technology. Results clearly indicate that 45.00 and 20.00 per cent respondents were found to be in medium and high change attitude category respectively. 35.00 per cent respondents had low change in attitude towards this technology.

Table 10 : Distribution of respondents according to pre and post exposure attitude towards processing of milk and milk products technology

Sr. No.	Categories	Pre-exposure		Total n=40	Categories	Post-exposure		Total n=40
		Dhana (n ₁ =20)	Balawas (n ₂ =20)			Dhana (n ₁ =20)	Balawas (n ₂ =20)	
1.	Unfavourable (20-25)	11(55.00)	8(40.00)	19(47.50)	Unfavourable (40-45)	7(35.00)	3(15.00)	10(25.00)
2.	Favourable (26-32)	8(40.00)	10(50.00)	18(45.00)	Favourable (46-51)	9(45.00)	12(60.00)	21(52.50)
3.	Strongly Favourable (33-39)	1(5.00)	2(10.00)	3(7.50)	Strongly Favourable (52-57)	4(20.00)	5(25.00)	9(22.50)

Figures in parentheses indicate percentages

Table 11: Change in attitude towards processing of milk and milk products technology

Sr. No.	Categories	Village-wise respondents		Total n=40
		Dhana (n ₁ =20)	Balawas (n ₂ =20)	
1	Low (18-21)	8(40.00)	6(30.00)	14(35.00)
2	Medium (22-25)	9(45.00)	9(45.00)	18(45.00)
3	High (26-29)	3(15.00)	5(25.00)	8(20.00)

Figures in parentheses indicate percentages

The low change in attitude may be due to the fact that at pre-exposure stage attitude of the respondents towards the technology were quite favourable. The observation of Sharma (1997), Sah (2001), Jain and Verma (2007), Deepti (2008) and Nutan (2009) are in the line with the findings of the present study.

4.5 Impact assessment and variability therein

Impact of training on processing of milk and milk products technology is given in Table 12. The impact percentage have been divided into three categories viz., low impact (<33), moderate impact (33-66) and high impact (>66). The impact assessment of training on gain in knowledge, change in attitude of scheduled caste rural women regarding message on processing of milk and milk products technology of respondents shows that the calculated impact was 49.66 per cent. Thus, it may be inferred that women respondents were succeeded in acquiring knowledge and change in their attitude to moderate extent after exposure of the training.

Similar views are evident from the research findings of Joseph and Podaria (2007), Riar and Gill (2007), Sharma *et al.* (2008) and Ajaz-ul-Islam (2008).

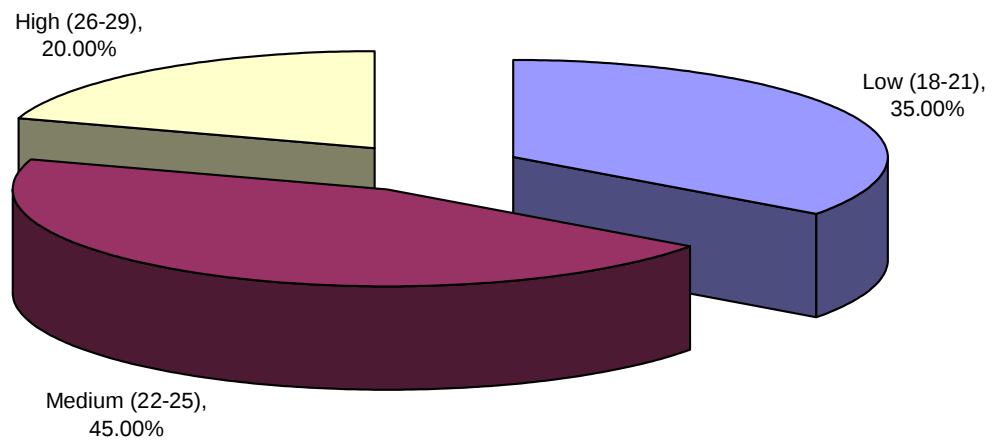


Fig. 10: Attitue change index of the respondents

Table 12: Impact assessment index of training on gain in knowledge change in attitude of respondents regarding message on processing of milk and milk products technology

Knowledge Attitude	High (3)	Medium (2)	Low (1)	Total n=40
Highly favourable (3)	4×3×3 36	3×3×2 18	2×3×1 6	9
Favourable (2)	10×2×3 60	7×2×2 28	3×2×1 6	20
Not favourable (1)	4×1×3 12	4×1×2 8	3×1×1 3	11
Total	18	14	8	40

Percentage impact : 49.66 (moderate)

4.6 Perceived feasibility of the technology

Perceived feasibility of processing of milk and milk products technology was assessed in terms of five attributes of the technology like : relative advantage (profitability), physical compatibility, cultural compatibility, simplicity complexity and triability (Rogers, 1983). Results of all the products have been presented in Tables 13-19.

4.6.1 Perceived feasibility of khoa technology

4.6.2 Perceived feasibility of paneer technology

4.6.3 Perceived feasibility of chhana technology

4.6.4 Perceived feasibility of flavoured milk technology

4.6.5 Perceived feasibility of cream technology

4.6.6 Perceived feasibility of sweet lassi technology

4.6.7 Perceived feasibility index

4.6.1 Perceived feasibility of khoa technology

Table 13 and Fig. 11 indicate that maximum number of respondents of village Dhana found the technology profitable (mean score 3.05, Ist rank), triable (mean score 3.00, IInd rank), simple to use (mean score 2.85, IIIrd rank), physical compatibility (mean score 2.65, IVth rank), culture compatibility (mean score 2.30, Vth rank) in order to sequence.

Whereas the respondents of village Balawas found the technology easy to try on small scale (mean score 3.05, Ist rank), simple to use (mean score 3.00, IInd rank), profitable (mean score 2.80, IIIrd rank). The results further show that equal number of respondents considered this technology as physical and cultural compatible (2.65, IVth rank each).

Table 13 : Perceived feasibility of khoa technology

Sr. No.	Attributes	Village wise respondents			
		Dhana (n ₁ =20)		Balawas (n ₂ =20)	
		Mean score	Rank	Mean score	Rank
1.	Relative advantage	3.05	I	2.80	III
2.	Physical compatibility	2.65	IV	2.65	IV
3.	Cultural compatibility	2.30	V	2.65	IV
4.	Simplicity	2.85	III	3.00	II
5.	Triability	3.00	II	3.05	I

4.6.2 Perceived feasibility of paneer technology

Irrespective of villages, majority of the respondents perceived the paneer making technology as profitable, simple to use and physical compatible raked Ist, IInd and IIIrd respectively (Table 14 and Fig. 11).

Table 14 : Perceived feasibility of paneer technology

Sr. No.	Attributes	Village wise respondents			
		Dhana (n ₁ =20)		Balawas (n ₂ =20)	
		Mean score	Rank	Mean score	Rank
1.	Relative advantage	2.70	I	3.05	I
2.	Physical compatibility	2.40	III	2.70	III
3.	Cultural compatibility	2.10	V	2.40	IV
4.	Simplicity	2.65	II	2.90	II
5.	Triability	2.25	IV	2.25	V

Data same in the table further exhibited that majority of the respondents of Dhana village found the technology easy to use (mean score 2.65, IVth rank) and cultural compatible (2.10, Vth rank). Whereas village Balawas respondents rated the technology cultural compatibility and easy to try on small scale at IVth and Vth place with mean score 2.40 and 2.25 respectively.

4.6.3 Perceived feasibility of chhana technology

Table 15 and Fig. 11 exhibited the perceived feasibility of chhana technology in Dhana village. The technology was found to be profitable (mean score 2.40, Ist rank), simple to use (2.35, IInd rank), cultural compatible (2.00, IIIrd rank) and easy to try on small scale (1.95, IVth rank), physical compatible (1.75, Vth rank) by majority of the respondents.

Whereas, the respondents of village Balawas rated the chhana technology as profitable with highest (mean score 2.50, Ist rank) followed by cultural compatible (mean socre 2.05, IInd rank), physical compatible (1.95, IIIrd rank) and simple to use (1.85, IV rank), easy to try (1.75, Vth rank).



Researcher giving demonstration on preparation of paneer



Researcher giving demonstration on preparation of flavoured milk

Table 15 : Perceived feasibility of chhana technology

Sr. No.	Attributes	Village wise respondents			
		Dhana (n ₁ =20)		Balawas (n ₂ =20)	
		Mean score	Rank	Mean score	Rank
1.	Relative advantage	2.40	I	2.50	I
2.	Physical compatibility	1.70	V	1.95	III
3.	Cultural compatibility	2.00	III	2.05	II
4.	Simplicity	2.35	II	1.85	IV
5.	Triability	1.95	IV	1.75	V

4.6.4 Perceived feasibility of flavoured milk technology

Out of the total sample, maximum number of the respondents found the technology of flavoured milk as easy to use, physical compatible, cultural compatible, profitable and simple to try by giving Ist, IInd, IIIrd, IVth and Vth rank respectively (Table 16 and Fig. 11).

Table 16 : Perceived feasibility of flavoured milk technology

Sr. No.	Attributes	Village wise respondents			
		Dhana (n ₁ =20)		Balawas (n ₂ =20)	
		Mean score	Rank	Mean score	Rank
1.	Relative advantage	1.40	IV	1.70	IV
2.	Physical compatibility	2.85	II	2.35	II
3.	Cultural compatibility	1.65	III	2.00	III
4.	Simplicity	3.10	I	2.80	I
5.	Triability	1.35	V	1.65	V

4.6.5 Perceived feasibility of cream technology

It is clear from the results that cream technology was perceived to be profitable with highest mean score 3.10, Ist rank followed by simple to use (mean score 2.55, IInd rank), triable (2.45, IIIrd rank) and physical compatible (2.30, IVth rank) and cultural compatible (1.70, Vth rank) in order to sequence by majority of the respondents of Dhana village (Table 17 and Fig. 11).

When responses of village Balawas were taken into consideration, it was observed that among five attributes of the technology, majority rated the cream making technology as most profitable with highest mean score 3.00. It was followed by simple to use (mean score 2.75, IInd), physical compatible (2.60, IIIrd rank), easy to try on small scale (2.55, IVth rank) and cutlrual compatible (1.70, Vth rank).

Table 17 : Perceived feasibility of cream technology

Sr. No.	Attributes	Village wise respondents			
		Dhana (n ₁ =20)		Balawas (n ₂ =20)	
		Mean score	Rank	Mean score	Rank
1.	Relative advantage	3.10	I	3.00	I
2.	Physical compatibility	2.30	IV	2.60	III
3.	Cultural compatibility	1.70	V	1.70	V
4.	Simplicity	2.55	II	2.75	II
5.	Triability	2.45	III	2.55	IV

4.6.6 Perceived feasibility of sweet lassi technology

A perusal of data in Table 18 and Fig. 11 indicated that maximum number of the respondents of village Dhana found the sweet lassi technology simple to



Researcher showing cream separation from milk to the respondents



Researcher giving demonstration on preparation of sweet lassi

use, physical compatible, cultural compatible, profitable and triable (with mean score 2.95, 2.75, 2.30, 1.70 and 1.65 respectively).

In respect to the respondents of village Balawas where most of the respondents perceived this technology as simple to use (mean score 3.20, Ist rank) followed by physical compatible (2.80, IInd rank), profitable (1.50, IIIrd rank), cultural compatible (1.45, IVth rank) and easy to try on small scale (1.40, Vth rank).

Table 18 : Perceived feasibility of sweet lassi technology

Sr. No.	Attributes	Village wise respondents			
		Dhana (n ₁ =20)		Balawas (n ₂ =20)	
		Mean score	Rank	Mean score	Rank
1.	Relative advantage	1.70	IV	1.50	III
2.	Physical compatibility	2.75	II	2.80	II
3.	Cultural compatibility	2.30	III	1.45	IV
4.	Simplicity	2.95	I	3.20	I
5.	Triability	1.65	V	1.40	V

A critical examination of the data reflected that khoa making technology was found to economical profitable, simple to use and try on small scale.

As regard paneer and cream making, these were found to be relative advantageous, simple and physical compatible technologies. Further data indicated that out of three profitable technologies viz., cream, khoa, chhana and paneer; cream technology was perceived to be most profitable by majority to the respondents because of availability of fat/cream testing machine in the village. Secondly, easy process of making ghee out of cream. Further majority of the ladies perceived flavoured milk and sweet lassi as simple and physical compatible

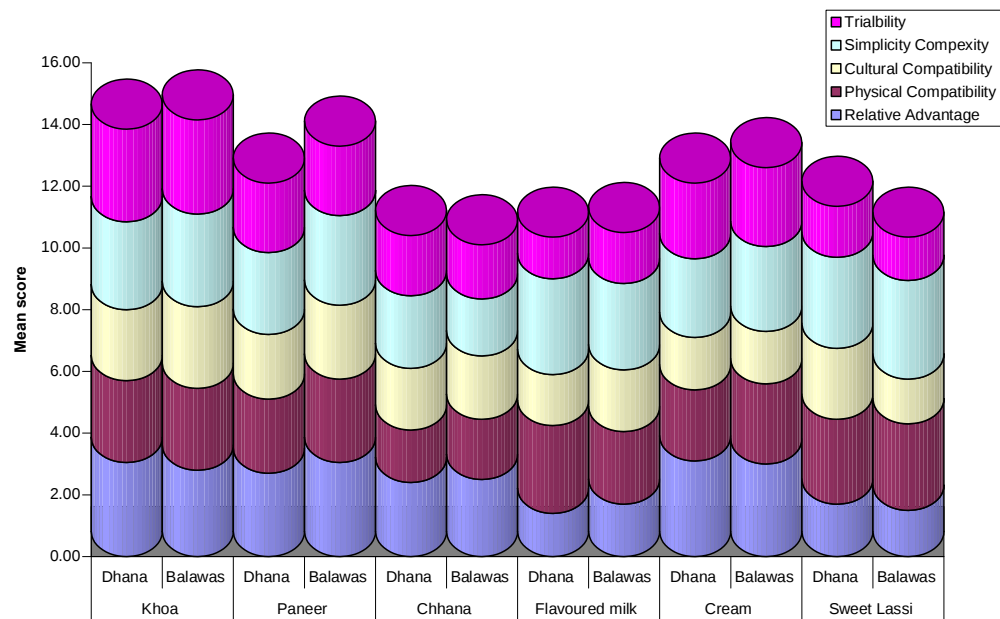


Fig. 11 : Village-wise perceived feasibility of various milk products technology

technologies but not relative advantageous. As far as chhana making was concerned they rated it as economical profitable and cultural compatible technology. Mittal (1998) also found khoa, paneer, chhana making untis as economical profitable. Dabur and Kapoor (2007) also reported that converting milk into khoa based sweet and marketing it into nearby urban markets, could earn a profit margin of Rs. 8.33/litre of milk handled or Rs. 2,500/month.

4.6.7 Perceived feasibility index

Perceived feasibility index for the technology was calculated on the basis of formula explained in the methodology and results (Table 19 and Fig.12) revealed that out of total sample adoption feasibility was medium by 56.68 per cent respondents followed by 24.16 per cent respondents having high perceived feasibility of processing of milk and milk products technology. Only 19.16 per cent respondents had low perceived feasibility with scores 46.67-73.33, 73.34 - 100 and 20 to 46.66 per cent respectively.

Thus, it may be confirmed that perceived feasibility of processing of milk and milk products technology was found to be medium for scheduled caste rural women. It means there is a need to provide appropriate production and processing technologies and motivation to scheduled caste rural women by organizing training courses and also establishing good marketing network in near by villages. This finding is in tune with the results of Anita (2000), Sunita (2002), Mittal *et al.* (2007) and Dabur and Kapoor (2007).

4.7 Symbolic adoption towards processing of milk and milk products technology

The figures pertaining to symbolic adoption have been presented in Table 20.

Table 19 : Perceived feasibility index of the respondents

Sr. No.	Categories	Khoa	Paneer	Chhana	Flavoured milk	Cream	Sweet lassi	Total
1.	Low (20-46.66%)	4(10.00)	4(10.00)	9(22.50)	11(27.50)	7(17.50)	11(27.50)	46(19.16)
2.	Medium (46.67-73.33%)	19(47.50)	25(62.50)	24(60.00)	24(60.00)	21(52.50)	23(57.50)	136(56.68)
3.	High (73.34-100%)	17(42.50)	11(27.50)	7(17.50)	5(12.50)	12(30.00)	6(15.00)	58(24.16)

Figures in parentheses indicate percentages

Table 20: Distribution of respondents according to pre and post-exposure symbolic adoption towards processing of milk and milk products technology

Categories	Khoa		Paneer		Chhana		Flavoured milk		Cream		Sweet lassi		Pre Total n=40	Post Total n=40
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post		
Low (0-3)	24 (60.00)	10 (25.00)	27 (67.50)	12 (30.00)	30 (75.00)	14 (35.00)	35 (87.50)	20 (50.00)	25 (62.50)	11 (27.50)	33 (82.50)	16 (40.00)	174 (72.50)	83 (34.59)
Medium (4-7)	12 (30.00)	21 (52.50)	10 (25.00)	20 (50.00)	9 (22.50)	21 (52.50)	5 (12.50)	19 (47.50)	11 (27.50)	21 (52.50)	7 (17.50)	21 (52.50)	54 (22.50)	123 (51.25)
High (8-10)	4 (10.00)	9 (22.50)	3 (7.50)	8 (20.00)	1 (2.50)	5 (12.50)	-	1 (2.50)	4 (10.00)	8 (20.00)	-	3 (7.50)	12 (5.00)	34 (14.16)

Figures in parentheses indicate percentages

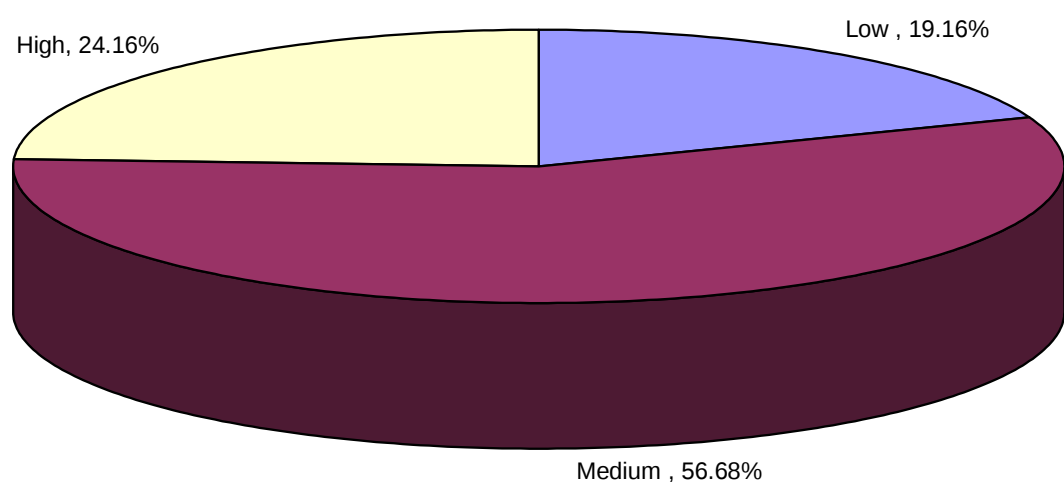


Fig. 12 : Perceived feasibility index of the respondents

It seems from the data that 72.50 per cent of the respondents fell under the category of low symbolic adoption score followed by medium (22.50%) and 5.00 per cent of the respondents had high symbolic adoption score at pre-exposure stage. But at post-exposure stage nearly half of the respondents (51.25%) had medium and 34.59 per cent respondents had low symbolic adoption score followed by high (14.16%). Similar contentions were shared by Sunita (2002) and Ahuja and Mohammed (2006).

Results clearly revealed that 34.59 per cent respondents still had low symbolic adoption even at post-exposure stage. Reasons may be illiteracy and lack of confidence among women to procure loan from the bank to purchase required machinery, to work in group and to market the products especially flavoured milk, sweet lassi and chhana.

4.7.1 Change in symbolic adoption.

Table 21 and Fig. 13 depicts change in symbolic adoption of the respondents after training towards processing of milk and milk products. Results clearly indicate that more than half (66.25%) of the respondents had low followed by medium (27.91%) change in symbolic adoption. Only 5.84 per cent respondents had high change in symbolic adoption.

Low change in symbolic adoption may be due to the fact that out of 6 products taught namely; khoa, paneer, chhana, flavoured milk, cream and sweet lassi, they were least interested to adopt flavoured milk, sweet lassi and chhana because they were not sure about the marketing of these products.

Table 21 : Distribution of respondents according to change in symbolic adoption towards processing of milk and milk products technology

Categories	Khoa	Paneer	Chhana	Flavoured milk	Cream	Sweet lassi	Total n=40
Low (0-2)	21(52.50)	24(60.00)	28(70.00)	32(80.00)	24(60.00)	30(75.00)	159(66.25)
Medium (3-4)	15(37.50)	13(32.50)	10(25.00)	8(20.00)	13(32.50)	8(20.00)	67(27.91)
High (5-6)	4(10.00)	3(7.50)	2(5.00)	-	3(7.50)	2(5.00))	14(5.84)

Figures in parentheses indicate percentages

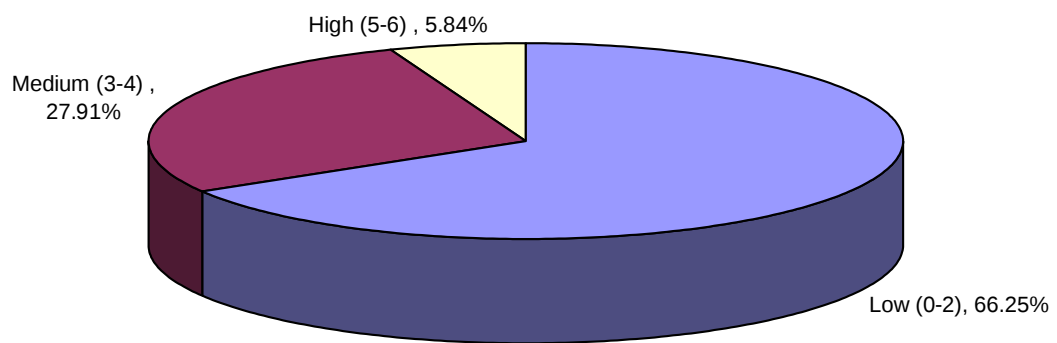


Fig. 13 : Change in symbolic adoption

4.7.2 Mean score of change in attitude and symbolic adoption.

Results related to mean scores of pre and post-exposure along with α values have been presented in Table 22.

It is evident from the results that respondents had succeeded in changing their attitude and symbolic adoption at the post-exposure level at 5 per cent level of significance.

Table 22 : Mean score of change in attitude and symbolic adoption

n=40

	Per-exposure mean score	Post-exposure mean score	Change	't' value
Attitude	25.95	48.22	22.27	50.29*
Symbolic adoption	3.30	17.72	14.42	14.51*

*Significant at 5% level of significant

4.8 Overall acceptability of processing of milk and milk products technology for income generation

The acceptability of milk and dairy products processing technology by respondents was measured and quantified by summing up individual scores about perceived feasibility and symbolic adoption of technology. The data presented in Table 23 and Fig. 14 show that exactly 50.00 per cent of the respondents were observed in medium followed by low (37.50%) categories of acceptability. 12.50 per cent of the respondents also found this technology as highly acceptable for income generation.

Table 23: Overall acceptability of processing at milk and milk products technology for income generation

Sr. No.	Category	Village wise respondents		Total n=40
		Dhana(n ₁ =20)	Balawas(n ₂ =20)	
1.	Low (60-86)	8(40.00)	7(35.00)	15(37.50)
2.	Medium (87-113)	10(50.00)	10(50.00)	20(50.00)
3.	High (114-138)	2(10.00)	3(15.00)	5(12.50)

Figures in parentheses indicate percentages

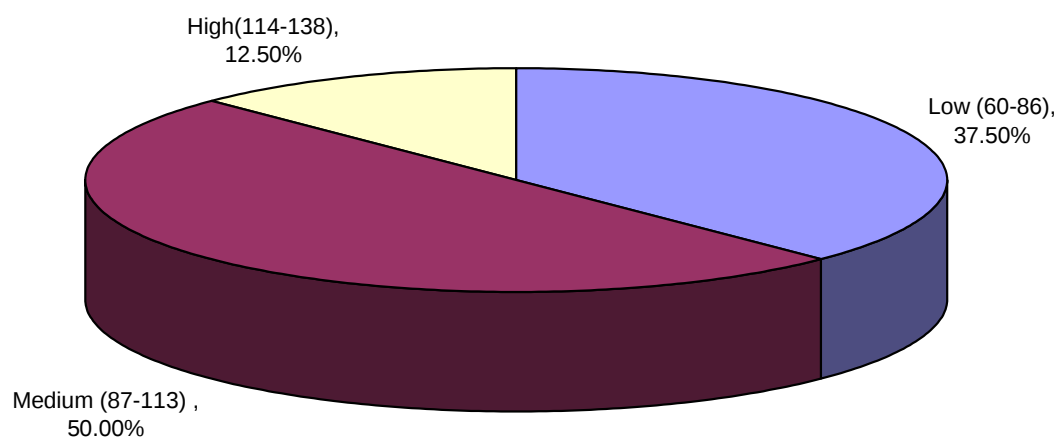


Fig. 14 : Overall acceptability of various milk products

4.9 Suggestion for improvement of training

Data as regards to suggestions for improvement of training in Table 24 indicate that cent per cent respondents were found to be infavour of conducting the training in village itself because daily to and fro to Hisar city consume their lot of time. Further they suggested that training hours/day should be reduced from 6 to 3 hours/day. 75.00 per cent respondents said that training should be provided by female instructors so that they can ask their queries freely.

Table 24 : Suggestion for improvement of training

Sr. No.	Suggestions*	Frequency
1.	Duration of training should extended upto 10 days	29(72.50)
2.	Training should be conducted in the village itself	40(100.00)
3.	Training should be provided by female instructors if possible	30(75.00)
4.	Training hours/day should be reduced to 3 hours	40(100.00)

*Multiple response

Further 72.50 per cent respondents reported that duration of training should be extended upto 10 days to practice all the products taught during the training and to understand the technical aspects more clearly.

CHAPTER-V

Summary and Conclusions

The constitution empowers the president of India, after consulting the heads of the different states, to notify by an order certain groups as scheduled castes. Thus, officially the scheduled castes are the groups that are named in the scheduled order of the president of India. The scheduled caste are spread over the entire country. The scheduled caste population in the country has grown to about 166,635,700 millions in 2001 from 138 millions in 1991 and 64 million in 1961.

A majority of the scheduled caste population (78.5%) of the state is residing in rural area. About 75.00 per cent of them live below poverty line and work participation rate of SC population is said to be for males 22.25 per cent and for females 25.98 per cent.

Socio-economic development of the scheduled castes and their respectful integration with the mainstream and brining them at par with the others is a constitutional responsibility and a national goal. Achieving this noble goal calls for effective planning and implementation of various programmes for the development of scheduled castes.

Processing of milk and milk products with just peripheral institutional support has the potential to supplement the income of poor rural households. Agriculturists and nutritionists have generally agreed that developing the

processing of milk and milk products is the fastest means of bridging the protein deficiency gap presently prevailing in the country. But villagers especially the women can not adopt industrial approach to processing of milk and milk products because of lack of proper knowledge or training and resources. Keeping their background in mind present study was planned with the following objectives :

- To identify the problems and socio-economic deprivations faced by scheduled caste families.
- To organize training on processing of milk and milk products and assess its impact on capacity building of scheduled caste women.
- To explore the acceptability of processing of milk and milk products enterprise for income generation.

METHODOLOGY

The study was conducted purposively in Hisar district, Haryana state, as the study was the part of one of the project of the department entitled 'Capacity building of scheduled caste rural women through developmental messages' operating in the Hisar district; secondly all the technical facilities were available at CCSHAU, Hisar. 50 per cent scheduled caste families (women) of both villages i.e. 50 from Dhana Khurd and 100 from Balawas which totaled to 150 women were interviewed randomly to know their problems and socio-economic deprivation.

A CD ROM was prepared in Hindi covering various messages related to processing of milk and milk products technology along with the printed version (manual). Two trainings 6 days each on processing of milk and milk products were organized in collaboration with APT Department, CCSHAU, Hisar to a group of interested 20 SC ladies/village having milch animals. During the training

six milk products namely; paneer, khoa, chhana, cream, sweet lassi and flavoured milk were demonstrated along with lectures by experts on various topics related with processing of milk and milk products.

Assessing the impact of training and acceptability of the technology were the dependent variables. Impact of the training was assessed in terms of gain in knowledge and change in attitude and acceptability was measured by considering the perceived feasibility and symbolic adoption of the technology by SC women. Various socio-personal, economical, psychological and communicational variables of SC rural women constituted the independent variables for the study.

A duly pre-tested interview schedule was used as a tool for data collection. The collected data were then analyzed to draw the appropriate inferences by application of suitable statistical tests.

MAIN FINDINGS

- The study revealed that 51.33 per cent respondents belonged to 18-35 years of age, were married (89.33%), illiterate (65.33%), had nuclear family system (64.67%) with medium family size (64.67%), were agricultural labourer (82.66%), possessed *kaccha-pucca* houses (56.00%), earn less than Rs. 5,000/month (63.34%), had no milch animal (50.00%) and low material possession (70.00%).
- Majority of respondents had low social participation, outside urban contact, mass media exposure (66.66%), medium level of entrepreneurial motivation (61.33%), risk orientation (64.00%) and economic motivation (55.33%).
- In general, irrespective of village, maximum number of respondents (42.50%) had 3-4 litre spared milk per day. 55.00 per cent respondents were utilizing the spared milk for ghee preparation, 72.50 per cent respondents

had heard about milk products like paneer, khoa, cream and cent per cent respondents never heard about sweet lassi and flavoured milk.

- Cent per cent of the respondents were never invited in social function, festivals and marriages (88.67%) by upper and middle caste. Under educational problems, 59.33 per cent respondent reported lack of motivation to girls by male member to attend school as one of the main reason for educational backwardness of SC girls. More than half of the respondents were unaware about reservation in education and in jobs, had lack of knowledge regarding income generating activities and provision of bank loans to SC women. 54.67 per cent respondents were never involved in village decisions.
- At pre-exposure stage majority of the respondents possessed low knowledge about all the messages of processing of milk and milk products. While at post-exposure level majority of respondents gained medium knowledge about most of the messages.
- At post-exposure stage, knowledge gap was reduced significantly for majority of the messages except testing adulteration in milk, packaging, loaning and marketing, starting milk unit because of lack of practical exposure about loaning procedure and marketing.
- χ^2 values were found to be significant at 5 per cent level of significant for all the messages as well as for aggregate training scores revealed that all the respondents gained statistically significant knowledge after exposure.
- 47.50 per cent respondents had favourable attitude towards processing of milk and milk products technology. 7.50 per cent had strongly favourable attitude. Whereas 45.00 per cent respondents had unfavourable attitude at pre-exposure which reduced to 25.50 per cent at post-exposure stage.

- Data reflected that khoa making technology was found to be economical, profitable, simple to use and try on small scale. As regard paneer and cream making, these were found to be relative advantageous, simple, physical compatible technologies. As far as chhana making was concerned majority rated it as economical profitable and cultural compatible but not relative advantageous technologies. Cream technology was perceived to be most profitable by majority of the respondents because of availability of fat/cream testing machine in the village. Secondly, easy process making ghee out of cream.
- Adoption feasibility of processing of milk and milk products technology was of medium level by 56.68 per cent respondents followed by high (24.16%) and low (19.16%).
- Majority of the respondents (66.25%) had low change in symbolic adoption followed by medium (27.91%). Only 5.84 per cent respondents had high change in symbolic adoption; low change in symbolic adoption after exposure may be due to the fact that majority of the women were least interested to try flavoured milk, sweet lassi and chhana on small scale because of uncertainty of marketing of these products.
- α values were found to be significant at 5 per cent level of significant for change in attitude and symbolic adoption.
- Regarding overall acceptability of processing of milk and milk products, it was found exactly 50.00 per cent of the respondents were observed in medium followed by low (37.50%) category and 12.50 per cent of the respondents considered this technology as highly acceptable.

RECOMMENDATION

- Results revealed that more than half of the SC families were unaware about the reservation in education, jobs, provision of bank loan for starting various income generating activities, it is therefore suggested to organize special lectures and training in the villages specially dominated by SC families by government extension agencies and NGOs.
- To avoid inconvenience in daily to and fro and to save the time, effort should be made to organize training in the village.
- Training hours should be reduced (from 6-3) and duration of the training should be extended (from 6-10 days) so that women can look after their household activities and children.
- Chhana cannot be marketed as such therefore it is recommended to organize a full-fledge training on chhana products.
- Visits to the centres preparing flavoured milk and sweet lassi should be made to motivate the SC women.
- Majority of the SC ladies perceived cream, paneer and khoa making as profitable technologies so efforts should be made by extension agencies to enhance capacity of SC rural women by organizing them into groups and providing them necessary training and support in these areas so that they can start their own income generating units.
- However medium symbolic adoption of processing of milk and milk products technology found, it is suggestive that actual adoption of processing of milk and milk products technology was should be measured by carrying out further research by the department.

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ANNEXURE I

LIST OF SCHEDULED CASTES IN HARYANA STATE

1.	Ad Dharmi
2.	Balmiki, Chura, Bhangi
3.	Bangali
4.	Barar, Burar, Berar
5.	Batwal
6.	Bauria, Bawaria
7.	Bazigar
8.	Bhanjra
9.	Chamar, Jatia Chamar, Rehgar, Raigar, Ramdasi, Ravidasi, Balahi, Batoi, Bhatoi, Bhambi, Chamar-Rohidas, Jatav, Jatava, Mochi, Ramdasia.
10.	Chanal
11.	Dagi
12.	Darain
13.	Deha, Dhaya, Dhea
14.	Dhanak
15.	Dhogri, Dhangri, Siggri
16.	Dumna, Mahasha, Doom
17.	Gagra
18.	Gandhila, Gandil, Gondola
19.	Kabirpanthi, Julaha
20.	Khatik
21.	Kori, Koli
22.	Marija, Marecha
23.	Mazhabi, Mazhabi Sikh
24.	Megh
25.	Nat, Badi
26.	Od.
27.	Pasi
28.	Perna
29.	Pherera
30.	Sanhai
31.	Sanhal
32.	Sansi, Bhedkut, Manesh
33.	Sansoi
34.	Sapela, Sapera
35.	Sarera
36.	Sikligar, Bariya
37.	Sirkiband.

Census (2001)

7. Please name the vitamins which are present in milk.
 - i. Water soluble vit.
 - ii. Fat soluble vit
8. Do you know what are the fat soluble vitamins?
 - i. Vit-A
 - ii. Vit-D
 - iii. Vit-E
 - iv. Vit-K
9. Please name the water soluble vitamins.
 - i. vit-c
 - ii. vit-B complex
10. Tell name of the minerals present in milk and its functions.

Minerals	Function
i. Calcium	Development of bones
ii. Phosphorus	Teeth development

Production & preservation of Milk

11. What points should be keep in mind for production of healthy milk:
 - i. Healthy condition of animal
 - ii. Hygienic place for milking
 - iii. Clean utensil
 - iv. The milkman should not contain any disease or micro-organism.
12. Please tell the appropriate time required for milking

6-8 minutes
13. For boiling of milk heavy bottom pan is required name the metals suitable for the pan
 - i. Copper
 - ii. Aluminum

14. Name the metal which is least suitable for boiling milk

Stainless steel

15. Please tell the methods commonly used for safe storage of milk at home in villages.

- i. wrap the muslin cloth around the utensils and dip utensil in earthen bowl the earthen bowls filled by water.
- ii. Put the milk utensil in front of cooler.
- iii. Put the milk in Refrigerator

16. Please tell the precaution to be followed for safe storage of milk.

- i. The milk should be filter
- ii. The milk utensil should be covered
- iii. Never place the milk in sunlight
- iv. Put the milk at cool place during summer

17. What do you mean by pasteurization?

Pasteurization is a process in which milk is heated for 15 minutes up to 72°C to destroy the pathogens present in milk

18. How we can increase the shelf life of milk?

By using/ adding metha soda in milk

19. Do you know the purpose of pasteurization?

- i. To kill the pathogenic micro organism
- ii. To improve the quality of milk

20. Which pasteurization method is suitable for above 1000 litre milk

High temperature Low time

21. Which pasteurization method is suitable for less than 1000 litre milk

Low temperature high time

- 22 What do you understand by term 'cooling process'?

Cooling the milk immediately after milking to prevent it from deterioration.

- 23 What do you understand by the Homogenization of milk?

- i. To make the milk uniform
- ii. To breakdown the fat globules
- iii Proper mixing of milk constituents

24. Do you know the benefits of Homogenization of milk.

- i. It helps in preparation different milk products like flavored milk, ice-cream, milk powder
- ii. Re-constitution of milk like separated milk & butter oil mixing
- iii. It increases the taste of milk.

Testing adulteration in milk

25. Do you know which instrument is used for testing the density of milk?

Lactometer

26. Please tell the test which is used for measuring the fat in the milk.

Gurber fat test

27. Do you know adulteration of water in milk can be hidden?

By adding starch

- 28 How do we detect the starch in milk?

By Iodine test

- 29 Which method is suitable to detect the sourness of milk?

By pH strip method

Processing of milk products

30. Please tell products which can be prepared from milk?

- i. Paneer
- ii. Lassi
- iii. Curd
- iv. Butter
- v. Khoa
- vi. Sweets

31. Which milk is best for preparation of paneer?

Buffalo milk

32. Please tell the acid used for preparation of paneer ?

Citric acid

33. In 1litre of milk how much citric acid should be added?

1-2%

34. How much amount of paneer we get from the 1litre milk?

150-200gm

35. What is the difference between paneer & chhana?

Paneer does not deform as we can use in vegetable or sweet as the chhana breaks into pieces.

36. For the preparation of channa which milk is best?

Cows milk

37. Name the sweet prepared by chhana.

- i. Rasgulla
- ii. Chum-chum
- iii. Sandesh

38. What percentage suger is added in meethi lassi?

10% or 100gm/1litre milk

39. Do you know the name of flavour which we used in flavoured milk?

- i. Vanilla
- ii. Mango
- iii. Banana
- iv. Kevda
- v. Chocolate
- vi. Strawberry

40. Do you know what is cream?

The milk in which water Percentage is less & fat percentage is high.

41. How we can get more cream from milk in less time?

Though machine

42. Do you know the percentage of fat in milk cream?

45% or more

43. Do you know the method of butter making ?

- i. Desi method
- ii. Scientific method

44. How the scientific method is best then desi method of making butter?

- i. The scientific method butter is more hygienic.
- ii. Takes less time than desi method

45. Name the production prepared by khoa

- i. Peda
- ii. Gulabjamun
- iii. Burfi

46. Name the milk which is most suitable for preparation of khoa.

Buffalos milk because of high % of fat

Starting processing of milk & milk products unit

47. Do you know why it is essential to start milk & milk Project?

- i. To provide income to land-less.
- ii. Employment to unemployed youth.
- iii. Additional income to family.

48. Do you know the importance of milk & milk products?

- i. Easy to produce
- ii. More profitable
- iii. More demand in market
- iv. Can be use for several days

49. Name the two type of milk plants.

- i. Liquid milk plant
- ii. Composite milk plant

50. what point should be kept in mind during establishment of small scale milk plant?

- i. Near the place where we get the milk easily.
- ii. Proper facilities of electricity & water
- iii. Cheap labour cost
- iv. Should be far from polluted area

51. What is the purpose of liquid milk plant?

Packaging & selling of milk

52. Tell the products made by the composite milk plant.

- i. Milk powder
- ii. Paneer
- iii. Ice-cream
- iv. Condensed milk

Packaging, Loaning, Marketing and Limitation

53. Tell the name of the machine used for packaging of milk.

Nichrame filback-1200

54. What is the age eligibility of getting loan from the bank?

Age of the beneficiary should be less than 65 year.

55. How much bank give loan for purchase of one buffalo ?

Rs. 25000/-

56. How much bank give loan for starting a dairy ?

- i. Rs. 5 lacks for purchase of animals/machines
- ii. Rs. 2500 for fodder/animal

56. Do you know how can you the keeping quality of milk in long distance marketing?

By adding formalin tablets

Limitation

57. Do you know the limitation of milk & milk products?

- i. Transportation problem, Perishable
- ii. Require selling on the same day

Attitude statements related to milk & milk products

Attitude statements related to milk & milk products

Sr.No	Statements	Pre- exposure			Post- exposure		
		A	UD	DA	A	UD	DA
		3	2	1	3	2	1
Attitude statements related to milk & milk products							
1.	Processing of milk & milk products technology is helpful in improving the economic status of family						
2.	Training of Processing of milk & milk products for the purpose of income generation is very beneficial for women						
3.	Family members get annoyed because of women for long absence of women for such training progs.						
4.	By starting processing of milk & milk products as an income generating technology, health of women is affected						
5.	Processing of milk & milk products project is not a profitable business						
6.	Processing of milk and milk products is the need of hour						
7.	One can start one's own business after receiving the training about processing of milk & milk products						
8.	The adoption of processing of milk & milk products technology is very costly beyond the means of average farm women						
9.	The processing of milk & milk products is less profitable in relation to the cost incurred						
10.	Processing of milk & milk products project will make rich richer & poor poorer						
11.	Processing of milk & milk products is very technical practice hence not suitable for illiterate farm women						

12. Income generating project like Processing of milk and milk products is important for national development
13. Making of milk products have poor market value because of its perish ability
14. By running processing of milk and milk products project, children are ignored
15. Processing of milk & milk products has more problems than benefits
16. One should not go for processing of milk and milk products unless most others half have adopted it successfully
17. Free distribution of equipment/machine will promote faster adoption of processing of milk and milk products
18. Women who take up unit for raising income are looked down by the society
19. One can get financial security by starting Processing of milk & milk products unit

A = Agree
UN = Undecided
D = Disagree

Note: For Agree, Undecided and disagree responses, scores were assigned 3,2, and 1 respectively for positive statements and 1,2,3 respectively for negative statements.

Perceived feasibility of technology

A. Relative advantage

[illegible]

Most Profit Somewhat Least Not at all

Profitable

Profitable able profitable profitable profitable

(5) (4) (3) (2) (1)

[illegible]

In your opinion how much profitable the following milk & milk products technologies then selling of milk as such:

- Khoa
- Paneer
- Chhana
- Flavoured milk
- Cream
- Sweet lassi

B. Physical compatibility

[illegible]

Most Simple Somewhat Least Not at all

Simple Simple Simple Simple

(5) (4) (3) (2) (1)

[illegible]

To what extent do you feel the activity as bening physically compatible in terms of practicability,market availability, local resource utilization:

- Khoa
- Paneer
- Chhana
- Flavoured milk
- Cream
- Sweet lassi

C. Cultural compatibility

~~~~~

Most      Suitabale    Somewhat    Least      Not at all

Suitabale                      Suitabale    Suitabale    suitabale

(5)            (4)            (3)            (2)            (1)

~~~~~

Is this activity culturally compatible based on practices as per the needs, past experience, existing value:

- a) Khoa
- b) Paneer
- c) Chhana
- d) Flavoured milk
- e) Cream
- f) Sweet lassi

D. Simplicity

	Very Simple	Simple	Neither Simple not complex	Complex	Not at all complex
	(5)	(4)	(3)	(2)	(1)

Give your opinion as to what extend
these economic activities are easy
or difficult to understand & prepare

- a) Khoa
- b) Paneer
- c) Chhana
- d) Flavoured milk
- e) Cream
- f) Sweet lassi

E. Triability

	Most triable	Simple triable	Simple	Least triable	Not at all triable
	(5)	(4)	(3)	(2)	(1)

To which extent you think it is
triable i.e. can be used by you
on small scale to see the results

- a) Khoa
- b) Paneer
- c) Chhana
- d) Flavoured milk
- e) Cream
- f) Sweet lassi

SYMBOLIC ADOPTION

S. No					Symbolic adoption		Pre- exposure		Post- exposure	
							Yes		No	
							(1)		(0)	

1 Having received knowledge of income generating activity. I can adopt it without hesitation:

- a) Khoa
- b) Paneer
- c) Chhana
- d) Flavoured milk
- e) Cream
- f) Sweet lassi

2. The activity even though is time consuming but even then it is easy to practice :

- a) Khoa
- b) Paneer
- c) Chhana
- d) Flavoured milk
- e) Cream
- f) Sweet lassi

3. As an income generating activity can be easily accepted by people :

- a) Khoa
- b) Paneer
- c) Chhana
- d) Flavoured milk
- e) Cream
- f) Sweet lassi

4. As these milk products are perishable, processing will not eradicate this problem :

- a) Khoa
- b) Paneer
- c) Chhana
- d) Flavoured milk
- e) Cream
- f) Sweet lassi

5. If I start this activity, I am sure it will help in solving my financial problems :

- a) Khoa
- b) Paneer
- c) Chhana
- d) Making of flavoured milk
- e) Making of cream
- f) Sweet lassi

6. Having known about income generating activity, do you think it can be adopted by you?

- a) Khoa
- b) Paneer
- c) Chhana
- d) Flavoured milk
- e) Cream
- f) Sweet lassi

7. The technology is so easy that I can conveniently do it without any problem.

- a) Khoa
- b) Paneer
- c) Chhana
- d) Flavoured milk
- e) Cream
- f) Sweet lassi

8. I feel more confident in accepting income generating activity due to know how received through training.

- a) Khoa
- b) Paneer
- c) Chhana
- d) Flavoured milk
- e) Cream
- f) Sweet lassi

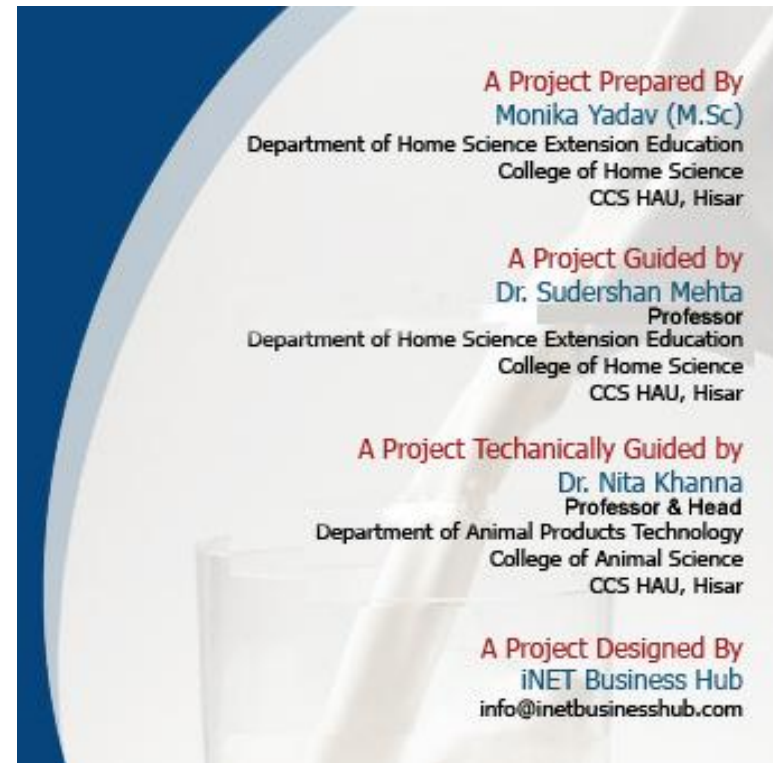
9. For improving the economic status of family, the income generating is a useful technology.

- a) Khoa
- b) Paneer
- c) Chhana
- d) Flavoured milk
- e) Cream
- f) Sweet lassi

10. As I am fully convinced about the importance of income of income generating activity no one can stop me to adopt it.

- a) Khoa
- b) Paneer
- c) Chhana
- d) Flavoured milk
- e) Cream
- f) Sweet lassi

CD ROM (Cover Page)



Abstract

Title of thesis	: Capacity building of scheduled caste rural women through processing of milk and milk product
Full name of degree holder	: MONIKA YADAV
Admission No.	: 2007HS200M
Title of degree	: Master of Science
Name and address of Major Advisor	: Dr. (Mrs.) Sudershan Mehta Professor Deptt. of Home Sci. Ext. Edu. I.C. College of Home Science CCS Haryana Agricultural University Hisar-125004
Degree awarding University/ Institute	: CCS Haryana Agricultural University, Hisar-125004
Year of award of degree	: 2009
Major subject	: Home Science Extension Education
Total No. of pages in thesis	: 77 + vii + XVI
No. of words in the abstract	: 300 (Approximately)

(An abstract of the thesis presented to the CCS Haryana Agricultural University in partial fulfilment of the requirements for the degree of M.Sc. in the subject of Home Science Extension Education)

Key words : Capacity-building, scheduled caste, processing of milk and milk products, perceived feasibility, acceptability.

The study was undertaken in randomly selected two villages viz : Dhana and Balawas, Hisar district, Haryana state. Out of the list of total SC families, 50 percent families i.e. 50 from Dhana and 100 from Balawas which totaled to 150 were selected randomly. Personal, social, economic, psychological and communicational parameters were taken as independent variables and impact of training (gain in knowledge and change in attitude), acceptability of the technology (perceived feasibility and symbolic adoption) were taken as dependent variable.

The study revealed that majority of the respondents belonged to young age group, were married belonged to nuclear family, were illiterate, had agricultural labourer as their main occupation, earn less than 5,000/month, had low material possession, low social participation, outside urban contact and mass media exposure, medium level of entrepreneurial motivation, risk orientation, and economic motivation. More than half of the respondents heard about various milk products. Majority were unaware about reservation in education and in jobs, had lack of knowledge regarding income generating activities and provision of bank loans to SC women.

Majority of the respondents had low knowledge in most of the messages, low symbolic adoption and unfavourable attitude at pre-exposure stage. But at the post-exposure stage, majority gained medium knowledge in all the messages i.e. testing adulteration in milk and packaging, loaning and marketing. Medium attitudinal change and low change in symbolic adoption. Khoa, paneer, cream and chhana were found to be economical profitable and simple to use. Majority perceived flavored milk and sweet lassi as simple to use and physical compatible but not profitable. On the whole adoption feasibility and overall acceptability of processing of milk and milk products technology was of medium level.

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