# Constraints Perceived by Dairy Farmers in Adoption and Repayment of Dairy Loans: A Case study of Amritsar 

Renuka Rani ${ }^{1}{ }^{\text {w }}$, Anita Gill ${ }^{2}$, Gagan Bajaj ${ }^{3}$ and Puneet Malhotra ${ }^{4}$<br>${ }^{1}$ Govt. Ranbir College, Sangrur, Punjab, India<br>${ }^{2}$ Punjabi University, Patiala, Punjab, India<br>${ }^{3}$ Vety Officer, Civil Vety. Hospital, Harkishanpura, India<br>${ }^{4}$ Dairy Manager, Deptt. of Animal Genetics and Breeding, GADVASU Ludhiana, Punjab, India<br>*Email: bajajvet123@gmail.com

Paper no: 89 Received: 15 August, 2013 Revised: 20 October, 2013 Accepted: 19 November, 2013


#### Abstract

The present study was conducted on two villages of one block of Amritsar District of Majha region of Punjab to find constraints perceived by dairy farmers in adoption and repayment of dairy loans. Majority of dairy farmers belongs to different categories according to herd size. Most of dairy farmers considered, high rate of interest, too many intermediates, lengthy complicated loan procedure, problem of financial guarantor, attitude of the loan officer, low price of milk, high cost of feed \& fodder, low milk production, failure of milk animal to conceive every year, exploitation by milk vendors and animal trader as the serious problems.


Keywords:Adoption, constraint, dairy farmers, intermediates, guarantor

## Introduction

The rice-wheat cropping pattern in the farming economy of Punjab has not only attained its potential but also led to depletion of soil and water resources of the state (Sidhu and Johl 2002). Recently the agriculture is facing a serious economic \& ecological crisis. In this critical situation it is desirable to encourage alternative farming systems such as dairy farming, vegetable growing, fruit cultivation, agro forestry etc. From all these options dairy farming is being considered as one of the most viable option for diversifying the agricultural economy of the state (Govt. of Punjab 2002). Livestock economy in India is an integral part of the farming system and play an important role in national economy as well as in socio-economic development of millions of rural households (Sharma 2004). A symbiotic relationship exists between man, land and livestock eco. System, live stock comprising mainly cattle and buffalo have a complementary, supplementary and sustainable relationship with crops in the mixed farming system. Punjab is one of the most progressive states of India. The total milk production in Punjab is 955.4 thousand tones per annum. Though the situation of total milk production in Punjab is better than rest of the country, still production level and adoption of animal husbandry innovations have been far from satisfactory. The dairy farmers are facing many problems in this profession, which leads to stagnation in minds of dairy farmers. There are many constraints in dairy farming due to which farmers are not adopting the recommended practices.

Credit is one of the major components whose contribution plays very important role in adoption of dairy farming. In the present study an attempt was made to ascertain the constraints perceived by dairy farmers in adoption and repayment of dairy loans.

## Materials and Methods

The present study was conducted in Amritsar District of Majha Region of Punjab. Amritsar districts has many villages in different blocks. The sampling procedure employed to select ultimate unit of sample was multistage sampling technique. One block (Verka) was selected from the district and then two villages (Dhattal and Khankot) were selected from block. This was in accordance with the study done by Sharma et al., (2010). Three categories of dairy farmers were prepared on the basis of number of animals possessed by them. Namely small dairy farmers (<10 animals), Medium dairy farmers (10-20 animals) and large dairy farmers (>20 animals). (Kumar et. al., 2009). A separate list of all dairy farmers were prepared from selected villages and total of fifty respondents were selected randomly by using proportional size of sampling technique (Aulakh et. al., 2010).

In present study to find out the constraints perceived by dairy farmers in adoption and repayment of dairy loans, a list of various constraints was prepared in consultation with extension scientists, available literature and progressive dairy owners. Then the information was collected on three point continuum i.e. extreme, moderate and negligible and score values of 3,2 and 1 were awarded respectively. The ranks were assigned on the basis of mean constraint scores.

## Results and Discussion

The results obtained in the study are described in the following sections.

## Constraints Perceived in Adoption of Dairy Loans

There are many constraints which hinder in adoption of dairy loans by dairy farmers. Some constrains contribute more in hindrance and other less. As Table I shows in loan procedures constraints like high rate of interest, too many intermediates, lengthy complicated loan procedure, problem of financial guarantor, attitude of the loan officer are considered most severe while mode of payment, inadequate loan amount and role of other departments are considered least severe by dairy farmers having less than 10 animals. Rate of interest for agricultural allied sectors is much higher as compare to agriculture sector. Role of intermediates like guarantor, insurance agents, etc. makes the loan procedure complicated. Role of other departments play a major role but due to ignorance of small farmers about the role of other departments and mode of payment of loan they considered these factors as least severe problems.

Moderate dairy farmers having 10-20 animals consider high rate of interest, too many intermediates, attitude of the loan officer, lengthy complicated loan procedure, inadequate loan amount and illiteracy of the borrowers as major problems. Most of the dairy farmers are illiterate. They cannot understand loan procedure of banks easily. Procedure of bank should be simple and loan amount given to them should be adequate. They consider problem of financial guarantor, role of other department, policy of banks and mode of payment as negligible problems.

Large dairy farmers having more than 20 animal consider too many intermediates, inadequate loan amount, high rate of interest, problem of financial guarantor and attitude of the loan officer as major problem. Dairy farming require very high investment. The farmers need high amount of loan for starting dairy business but the loan which is sanctioned by the banks is inadequate and charges very high rate of interest. It cannot fulfill

Economic Affairs Constraints Perceived by Dairy Farmers in Adoption and Repayment of Dairy Loans: $\mathcal{P}$
Table 1: Constraints Preceived by the Diary farmers in the growth and distribution of dairy loans

| S. No. Aspect |  | Category | Less than 10 animals$\mathrm{N}=26$ |  | $\begin{gathered} 10-20 \text { animals } \\ \mathrm{N}=14 \end{gathered}$ |  | More than 20 animalsN=10 |  | Overall 50 percentage |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Frequency | Percentage | Frequency | Percentage | Frequency | Percentage |  |
| 1. | Too many intermediates |  | Extreme | 13 | 50 | 8 | 58 | 7 | 70 | 56 |
|  |  | Moderate | 11 | 42 | 3 | 21 | 2 | 20 | 32 |
|  |  | Negligible | 02 | 08 | 3 | 21 | 1 | 10 | 12 |
|  | Illiteracy of the borrowers | Extreme | 06 | 23 | 3 | 22 | 2 | 20 | 22 |
|  |  | Moderate | 17 | 65 | 9 | 64 | 6 | 60 | 64 |
|  |  | Negligible | 03 | 12 | 2 | 14 | 2 | 20 | 14 |
| 3. | Attitude of the Loan Officer | Extreme | 11 | 42 | 6 | 43 | 5 | 50 | 44 |
|  |  | Moderate | 11 | 42 | 5 | 36 | 3 | 30 | 38 |
|  |  | Negligible | 04 | 16 | 3 | 21 | 2 | 20 | 18 |
|  | High Rate of Interest | Extreme | 18 | 69 | 10 | 72 | 5 | 50 | 66 |
|  |  | Moderate | 07 | 27 | 02 | 14 | 4 | 40 | 26 |
|  |  | Negligible | 01 | 04 | 02 | 14 | 1 | 10 | 08 |
| 5. | Problem of Financial Guarantor | Extreme | 13 | 50 | 03 | 21 | 5 | 50 | 42 |
|  |  | Moderate | 10 | 38 | 07 | 50 | 4 | 40 | 42 |
|  |  | Negligible | 03 | 12 | 04 | 29 | 1 | 10 | 16 |
|  | Inadequate Loan Amount | Extreme | 06 | 24 | 05 | 36 | 6 | 60 | 34 |
|  |  | Moderate | 10 | 38 | 05 | 35 | 4 | 40 | 38 |
|  |  | Negligible | 10 | 38 | 04 | 29 | 0 | 00 | 28 |
|  | Lengthy complicated loan procedure |  | 15 | 58 | 05 | 36 | 3 | 30 | 46 |
|  |  | Moderate | 06 | 23 | 07 | 50 | 6 | 60 | 38 |
|  |  | Negligible | 05 | 19 | 02 | 14 | 1 | 10 | 16 |
|  | Policy of Banks | Extreme | 08 | 31 | 3 | 21 | 2 | 20 | 26 |
|  |  | Moderate | 12 | 46 | 5 | 36 | 5 | 50 | 44 |
|  |  | Negligible | 06 | 23 | 6 | 43 | 3 | 30 | 30 |
|  | Role of other departments | Extreme | 03 | 12 | 5 | 36 | 3 | 30 | 22 |
|  |  | Moderate | 12 | 46 | 3 | 21 | 2 | 20 | 34 |
|  |  | Negligible | 11 | 42 | 6 | 43 | 5 | 50 | 44 |
| 10. | Sanction of Loans | Extreme | 08 | 31 | 3 | 21 | 3 | 30 | 28 |
|  |  | Moderate | 09 | 34.5 | 5 | 36 | 3 | 30 | 34 |
|  |  | Negligible | 09 | 34.5 | 6 | 43 | 4 | 40 | 38 |

Source: Sample Survey
Table 2: Constraints Preceived by the Diary farmers in the growth and distribution of dairy loans

| S. No. Aspect |  | Less than 10 animalsN=26 |  |  | 10-20 animalsN=14 |  |  | More than $20 \mathrm{~N}=10$ |  |  | Overall $=50$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total constraint score | Mean score | Rank <br> Order | Total constraint score | Mean score | Rank <br> Order | Total constraint score | Mean score | Rank Order | Total constraint score | Mean score | Rank Order |
| 1. | Too many intermediate | 63 | 2.42 | II | 33 | 2.4 | II | 26 | 2.6 | I | 122 | 2.44 | II |
| 2. | Illiteracy of the borrower | 55 | 2.1 | VI | 29 | 2.0 | V | 20 | 2.0 | VII | 104 | 2.08 | VI |
| 3. | Attitude the loan officer | 59 | 2.26 | V | 31 | 2.2 | III | 23 | 2.3 | V | 113 | 2.26 | IV |
| 4. | High rate of Interest | 69 | 2.65 | I | 36 | 2.6 | I | 24 | 2.4 | III | 129 | 2.58 | I |
| 5. | Problem of financial guarantor | 62 | 2.38 | III | 27 | 1.9 | VII | 24 | 2.4 | III | 113 | 2.26 | IV |
| 6. | Inadequate loan amount | 48 | 1.84 | IX | 29 | 2.0 | V | 26 | 2.6 | I | 103 | 2.06 | VII |
|  | Lengthy complicated loan procedure | - 62 | 2.38 | III | 31 | 2.2 | III | 22 | 2.2 | VI | 115 | 2.3 | III |
| 8. | Policy of Banks | 54 | 2.0 | VII | 25 | 1.7 | IX | 19 | 1.9 | VIII | 98 | 1.96 | VIII |
|  | Role of other departments | 44 | 1.69 | X | 27 | 1.9 | VII | 18 | 1.8 | X | 89 | 1.78 | X |
|  | Mode of Payment | 51 | 1.96 | VIII | 25 | 1.7 | IX | 19 | 1.9 | VIII | 95 | 1.9 | IX |

[^0]their requirements. These farmers consider policy of banks, role of other department and mode of payment as negligible problem.

On pooled analysis of all 50 respondents it was observed that they consider high rate of interest, too many intermediates, lengthy complicated loan procedure, attitude of the loan officer and problem of financial guarantor as severe problems while policy of banks, mode of payment and role of other department as least severe problems.
Table 2 shows the mean score and ranking order of different constraints that small, medium and large farmers are facing. The first three ranks attained in all categories are high rate of interest (2.58), too many intermediates (2.44) and lengthy complicated loan procedure (2.3) respectively. It is suggested that rate of interest on dairy loans should be lowered as in agricultural loan and procedure of loan sanction should be easy and without intermediates.

## Constraints Perceived by Dairy Farmers about the Repayment of Loan

There are many factors which cause problems in repayment of dairy loans. Table 3 shows the various constraints which are perceived by dairy farmers in repayment of dairy loans. Small dairy farmers consider low price of milk, high cost of feed and fodder, failure of milk animals to conceive every year, low milk productivity, shortage of quality breed animal and loan income generation as the major problems. Quality of milk is dependent on good quality animals and type of feed given to them. Due to lack of fulfilling both conditions, the animals produce low quality of milk resulting in less price of milk. Due to poor financial status of small dairy farmers they can not purchase good quality animals as they very expensive. According to them diversion of funds, heavy investment on project and mode of repayment are negligible problems, most of small farmers are not calculative of keeping animals, as they consider these problems as negligible.

Medium farmers consider costly feed and fodder, exploitation by animal traders, expensive animals, low price of milk, absence of good marketing system, exploitation by milk vendors, failure of milk animals to conceive every year as major constraints. In Punjab state due to monopoly of few companies there is exploitation of dairy farmers, leading to low price of milk. Shortage of quality breed animals, expansion of farm, mode of payment, delay in payment by co-operative societies as negligible problem by this category of farmers.

Large farmers consider low price of milk, low milk production, costly feed and fodder, absence of good marketing system, shortage of quality breed animals and expensive animals as major constraints while exploitation by animal traders, expansion of farm, diversion of funds and mode of payment are considered negligible problems.

The pooled analysis of all 50 respondents revealed that low price of milk, costly feed and fodder, low milk productivity, failure of milk animals too conceive every year, loan income generation, exploitation by milk vendors and animal traders as major constraints while delay in payment by co-operative societies, expansion of farm, diversion of fund and mode of payment are negligible problems.

Table 4 shows that when mean score and rank order of these constraints are calculated in all categories of farmers, low price of milk was ranked first with mean score (2.46), costly feed and fodder was ranked second with mean score (2.44), low milk productivity was third with mean score (2.32). It is therefore suggested that quality of animal should be improved so that milk productivity of animals can be increased. Government should take appropriate steps to increase the price of milk and give subsidies on raw material of feed of animals. These findings are online with the result of Kumar et. al., (2009) and Sharma et. al., (2008).
Table 3: Constraints Preceived by the Diary farmers about the repayment of Loans

| S. No. Aspect |  | Category | Animals less than$10 \mathrm{~N}=26$ |  | $\begin{gathered} 10-20 \text { animals } \\ \mathrm{N}=14 \end{gathered}$ |  | Animals more than$20 \mathrm{~N}=10$ |  | Total animals 50 percentage |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Frequency | Percentage | Frequency | Percentage | Frequency | Percentage |  |
| 1. | Shortage of quality |  | Extreme | 10 | 39 | 14 | 28 | 4 | 40 | 36 |
|  | breed Animals | Moderate | 12 | 46 | 65 | 36 | 3 | 30 | 40 |
|  |  | Negligible | 4 | 15 | 45 | 36 | 3 | 30 | 24 |
| 2. | Animals are very expensive | Extreme | 6 | 23 | 4 | 28 | 3 | 30 | 26 |
|  |  | Moderate | 16 | 62 | 6 | 44 | 5 | 50 | 54 |
|  |  | Negligible | 4 | 15 | 4 | 28 | 2 | 20 | 20 |
| 3. | Less knowledge about | Extreme | 8 | 30 | 5 | 36 | 1 | 10 | 28 |
|  | quality breed Animals | Moderate | 9 | 35 | 6 | 44 | 6 | 60 | 42 |
|  |  | Negligible | 9 | 35 | 3 | 20 | 3 | 30 | 30 |
| 4. | Feed and Fodder is costly | Extreme | 12 | 46 | 9 | 64 | 5 | 50 | 52 |
|  |  | Moderate | 12 | 46 | 4 | 29 | 4 | 40 | 40 |
|  |  | Negligible | 2 | 8 | 1 | 7 | 1 | 10 | 08 |
| 5. | Milk Productivity is low | Extreme | 13 | 50 | 6 | 44 | 6 | 60 | 50 |
|  |  | Moderate | 09 | 35 | 5 | 36 | 2 | 20 | 32 |
|  |  | Negligible | 04 | 15 | 3 | 20 | 2 | 20 | 18 |
| 6. | Price of milk is low | Extreme | 16 | 62 | 7 | 50 | 7 | 70 | 60 |
|  |  | Moderate | 7 | 27 | 4 | 29 | 2 | 20 | 26 |
|  |  | Negligible | 3 | 11 | 3 | 21 | 1 | 10 | 14 |
| 7. | Delay in payment by | Extreme | 6 | 23 | 2 | 14 | 2 | 20 | 20 |
|  | co-operative societies | Moderate | 12 | 46 | 4 | 29 | 5 | 50 | 42 |
|  |  | Negligible | 8 | 31 | 8 | 57 | 3 | 30 | 38 |
| 8. | Absence of good marketing | Extreme | 5 | 19 | 6 | 43 | 6 | 60 | 34 |
|  |  | Moderate | 9 | 35 | 6 | 43 | 2 | 20 | 34 |
|  |  | Negligible | 12 | 46 | 2 | 14 | 2 | 20 | 32 |
|  | No knowledge about ration | Extreme | 6 | 23 | 5 | 36 | 2 | 20 | 26 |
|  | formulation | Moderate | 8 | 31 | 6 | 43 | 6 | 60 | 40 |
|  |  | Negligible | 12 | 13 | 3 | 21 | 2 | 20 | 34 |


| S. No. Aspect |  | Category | Animals less than$10 \mathrm{~N}=26$ |  | $\begin{gathered} 10-20 \text { animals } \\ \mathrm{N}=14 \end{gathered}$ |  | Animals more than$20 \mathrm{~N}=10$ |  | Total animals 50 percentage |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Frequency | Percentage | Frequency | Percentage | Frequency | Percentag |  |
| 10. | Exploitation by Animal traders |  | Extreme | 9 | 35 | 7 | 50 | 2 | 20 | 36 |
|  |  | Moderate | 11 | 42 | 6 | 43 | 3 | 30 | 40 |
|  |  | Negligible | 6 | 23 | 1 | 7 | 5 | 50 | 24 |
| 11. | Exploitation by Milk Vendors | Extreme | 8 | 31 | 6 | 43 | 4 | 40 | 36 |
|  |  | Moderate | 14 | 54 | 6 | 43 | 1 | 10 | 42 |
|  |  | Negligible | 4 | 15 | 2 | 14 | 5 | 50 | 22 |
| 12. | Animal could not conceive every year | Extreme | 12 | 46 | 8 | 57 | 3 | 30 | 46 |
|  |  | Moderate | 12 | 46 | 2 | 14 | 5 | 50 | 38 |
|  |  | Negligible | 2 | 8 | 4 | 29 | 2 | 20 | 16 |
| 13. | Loan Income Generation | Extreme | 10 | 39 | 6 | 43 | 6 | 60 | 44 |
|  |  | Moderate | 11 | 42 | 6 | 43 | 2 | 20 | 38 |
|  |  | Negligible | 5 | 19 | 2 | 14 | 2 | 20 | 18 |
|  | Expansion of farm | Extreme | 5 | 19 | 1 | 7 | 1 | 10 | 14 |
|  |  | Moderate | 14 | 54 | 10 | 72 | 5 | 50 | 58 |
|  |  | Negligible | 7 | 27 | 3 | 21 | 4 | 40 | 28 |
|  | Diversion of funds | Extreme | 2 | 8 | 6 | 43 | 1 | 10 | 18 |
|  |  | Moderate | 12 | 46 | 3 | 21 | 4 | 40 | 38 |
|  |  | Negligible | 12 | 46 | 5 | 36 | 5 | 50 | 44 |
| 16. | Heavy Investment on Project | Extreme | 4 | 15 | 5 | 36 | 4 | 40 | 26 |
|  |  | Moderate | 7 | 27 | 5 | 36 | 1 | 10 | 26 |
|  |  | Negligible | 15 | 58 | 4 | 28 | 5 | 50 | 48 |
|  | Mode of Repayment | Extreme | 1 | 4 | 2 | 14 | 1 | 10 | 8 |
|  |  | Moderate | 7 | 27 | 8 | 57 | 1 | 10 | 32 |
|  |  | Negligible | 18 | 69 | 4 | 29 | 8 | 80 | 60 |

Table 4: Constraints Preceived by the Diary farmers about the repayment of loans

| S. No. Aspect |  | Less than 10 animalsN=26 |  |  | 10-20 animalsN=14 |  |  | More than $20 \mathrm{~N}=10$ |  |  | Overall $\mathrm{N}=50$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total constraint score | Mean score | Rank Order | Total constraint score | Mean score | Rank Order | Total constraint score | Mean score | Rank Order | Total constraint score | Mean score | Rank Order |
| 1. | Shortage of quality breed Animals | 58 | 2.23 | V | 27 | 1.92 | XIV | 21 | 2.1 | VI | 106 | 2.12 | VII |
|  | Animals are very expensive | 54 | 2.07 | IX | 28 | 2.0 | XIII | 21 | 2.1 | VI | 103 | 2.06 | IX |
|  | Less knowledge about quality breed Animals | 51 | 1.96 | XI | 30 | 2.14 | IX | 18 | 1.8 | XIII | 99 | 1.98 | XI |
|  | Feed and Fodder is costly | 62 | 2.38 | II | 36 | 2.57 | I | 24 | 2.4 | II | 122 | 2.44 | II |
| 5. | Milk Productivity is low | 61 | 2.34 | IV | 31 | 2.21 | VIII | 24 | 2.4 | II | 116 | 2.32 | III |
| 6. | Price of milk is low | 65 | 2.5 | I | 32 | 2.28 | III | 26 | 2.6 | I | 123 | 2.46 | I |
|  | Delay in payment by co-operative societies | 50 | 1.92 | XI | 22 | 1.57 | XVII | 19 | 1.9 | X | 91 | 1.82 | XIV |
| 8. | Absence of good marketing system | 45 | 1.73 | XIV | 32 | 2.28 | III | 24 | 2.4 | II | 101 | 2.02 | X |
|  | No knowledge about ration formulation | 46 | 1.76 | XIII | 30 | 2.14 | IX | 20 | 2.0 | VIII | 96 | 1.92 | XII |
| 10. | Exploitation by Animal traders | 55 | 2.11 | VIII | 34 | 2.42 | II | 17 | 1.7 | XIV | 106 | 2.12 | VII |
| 11. | Exploitation by Milk Vendors | 56 | 2.15 | VII | 32 | 2.28 | III | 19 | 1.9 | X | 107 | 2.14 | VI |
|  | Animal could not conceive every year | ar 62 | 2.38 | II | 32 | 2.28 | III | 20 | 2.0 | VIII | 114 | 2.28 | IV |
| 13. | Loan Income Generation | 57 | 2.19 | VI | 32 | 2.28 | III | 24 | 2.4 | II | 113 | 2.26 | V |
| 14. | Expansion of farm | 50 | 1.92 | XII | 26 | 1.85 | XV | 17 | 1.7 | XIV | 93 | 1.86 | XIII |
| 15. | Diversion of funds | 42 | 1.61 | XV | 29 | 2.07 | XI | 16 | 1.6 | XVI | 87 | 1.74 | XVI |
|  | Heavy Investment on Project | 41 | 1.57 | XVI | 29 | 2.07 | XI | 19 | 1.9 | X | 89 | 1.78 | XV |
|  | Mode of Repayment | 35 | 1.34 | XVII | 26 | 1.85 | XV | 13 | 1.3 | XVII | 74 | 1.48 | XVII |

Source: Sample Survey

## Conclusion

From the above analysis it was observed that shortage of quality breed animals, high rate of interest, low price of milk, high cost of feed and fodder, animals are expensive, problem of financial guarantor, exploitation by animal traders and milk vendors were considered as the major problems by all the respondents. So it is suggested that there is a need of good quality animals and to reduce the cost of feed and fodder. Banks should come forward and play positive role to provide loan and repayment of loan for the future growth of dairy sector in Punjab.

## References

Economic Advisor to the Government of Punjab, Chandigarh, statistical Abstracts of Punjab: Various issues.
Kumar. S., Hindustani. S., Kateryar. K.M. and Sankhala. G. 2009. Constraints Perceived by Famers in Adopting Scientific Dairy Farming Practices in Banka District of Bihar. Indian Journal of Dairy Sciences. 62(2):131-139.
Mathur, H. 2007. "Indian Dairying": Prospectus and Opportunities Dairy India.
Sain, Inder and Joshi, A.S.1995. "Changing composition and Role of Livestock in the Punjab Economy". Indian Journal of Agricultual Engineering 50 (3).
Sharma, K. 2005. Problems and Prospects in adoption of Buffalo Husbandry Practices in Haryana, Ph.D. thesis submitted to ICAR, New Delhi.
Sharma K., Singh. S.P. and Gautam. 2010. Constraints Perceived by Dairy Farmers in Adoption of Recommended Buffalo Husbandry Practices. Indian Journal of Dairy Sciences 63(3): 225-232.
Sharma.V.K. and Singh V.P. 2008. Role of Dairying in Punjab Agriculture. Indian Journal of Dairy Sciences 61(6): 483488.

Taneja, V.K. 2007. A Road Map : Enhancing Production, Productivity and income from Dairying in Punjab. The Tribune, dated $8^{\text {th }}$ Nov.
Yadav, V. K., Fulzele, R,M., Kumar, A and Sah, A.K., 2009. Constraints in adoption of scientific Dairy Farming Practices in Haryana. Indian Journal of Dairy Science 61(5) : 389-394.


[^0]:    Source: Sample Survey

