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## Constraints perceived by the dairy farmers in adoption and diffusion of innovations

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### Abstract

Smallholder dairy production is becoming increasingly important and it contributes magnificently to the improvement of the livelihoods of the rural people. Higher level of technology adoption is associated with better milk yield and improved dairying which has a direct impact on income generation. Small household dairy farms face several constraints in the way of adoption of technology due to improper technical inputs as well as services and extension interventions. The present study was an attempt to identify the constraints perceived by the farmers in adoption of dairy farming technologies. Three districts from the three respective geographical regions of Andhra Pradesh were purposively selected for the study. From each district, three mandals and from each mandal two villages, constituting a total of 18 villages were selected for the study. Twenty farmers adopting recommended dairy innovations were selected through simple random sampling and were asked to voice the constraints perceived by them in adoption and diffusion of innovations. The constraints voiced by the dairy farmers in rank order are, non-remunerative price for milk (I), no minimal standardized price per litre of milk (II), non availability of market information on milk and feed prices (III), no regular mechanism for dissemination of scientific information (IV), no reach to newer technologies developed in animal husbandry sector (V), poor storage facilities for milk marketing (VI), lack of awareness on important hygienic and quality standards of milk (VII), non-availability of experts during emergency/ crisis (VIII).

**Keywords:** Constraints, Adoption, Diffusion, Innovations, Rank order.

### Introduction

Dairy sector occupied an important position in the agriculture economy of India, as milk is the second largest agriculture commodity contributing to the G.N.P, next to rice. Dairying in India provides regular employment to 9.8 million people in subsidiary status, which constitutes 5% workforce. The share of livestock output to the agriculture is 25% of the total and 6% to GDP. Milk alone contributes Rs.450 billion to the GNP of the country (A.P Patil *et al.*, 2009) <sup>[1]</sup>. The strength of dairy sector lies in the fact that inspite of limited investment, it has shown consistent and sustainable growth. However, smallholder dairy production is becoming increasingly important and it contributes magnificently to the improvement of the livelihoods of rural people. Higher level of technology adoption is associated with better milk yield and improved dairying which has a direct impact on income generation, poverty alleviation and availability of animal protein. Thus, to increase the milk production, existing dairy technologies should be adopted in the small household dairy farms. Small household dairy farms face several constraints like problems of inefficient management practices and health care, lack of proper breeding programme to improve the existing dairy cattle resource, high input and low output prices leading to lower productivity etc., (Uddin *et al.*, 2010) <sup>[6]</sup>. Constraints are nothing but the problems that come in the way of adoption of technology. If these constraints are identified, they are helpful to bridge the gap between dairy technology and its adoption by dairy farmers. With this objective the present study was carried out as an attempt, to identify the constraints perceived by the dairy farmers of Andhra Pradesh in adoption of technologies/innovations pertaining to dairy farming.

### Methodology

Three regions of Andhra Pradesh *viz.*, North coastal, Coastal and Rayalaseema were selected purposively for the study. Based on the highest cattle population and best rank in adoption of recommended dairy innovations three districts namely Visakhapatnam, Krishna and Chittoor were selected from each region respectively.

Three mandals from each district and two villages from each mandal, i.e., 6 villages from each district were selected for the study through simple random sampling. Among the selected 18 villages, a list of dairy farmers adopting recommended dairy innovations was prepared respectively in consultation with local Veterinary Assistant Surgeons, Heads of dairy co-operatives and supervisors of milk collection centres. From the list prepared, 20 dairy farmers were selected randomly thus forming a sample size of 360 respondents for the study.

The respondents were asked to voice the constraints faced by them in adoption of innovative dairy technologies. The constraints perceived by the respondents were recorded and expressed in rank order on basis of frequency and percentage.

## Results

The constraints voiced by the dairy farmers of the state of Andhra Pradesh were recorded and presented in Table 1.

**Table 1:** Constraints voiced by the dairy farmers

S. No	Constraints voiced	F	%	Rank
1.	Non-remunerative price of milk	318	88.44	I
2.	No minimal standardized / fixed price per litre of milk	309	85.82	II
3.	Non-availability of market information on prices of feed, fodder and straw	305	84.73	III
4.	No regular mechanism for dissemination of scientific information	282	78.42	IV
5.	No reach to newer technologies developed by the state department of animal husbandry/ state veterinary university	272	75.43	V
6.	Poor storage facilities to store milk for marketing	260	72.18	VI
7.	Lack of awareness on importance of hygienic and quality standards of milk	247	68.62	VII
8.	Non-availability of experts during emergency / crisis	204	56.67	VIII

The constraints voiced by the dairy farmers are 'non-remunerative price of milk' (88.44%). No minimal standardized / price litre of milk (85.84%). Non availability of market information on feed milk prices, feed prices etc. (84.73%), no regular mechanism for dissemination of scientific information (78.42%), no reach to newer technologies developed in animal husbandry sector (75.43%) to store poor storage facilities milk of marketing (72.18%), lack of awareness on important hygienic and quality standards of milk, (68.62%), non-availability of experts during emergency/ crisis (46.67%). A glance at Table 1 indicates the severity of constraints faced by the dairy farmers in adoption and diffusion of innovations based on frequency of the respondents perceiving the constraints and ranking was allocated to each constraint accordingly.

## Discussion

Results indicated that the constraint 'Non-remunerative price for milk' ranked 1<sup>st</sup> among dairy farmers. Non-availability of grazing lands, lack of fodder units, purchasing of all commodities like fodder, paddy straw, concentrate feed has increased cost of production towards a considerable extent but the price received per litre of milk is ranging between Rs.26/- to Rs.32/- which is viewed non-remunerative by 85 percent of the respondents. The findings gain the support of Singh. P *et al.*, (2015) [3].

The constraint 'No standardized / fixed price / litre of milk is viewed second by majority of the dairy farmers. The milk price is based on fat percentage which fluctuates sometimes due to considerable reasons. The price is also rated accordingly which is perceived as major constraint by sizeable section of the respondents. The dairy farmers opined that minimal standard price/ litre of milk having 4 per cent fat must be fixed at least as Rs.35/- which may be made mandatory to all the milk collecting dairies either public / private sector.

"Non-availability of market information" on feed and fodder price ranked third by the respondents. Lack of information on availability of fodder, paddy straw and feed ingredients forced the farmers to procure them at higher rates from local markets. Since major share (70%) of dairying goes to feeding alone, the farmers expressed this constraint. The results are in line with the findings of Tanwar P.S (2011) [4].

The fourth and fifth major problems expressed by dairy farmers were "No regular mechanism for dissemination of scientific information" and "No reach to newer technologies developed in the animal husbandry" sector. The farmers in the study area were unable to access information on latest scientific advancements in dairy sector. The only sources in the village were gopalmitras, para-veterinarians and veterinary assistant surgeons at mandal level. Thus, the respondents expressed that, dissemination of information on recent scientific advancements in dairying may be telecasted through television in the form of video clips followed by discussion forums with subject matter specialists in kisan programs for one hour duration in the evening sessions daily. These findings are in concurrence with Vijay Kumar and Singh B.P (2015) [5].

"Poor facilities to store milk for marketing" was perceived as constraint in sixth position. Majority of farmers opined that bulk milk coolers may be installed at unit level, considering 4 villages as a unit, which would be helpful for them to store milk up to marketing during flush seasons.

The seventh constraint perceived by the farmers is lack of awareness on quality assurance of milk. Hygienic and clean milk production has lot of importance in the market from consumers perspective. The importance of hygienic and clean milking, role of animal, milker and equipment in the process of milking may be made aware through short duration trainings which helps the farmers to meet the food security standards and safeguard consumers health.

Non-availability of experts during emergency/crisis is expressed as the eighth constraint by 56.67 percent of the respondents. Dairy animals are subjected to diseases and outbreaks of which some are fatal. Non-availability of technical personnel in emergencies becomes catastrophic incurring heavy losses which gain the agreement of Jeelani R *et al.*, (2015) [2].

## Conclusion

The constraint 'Non-remunerative price for milk' and No standardized / fixed price / litre of milk may be addressed by fixing a minimal standard price/ litre of milk with 4 per cent fat as Rs.35/- and must be made mandatory to all the milk collecting dairies either public / private sector. Market price for feed ingredients, milk and milk products should be

provided to all the dairy farmers through SMS/telephonic message through milk unions/societies. Bulk milk coolers may be installed at unit level, for storage during flush seasons. Dissemination of information on recent scientific advancements in dairying may be telecasted through television followed by discussion forums in kisan programs daily to bridge the gap between research and farming communities.

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