Adoption of Improved Dairy Cattle Management Practices under Vidarbha Development Programme Package

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ABSTRACT

Maharashtra Government launched Vidarbha Development Programme Package (VDPP) in year 2004 to increase milk production in Vidarbha region. The study was conducted in Nagpur district, where 101 cross bred dairy cows were distributed among 86 farmers, scattered in 39 villages of 12 Tahsils. The study highlighted the correlation of profile and adoption of improved dairy cattle management practices by beneficiaries under VDPP. The attributes namely education and socio-economic status were found highly significant. Whereas land size, total annual income, dairy herd size, daily milk production, daily milk sale, milk production from purchased dairy cattle social participation, utilization of communication sources, knowledge level, attitude towards dairy farming, economic motivation and training on dairy farming were significantly correlated with adoption of improved dairy cattle management practices. Independent variables like age, family size, family member participation in dairy farming, number of purchased dairy cattle and experience in dairy farming were non-significantly related with adoption level of improved dairy cattle management practices.

Key words : Vidarbha development programme package (VDPP; Improved dairy cattle management practices;

Dairying is a potential source of gainful employment, creating additional income to rural people, particularly landless farm labourers, marginal and small farmers who are resource deficit. Milk production contributes a major share of livestock production and is only next to rice with regard to contribution to agriculture production (*Das et al., 2004*). India's livestock census (*Dairy India, 2002*) denotes it's first rank in bovine population with 209.489 million cattle and 91.784 million buffalo, contributing 19 % of the world. Also India ranked first in milk production with about 86.4 million tonnes in 2002–03. The rapid growth of milk production in India has been mainly because of the increase in the number of animals rather than that of the improved productivity. However the maximum milk is produced from selected pockets of the most of the states of the country. It is also reported that Maharashtra state generates about 1.6 crore litres of milk every day, out of which Kolhapur district of western Maharashtra alone is producing about 20 lakh litres of milk. As against this, Vidarbha region produces only 80,000 litres of milk per day. To overcome this situation Maharashtra Govt. launched Vidarbha Development Programme Package (VDPP) in the year 2004 to increase the milk production in Vidarbha region. The present study was conducted with the objectives, to study the profile of beneficiaries under VDPP, to study adoption of improved dairy cattle management practices by beneficiaries and to study relationship between profile of beneficiaries with adoption of improved dairy cattle management practices under VDPP.

METHODOLOGY

The present study was conducted in purposively selected Nagpur district of Vidarbha region in Maharashtra state, where Govt. of Maharashtra distributed 101 cross-bred dairy cows among 86 farmers. Total 86 beneficiaries under VDPP were scattered in 39 villages of twelve Tahsils of Nagpur district. All 86 beneficiaries under VDPP were purposively selected and called as sample for present study.

The dependent variable for this study was adoption of improved selected dairy cattle management practices by beneficiaries in the areas of nutrition, breeding, management and health. The selected independent variables were viz. age, education, family size, family member participation in dairy farming, total annual income, land size, social participation, socio-economic status, utilization of communication sources, dairy herd size, daily

milk production, daily milk sale, number of purchased dairy cattle under VDPP, milk production from purchased dairy cattle, knowledge about scientific dairy farming, attitude towards dairy farming, economic motivation, experience in dairy farming, participation in dairy farming training. The structured interview schedule was prepared, pre-tested and data were collected from all 86 beneficiaries by personal interview method. The statistical methods like mean, standard deviation were used for categorization of data. Coefficient of correlation (r) suggested by *Garrett (1967)* was used for testing the significance of relationship between dependent and independent variables.

RESULTS AND DISCUSSION

Results of the study (Table No.1) revealed that majority of beneficiaries (60.47 per cent and 20.93 per cent) were from the age group of 31 to 50 and the age group of up to 30 years, respectively. In family size, the majority of beneficiaries (68.61 per cent) belonged to the family size of 5 and below members. While majority of the beneficiaries (61.63 per cent) had participation of 2-3 family members in dairy farming. Regarding education, 51.16 per cent beneficiaries were educated between 5th to 10th standard, whereas majority of beneficiaries (38.37 percent) had annual income of Rs. 50,000 to 1 lakh. It was observed that 32.56 per cent of beneficiaries had big land size of 10.1 acre and above and only 5.81 per cent were landless. It was revealed that 82.56 per cent beneficiaries had no social participation and 68.60 per cent had medium socio-economic status. Majority of beneficiaries (61.63 per cent) had medium level utilization of 6 to 13 communication sources. Regarding dairy herd size, 34.88 per cent of beneficiaries had 3 to 5 heads of dairy cattle. While, 37.21 per cent of beneficiaries had 6 to 10 litre daily milk production as well as, 38.37 per cent had 6 to 10 litre daily milk sale. It was noticed that 82.56 per cent beneficiaries purchased one dairy cattle under VDPP and above half of beneficiaries (51.16 per cent) had daily milk production between 5.1 to 10 litre from purchased dairy cattle under VDPP. Majority of beneficiaries 73.26 per cent had medium knowledge level. Nearly 44.18 per cent of beneficiaries had more favorable attitude towards dairy farming, while 84.88 per cent had medium level economic motivation. Data revealed that, 53.49 per cent of beneficiaries had high experience in dairy farming, while 91.86 per cent had never attended any training on dairy farming.

Adoption : Adoption is a mental process through which an individual passes from first hearing about an innovation to its final adoption. Adoption in this study meant use of improved dairy cattle management practices. The data revealed that majority of beneficiaries (65.12 per cent) had secured medium adoption of improved dairy cattle management practices. While, 18.60 per cent and 16.28 per cent of beneficiaries had low and high adoption of improved dairy cattle management practices, respectively. Similar findings were reported by *Rogers and Shoemaker (1971), Pharate (1986), Takate (1987)* and *Ahire (2007).*

Correlation of socio-economic and psychological characteristics with adoption: It is observed that education and socio-economic status were significantly coorelated with adoption of improved dairy cattle management practices. It might be due to better understanding of beneficiaries about the importance of improved management practices in dairy farming for increasing production and minimizing the inputs and their better social contacts and high economy lead to economic motivation. These findings are in line with the findings of *Sohi and Kherde (1980)* and *Sawarkar et al. (2001).*

The land size, total annual income, dairy herd size, daily milk production, daily milk sale, milk production from purchased dairy cattle under VDPP were significantly correlated with adoption of improved dairy cattle management practices by beneficiaries. It might be due to their risk bearing abilities, availability of labour and money, utilization of more informative sources, increase in milk production, motivated to adopt improved dairy cattle management practices and their livelihood might be depending on dairy farming business. These findings correlate with the findings of *Shanthudu (1985), Verma and Tyagi (1993) Shinde et al. (1998), Sawarkar et al. (2001) and Basunathe (2004).*

It is noticed that social participation, utilization of communication sources, knowledge level, attitude towards dairy farming, economic motivation and training on dairy farming were significantly correlated with adoption of improved dairy cattle management practices by beneficiaries. It might be due to less risk bearing ability, lack of confidence, non-organization of training programme through Govt. agency before distribution of dairy cattle as well as their low education and low socio-economic status restricted them from training and not exposed to demonstration of improved dairy cattle

Table 1. Distribution of beneficiaries by their characteristics, correlation of adoption with other independent variables

S. N.	Parameter	No. of beneficiaries	Percent N=86	Adoption level			r
				N=16	N=56	N=14	
1.	Age (Years)						
	1. Young (Up to 30)	18	20.93	04	11	03	0.013^{NS}
	2. Middle (31 to 50)	52	60.47	08	35	09	
	3. Old (51 and above)	16	18.60	04	10	02	
2.	Family size (Members)						
	1. Small (5 and below)	59	68.61	10	38	11	0.157^{NS}
	2. Medium (6 to 13)	23	26.74	60	15	02	
	3. Big (14 and above)	04	4.65	00	03	01	
3.	Family member participation in dairy farming (Members)						
	1. Low (One)	21	24.42	04	10	07	0.109^{NS}
	2. Medium (2 to 3)	53	61.63	12	35	06	
	3. High (4 and above)	12	13.95	00	11	01	
4.	Education (Standard)						
	1. Primary (4 th std. and below)	14	16.28	04	10	00	
	2. Secondary (5th to 10th std.)	44	51.16	10	27	07	0.507**
	3. Higher secondary to incomplete graduation	13	15.12	02	07	04	
	4. Complete graduation	15	17.44	00	12	03	
5.	Total annual income (Rupees)						
	1. Low (Up to Rs. 50,000)	23	26.75	06	16	01	
	2. Lower medium (Above Rs. 50,000 to 1 lakh)	33	38.37	06	22	05	0.378**
	3. Upper medium (Above Rs. 1 lakh to 1,50,000)	15	17.44	04	07	04	
	4. High(Above Rs.1,50,000)	15	17.44	00	11	04	
6.	Land size (Acre)						
	1. Landless	05	05.81	01	04	00	
	2. Marginal (Up to 2.5)	06	06.98	00	05	01	0.298**
	3. Small (2.5 to 5)	26	30.23	05	19	02	
	4. Medium (5.1 to 10)	21	24.42	05	12	04	
	5. Big (10.1 and above)	28	32.56	05	16	07	
7.	Social participation (Score)						
	1. No participation	71	82.56	14	48	09	
	2. In one organization	11	12.79	01	06	04	0.253*
	3. In more than one organization	04	4.65	01	02	01	
8	Socio-economic status (Score)						
	1. Low	11	12.79	04	07	00	0.610**
	2. Medium	59	68.60	12	39	08	
	3. High	16	18.61	00	10	06	
9.	Utilization of communication sources (Score)						
	1. Low	14	16.28	05	07	02	0.464**
	2. Medium	53	61.63	09	38	06	
	3. High	19	22.09	02	11	06	
10.	Dairy herd size (Numbers)						
	1. Very small (1)	09	10.46	03	06	00	0.476**
	2. Small (2)	27	31.40	04	20	03	

	3. Lower Medium (3 to 5)	30	34.88	09	16	05	
	4. Upper Medium (6 to10)	06	6.98	00	04	02	
	5. Large (11 and above)	14	16.28	00	10	04	
11.	Daily milk production (Liters)						
	1. Low (5 and below)	08	9.30	05	03	00	0.479**
	2. Low medium (6 to 10)	32	37.21	06	23	03	
	3. High medium (11 to15)	20	23.26	03	13	04	
	4. High (16 and above)	26	30.23	02	17	07	
12.	Daily milk sale (Liters)						
	1. Low (5 and below)	12	13.95	06	06	00	0.460**
	2. Low medium (6 to 10)	33	38.37	06	22	05	
	3. High medium (11 to 15)	18	20.93	03	13	02	
	4. High (16 and above)	23	26.75	01	15	07	
13.	No. of purchased dairy cattle (Numbers)						
	1. One	71	82.56	16	44	11	0.142 NS
	2. Two	15	17.44	00	12	03	
14.	Milk production from purchased dairy cattle (Liters)						
	1. Low (5 and below)	32	37.21	09	19	04	0.331**
	2. Medium (5.1 to 10)	44	51.16	06	29	09	
	3. High (10.1 to 15)	10	11.63	01	08	01	
15.	Knowledge level (Score)						
	1. Low	00	00.00	00	00	00	0.495**
	2. Medium	63	73.26	16	43	04	
	3. High	23	26.74	00	13	10	
16.	Attitude towards dairy farming (Score)						
	1. Less favorable	13	15.12	04	08	01	0.375**
	2. Favorable	35	40.70	07	23	05	
	3. More favorable	38	44.18	05	25	08	
17.	Economic motivation (Score)						
	1. Low	13	15.11	03	09	01	0.214*
	2. Medium	73	84.88	13	47	13	
	3. High	00	00.00	00	00	00	
18.	Experience in dairy farming (Years)						
	Low (One year)	02	2.33	00	01	01	0.039NS
	Lower medium (1.1 to 5 yrs.)	30	34.88	04	21	05	
	Higher medium (5.1 to 10 yrs.)	08	9.30	02	06	00	
	High (10.1 yrs. and above)	46	53.49	10	28	08	
19.	Training of dairy farming						
	Attended	07	8.14	00	02	05	0.386**
	Non attended	79	91.86	16	54	09	

management practices. These findings are similar with the findings of *Khuspe et al. (1980), Shinde et al. (1997), Sawarkar et al. (2001)* and *Basunathe (2004).*

CONCLUSION

On the basis of data analysis of the study, it can be concluded that education and socio-economic status were highly significant, whereas total annual income, land size, social participation, utilization of communication sources, dairy herd size, daily milk production, daily milk sale, milk production from purchased dairy cattle, knowledge level, attitude towards dairy farming and economic motivation were found significantly correlated with adoption of improved dairy cattle management practices.

Landless and low income group beneficiaries were quite less as compared to others. Majority of the beneficiaries had medium knowledge and attitude towards dairy farming and had adoption of improved dairy cattle management practices at medium level because of lack of training, inadequate and unreliable communication sources.

During implementation of subsidy based programme, the stress should be given on weaker sections, especially on landless and below poverty line farmers in selection of beneficiaries. The purchasing process of dairy cattle should be improved by control over or less involvement of middlemen in the market . The training programme of short duration shall be made mandatory to beneficiaries before distribution of animals.

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