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ABSTRACT

To study the knowledge of dairy animal owners in improved dairy husbandry practices a field survey in Surat district was conducted during March, 2013 to January, 2014. Data were collected through personal interview from randomly selected 300 dairy animal owners from randomly selected five talukas out of nine talukas of Surat district with the help of pre-tested structured schedule. The present study revealed that majority of the dairy farmers were belonged middle to old age group, literate, nuclear type of family having more number of children making big size family. Majority of the respondents were from scheduled tribe and other backward category having medium level of extension contacts and mass media exposure with membership in one organization. Majority of the respondents were falling under marginal to small categories farmers with small herd size and they possessed agriculture and livestock as their livelihood. The education, caste, land holding, animal holding size, extension contact and mass media exposure of the respondents were positively and significantly related, whereas vocational diversification was negatively related with knowledge of dairy farmers regarding improved dairy husbandry practices in the study area.

Keywords: Animal Husbandry Practices, Dairy animals, Knowledge, Relationship

Animal husbandry makes a significant contribution in the national economy and socio-economic development of the country. In rural India, the livestock is the main source of livelihood to the farmers, where over 15-20 percent families are landless and about 80 percent of the land holders belong to the category of small to marginal farmers (Hegde, 2006). Livestock rearing is an integral part of agriculture in India as well as many developing countries since centuries. The
Indian dairy industry has made a remarkable progress in the last three decades with unprecedented growth in milk production. Cattle and buffalo producing milk which is the largest agricultural commodity play a major role in the Indian economy. India is one of the countries which has modernized its dairying and has achieved higher production through the introduction of scientific technologies into dairy farming system. In recent years, Indian dairy farmers have shown encouraging sign of changing from traditional to improved one, at the same time it is also true to say that during the last 60 years, a number of changes have taken place in India through various developmental programmes. In spite of this, we are yet to modernize the rural dairy farming and its economy up to the desirable level. It is recognized that if progress has to be achieved in dairy farmers, they are to be modernized in knowledge, adoption and other personal, social and economic characteristics.

India has emerged as leading milk producer country in the world, however production potential per milking animal is very low i.e. wet average in indigenous cows, crossbred cows and buffalo are 1.98, 6.75 and 4.50 kg/day respectively (Hegde, 2006). This low production in India is mainly due to lack or low level of knowledge of the dairy farmers about improved animal husbandry practices which make differences in socio-economic conditions. In these contexts, the present study was undertaken on personal, socio-economic characteristics of the dairy animal owners and their relationship with knowledge of animal husbandry practices.

MATERIALS AND METHODS

A field survey was conducted in Surat district of South Gujarat during March, 2013 to January, 2014. Surat district possess nine talukas namely- Choryasi, Palsana, Kamrej, Bardoli, Olpad, Mangrol, Mandvi, Mahuva and Umarpada. This district is spread over an area of 4327 sq. km and has 761 villages. Out of nine talukas in the district, randomly five talukas were selected, subsequently from each selected taluka five villages having functional primary milk producer’s co-operative societies were selected at random. Twelve dairy animal owners from each selected villages were randomly selected with the help of Talati cum Mantri/ village dairy cooperatives which constituted a total of 300 respondents. While selecting respondents due care was taken to ensure that they were evenly distributed in the village and truly represented animal management practices prevailing in the area. The selected farmers were interviewed and the desired information was collected with the help of pre-designed and pre-tested questionnaire. Data were tabulated and analyzed as per the standard statistical procedure suggested by Snedecor and Cocharan (1989) to draw meaningful interference.
RESULTS AND DISCUSSION

Personal characteristics of dairy animal owners

Personal characteristics of dairy animal owners are presented in Table 1.

Age

Age is an important factor, which influences the behaviour pattern of individual. The data in the Table 1 revealed that the highest percent of the dairy animal keepers (43.67 percent) belonged to middle age category followed by old (41.66 percent) and young (14.66 percent). Data indicated that the middle age group had better experience and interest, so they were always ready to adopt new innovations without considering the reaction of the other ones. The present results are well supported by the finding of Gill and Saini (2008), Divekar and Saiyed (2009) and Thombre et al. (2012). However, there was lot of variation in findings and they were indicative of differences in accordance with the overall demographic structure of the regions.

Table 1. Distribution of the dairy animal owner according to their personal characteristics and relationship with their knowledge regarding improve dairy husbandry practices (N=300)

<table>
<thead>
<tr>
<th>Character</th>
<th>Category</th>
<th>Frequency</th>
<th>%</th>
<th>r-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Young age (20 to 35 years)</td>
<td>44</td>
<td>14.66</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Middle age (36 to 50 years)</td>
<td>131</td>
<td>43.67</td>
<td>0.030NS</td>
</tr>
<tr>
<td></td>
<td>Old age (above 50 years)</td>
<td>125</td>
<td>41.66</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Illiterate (can’t read and write)</td>
<td>111</td>
<td>37.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary education (1st to 7th std.)</td>
<td>89</td>
<td>29.67</td>
<td>0.560**</td>
</tr>
<tr>
<td></td>
<td>Secondary education (8th to 12th)</td>
<td>85</td>
<td>28.33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Above secondary and college level</td>
<td>15</td>
<td>05.00</td>
<td></td>
</tr>
<tr>
<td>Extension contacts</td>
<td>Low</td>
<td>35</td>
<td>11.66</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>212</td>
<td>70.67</td>
<td>0.189**</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>53</td>
<td>17.67</td>
<td></td>
</tr>
<tr>
<td>Mass media exposure</td>
<td>Low</td>
<td>34</td>
<td>11.33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>247</td>
<td>82.34</td>
<td>0.211**</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>19</td>
<td>06.33</td>
<td></td>
</tr>
</tbody>
</table>

NS - Non Significant, ** P<0.01
**Education**

The data shown in Table 1 indicated that the percent level of illiterate, up to primary, secondary and above secondary up to college level were 37.00, 29.67, 28.33 and 5.00 respectively. From the observations, it can be concluded that 63 percent of the respondents selected were literate, moreover majority of them were falling between primary and secondary level of education. These shows that dairy farmers have realized the importance of formal education in their social development. The present findings are comparable with the findings of Thombre et al. (2012) and Akila and Senthilvel (2012).

**Extension contacts**

Data depicted in Table 1 revealed that majority (70.67 percent) of the respondents have medium level of extension contacts, followed by 17.67 and 11.67 percent with high and low level of extension contacts, respectively. Thus, it can be concluded that majority (88.34 percent) of the respondents had medium to high level of extension contacts. The reason for this might be that, various extension agencies like Training and Visit system of state agriculture department, Sumul dairy, State animal husbandry department, Vanbandhu College of Veterinary and Animal Husbandry, Navsari and Krishi Vigyan Kendra were actively involved for various extension activities. In this area majority of farmers were literate so, they might have created awareness about how to make contact with these extension agencies. These findings are similar to the findings revealed by George and Chauhan (2004) and Upadhyay and Desai (2011).

**Mass media exposure**

Frequency data analysis in Table 1 indicated that majority (82.33 percent) of the respondents had medium level of mass media exposure followed by 11.33 and 6.33 percent of the respondents with low and high level of mass media exposure, respectively. In general, it is observed that majority (93.66 percent) of the dairy animal owners possessed low to medium exposure to mass media which might be due to their low to medium level of awareness regarding importance of various mass media in improving their knowledge. Because of this reason they might not have shown their expected interest in useful programmes broadcasted and telecasted on radio and television, respectively, as well as from literature published by different agencies. The findings of this study are supported with the findings observed by George and Chauhan (2004), Dhaka et al. (2011) and Upadhyay and Desai (2011).
Table 2. Distribution of the dairy animal owner according to their socio-economic characteristics and relationship with their knowledge regarding improve dairy husbandry practices (N=300)

<table>
<thead>
<tr>
<th>Character</th>
<th>Category</th>
<th>Frequency</th>
<th>%</th>
<th>r-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Caste</strong></td>
<td>General</td>
<td>41</td>
<td>13.67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other backward category (OBC)</td>
<td>120</td>
<td>40.00</td>
<td>0.222**</td>
</tr>
<tr>
<td></td>
<td>Scheduled caste (SC)</td>
<td>21</td>
<td>07.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scheduled tribe (ST)</td>
<td>118</td>
<td>39.33</td>
<td></td>
</tr>
<tr>
<td><strong>Family size</strong></td>
<td>Small size (up to 4 members)</td>
<td>95</td>
<td>31.67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Big size (above 4 members)</td>
<td>205</td>
<td>68.33</td>
<td>-0.073NS</td>
</tr>
<tr>
<td><strong>Family type</strong></td>
<td>Nuclear type</td>
<td>175</td>
<td>58.33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Joint type</td>
<td>125</td>
<td>41.67</td>
<td>-0.010NS</td>
</tr>
<tr>
<td></td>
<td>No participation</td>
<td>13</td>
<td>04.33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Membership in one organization</td>
<td>277</td>
<td>92.34</td>
<td></td>
</tr>
<tr>
<td><strong>Social participation</strong></td>
<td>Membership in more than one organization</td>
<td>06</td>
<td>02.00</td>
<td>0.104NS</td>
</tr>
<tr>
<td></td>
<td>Holding position in organization</td>
<td>04</td>
<td>01.33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Landless</td>
<td>99</td>
<td>33.00</td>
<td></td>
</tr>
<tr>
<td><strong>Land holding</strong></td>
<td>Marginal farmer (up to 2.5 acres)</td>
<td>108</td>
<td>36.00</td>
<td>0.256**</td>
</tr>
<tr>
<td></td>
<td>Small farmer (2.6 to 5 acres)</td>
<td>62</td>
<td>20.67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Large farmer (above 5 acres)</td>
<td>31</td>
<td>10.33</td>
<td></td>
</tr>
<tr>
<td><strong>Animal holding size</strong></td>
<td>Small (1 – 5 animals)</td>
<td>172</td>
<td>57.34</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medium (6 – 10 animals)</td>
<td>79</td>
<td>26.33</td>
<td>0.148*</td>
</tr>
<tr>
<td></td>
<td>Large (&gt;10 animals)</td>
<td>49</td>
<td>16.33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Only Dairy</td>
<td>43</td>
<td>14.33</td>
<td></td>
</tr>
<tr>
<td><strong>Vocational diversification</strong></td>
<td>Agriculture + Dairy</td>
<td>185</td>
<td>61.67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agriculture + Dairy + Service</td>
<td>10</td>
<td>03.33</td>
<td>-0.143*</td>
</tr>
<tr>
<td></td>
<td>Dairy + Service</td>
<td>05</td>
<td>01.67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dairy + Labour</td>
<td>57</td>
<td>19.00</td>
<td></td>
</tr>
</tbody>
</table>

NS - Non Significant, ** P<0.01 and * P<0.05

**Caste**

Data in Table 2 revealed that the majority of the respondents (40 percent) were from other backward category followed by scheduled tribe (39.33 percent), general...
category (13.67 percent) and scheduled caste (7 percent). However, variations in the findings related with the caste of the dairy animal owners in various parts of Gujarat and India are observed due to the overall demographic structure of the regions.

**Family size**

The perusal of data presented in Table 2 revealed that majority (68.33 percent) of respondents had big size family followed by small size of family (31.67 percent). Present findings are similar with findings of Mande and Thombre (2009) and Upadhyay and Desai (2011).

**Family type**

Data from the Table 2 indicated that majority (58.33 percent) belonged to nuclear type family and 41.67 percent to joint type family. The smaller family sizes in the households with small holding might be due to division of the joint families. Many of them wanted to remain as small nuclear family for ease of family management in most economic way. These findings are supported by Halakatti *et al.* (2007), Mande and Thambre (2009) and Thombre *et al.* (2010, 2012).

**Social participation**

Data in Table 2 indicated that majority i.e. 92.34 percent respondents had membership in one organization while, two percent respondent had membership in more than one organization, 1.33 percent respondent had membership with holding position in organization and 4.33 percent respondents had no participation in any organization. The possible reason for these findings might be that the most popular and service oriented village organizations meet the needs of dairy farming and financial assistance by village dairy co-operative societies. Hence, most of the respondents become their members for availing these benefits. These findings are supported by the findings of George and Chauhan (2004) and Upadhyay and Desai (2011).

**Land holding**

The observations of the Table 2 revealed that 36.00, 20.67, 10.33 and 33.00 percent of the respondents were falling under marginal, small, large farmer and landless, respectively. These findings are in accordance with the findings of Rathod *et al.* (2011) and Sharma *et al.* (2012).
Animal holding size

It is apparent from the Table 2 that majority of the respondents (57.34 percent) had small herd size followed by medium size (26.33 percent) and large size herd (16.33 percent). The majority of the respondents possessed crossbred cows which require more amount of green fodder and most of the respondents were marginal farmers who can’t allot more area for fodder crop production are the main reasons for small herd size. The price of such dairy animal is also very high. These findings are well supported by that of Shinde et al. (1998), Mande and Thombre (2009) and Thombre et al. (2010, 2012).

Vocational Diversification

Data presented in Table 2 revealed that the majority (61.67 percent) of the respondents possessed agriculture and livestock as their livelihood and the others either depend only on livestock (14.33 percent), dairy and labour (19.00 percent) or on agriculture - dairy and service (3.33 percent) or on dairy and service (1.67 percent). It can be concluded that majority of the respondents had farming with dairying as a main source of income for their livelihood. This finding is more or less similar to the results of Singh et al. (2004), Ahiwar et al. (2009), Sharma et al. (2012) and Thombre et al. (2012), whereas Patel et al. (2005) reported that in Patan district of North Gujarat 74 percent of farmers depend on the livestock for their livelihood.

Relationship between personal, socio-economic characteristics of dairy animal owners and their knowledge regarding improve dairy husbandry practices

Relationship between personal, socio-economic characteristics of dairy animal owners and their knowledge regarding improve dairy husbandry practices are depicted in Table 1 and 2.

Relationship between age and knowledge

Table 1 indicated that age of dairy animal owners had positive but non-significant correlation with knowledge of improved dairy husbandry practices. Thus, it can be concluded that age of dairy animal owners had not played significant role on their knowledge of improved animal husbandry practices. Meena and Chauhan (1999), Mande et al. (2008), Sharma and Singh (2008) and Kumar et al. (2009) reported that age of dairy animal owners had negative and non-significant co-relation with their knowledge. Chandrakala and Eswarappa (2001) reported that age of dairy animal owners had positive and significantly co-related with their knowledge. However, present results are in contrary to Singh and Godara (2002), Sharma et
al. (2009) and Shekhawat et al. (2013) reported that age of dairy animal owners had negative and significantly co-related with their knowledge.

**Relationship between education and knowledge**

It was observed that education of dairy animal owners had highly significant positive correlation with knowledge about improved dairy husbandry practices. This showed that the educated animal owners possessed more knowledge due to the fact that they tend to have more interaction with extension agencies and do not hesitate to discuss their problems related to dairy animals with veterinarians and scientist as compared to old illiterate respondents. Present results are in similar to the findings reported by Meena and Chauhan (1999), Singh and Godara (2002), Sharma and Singh (2008), Mande et al. (2008), Kumar et al. (2009), Sharma et al. (2009) and Shekhawat et al. (2013).

**Relationship between caste and knowledge:**

Table 2 revealed that caste of dairy animal owners had highly significant and positive correlation with knowledge about improved dairy husbandry practices. Present finding is in similar line with Sharma and Singh (2008). These findings are in contrary to the findings of Singh and Godara (2002) and Sharma et al. (2009), who reported caste of dairy animal owners was non-significant and positive correlation with knowledge about improved dairy husbandry practices.

**Relationship between family size and knowledge**

Data shown in Table 2 indicated that family size of dairy animal owners had negative and non-significant relationship with knowledge about improved dairy husbandry practices. Present result is similar to the finding of Satyanarayan and Jagadeeswary (2010). However, they are contradictory with the results of Meena and Chauhan (1999), Mande et al. (2008) and Kumar et al. (2009).

**Relationship between family type and knowledge**

It was observed that family type of dairy animal owners had negative but non-significant relationship with knowledge about improved dairy husbandry practices. Present results are similar with findings of Satyanarayan and Jagadeeswary (2010).

**Relationship between social participation and knowledge**

Data presented in Table 2 indicated that social participation of dairy animal owners had positive and non-significant co-relation with knowledge about improved dairy
husbandry practices. These findings are in accordance with the results reported by Chandrakala and Eswarappa (2001), Singh and Godara (2002) and Satyanarayan and Jagadeeswary (2010). However, these findings are contrary to the findings of Meena and Chauhan (1999) and Mande et al. (2008).

**Relationship between land holding and knowledge**

Data shown in Table 2 revealed that land holding of dairy animal owners had significantly high and positive relationship with knowledge about improved dairy husbandry practices. These findings are similar with the findings of Meena and Chauhan (1999), Mande et al. (2008), Kumar et al. (2009) and Satyanarayan and Jagadeeswary (2010).

**Relationship between vocational diversification and knowledge**

Data in Table 2 indicated that vocational diversification of dairy animal owners had negative but significant relationship with knowledge about improved dairy husbandry practices. Present results are similar with Meena and Chauhan (1999). However, Present findings are contrary with the results of Singh and Godara (2002).

**Relationship between animal holding size and knowledge**

Data shown in Table 2 revealed that animal holding size of dairy animal owners had positive and significantly co-related with knowledge about improved dairy husbandry practices. It means that knowledge of the dairy animal owners was increased with increase in the numbers of animal holding. Present results are in accordance with findings reported by Meena and Chauhan (1999), Mande et al. (2008), Sharma and Singh (2008), Kumar et al. (2009) and Sharma et al. (2009).

**Relationship between extension contact and knowledge**

Data depicted in Table 2 observed that extension contact of dairy animal owners had positive and highly significant relationship with knowledge about improved dairy husbandry practices. Extension contact is one of the most important factors to enhance the knowledge level of dairy animal owners. The correlation analysis revealed that variable tends to have more knowledge about improved dairy husbandry practices. Present findings are similar to the findings of Singh and Godara (2002), Mande et al. (2008), Sharma and Singh (2008), Kumar et al. (2009), Sharma et al. (2009) and Shekhawat et al. (2013). However, these findings are contrary to the findings of Chandrakala and Eswarappa (2001).
Relationship between mass media exposure and knowledge

It was observed that mass media exposure of dairy animal owners had positive and highly significant relationship with knowledge about improved dairy husbandry practices. These findings are similar to the results reported by Sharma and Singh (2008), Kumar et al. (2009) and Sharma et al. (2009).

CONCLUSION

It can be concluded from above findings that majority of the dairy farmers were belonged middle to old age group, literate having nuclear type of big family and from scheduled tribe and other backward category. Majority of the respondents had medium level of extension contacts and mass media exposure with membership in one organization. Majority of the respondents were falling under marginal to small categories farmers with small herd size and having agriculture-cum-livestock as their livelihood. The education, caste, land holding, animal holding size, extension contact and mass media exposure of the respondents were significantly positive, whereas vocational diversification was negatively related with knowledge of dairy farmers regarding improve dairy husbandry practices.

REFERENCES


