Productivity of Milch Animals in Small Scale Dairying among Female and Male Headed Households

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ABSTRACT

The present study has been carried out purposively in mid western zone of Uttar Pradesh to compare the productivity of milch animals between female and male headed households in small scale dairying. Data were collected through interview schedule from 100 distinct households (50 female headed + 50 male headed). The study revealed that fifty eight per cent of females were depended on single species of animal either cattle, buffalo or goats and the rest were rearing the livestock in different combination but in small numbers. Male headed households, however were rearing more large animals in combinations. Goats were reared in combination only by few male headed families, whereas these were reared by majority of female respondents both singly and in combination. None of the female respondents had any draft animals. Irrespective of gender, majority of the respondents obtained medium level of production from their milch animals. Twenty two per cent male headed households, however had higher productivity of their milch animals in comparison to only 8 per cent female headed households. Significant differences were found in the mean scores of early and peak milk yield of desi cows between the female and male respondents.

Key words: *Female and male headed households; Productivity and Small scale dairying;*

Animal husbandry is an integral component of Indian agriculture supporting livelihood of more than two-thirds of the rural population. Animals provide nutrient-rich food products, draught power, dung as organic manure and domestic fuel, hides & skin, and are a regular source of cash income for rural households. Livestock are treated as a form of financial, social and natural capital (*McLeod and Wilsmore, 2001*). In most of the communities, rural women are responsible for the day to day care and management of animals. The poorer the community, the greater their roles. Despite this reality, even the work performed by these women are seldom recognized although the responsibilities ultimately impinge on them. These responsibilities naturally increase in communities where women head the households due to widowhood, migration of male for employment, divorce etc. In such households, she is more likely to be considered the owners of small stock compared to larger livestock and to have a say in the disposal and sale of small stock and small stock products and in the use of income from this. Thus livestock is an important asset for these women because it is often easier to acquire it either through inheritance, markets or collective action processes, than it is for them to purchase land or other physical assets or to control other financial assets (*Rubin et al., 2010*). The productivity of milch animals reared by such households depends on the type of animals and the breeds maintained by them and differ from the productivity of milch animals maintained by male headed households because women suffer from many broader constraints compared to men, in their access to land, capital, information, marketing opportunities and adoption of improved technologies which may affect small scale production and the benefits gained from it. A number of studies have been carried out on the participation in animal husbandry, but no comparative study has so far been carried out in small scale dairy in terms of productivity of milch animals in the female and male headed households.

METHODOLOGY

The present study was conducted purposively in Bareilly district of Uttar Pradesh. It comprises of 15 CD blocks. Out of it, five blocks were selected randomly. From each of the selected blocks, 5 clusters were made consisting 10 villages in each and from each

of the clusters, ten female and ten male headed households owning milch animals were selected randomly after preparing a comprehensive list of such households. Thus from each cluster, twenty households (10 female headed + 10 male headed) were interviewed personally using semi structured interview schedule. Productivity of milch animals was calculated by using Livestock Production Index (Milk Yield) recommended by *Yang (1980)*. Productivity of milk was operationalised as a manifestation of obtaining total fluid milk from per unit of dairy animals including cattle, buffalo and goat through the adoption of scientific dairy farming technologies, available man power and financial resources. For calculating the milk production index for milch animals of a particular household, the average yield of milch animal of the region was determined. Then, by dividing the average yield per animal on the particular household by the average milk yield of individual animal in the region, a percentage which then was multiplied by 100, gave the milk index for individual animal. Finally, respondents were categorized as low, medium and high productivity scores of milch animals on the basis of equal class intervals between minimum and maximum scores obtained by them. Mean differences of different stages of milk yield of animals between female and male headed households were also compared by t-test.

RESULTS AND DISCUSSION

Herd size and Herd composition: To determine the strength of milch animals per family as a unit, average scores were computed based on comparative assigned values of cattle equivalents. Table 1 shows that eighty two per cent of the females, heading the households had small herd size (0.4 -3.25) followed by 18 per cent owned medium number of livestock (3.25-6.10). Fifty two per cent male respondents, heading households were owning of medium size (3.25-6.10) of herd followed by 26 per cent, who had large (6.10-8.94) and the rest (22%) had small number of livestock (0.4 - 3.25). Fifty eight per cent of females were depended on single animal either cattle, buffalo or goats. Rest of the households were rearing the livestock in different combination in small numbers however, male headed households owned large animals more in combinations. Goats were reared in combination only by few male headed families, whereas these were reared by majority of female respondents both singly and in combination. None of the female respondents had any draft animals as it was difficult to maintain by them due to resource poor and had either no land or small land holdings. *Kumar, 2009;* and *Rathod et al., 2011* in his study mentioned that majority of the families had medium size of herd.

Table 1: Herd size and Herd structure of sampled households (N=100)

Herd size	Female Headed	Male Headed
Small (0.4 -3.25)	41(82.00)	11(22.00)
Medium (3.25-6.10)	09(18.00)	26(52.00)
Large (6.10-8.94)	-	13(26.00)
Herd structure, Single animals		
Cattle only	12(24.00)	03(6.00)
Buffalo only	13(26.00)	10(20.00)
Goat only	04(8.00)	-
Combination of two animals		
Cattle + Buffaloes	08(16.00)	16(32.00)
Buffalo + Goats	06(12.00)	-
Cattle + Goats	06(12.00)	-
Cattle + Draft animals	-	02(4.00)
Buffalo + Draft animals	-	04(8.00)
Combination of three animals		
Cattle + Buffalo + Goats	01(2.00)	04(8.00)
Cattle + Buffalo + Draft animals	-	10(20.00)
Cattle + Goat + Draft animals	-	01(2.00)

Table 2: Productivity of milch animals of households

Level of productivity (scores)	Female Headed	Male Headed
Low (49.95-81.35)	08 (16.00)	06(12.00)
Medium (81.35-112.75)	38(76.00)	33(66.00)
High (112.75-144.15)	04 (8.00)	11(22.00)

Productivity of milch animals: Table 2 shows that both set of respondents had medium level (81.35-112.75) of productivity of their milch animals. 22% male headed households, achieved higher (112.75-144.15) productivity of their milch animals in comparison to only 8 per cent female headed households. Sixteen per cent female headed households had low level (49.95-81.35) of productivity of milch animals as compared to 12 per cent male headed households. *Manivannan (2003)* in his study revealed that significantly higher productivity of milch animals was achieved by urban respondents as compared to peri-urban and rural areas. *Kumar (2008)* revealed that about 50% of female SHGs had low level of productivity of their milch animals as compared to 37 per cent of male SHGs.

Table 3 : Mean differences in different stages of milk production of milch animals between the female and male headed households (N=100)

Milch animals species	Milk production Stages		
	Early	Peak	Late
Desi cows			
Female Headed Households	1.05	3.18	0.63
Male Headed Households	1.91	4.64	0.76
't' value	6.797**	6.471**	1.725
Crossbred cows			
Female Headed Households	1.90	5.90	0.56
Male Headed Households	2.30	7.76	1.08
't' value	2.062*	4.388**	5.333**
Desi buffaloes			
Female Headed Households	1.58	5.26	0.72
Male Headed Households	2.40	6.62	0.96
't' value	6.207**	4.402**	3.470**
Improved buffaloes			
Female Headed Households	2.83	6.33	1.00
Male Headed Households	3.25	8.36	1.19
't' value	1.543	4.097**	2.401*
Goats			
Female Headed Households	0.36	1.00	0.35
Male Headed Households	0.49	0.96	0.31
't' value	1.828	-0.683	-0.742

** Significant at 1% level of significance (P<0.01),
* Significant at 5% level of significance (P<0.05)

Mean differences in different stages of milk production of milch animals between female and male headed households : A set of independent sample t-test was conducted to compare the mean difference of production of milch animals between female and male headed households in each category of animals. Table 3 revealed the significant differences in the means of early and peak milk yield of desi cows between the female and male respondents, heading the households. No significant difference was found in the late milk yield of desi cows between the two sets of households. However the milk yield of desi cows was higher in late period in male headed households like other stages in comparison to the animals owned by females. Milk yield of crossbred cows, desi buffaloes and improved buffaloes differed significantly between female and male headed households. No significant difference however was, found in the milk yield of goats reared by female and male respondents of sampled households.

CONCLUSION

The main conclusion to be drawn from our study is that the productivity of animals owned by female headed households were medium to low as compared to males wherein productivity scores were medium to higher. Thus the study implied that improvements in productivity are possible and can contribute in enhancing the livelihood of female headed households by emphasizing more on new production technologies supported by efficient extension services for technology transfer and delivery of animal health care and breeding facilities, along with capacity building programmes. Thus small scale dairy production can be realized as a means to reduce the poverty, improving the livelihood and nutritional security of these poor households.

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