



Research Article

Donkeys as an Alternate Domestic Pack-animal in the Arid Zone of Dera Ismail Khan, Pakistan

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Authors' Contributions

SU, NAR and MU conceived and designed the experiments. SAK, AZ, MIM and SU performed the experiments. SMKS, IU and MSK analyzed the data. MIM, MSK SMKS wrote the paper.

Keywords

Alternate animal, Arid-zone, Donkeys, Pakistan, Welfare

Abstract | Domestic farming has a great contribution in rural agriculture, livestock and dairy sectors of Pakistan. Their help ranges from the crop and livestock production to cottage industry. The women in rural societies of Pakistan deliver many farm duties especially in the Punjab province, anterior Sindh, KP, Gilgat-Baltistan and Baluchistan. In the hilly areas men and women of the rural community use the donkeys for daily practice work like fetching water, collection of firewood for domestic use and sale in the nearby local market to cope their daily needs. The present study was carried out in three different rural towns of Dera Ismail Khan district of KP in the year 2016, where the house hold community members male and female keeping animals to cope their livelihood needs. By restoring proportionate sampling each group was comprised of 30 males 30 females. Animal's owners were selected for the purpose of this study as the representative samples of the area by personal interviewing of respondents and observations regarding different pack animals *i.e.* camel, bull, horses/ mules and donkey. Score from female respondents by different pack animals *i.e.* camel, bull, horses/ mules and donkey receive were 33.67 ± 2.55 , 29 ± 1.00 , 29.52 ± 2.52 and 58.67 ± 2.082 respectively (% means \pm Standard deviation), while from male respondents with the % means \pm Standard deviation of 34.67 ± 6.43 , 35.00 ± 1.00 , 36.00 ± 2.65 , 44.33 ± 4.041 respectively.

Novelty Statement | Donkey as domestic helping animal received significantly higher score as compared with other animals from female and male respondents of the rural communities. Donkey are the major drought animal in this arid zone and should be given special consideration to improve their management and health status.

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Introduction

The arid zone of Pakistan is experiencing low agricultural production due to insufficient water resources and farm power utilization. Lack of appropriate

modern technological access are the main cause of agricultural deprivation (Usman *et al.*, 2016). Poor seasonal rainfall distribution over the last decade has also not only effect Pakistan and Afghanistan in Asia but other countries of the world (Yaqoob, 2011). In the rest of the world like African region it has also contributed to the widespread of poverty among the thousands of farming households (Olomola, 2010; Ewane *et al.*, 2009).

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The majority of farmers in the arid zone of Pakistan use the draft animals to carry their goods supply and also other different tasks. Horses, donkeys and camels are the major drought animals (Ul-Allah, 2014; Khan *et al.*, 2013). These are used in the rainy areas and pastoral societies tends to be a male-dominated work environment (Lochi *et al.*, 2014). Work in farms are mostly done by men and assisted by women by helping in to the accessory activities or have secondary role in weeding, planting, harvesting and animal grazing activities (Baba, 2015). On the other hand, women also worked with drought animals in these areas (Kristjanson *et al.*, 2014; Begum and Yasmeen, 2011). Along with other farming activities to carry their farm luggage to different places of work, female use and manage pack animals (Naveed and Anwar, 2013). However, women's ease in accessing animals like camel, horse and bulls is generally limited due to their ways of management because women generally work with small ruminants and cattle in homes (Zahoor *et al.*, 2013; Luqman *et al.*, 2012). All women are not so brave to work with camels and bulls and feel inconvenient carrying goods or riding these large pack animals because of expected aggression other causes like bulls often having long horns (Kallioniemi *et al.*, 2011; Patel *et al.*, 2016).

Donkeys are normally more acceptable as pack animals for women and women find them very friendly to carry different goods and riding by means of this innocent animal. While Ox and camel are costly in term of initial cost and daily maintenance (Rossel *et al.*, 2008; Smith, 2016). This research will describe the use of donkeys as alternate pack animal for women of the arid-agricultural based societies in D.I. Khan region of Pakistan with particular reference to their possible greater use by women in house hold farming system (Ansari-Renani *et al.*, 2013; Jamali, 2006; Shah *et al.*, 2015).

Materials and Methods

The present study was carried out in three different towns of Dera Ismail Khan district of KPK in the year 2015-2016 in the areas where the pack animals used by the women and men to carry their baggage's farm belongings and house hold carriages. By restoring proportionate sampling each group was comprised of 30 males and 30 females. Pack-animals owners were selected for the purpose of study was the representative samples of the area by interviewing questionnaire administered to the respondents regarding different pack animals *i.e.* camel, bull, horses/ mules and donkey were recorded. Data was recorded in triplicate samples and analyzed by Graph Pad prism by column statistics determining their means with standard deviation followed by two-way ANOVA and Sidak's multiple comparison tests and percentages were presented in bar graphs.

Results and Discussion

The % values of scores got in the results of interviews from male and female correspondents of the farmers' family were analyzed by two-way ANOVA and presented in graphical format. Percentage Means \pm Standard deviation scores received by different pack animals *i.e.* camel, bull, horses/ mules and donkey were 33.67 ± 2.55 , 29 ± 1.00 , 29.52 ± 2.52 and 58.67 ± 2.082 respectively. Overall highly significance ($p < 0.01$) difference was observed among the % score achieved by different animals' species from female respondents (Figure 1).

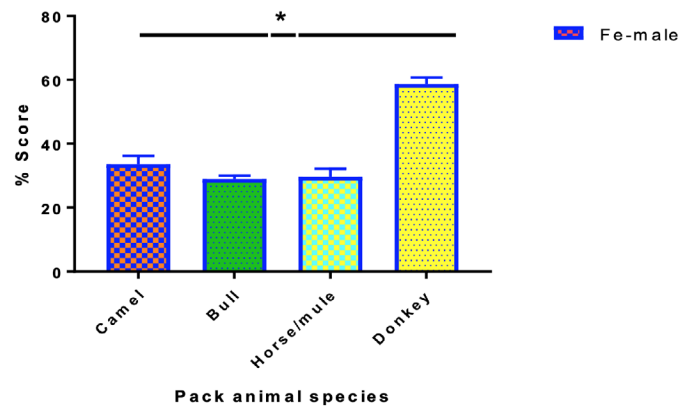


Figure 1: Graphical presentation of % score showing adoptability of different pack animals species by female respondents of rural livestock farmer's family.

There was no significant difference ($p > 0.05$) observed by two-way ANOVA among the % score achieved by different animals species by male respondents with the % means \pm Standard deviation of 34.67 ± 6.43 , 35.00 ± 1.00 , 36.00 ± 2.65 , 44.33 ± 4.041 respectively (Figure 2).

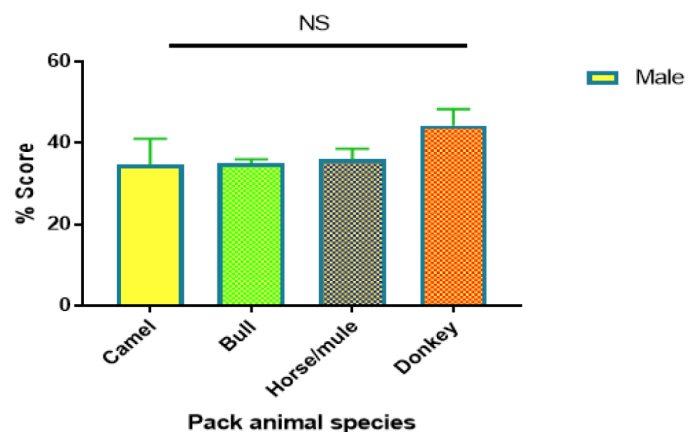


Figure 2: Graphical presentation of % score showing adoptability of different pack animals species by male respondents of rural livestock farmer's family.

Multiple comparisons

Multiple comparison was performed by applying Sidak's multiple comparisons test to the data and comparison shows no significant difference ($p > 0.05$) among the scores of camels, Bull, Horse/mule species of

pack animals between male and female respondents while overall significant ($P < 0.01$) difference was observed among the % score achieved by the donkey from female and male correspondents of the interview (Figure 3).

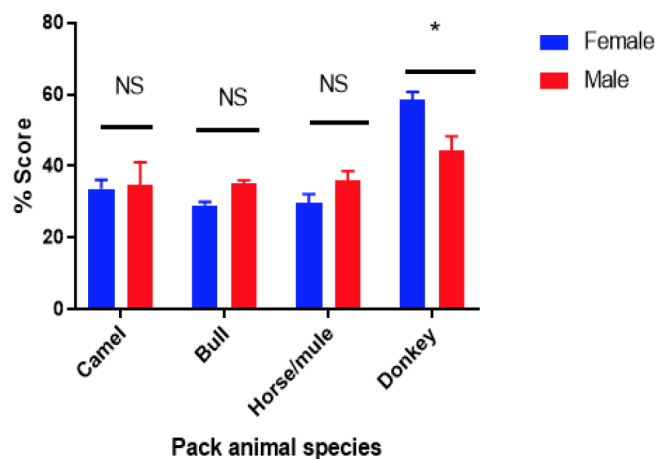


Figure 3: Graphical presentation of % score comparing adoptability of different pack animals species by Female and male respondents of rural livestock farmer's family.

Percentage Means \pm Standard deviation % scores received by different pack animals camel, bull, horses/mules and donkey were 33.67 ± 2.55 , 29 ± 1.00 , 29.52 ± 2.52 and 58.67 ± 2.082 respectively. Overall highly significance ($P < 0.01$) difference was observed among the % score achieved by different animals species these results were in agreement with the studies who described that working equines, particularly donkeys, play a significant role in empowering the household farmers in many developing nations (Phaniraja and Panchasara, 2009).

No significant difference ($p > 0.05$) was observed by two-way ANOVA tests among the % score achieved by different animals species from male respondents with the % means \pm Standard deviation of 34.67 ± 6.43 , 35.00 ± 1.00 , 36.00 ± 2.65 , 44.33 ± 4.041 respectively. These results were in agreement with the studies who described that similarities and differences between pastoral resource utilization are present and the influence of heterogeneous environmental settings needs to be considered in resource utilization (Nusser and Holdschlag, 2012).

Multiple comparison was done by applying Sidak's multiple comparisons test to the data and comparison shows no significant difference ($p > 0.05$) among the scores of camel, Bull, Horse/mule species of pack animals by male and female correspondents while overall high significance ($P < 0.01$) difference was observed among the % score achieved by the donkey from female and male respondents of the interview these results were in agreement with the studies who described that through a diachronic overview of the appearance of the characteristics shared by pastoral agricultural groups in Africa and Asia, it was clear that only

this mode of livelihood have taken its present shape. This pattern is consistent with recent studies of other domestic animals in different regions of the world suggest that the women have major role in process of domestication of working animals (Rossel *et al.*, 2008; Linseele, 2010).

Conclusions

Taking these all issues into consideration there are many possibilities for the rural women to use the donkey as an alternate pack animal. It is clear that there exists as so much safe and sound probable potential which if realized could advantage many peoples and families in the pastoral society of Pakistan. Donkey as domestic helping animal received significantly higher score as compared with other animals from female and male respondents of the rural communities. Donkey are the major drought animal in this arid zone and should be given special consideration to improve their management and health status. So that maximum benefits could be obtained in their proper use.

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Conflict of interest

There is no conflict of interest.

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