

Food Security and Socio-Economic Uplift of Camel Herders in Southern Punjab, Pakistan

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Abstract

This study belongs to project “Rural development by livestock extension education in Southern Punjab”. A survey was conducted in Multan and Muzaffargarh districts of Southern Punjab by using a pretested questionnaire to collect the information regarding food security and socio-economic status of cameleers in study area. It has been shown from the results that the socio-economic status of camel herders has improved a lot in last decade mainly due to the knowledge about camel and its products. Definitely camel plays an indispensable role in the food security of people of arid zone. Now the people are getting conscious about consuming the camel milk and products as in earlier time there was a taboo to use the camel products and the people did not get their taste developed. Due to increasing health reasons and by the initiatives taken by government departments the people are getting familiar with the camel products. Now the camel has shifted its place from “ship of the desert” and “beast of the burden” to a “food security animal” with great potential to produce a valuable product even in those areas of harsh climatic conditions where there seems difficult for the other domestic animals to produce. The camel herders value the ethno-veterinary practices and still use these for the treatment in camels. Mainly the camel browse on the roadsides but also stallfed with fodder by cut and carry system. The camel plays a pivotal role in the life sustainability of cameleers where they mainly depend on this specie for their livelihood. Hence; this is an integral part of pastoral ecosystem in arid, semi-arid and deserted lands.

Keywords: camel, food security, desert, pastorals, ecosystem, land

1. Introduction

The saying of Almighty in Quran “Do they not look at the camel, how they are made”; well extoled the virtues of camel (Al-Ghashiyah, 88). It is believed that when the desert dwellers turned to God and complained about the harsh climatic conditions of the desert, God heard their please and sent them the she-camel, they drank its milk and became well (Khan et al., 2003).

Exploding population increases the concern about food security in the world where Pakistan is not exception to this, the country is fifth largest regarding population and challenged with food security (Faraz et al., 2019a). In exploration of new resources, the camel is a future hope as it is important addition in food chain (Faraz et al., 2019b). Pakistan has a sizable population of 1.1 million heads and ranks eighth in the world (GOP, 2019-20; FAOSTAT, 2019).

Camel has special attributes; it can utilize poor quality roughages with better efficiency by retaining the fiber in fore stomach for extending periods may be up to 70 hours (Rollefson, 2005). Camel performs reutilization of urea in kidneys for microbial protein synthesis and can use water economically for all metabolic functions (Schwartz et al., 1992). They have fluctuating body temperatures so reduce sweating and can digest dry matter and crude fiber better than other domestic species. Dehydrated camel maintains lactation with 90% milk water contents (Khan et al., 2003). The camel has ability to survive in harsh climatic conditions by tolerating stresses like heat and food scarcity (Faraz, 2020). Hence, need was felt to perform current study for a deep look on the role of camel in food security and socio-economic status of camel herders in Southern Punjab, Pakistan.

2. Method

The climate of the area is arid-semi-arid, subtropical, continental and the mean summer temperature remains 45.6°C and winter falls up to 5.5 to 1.3°C with mean annual rainfall ranges between 150-350 mm (Rahim et al., 2011). A pretested questionnaire was developed and a single-visit-multiple-subject diagnostic survey was conducted in different pockets of study area to collect the information data. About 50 cameleers willing to participate in the study were interviewed by using purposive sampling techniques. The food security avenues and socio-economic status was studied as perceived by the camel herders and the solution sought. Methods described by the ILCA (International Livestock Center for Africa) were used to rank the major contributions of dromedary camel (ILCA, 1990).

3. Results

Camel has special role in the food security of study area as it provides milk, meat and other valuable by-products like wool, dung and urine. The herders claimed that they use to milk the camels whenever they need for their domestic consumption and selling. Mostly the herders use to sell milk in peri-urban areas at the rate of 0.5 \$ per liter. Some people contact them for purchasing of milk due to medicinal use.

The herders reported that they sell the camels to butchers mostly between 2-5 years of age and the usual meat price is about 3-4 \$ per kg, mostly the camels are slaughtered at Friday and the people are eager enough to purchase and consume its meat. The camels (*Doonda*, almost of 5 years age) at Eid-UI-Azha festival fetch a good price of about 1600-2500 \$ per animal.

Camel is playing a pivotal role in the economy of the study area. The camel herders have gained a better living status during the last decade. Most of the herders were keeping Barela camel which is the most popular milch breed of camel in southern Punjab especially of Cholistan region. Camel herders also have Marecha breed and some have desi (non-descript) camels as well.

4. Discussion

The nutrient richness and therapeutic worth of camel is well proved (Kouniba et al., 2005). The herders have believed that the consumption of camel milk is far better than cow/buffalo milk regarding health benefits. Camel has a longer lactation period of about 12-18 months with reported milk yield of 3-10 kg, serving as important source for the herders living in the deep deserts. An interesting aspect of camel milking is the need; whenever you want just tie the legs, the she-camel will be ready for milking. Camel contributes about 30% in the annual caloric diet of the pastorals (Faraz et al., 2013). The milk production ability of camel is excellent which is capable of producing more milk per unit body weight as compared to large ruminants (Knoess et al., 1986). Camel milk has additional properties like therapeutic peculiarities, having additional vitamins, minerals, lacks the allergens (Wernery, 2008) and having greater contents of lysozyme, lactoferrin and immunoglobulin than bovine milk (Konuspayeva et al., 2011). The author with his co-workers studied the milk production potential of camel in Thal Desert and reported the daily milk yield of Marecha camel as 6.1 liters (Faraz et al., 2020a) and Barela camel as 7.38 liters (Faraz et al., 2020b) and regarding the richest milk composition the camel milk is considered as the best source of food security (Faraz et al., 2020c).

The demand for camel meat is also increasing due to health reasons and people are consuming it as most nutritious as well as healthy meat. It produces carcasses with lesser fat percentage (1.2-1.8% vs. 4-8%) than cattle meat and higher water contents (5-8 % more). Camel meat has relatively more poly unsaturated fatty acids (PUFA) contents than cattle meat (Kadim et al., 2008). It is being used as remedial purposes in the treatment of many diseases like jaundice, long bone pain, arthritis, diabetes, spleen infections and liver disorders. It is also used as an aphrodisiac (Kurtu, 2004).

In another study, the living status of camel herders in Desert Thal has also been reported to be improved (Faraz et al., 2019c). Most of the herders in South Punjab have female camels while the male camels were fewer in number as majority of male camel calves are used for slaughtering in their earlier ages except the breeding stock. Some male camels are castrated and allowed for growing up to 3-5 years of age and then sold and slaughtered for Eid-ul-Azha festival. Most of the herders sell their camels to the middlemen and the price depends on the condition, demand and stage of the camels. Main income source of the herders was sale of milk, meat and animals regarding camel husbandry.

There is no need of any scientist to prove that camel herders are receiving camel milk in draught stricken areas when other livestock species have succumbed due to environmental stresses. There is a misunderstanding regarding camel production to cow production in temperate climates; thus, the role of camel as food security provider is neglected. There is a bad selection process continued in the camel husbandry over decades that resulted

in poor milkers, even then the animals are able to feed almost the ten children of family due to the filling effect of camel milk. More than thirty percent of Asian camel population is present in Pakistan and camel is serving as an important food security provider in arid, semi-arid and deserted areas of country (Faraz and Waheed, 2019). The camel herders mainly rely on camel regarding their food provision and there is only 25 percent rainy area while the rains make a significant contribution to the agriculture. The arid lands of Pakistan support almost 70% of the livestock population. There are persistent food deficiencies in the region due to lower crop yields and poor marketing infrastructure so livestock sector contributes a major contribution to the agriculture (Faraz et al., 2019d). Livestock production values have been increasing due to large number of animals mostly the camels and the small ruminants.

The crop production is not a sole source of income due to the uncertain and erratic rainfalls which cause crop failure and have drastic effects on the socio-economics of the small resource poor camel herders. Therefore, the cameleers keep camels and other livestock species as a security against the crop failure and as a meaning of savings and source of supplementary income. Despite of the fact, the camel number is small as compared to other animals, its socio-economic values are widely recognized as they are providing an important source of subsistence and income to the people of study area. Although peaceful mechanization is endangering the greater camel role in the marginalized societies, the camel has been remaining an integral component of the nomadic ecosystem of country. The camel herders still respect and rely on the ethnoveterinary practices regarding the treatment of their camels; hence, preserving the indigenous knowledge and serving as reservoir to aboriginal culture.

5. Conclusion

Pakistan is not exception to the change, where the notion “ship of the desert” has been shifted to “food security animal” about camel. Camel is of prime importance and a major source of food and socio-economics in Southern Punjab. It is meeting the milk and meat demands of the people thus; serves as food security provider in the diverse eco-zones.

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