

SHORT RESEARCH NOTE

STATUS OF GOAT GENETIC RESOURCES OF GUJARAT STATE

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ABSTRACT

The present investigation was planned to know the demography, productivity and population of different breeds of goat in Gujarat state, based on the secondary data collected from the reports, manuals etc. It was found that goat population in Gujarat was 4.93% and 3.31% in 1951 and 201, respectively of total population of India. The percent share of goat breeds of Gujarat i.e. Zalawadi, Surti, Kachchhi, Mehsana and Gohilwadi was 17.71%, 14.47%, 14.25%, 12.86% and 6.93% respectively, whereas 33.78% population was non descript. The average daily milk yield per milch goat was 0.194 kg in 1983, whereas it was 0.404 kg in 2010. The percent share of goat milk in total milk production in Gujarat decline sharply from 4.83% in 1983 to 2.53% in 2010, while percent of total slaughtered animals were about 60.23% goat alone in Gujarat state. It shows that sizable number of animals were slaughtered every year, even though population of goat increased significantly in the state, shows its prolificacy and demands of goat meat in the market even though majority of population is vegetarian in the state.

KEY WORDS: *breeds of goat, Zalawadi, Surti, Kachchhi, Mehsana and Gohilwadi*

INTRODUCTION

Goat was domesticated during 9000 BC, even earlier than cattle and buffalo. They significantly contributed to the agrarian economy and play a vital role in the livelihood security of the small and marginal farmers and landless goat keepers especially under arid, semi arid and mountainous regions of the country. They reared by the socially and economically poor families and it often called as "poor man's cow", to serve the mankind. These families don't have alternate occupation for livelihood security. Under such circumstances, it is also important that these animals are widely

adapted and thrive well in dry, hot, cold, humid as well as tropical climatic conditions and consumed a wide variety of grasses, weeds, forbes, bushes, shrubs, tree leaves and crop residues. The size of these animals are also very much suitable for meat (for small families) as well as for milk production. However, these animals can be milked at any time during the day and are therefore named as "moving refrigerators". Goat milk is preferred for children, old and sick persons, as it is easily digestible and has medicinal value, hence preferred over cow milk (Anonymous, 2016).

MATERIALS AND METHODS

The secondary data of Gujarat state relevant to goat population, productivity, breeds and slaughter of animals in the state were collected from the annual reports, manuals, web-sites and presented in the tabular form to know the demography of goat, its productivity and status of slaughtered animals to draw the meaningful conclusions from the study.

Results and Discussion : Goat population

Infect in India, livestock genetic diversity account about 11 per cent of the world's livestock population, which includes about 20 per cent of the goat population in the country (Anonymous, 2016 and http://www.goatwala.com/Goat_World_India.html). However, total goat population of the country was about 472 lakhs in 1951 as compared to 1405 lakhs in 2011, similarly, in Gujarat state it was 23.46 and 46.40 lakhs, respectively (Table 1; Anonymous 2007 and 2007-08). It shows that goat population has been increased about 2.98 times in the country and it became double in the state after 1951. Here, we shall remember the perception of Shri T. N. Sheshan, Secretary, Environment and Forests during mid- 1980s, who, advised to Hon'ble Prime Minister Shri Rajiv Gandhi that the subsidies given on goat rearing to the farmers under the Integrated Rural Development Programme be stopped, because goats may encourage deforestation. Even, before that during 1976, National Commission on Agriculture, recommended to bringing down the goat population in the country (<http://www.downtoearth.org.in/node/2331>), where its population had risen from 47 million in 1951 to 68 million in 1972 in India. Hence, it was recommended that more animals shall

be slaughtered to bring down the goat population to 67 million by 1985 and stabilize it at around 40 million by 2000. "The trend of increase in goat population, particularly in the desert areas is disturbing the ecology. This can produce a devastating effect on vegetation due to browsing habits of goats"(<http://www.downtoearth.org.in/node/2331>and<http://www.pib.nic.in/feature/feyr98/fe0798/PIBF2907981.html>), but due to its utility and social structure of the society, a middle path was adopted to ensure the livelihoods for the poor, while protecting natural resources.

Distribution of goat breeds

There are about 300 breeds of the goats in the world, of which 26 breeds are in India (inclusive five breeds of Gujarat). These Indian breeds can be classified broadly as follows (<http://goatsindia.com>):

(i)Milk purpose breed : Surti.

(ii) Milk and meat purpose breeds : Mehsana, Zalawadi, Kachchhi, Gohilwadi, Jamunapari, Barberi, Sangamneri, Osmanabadi, Ajmeri and Beetal).

(ii)Wool purpose breeds Pashmina (Kashmiri), Gaddhi and Angora.

(iii)Meat purpose breeds :Marwari, Sirohi, Assam and Black Bengal.

Further, it is summarized that goat breeds originated from Gujarat were depicted in Table-2 (Taneja, 2002 and Anonymous, 2007), it shows that proportion of different breeds in total population were 17.71, 14.47, 14.25, 12.86 and 6.93 per cent of Zalawadi, Surti, Kachchhi, Mehsana and Gohilwadi, respectively and their lactation milk yield was about 154.00, 150.00, 90.00, 147.95 and 80.00 kg, respectively, which realized that Surti, Mehsana and Zalawadi are quite good in milk production, where further

improvement programmes may be taken up accordingly.

The population status of goat breeds in Gujarat indicated that Zalawadi constituted the highest number of animals, while least number of animals belongs to Gohilwadi breed. This variation in population might be due to the preference of the goat keepers as well as the adaptability of different breeds in different regions of the state.

Production of milk and meat

The goat milk production in Gujarat state is depicted in Table 3 (Anonymous, 2010, 2010-11, 2011a and 2011b), which showed that total milk production of the species has increased continuously, while its share in total milk production in the state was declining and number of milch goat were also increased. Hence, it can be interfaced that productivity of individual animal is improving continuously, which might be due to better care and management.

Another, interested aspect of goat rearing in the state is that majority of human population is vegetarian and killing of animal is a sin, even though proportion of goat slaughter annually is about 60.23 per cent of total slaughtered animals (Table 4; Anonymous, 2001a) in the state. This showed that non vegetarian population preferred goat meat over others species in the state or we can say that goat meat is their first choice over other species or another reason might be export of animals to different countries from the state.

Management of goat

The goat genetic resources of the state are well adapted to the arid and semi arid climatic conditions. They have better heat tolerance and disease resistant capacity, utilized poor feed resources, perform better under draught conditions and providing

livelihoods to the peoples of the poor section in the state. Generally, these animals are managed on the waste land, road side grazing land and farmers' field after harvesting the crop, whereas institutional flocks are managed under grazing as well as stall feeding conditions.

Breeding methods

Goats are very important source of livelihoods for landless, small and marginal farmers under arid and semi arid region of the state. These animals have better prolificacy as compared to other livestock. The reproductive activities among these animals occurs during summer season (April to May) and winter season (October to November), while summer season is the first preference of goat keepers for mating their animals. Usually, mating during winter season is avoided, because it will leads to kidding during March to April, which is the period of migration due to scarcity of feed, water, and other resources in the state. The age of mating in goat was reported about 20 to 24 months, whereas in buck age of service was reported about 15 to 18 months (Singh and Chaudhary, 2010). Generally, majority of goat keepers keep the bucks for one to two years and thereafter they exchange with another flock owners' to avoid the inbreeding and they harvest only one crop in a year. However, important criteria for selection of breeding male are based on the physical traits as well as body weight, health and age at sexual maturity.

Goat breeding farms in the state

The existing goat breeding farms for improvement of different breeds were established under the different regions of the state, where selective breeding is adopted for all breeds. The details of these farms are given here as under:

(i) Mehsana goat : Goat Breeding Farm, SDAU, Sardarkrushinagar, Banaskantha.

(ii) Kachchhi goat : Goat Breeding Farm, Naliya, Kachchh

(iii)Zalawadi goat : Goat Breeding Farm, Morbi, Rajkot.

(iv)Surti goat : Goat Breeding Farm, Koth, Bharuch.

Future strategies

Goats are very important source of livelihoods in the state, hence following points shall be taken into consideration for their conservation and improvement.

- 1.The conservation of all native breeds of the state under its natural habitats is must as per biodiversity act and for maintaining the genetic purity of all breeds originated from the state shall be given priority.
- 2.The genetic improvement programme for all breeds shall be taken up through institutional flocks as well as in the field for all breeds in their natural habitats and other parts of the state.
- 3.The productivity of institutional flocks may be improved through selective breeding, followed by establishing the elite germplasm unit and systematic breeding programmes under field conditions with the participation of goat keepers.
- 4.The Goat Breeder's Society for different breeds originated from the state shall be established for their active participation in all improvement programmes as well as for conservation of goat genetic resources in the state.
- 5.The facilities for marketing of goat milk shall be established, considering the availability of goat milk in a particular area of the state.

REFERENCES

Anonymous (2007). Summary Report on 18th Livestock Census-2007 (Provisional) Gujarat State,

Directorate of Animal Husbandry, Gujarat State, Krishi Bhawan, Sector: 10 - A, Gandhinagar, Gujarat.

Anonymous (2007-08). Bulletin of Animal Husbandry and Dairying Statistics - 2007-08. Directorate of Animal Husbandry, Gujarat State, Krishi Bhawan, Sector: 10 - A, Gandhinagar, Gujarat.

Anonymous (2010). 27th Survey Report on Estimates of Major Livestock Products for the Year 2009-2010 Gujarat State. Directorate of Animal Husbandry, Gujarat State, Krishi Bhawan, Sector : 10 - A, Gandhinagar, Gujarat.

Anonymous (2010-11) Bulletin of Animal Husbandry and Dairying Statistics 2010-11. Directorate of Animal Husbandry, Gujarat State, Krishi Bhawan, Sector : 10 - A, Gandhinagar, Gujarat.

Anonymous, (2011a) Bulletin of Animal Husbandry and Dairying Statistics 2009-2010. Directorate of Animal Husbandry, Gujarat State, Krishi Bhawan, Sector : 10 - A, Gandhinagar, Gujarat.

Anonymous (2011b) Districtwise Main Findings of Integrated Sample Survey To Estimate Major Livestock Products 1983-84 to 2009-10, Gujarat State, Directorate of Animal Husbandry, Gujarat State, Krishi Bhawan, Sector : 10 - A, Gandhinagar, Gujarat.

Anonymous (2016) Lactose Intolerance, web-site : http://en.wikipedia.org/wiki/Lactose_intolerance, web-site accessed on 23-03-2017

http://www.goatwala.com/Goat_World_India.html

<http://www.downtoearth.org.in/node/2331>

<http://www.pib.nic.in/feature/feyr98/fe0798/PIBF2907981.html>

<http://goatsindia.com>

Singh, K. P. and Chaudhary, A. P. (2010). Goat Genetic Resources of Gujarat: Production System and Improvement Strategies. Compendium of National Symposium on "Conventional

and Modern Technologies for Genetic Improvement of Livestock and Poultry in India", held at G.B.Pant Uni. of Agril and Tech, Pantnagar, Uttarkhand, during Oct., 22 to 23; pp 74 to 77.

Taneja, V. K. (2002). *Handbook of Animal Husbandry*. ICAR, New Delhi

Table 1 : Status of goat population in Gujarat and India since 1951 to 2011

Sr No	Year	Goat population (lakh)			Population growth rate	
		India	Gujarat	Percent population in Gujarat state	India	Gujarat
1	1951	472	23.26	4.93	---	---
2	1961	609	22.23	3.65	24.03	-04.43
3	1972	675	32.10	4.76	10.84	30.75
4	1982	952	33.00	3.47	41.04	02.81
5	1992	1153	42.41	3.68	21.11	37.61
6	2003	1244	45.41	3.65	07.89	00.71
7	2011(P)	1405	46.40	3.31	12.94	02.18

Table 2: Breeds wise goat population in the state and their productivity

Sr No	Name of the breeds	Population (lakh)	Proportion of total population of the state (%)	Total lactation milk yield (kg) per goat
1	Zalawadi	8,21,726	17.71	154.00
2	Surti	6,71,494	14.47	150.00
3	Kachchhi	6,61,198	14.25	90.00
4	Mehsana	5,96,667	12.86	147.95
5	Gohilwadi	3,21,565	06.93	80.00
6	Non descript	15,67,487	33.78	----
7	Total population	46,40,137	100.00	----

Table 3: Productive animals and total goat milk production (000, Tonnes) of Gujarat state

Sr No	Year	No of in milk goat	No of milch goat	Total goat milk production	Milk yield / milch goat (kg)	Total milk production in Gujarat	% share of goat milk in total milk production
1	1983-84	NA	21,10,300	149.26	0.194	3093.13	4.83
2	1993-94	14,40,100	25,14,500	176.76	0.193	3934.58	4.49
3	2003-04	17,41,600	30,19,100	242.62	0.220	6420.67	3.78
4	2009-10	15,77,600	27,01,100	231.24	0.235	8842.84	2.62
5	2010-11 (P)	15,97,800	27,18,100	235.60	0.404	93208	2.53

Table 4 : Number of animals slaughter in Gujarat state (2010-11).

Sr No	District	No of slaughter houses	No of animals of different species slaughtered				Total animals slaughtered	% Goat slaughtered of total animals
			Goat	Sheep	Buffalo	Other s		
1	Patan	1	1190	1124	---	---	2314	51.43
2	Gandhinagar	1	1842	1458	---	---	3300	55.82
3	Ahmedabad	2	5717	4743	1397	2789	14446	39.58
4	Vadodara	1	4754	7427	---	----	12181	39.03
5	Surat	2	86413	37077	5385	----	128875	67.05
6	Jamnagar	1	9663	9213	---	---	18876	51.19
7	Bharuch	3	6694	4406	779	---	11879	56.35
8	Dahod	1	2991	382	1662	---	5035	59.40
9	Kheda	4	1234	886	348	---	2468	50.00
10	Valsad	2	10419	1442	---	---	11861	87.84
11	All other districts	20	---	---	5814	---	5814	00.00
Total		38	130717	68158	15385	2789	217049	60.23