

# Characterization of the Watani or "Native" goat in Parwan Provenance

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## Abstract

*The purpose of this study was to evaluate and describes some of the morphological traits of the watani or native goat, which accounts for approximately 75% of the goat population in Afghanistan. For the collection of the data direct observation, questioner and interview with Farmers were used. Data Analyzed by IBM SPSS Statistics version20 software. The watani goat, although smaller than the exotic breeds, is hardier and exhibits seasonal breeding characteristics. They able to survive under harsh conditions. Very little, however, is known about the genetic material within the local eco-type. Information on their origin, morphological traits, handling and production systems are presented. Data were collected from 650 goats of all category of ages and genus in five districts. These included age, weight, heart girth, body length, head length, nick length, pelvic width and height at withers, as well as qualitative characters such as sex, color, and the presence or absence of horns, wattles and beard. The analysis showed the average body weight of does to be 36.93 kg, while the average body weight of kids at birth and 9 months of age was 2.3 kg and 21.12 kg., respectively. Prolificacy was 92.86% in mature does. Measurements of linear body traits were: wither height 64.34 cm, body length 61.36 cm, hearth girth 71.43 cm, chest width 71.43 cm, head length 20.36, nick length 19.82 and pelvic width 14.21 cm. Among dairy production traits, following results were obtained: lactation length 3-4 months, milk yield per day 0.80 liter.*

**Key words:** goat, morphological traits, qualitative characters, dairy production traits.

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## Introduction

Afghanistan is classified as having a large number of agro-ecological zones, given as high as 28 by some sources, although there is a lack of precise definition (UNDP, 1993). This variation puts the livestock into an important integral position in the small farm production systems of Afghan agriculture. Before war, livestock products were estimated to comprise 18 percent of the country's domestic products and 27 percent of national flock belonged to nomads and semi-nomadic pastoralists (Barker, 1997).

Livestock raising is common all across the country and it is an integral part of various farming systems in Afghanistan. Major livestock products are wool, hide, skin, fat, mutton, milk and milk products (cream, butter, curd, yogurt, ghee, and cheese). The livestock and livestock products jointly constitute major income source for most livestock holders. In some areas, sheep are fattened and slaughtered in early winter for dried mutton (Khan et al., 1999).

Livestock Products are a major source of income for the farmers and a good food source for the families of farmers also, animals are the only source of income for nomads million (Central statistical office., 2017).

Base on report by FAO.(2003) there were a total of 3.72 million cattle, 8.77 million sheep, 7.28 million goats, 1.59 million donkeys, 0.18 million camels, 0.14 million horses and 12.16 million poultry.

Based on reports by provinces agricultural departments, number of cattle's are 5.2 million, sheep 13.3 million, goats 7.4 millions and chickens 11.9 million ( Central statistical office., 2017).

Goat Breeds are include Asmari, Kabuli, Kandahari or Qandahari, Kashmiri, Markhor (exotic breed), Rahnama, Tajiki, Vatani or Watani. Asmari goats are large in size. Their typical characteristics are small head, long neck, body color white with neck and black shoulders. The Kabuli, Kandahari and Tajiki breeds are jointly termed as Vatani or Watani meaning native. These small sized goats are black in color and represent more than 75 percent of the Afghan goat population. They grow an undercoat popularly known as 'Cashmere' which has a market in Herat, otherwise the goat hairs are locally used in making ropes (Khan et al.,1999).

Generally information on them is scanty and evaluations are not available. Apart from this information apparently no study has been undertaken to describe the characteristics and performances of goats in the different areas of Afghanistan in detail.

Goats are usually kept in combined flocks, where sheep are the dominating species, but some areas goats makeup of the majority in the flocks. McArthur et al. (1979) and Glatzer and Casimir (1983) studied large numbers of flocks in western Afghanistan and found an almost equal number of sheep and goats in the flocks and similar conditions are reported from Kapisa (ASA, 1993). Small ruminant flocks with a large proportion or majority of goats were seen during missions in different provinces and in very different areas. Goats utilize alternative feed sources and are used to lead the combined flocks. According to information from farmers in the visited areas goats have higher twinning rates but also higher abortion rates and losses after birth than sheep. Glatzer and Casimir (1983) found a lower reproductive rate for goats than sheep (71.5% v. 81.4%).

In addition to meat, goats produce milk, hair and wool. They are normally shorn once a year in late spring and the hair is used for making ropes or the black tents of the Kuchis. Some interviewed farmers in Balkh stated that they never shear their goats. McArthur et al. (1979) found 0.5 Kg of hair production per breeding female and Glazer and Casimir (1983) of 0.78 Kg per goat. A farmer from Aqcha (jawzjan) reported average hair production of 0.75 Kg, but this included also the cashmere component of the fleeces. In Afghanistan down fiber are separated from the hair after shearing by hand, either by the flock owners or by workers employed by the wool dealers. The cashmere fiber is mainly collected in the western and northwestern areas. It is also grown by goats raised in the high Pamir areas ( Shahrani, 1979), but no information is available but its utilization. Demirenen (1958) found a fiber fineness of 16.6mm and fiber length of 68mm which is within the trade preference ( MILLAR, 1986). Zafar.(2006).

Sheep and goats are generally kept together and mainly thrive on grazing for most part of the year. The common flock size is approximately 25 animals, except Karakuls. The migration of sheep and goat flocks from lowlands to highlands starts during the early summer, where they stay till the end of summer season and are brought back to the lowlands in autumn. The young stock and adult sheep and goats are kept in separate flocks and the rams/bucks are not allowed with the adult females during this period. The females are exposed to breeding males during the months of October and November. The rams and bucks are kept in small numbers and one male has to cover about 100 females, however, under the better breeding management conditions one ram is kept for 20-30 ewes. (Khan et al.,1999).

During winter and under severe weather conditions, sheep and goats are provided shelter and are offered concentrates, roughages, hay, straw and tree leaves of various types. Concentrate supplementation is provided for about two months in variable quantities, with preference to weak and advance pregnant animals.

Shearing of sheep is done twice a year and that of goats once a year. Males not kept for breeding are castrated before attaining 12 months age. Mutton from sheep is liked more as compared to goats. For this reason, fattening of young lambs is practiced in Afghanistan, however, at the domestic level only. Nomads, contribute significantly in the production of sheep and goats for Afghanistan. (Khan et al.,1999).

## Materials and methods

The study was carried out in the five districts of Parwan province they includes Kohisafy, Bagram, salang, shenwary and charikar. In this study 150 female goats, 100 male goats, 100 male kids at birth, 100 female kids at birth, 100 male 9 month of age, and 100 female 9 months of age selected randomly and Multi stage random method was used. For the collection of the data direct observation, questioner and interview with Farmers were used.

Each holding was identified on the questionnaire by the farmer's name and address. This as well as information on the husbandry system employed was entered on the questionnaire by the researchers. The use of housing for the goats was also recorded.

Body weight was measured in mature goats. Body weight of kids was measured at birth and at the age of 9 months. Prolificacy was measured in mature does.

Among dairy production traits, following traits have been analyzed: the milk yield per day and lactation duration (in months).

Data collected on each goat included the following parameters:

1. Sex
2. Age (in months)
3. Weight (Kg)
4. Heart Girth - the circumference of the chest measured over back, shoulder and fore flank.
5. Height at withers - the distance from the shoulder blades to the ground.
6. Body length - the distance from the shoulder blades to the hip bone.
7. Length of neck.
8. Coat color
11. Presence or absence of horns.
12. Presence or absence of beard
13. Presence or absence of wattles.

Statistical Analyzed of the collected data were done by the IBM SPSS Statistics version20 software. Obtained results were presented using descriptive statistics.

## Result and Discussion

The survey also revealed that the "Native" goat has a wide range of coat colors. The coat colors of goat in all districts are same were either most of the animals are black in color. The survey revealed that 73.4 percent of the animals are in Black, 13.8% in black and wite, 5.4% in Red and black, 2% in red and black, 2% in gray and 0.5% in red color.

According to report of Khan et al. (1999) Vatani or Watani meaning native. These small sized goats are black in color and represent more than 75 percent of the Afghan goat population. The compression of results showed there is no more deferent.

Some quantitative characteristics of the Watani or "Native" goat are presented in Tables 1 and 2 for males and females. Ten continuous morphological traits are used to describe the goats. Mean values, Range and their standard Deviation are given. Of the ten variables measured for the males (Table 1) and for females (Table 2).

Table 1. Mean body measurements for Male Watani or "Native" goats

Descriptive Statistics				
Traits	N	Range	Mean	Std. Deviation
Age(year)	100	1-4	1.4	0.96
Chest girth (cm)	100	44-74	66.50	13.33
Body length (cm)	100	49-76	62.50	7.63
Chest width (cm)	100	13-18	15.20	2.5
Pelvic width (cm)	100	8-17	14.20	2.6
Neck length(cm)	100	16-21	18.30	1.8
Head length(cm)	100	17-23	19.40	2.31
Head width(cm)	100	9-14	11.00	1.49
Horn length (cm)	100	5-22	17.20	4.98
Ear length (cm)	100	4-19	14.5	4.83
Wither Height(cm)	100	55-72	65.60	7.29

Table 2. Mean body measurements for female Watani or "Native" goats

Descriptive Statistics				
Traits	N	Range	Mean	Std. Deviation
Age(year)	150	1-7	3.24	1.31
Chest girth (cm)	150	36-94	71.64	8.51
Body length (cm)	150	42-78	61.36	6.66
Chest width (cm)	150	10-18	17.43	2
Pelvic width (cm)	150	9-16	14.21	1.90
Neck length(cm)	150	13-28	19.82	2.78
Head length(cm)	150	11-25	20.38	2.07
Head width(cm)	150	8-20	12.12	1.68
Horn length (cm)	150	3-36	17.78	5.53
Ear length (cm)	150	3-27	16.65	4.27
Wither Height(cm)	150	61-88	64,34	6.91

Morphological measurements have been traditionally used for characterisation of different breeds of goats by many researchers. Furthermore, external body measurements have been studied to predict body weight, as well as to predict body characteristics (Khan et al., 20016; Hassen et al., 20016; )

In attempting to characterize the "Native" goat a profile can be formed from the data in the above figures. Using this along with Devendra's (1970) classification of goats on the basis of height at withers (>65 cm for large breeds, 51-65 cm for small and 50 cm for dwarf) we can describe the watani or "Native" goat as a small type, having horns and beard with mean body measurements for mature males and females as shown in Table 1 and 2.

Descriptive statistics for live weight of does, buck, birth weight of kids, body weight of kids at the age of 9 months and prolificacy of mature does are set out in Table 3.

Table 3. Mean body Weight for mature, kids at the birth and 9 months age, male, female Watani or "Native" goats

Descriptive Statistics				
Traits	N	Range	Mean	Std. Deviation
Body weight of does (kg)	150	15-65	36.93	6.56
Body weight of buck (Kg)	100	22-40	32.50	7.33
Body weight of female kids at birth (kg)	100	1.90-3	2.34	.29
Body weight of male kids at birth (kg)	100	2-3	2.50	.30
Body weight of female kids at 9 months of age (kg)	100	14-36	21.12	6.35
Body weight of male kids at 9 months of age (kg)	100	15-36	23	6.49

Body weight is an important economic trait in the selection of animals and the main purpose of animal breeding practices is to improve traits of economic value.

Live weight of adult male and female goats, as presented in Table 3, was 36.93 kg and 32.50 respectively. Zafar (2006) reported average live weight of mature male goat is 70-90 Kg that of female is 55-65 Kg in Asmari goat raised in kuner province, which is incompatibility with present study because watani breed is smaller than Asmari breed. The Cheeli goat is another breed that raised in Afghanistan, The body weight of mature male goat is 70-90 Kg that of female is 55-65 Kg that is also heavier than watani breed.

Average body weights at birth and at 9 months of age male and female, kids, were 2.50 kg, 2.34 kg, 23 kg and 21.12 kg, respectively. Zafar (2006) found body weights of Asmari kids to be: 4-5 Kg birth day at birth day. Kume and Hajno (2010) also reported higher birth weights (3.11-3.15 kg), compared to the present study.

Qualitative variables measured for watani goats. These include the frequency of horns, beard and wattles. Beards were present in 93.1% of goats. The presence of horns was observed in 95.6% of goats. Wattles occurred in only 0.5% of goats studied. Among dairy production traits, following results were obtained: lactation length 3-4 months, milk yield per day 0.80 liters.

### Conclusion

The "Native" goat although small in comparison to the exotic breeds have their place in contributing to the genetic pool because of their hardiness and ability to survive and produce under low input conditions. Watani goats contain higher percentage between Afghan goats breeds and they have high percentage kidding rate. Unfortunately for improvements of breeding and selection have not worked

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