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Morphological Study Of Giant Angora Rabbits At PARC AZRC Dera Ismail Khan Khyber Pakhtunkhwa, Pakistan

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Abstract

Rabbits are one of the most important animals that mostly used in various laboratories to perform various experiments all over the world. These are either kept in animal facilities for scientific purposes or sold out for commercial purposes. The various breeds of rabbits have been reared in the globe but Angora rabbit is best breed among them. The current study was conducted to check the morphology of angora rabbits. The study showed that the average mean body length, heart girth, tail length, ear length, ear width, head length, head width, neck length and height of male angora rabbits was 12.24±1.09, 13.24±1.06, 3.31±0.52, 4.00±0.25, 2.70±0.28, 5.09±0.81, 2.98±0.41, 2.78±0.89 and 11.87±1.10 inches, respectively. The average mean body length, heart girth, tail length, ear length, ear width, head length, head width, neck length and height of female angora rabbits was 11.99±1.08, 12.76±1.32, 3.38±0.63, 3.76±0.30, 2.64±0.56, 5.00±0.63, 2.77±0.51, 2.74±0.49 and 11.40±2.00 inches, respectively. The colour of coat was white while eyes of the rabbits were pink in colour. This is the first study related to morphology of angora rabbits in the country which helped to document the morphological characters of Angora rabbits in study area. This study will be proved basic step in determining the morphology and biology of angora rabbits in the country.

Keywords: Biology, Morphology, Angora rabbits, Colour, Dera Ismail Khan, Pakistan

Introduction

The majority of the world's population is nourished by food produced at large and small scale even on tiny farms. The demand of food is becoming high and production is reducing with increasing human population (McIntire et al., 1992). The food production is not enough high to full fill the requirement of

increasing population all over the world especially Pakistan. This has necessitated the quest for alternate protein sources that are inexpensive, widely available, and do not compete with man's dietary consumption (Akinmutimi, 2007). The high prolificacy, strong genetic selection potential, high feed conversion efficiency, economic space usage and fast development rate (Lebas, 1997; Hassan et al., 2012) of the rabbit's make them a viable option based on these features.

Rabbit breeds can be distinguished morphologically by their body size, coat colour and shape (Lebas et al., 1997). American Rabbit Breeders Association (2010) identified 47 unique rabbit breeds based on this classification, of which only a few are retained in Kenya. Californian, New Zealand white, Chinchilla, Dutch, Checkered giant, French Lop, Flemish giant, Rex and Angora are the most common rabbit breeds in Kenya (McGregor et al., 1992; Risam et al., 2005). Rabbits are fast-growing animals with a high reproductive potential. Rabbits produce a lot of delicious meat for domestic use. Rabbit meat is high in protein (about 22%), low in fat (4%), and cholesterol (5%), and hence has health-promoting qualities (Olmez and Dellal, 2002). Angora rabbit fibre has a lot of potential as a source of fibre. Textiles having unique characteristics. It is exceedingly fine, soft, and supple. antistatic, glossy, and long-lasting, while providing superior performance due to the insulation and warmer sensation of the clothing, in the core of the fibre, there is a medulla structure (Oglakcioglu et al., 2009; Franck, 2001; Ossard et al., 1995) Angora fibre is primarily manufactured in China today, however, small amounts are also grown in South America and Korea as well as Europe. Fashion trends have a significant impact on the economy (Schlink and Liu, 2003).

The demand of angora fiber since last ten years is increased all over the world, as a result, angora has always commanded a high price. As a result, the purpose of this research is to evaluate the morphometric properties of Angora rabbits.

Material and methods

Study area and rearing of Angora rabbits

The research was conducted at PARC Arid Zone Research Centre, DIKhan Rabbit Farm in Khyber Pakhtunkhwa, Pakistan. Angora rabbits were reared on berseem up to 2nd generations. All protective measures were maintained during the whole study period.

Morphometric characters

Twenty male and twenty female rabbits of the same age and same body weight were selected from PARC Arid Zone Research Centre, DIKhan farm. Using a measuring tape, morphometric measurements were taken such as body length, heart girth, height, tail length, ear length, ear width, neck length, head length and fore head width.

Results and discussion

Rabbits are nocturnal animals belong to leporids family which live in burrows. These are mostly come out at evening time while remained in burrows at morning time. An average body weight of adult male and female rabbits is 2-5 and 2-6 kg, respectively. The ears of the rabbits act as thermoregulatory organ which regulate the heat. It has been reported that adult rabbits can consume about 5-100g food per day while drink 5-10 ml water per day. The total life span of rabbit is 7-12 years which also depend upon

breeds and availability of food. The life period of rabbits can affect by various factors such as availability of food, diseases, habitat loss and environmental changes. The coat and forehead of rabbits were all white in colour while eyes were pink in colour. Redmond (2009) had reported variations in colour of domesticated rabbits. The variations can occur according to breeds and climatic conditions (Sanford, 1996; Akugre, 2010).

The average mean body length, heart girth, tail length, ear length, ear width, head length, head width, neck length and height of male angora rabbits was 12.24±1.09, 13.24±1.06, 3.31±0.52, 4.00±0.25, 2.70±0.28, 5.09±0.81, 2.98±0.41, 2.78±0.89 and 11.87±1.10 inches, respectively. The description of morphometric characters of male rabbits are shown in table 1.

The various researchers had conducted studies on morphology of angora rabbits in many countries except Pakistan. The morphology of animal is very important, provides basic knowledge about tested species and evaluate the breeds in specific region (Khalid, 2011). The information about morphology or biology of species are prove helpful for their selection in specific area or country in the world.

Table 1. Morphometric characters of male Angora rabbits

Parameters	Mean±SE	Range (Inches)
Body length	12.24±1.09	10.90-15.05
Heart girth	13.24±1.06	10.50-14.10
Tail length	3.31±0.52	3.31-4.50
Ear length	4.00±0.25	4.00-5.00
Ear width	2.70±0.28	2.70-3.00
Head length	5.09±0.81	5.09-6.10
Head width	2.98±0.41	2.98-3.75
Neck length	2.78±0.89	2.78-3.05
Height	11.87±1.10	10.75-15.40

The average mean body length, heart girth, tail length, ear length, ear width, head length, head width, neck length and height of female angora rabbits was 11.99±1.08, 12.76±1.32, 3.38±0.63, 3.76±0.30, 2.64±0.56, 5.00±0.63, 2.77±0.51, 2.74±0.49 and 11.40±2.00 inches, respectively as shown in table 2.

Table 2. Morphometric characters of female Angora rabbits

Parameters	Mean±SE	Range (Inches)
Body length	11.99±1.08	10.00-14.00
Heart girth	12.76±1.32	11.05-13.05
Tail length	3.38±0.63	3.50-4.50
Ear length	3.76±0.30	3.25-4.75
Ear width	2.64±0.56	2.76-3.75
Head length	5.00±0.63	5.00-6.00

Head width	2.77±0.51	2.77-3.25
Neck length	2.74±0.49	2.74-3.00
Height	11.40±2.00	10.70-15.10

The great variations or difference in morphology of rabbits were reported by various researchers, studies conducted them in different countries. These variations may be due to geographical variations (Hassan et al., 2012; Karima et al., 2002). The study concluded that Angora rabbits are raised for a variety of economic uses, including the production of wool and fur even they play a vital role in research. The average mean heart girth and body length was higher in male Angora rabbits than female rabbits while height of the male body was lower than female.

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