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Determination of the Morphological Characteristics of Scandaroon Pigeon Grown in the Central of Hatay Province *(Columba livia domestica)*

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Abstract: Scandaroon pigeon know at the southeast and Hatay region in Turkey and is commonly raised in this area. This genotypewhich has different color varieties, has been cultivated by local people for centuries.This research was carried out in order to determine some morphological characteristics of scandaroon pigeons grown in the central of Hatay province.The study was conducted on a total of 224 pigeons (122 males and 102 females) reared in six different enterprises in 2016. Some morphological characteristics of pigeons were examined as coat color, marking, eye color, the number of wing and tail flight feathers. However, as a body morphometric characteristics; body weigth and length, trunk length, wing span and length, tail length, thoracic perimeter, chest width and depth, head length and width, beak length and depth, tarsus diameter were measured. In conclusion, in this study body weight and body morphological characteristics were found to be high in males and gender and age were effective on body characteristics

Keywords: Body morphometric characteristics, Morphological characteristics, Scandaroon pigeon

Introduction

The Scandaroon pigeon is a native genotype belonging to the subspecies of Columba livia domestica. Especially in the southeast region of Turkey it is growing. Baghdadi was also recognized by name in Turkey, which is an animal native to Iraq. This genotype found in the Hatay region is known as a squadron flyer pigeon (Işcen, Y., 2017).

These pigeons, with curved beak structure, have red colored feet. The nostrils are marked, the eyes are usually red, and the eyes are lint-free. In pure animals there is a backward color flow on the beak and it is called a mustache. Lay your neck and legs. It has been reported that live weights vary between 400-600g (Anonymous, 2016; Anonymous, 2018a).

This genotype with color varieties such as white, black, yellow, red and sky blue has a higher live weight than other pigeon breeds (Figure 1., 2., 3., 4., 5.).

The colors we call gray or ash become black belt. The so-called twin colored ones are made up of Red, Black, Yellow, and Gray colors on White. They are more popular than plain colors. At the bottom of their eyes is a patch (mustache) extending towards the gag. The Scandaroon pigeon is in the class of hard-haired pigeons and fast flying, the body and wings are strong (Anonymous, 2018b ; Anonymous, 2017).

Atasoy et al., (2013), cited the importance of locating breeds of locality in determining morphological characteristics of indigenous genotypes. This finding is important because it made with traditional methods of

breeding pigeons in Turkey. Studies should be carried out to identify race characteristics by applying scientific methods and to determine race standards. For this reason, this study was carried out in order to determine the morphological characteristics of Iskenderun pigeons, which were extensively cultivated in the Hatay region.

Method

The research was carried out on 224 Scandaroon pigeons in total consisting of 122 males and 102 females in 6 separate enterprises in 2016 in Hatay. Operations are carried out by the same person in May, and measurements are taken according to age groups from animals. Pigeon ages were determined as 6-12, 13-36 and 37 months, using the business records.

The live weight was determined with a precision scale sensitive to 0.01 g.
Body length (between upper beak tip and longest tail wrist) is measured by a ruler.
Wing span (between the longest flying planes of the two wings) and its length (between the shoulder joint and the longest flying wing), trunk length (between two thighs and pgostyle end), tail length (between tail tail root and longest tail tail), thoracic perimeter (measured along the extreme end of the chest strap from under the two wings) was measured with the measurement strip.
The width of the chest (between the right and left inguinal cavity) and the depth (between the two chest vertebrae and the extreme end of the chest), head length (between upper beak tip and condyles occipitalus), head width (between the extreme points on the left and right of the head restraint), the length of the beak (between the upper beaked beak feather) and the depth (between the top and bottom of the middle part of the beak) and the diameter of the metatarsus (from the middle of the metatarsus bone) was measured by digital calipers. (Atasoy et.al., 2013; Özbaşer et al., 2016).

In the study pigeons with 5 color varieties were identified as white, black, red, partly yellow and sky blue according to feather colors (Figure 1., 2., 3., 4., 5). As a sign, the backward color flow was determined on the beak.

The general features of the Scandaroon pigeons are summarized as follows;

Size and carrying: Strong very high and proud bearing.

Head: long and narrow, without any angle or flat, arched, while the back of the head is well rounded and passing into the neck.

Eye: Large and fiery, dark colour in Whites and Pied, and in all other colors yellow-range.

Cere: bright red.

Beak: Very powerful, upper and lower mandibles of some thickness, well closed, and stumpy at the point, proceeding in shape to line of head, with forehead, skull and back part of the head forming more than a pure semi circle. Color, whitish-rose, except in blue, blue chequered, self-coloured birds, whish may have a light horn-coloured beak.

Neck: long and bent, sharply curved. Thin at shoulders and breast slightly widening out.

Breast: Broad and strongly extended.

Back: Broad and somewhat arched, running powerfully to the tail.

Wing: Medium length, wide across and deep, lying very loose on body, sloping pointed to the rear resting on tail. Short primary flights.

Tail: short and well closed.

Lengs: Strong, featherless, red in colour (Anonymous, 2018a).
The morphological characteristics (body color, eye color, number of wing and number of wing and number of winged call) were expressed by the percentages of the statistical evaluation. The importance of the difference

between age and gender groups in the evaluation of body measurements was done by the General Linear Model method. Tukey test was applied to compare important groups (Dawson and Trapp, 2001).

Figure 1. White

Figure 2. Black

Figure 3. Yellow

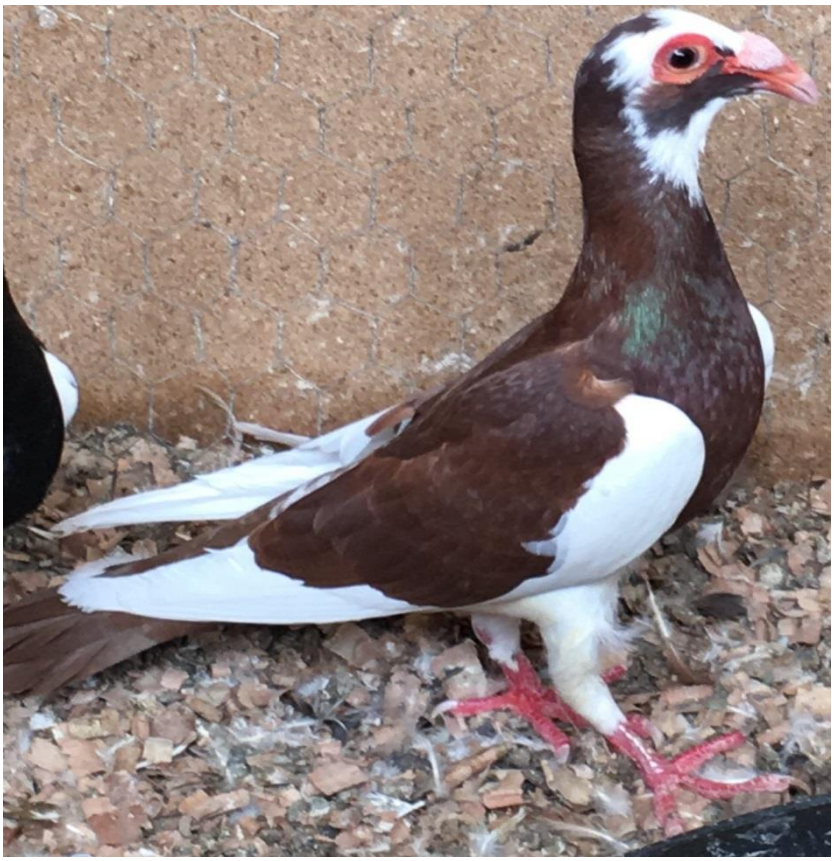

Figure 4. Red

Figure 5. Sky blue

Results and Discussion

Specified morphological characteristics are shown in Tables 1. and 2., and data on body characteristics are shown in Tables 3., 4., 5. and 6. In the head part, 13.53% of the marking, which is called as mustache and extending from the under eye to the gagged eye, was detected. The rate of those without sightseeing is 86.47%. The low rate of this structure, which is an important breeding feature in Scandaroon pigeons, can be explained by the fact that the genetic structure of the animal is not pure.

Table 1. Some morphological features in scandaroon pigeons

Color	Rate (%)	Marking	Rate (%)	Eye color	Rate (%)
White	15.21	Non marking	86.47	Red	95.17
Black	20.13	Mustache	13.53	Orange	4.83
Red	29.32				
Yellow	23.78				
Sky blue	11.56				
Total	100		100		100

Table 2. Some morphological features in scandaroon pigeons

Number of wing feather	Rate (%)	Number of tail feather	Rate (%)
12	89.26	12	53.78
13	7.54	13	23.17
14	3.2	11	11.73
		14	7.14
		10	4.18
Total	100		100

The effect of gender factor on all values except for beak length and shin diameter was found to be significant. Numbers were found high in male (P<0,001, P<0,01, P<0,05) . Numbers were found high in male.

The statistically significant difference between age groups in terms of body weight, body length, trunk length, chest circumference, width and depth, head length and width and beak length indicates that the development of Scandaroon pigeons continues.

Atasoy et al (2013) obtained different results in terms of these properties. It is reported that these researchers did not have the age effect on these traits in the study of the tumbler pigeons.

This result can be explained by the fact that the Scandaroon pigeons were able to grow longer due to their squadron type pigeon group and having a larger body structure.

However, the effect of age and gender on the depth of the beak was found to be significant (P<0,05), while age and gender were not affected by the length of the beak.

On the other hand, it has been determined that the effect of age on wing span and length and tail length is important (P<0,01, P<0,05, P<0,01). This situation has a positive result for the ability to stay constant and stable.

While the effect of age and gender on the diameter of the shin is insignificant, a high value is obtained for this characteristic again in male.

Table 3. Body morphometric characteristics in scandaroon pigeons

	N	Live weigth (g)	Body length (cm)	Trunk length (cm)	Wing span (cm)
P		**	*	*	**
Age (month)					
6-12	78	452.25±8.07c	39.79±0.34b	14.80±0.27b	70.36±0.21c
13-36	65	495.12±5.31b	40.54±0.21ab	15.50±0.13ab	71.41±0.34b
37 and over	81	520.24±6.50a	41.10±0.38a	16.11±0.18a	73.54±0.28a
P		**	*	*	**
Gender					
F	102	457.59±6.41b	39.50±0.55b	14.22±0.19b	70.15±0.28b
M	122	516.84±7.73a	41.13±0.38a	15.89±0.14a	72.64±0.33a
Total	224				
Average		496.21±6.08	40.31±0.48	15.05±0.16	71.40±0.27

- : Non significant, *: P<0.05, **: P<0.01, ***: P<0.001
a,b.c : there is statistical variability between figures shown in different letters in the same column

Table 4. Body morphometric characteristics in scandaroon pigeons

	N	Wing length (cm)	Tail length (cm)	Thoracic perimeter (cm)	Chest width (mm)
P		*	**	*	*
Age (month)					
6-12	78	31.47±0.18b	13.32±0.11b	31.11±0.13b	55.30±0.45b
13-36	65	32.26±0.14ab	13.55±0.19ab	31.28±0.06b	56.51±0.43a
37 and over	81	32.64±0.15a	14.41±.013a	32.42±0.14a	56.23±0.38a
P		**	*	*	*
Gender					
F	102	31.13±0.25b	13.26±0.17b	31.18±0.15b	55.17±0.39b
M	122	32.51±0.18a	14.31±0.13a	32.33±0.23a	56.30±0.48a
Total	224				
Average		31.82±0.18	13.78±0.14	31.75±0.29	55.75±0.36

- : Non significant, *: P<0.05, **: P<0.01, ***: P<0.001
a,b.c : there is statistical variability between figures shown in different letters in the same column

Table 5. Body morphometric characteristics in scandaroon pigeons

	N	Chest depth (mm)	Head length (mm)	Head width (mm)
P		*	**	*
Age (month)				
6-12	78	68.16±0.42b	65.31±0.27c	27.54±0.15c
13-36	65	69.28±0.55a	66.47±0.38b	28.63±0.27b
37 and over	81	69.47±0.44a	68.32±0.28a	29.42±0.29a
P		*	***	*
Gender				
F	102	68.72±0.43b	65.27±0.28b	27.56±0.17b
M	122	69.25±0.49a	67.39±0.13a	28.31±0.13a
Total	224			
Average		68.99±0.38	66.33±0.18	27.93±0.18

- : Non significant, *: P<0.05, **: P<0.01, ***: P<0.001
a,b.c : there is statistical variability between figures shown in different letters in the same column

Table 6. Body morphometric characteristics in scandaroon pigeons

	N	Beak length (mm)	Beak depth (mm)	Tarsus diameter (mm)
P		-	*	-
Age (month)				
6-12	78	31.45±0.31	7.13±0.04b	3.42±0.09
13-36	65	31.57±0.29	8.67±0.05a	3.58±0.04
37 and over	81	31.45±0.13	8.34±0.03a	3.24±0.05
P		-	*	-
Gender				
F	102	31.21±0.27	7.83±0.04b	3.45±0.05
M	122	31.87±0.33	8.21±0.02a	3.53±0.08
Total	224			
Average		31.54±0.18	8.02±0.02	3.49±0.06

- : Non significant, *: P<0.05, **: P<0.01, ***: P<0.001
a,b.c : there is statistical variability between figures shown in different letters in the same column

Conclusion

In the study done body measurements were generally found to be high in men. However, it was found that body characteristics were influenced by sex and age P <0.001, P <0.01, P <0.05.

In traditional breeder conditions, Scandaroon pigeons differ in morphological and body characteristics. This is due to the random breeding of animals and the constant change of genetic structure, depending on the inadequate knowledge of breeders. It can be determined by the subjective assessment that the animals in the hands of the growers are not pure from morphological means.

Despite the fact that the qualitative properties are determined by a few genes and therefore the desired morphological properties are relatively more accurate, it is not possible to express this in the same manner for quantitative characters. Pure breeding is important for this accurate reflection of race characteristics.

The basic rule of pure breeding is to keep the individuals who hold the gene and gene combinations that determine the characteristics of the race belonging to the breed high in the structure. The determination of race characteristics at the molecular level (DNA analysis) and the selection methods and applications accordingly will increase the accuracy.

Recommendations

The Scandaroon pigeons need to be purified in terms of their genetic structure. For this purpose, it is essential to establish production stations in scientific sense. It is the universities and research institutes that will best accomplish this. Course and seminars can also be organized in order to increase the knowledge of traditional farmers.

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References

Anonymous (2016, March 14). Doğan güvercin. http//doganguvercin.com/bagdatirk.htm
Anonymous (2017, March, 12). http://www.guvercin.info/irklar_iskenderun.php
Anonymous (2018a, May 20). The Scandaroon, Part 2. http://www.aviculture-europe.nl/nummers/09E05.pdf
Anonymous (2018b, May 16). http://www.kusvekuscudunyasi.com/arsiv/haber_detay.asp?haberID=778
Atasoy, F., Erdem, E., & Hacan, Ö.G. (2013). Determination of Morphological Characteristics of Tumbler Pigeons in Province of Ankara (Columba livia domestica). *Ankara Univ. Vet. Fak. Derg, 60, 135-143*
Dawson,B. and Trapp, R. 2001. Basicand clinical biostatistics. Lange Medical Books/McGraw-Hill, New York
İşçen, Y. (2017, January 10). http://evcilguvercin.blogspot.com.tr/p/guvercin-yetistiriciligi-1.html format.
Özbaşer, F.T., Atasoy, F., Erdem, E., & Güngör, İ. (2016). Some Morphological Characteristics Squadron Flyer Pigeons (Columba livia domestica). *Ankara Univ. Vet. Fak. Derg, 63, 171-177*

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