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Araştırma Makalesi

Broilerlerde Karkas Özellikleri ve İç Organ Ağırlıkları Üzerine Günlük Yaştaki Civciv Ağırlığı, Parmak Uzunluğu, İncik Uzunluğu ve Civciv Uzunluğunun Etkileri

Turgay ŞENGÜL[1]*, Ömer ŞENGÜL[2]

[1]Bingöl University, Faculty of Agriculture, Dept. of Anim. Sci., Bingöl, Türkiye
[2]Bursa Uludağ University, Faculty of Agriculture, Dept. of Anim. Sci., Bursa, Türkiye

*Sorumlu Yazar: tsengul2001@yahoo.com

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ÖZ

Bu çalışma, günlük yaştaki etlik piliçlere ait bazı vücut ölçütlerinin (civciv ağırlığı, parmak uzunluğu, incik uzunluğu, civciv uzunluğu) karkas özellikleri ve yenilebilir iç organ ağırlıkları üzerine etkilerini araştırmak amacıyla yürütülmüştür. Çalışmada, 192 adet günlük yaşta erkek broiler civcivi kullanılmıştır. Etlik piliçler önce muamele gruplarına göre (civciv ağırlığı, parmak uzunluğu, incik uzunluğu, civciv uzunluğu) 4 gruba ayrılmış olup, daha sonra her bir grup ağırlık (ağır-hafif) veya uzunluk (uzun-kısa) durumlarına göre ikişer gruba ayrılmıştır. Vücut ölçütlerinden; civciv ağırlığı ≥47.7 ve <47.7 g, parmak uzunluğu ≥2.01 ve <2.01 cm, incik uzunluğu ≥2.9 ve <2.9 cm ve civciv uzunluğu ≥18.3 ve <18.3 cm olarak planlanmıştır. 42 günlük besi dönemi sonunda vücut ağırlığı bakımından ağır ve hafif gruplar arasında, karkas ağırlığı, but ağırlığı, göğüs ağırlığı ve abdominal yağ ağırlıkları arasında önemli (P<0.05) farklılıklar gözlenmiştir. Parmak uzunluğu, incik uzunluğu ve vücut uzunluğu bakımından ise, uzun ve kısa gruplar arasında, karkas ağırlığı, but ağırlığı, göğüs ağırlığı, taşlık ağırlığı, karaciğer ağırlığı, kalp ağırlığı ve abdominal yağ ağırlıkları arasında önemli (P<0.05, P<0.01) farklılıklar saptanmıştır. Ayrıca, karkas özellikleri arasında önemli ve pozitif korelasyonlar bulunmuştur.

Anahtar kelimeler: Broiler, civciv ağırlığı, civciv uzunluğu, karkas özellikleri, iç organ, korelasyon

Effect of Day-Age Chick Weight, Finger Length, Shank Length and Chick Length on Carcass Characteristics and Internal Organ Weights of Broiler Chickens

ABSTRACT

This study was carried out to investigate the effects of some body measurements (chick weight, finger length, shank length, chick length) of day-old broiler chicks on carcass characteristics and edible yields. In the study, 192 day-old male broiler chicks were used. Broiler chicks were first divided into 4 groups according to treatment groups (chick weight, finger length, shank length, chick length), and then each group was divided into two groups according to weight (heavy-light) or length (long-short). From body criteria; chick weight ≥47.7 and <47.7 g, finger length ≥2.01 and <2.01 cm, shank length ≥2.9 and <2.9 cm, and chick length ≥18.3 and <18.3 cm is planned as. At the end of the 42-day fattening period, in different body weight groups (heavy and light groups) significant (P<0.05) differences were observed between carcass weights, thigh weights, breast weights and abdominal fat weights. In terms of finger length, shank length and body length (long and short groups) there were significant (P<0.05, P<0.01) differences between carcass weights, thigh weights, breast weights, gizzard weights, liver weights, heart weights and abdominal fat weights. In addition, significant and positive correlations were found between carcass characteristics.

Keywords: Broiler chick, body weight, body length, carcass characteristics, internal organs, correlation.

INTRODUCTION

One of the important factors affecting profitability in chicken meat production is chick quality (Tona et al., 2005). It is known that chick quality significantly affects fattening performance and carcass yield in broilers (İpek and Sözcü, 2013; Zamani et al., 2017). In a production made with the use of poor quality chicks, the losses in the fattening period can reach a level that cannot be compensated (Kamanlı and Durmuş, 2010). For this reason, the necessity of producing quality chicks for hatcheries has come to the fore, as producers desire higher slaughter weight, carcass weight and carcass yield at the end of the production process. For broilers producing broilers, in addition to high hatchability, it is important that the survivability of the chicks and broiler performance meet the expectations of the producer.

Many factors are effective on chick quality, and chick quality also changes depending on the effect levels of these factors. Quality in chicks is measured by some quantitative and qualitative scoring methods. Factors such as the age of the breeding flock, the storage conditions of the hatching eggs, the genotype and hatchability affect the chick quality and therefore the growth rate of broiler chickens (Kamanlı and Durmuş, 2014; Alshelmani et al., 2016).

If the factors affecting the chick quality are taken into account, the chick quality increases. Genetic factors affecting the quality are factors such as the shell thickness of the breeding eggs, the white height and the resistance of the egg shell to breakage. The chick quality of the genotypes and lines with high egg quality is also good. The age of the breeding flock affects chick quality and hatchability. If the breeder flocks are older, especially depending on the storage conditions, a decrease in egg white height, an increase in embryo mortality and poor quality chick rate are observed. Depending on the storage period of eggs belonging to this type of flock, a decrease in Haugh unit and a decrease in chick quality are observed. Lower hatching power and chick quality are obtained from very large or small hatching eggs compared to normal ones. Thin-shelled, cracked or dirty eggs are not recommended to be used as hatching because they affect chick quality (Kamanlı and Durmuş, 2010).

Studies show that chick size is associated with broiler performance. In order to achieve the desired body weight in chicks, it is important to pay attention to the optimum weight of hatching eggs. As the egg weight increases, the chick weight also increases. Ould-Ali and Schulte-Drüggelte (2016), Patbandha et al. (2017) and Narinç and Aydemir (2021) reported that body measurements such as chick weight and chick length are among the important quality parameters. Reijrink and Molenaar (2006) reported that there is a positive correlation between 7th day live weight and chick length in broiler chickens. Ketels (2011) reported that chick length is not only associated with broiler performance, but also with the development of internal organs. He explained that heart and liver weights showed significant differences in long and short chicks. He also stated that it is possible to calculate flock uniformity by measuring the length of day-old chick. Petek et al., (2008) found a significant correlation between body length at hatching and live weight in broiler chicks and reported that body length could be used instead of body weight to determine growth potential in day-old chicks. Meijerhof (2005) reported that daily chick weight is often considered an important indicator in determining chick quality in broilers, and measuring chick weight is both easy and objective. He also emphasized that measuring chick length or shank length is a more practical way to determine chick quality. In addition, he explained that the correlation of day-old chick length with broiler performance at 6 weeks was higher than its relationship with day-old chick weight.

Kamanlı and Durmuş, (2010) reported that determining chick quality by looking at one-day-old live weight may not give accurate results for the following periods. In poultry, hatching weight is an important criterion used to measure and determine hatchability (Hill, 2001). Incubation quality is important as it provides information about embryo development and subsequent performance during the incubation period (Molenaar et al., 2008). Some studies showed that 7-day-old body weight has a greater effect on performance in the following weeks rather than starting weight. Willemsen et al., (2008) reported that the relationship between live weight and carcass weight at 7-10 days of age was higher than the relationship between hatching weight and carcass weight.

In this study, it was aimed to determine the effects of some body criteria such as chick weight, shank length, finger length and chick length on carcass characteristics in day-old broiler chickens.

MATERIAL and METHODS

A total of 192 Ross 308 hybrid male chicks were used in the study. The experiment was carried out for 42 days in a windowed coop. The chicks were housed in multi-level broiler cages for the first 2 weeks and were transferred to the litter system at the end of the 2nd week. The feeds used during the fattening were obtained from a commercial enterprise. Broilers, 1-14. They were fed with feeds containing 24% crude protein and 3000

kcal/kg ME between days, and 22% crude protein and 3200 kcal/kg ME from the 15th day to slaughter. The feed and water needs of the animals were supplied as ad libitum during the fattening period. The chicks were illuminated 24 hours a day for the first 3 days. The lighting program was applied as 23 hours of light and 1 hour of darkness from the third day to the cutting. The temperature was kept between 32-33 °C in the first week, and from the second week it was reduced by 3 °C every week to 18-20 °C towards slaughter.

Chicks were divided into 4 different groups at the age of one day according to 4 different body criteria (body weight, finger length, shank length, chick length). In order to form the body weight group, 48 chicks selected randomly were divided into two groups, 24 heavy and 24 light, according to their weight. 24 chicks in the heavy chick group were randomly divided into 3 and three replication groups of 8 were formed (14 bird/m2). The same method was applied for the light group, and a light group with 3 replications was formed. In order to determine the length of the chick, 48 chicks were stretched on the ruler, respectively, and the part of the beak and middle finger of the right foot to the beginning of the nail was measured. The chicks, whose measurements were completed, were formed in the same way as the body weight group, this time as long and short groups, with the same number of repetitions. In order to form the shank length group, the distance between the elbow of the right leg and the starting point of the ankle of 48 chicks was measured with the help of electronic caliper, and long and short groups were formed. In order to form the toe length groups, long and short groups were formed by measuring the middle finger of the right foot of 48 chicks to the point of the nail start with an electronic caliper.

At the end of the fattening period, all broilers were slaughtered and carcass traits were measured. In the current study, the carcass characteristics of broilers slaughtered at the end of the 42-day fattening period; carcass weight, carcass percentage, thigh weight, breast weight, wing weight, ridge weight, neck weight and edible internal organ weights were determined. The study was designed as randomized experimental design. Data of the examined features were analyzed in the SPSS 22.0 statistical package program. T-test was performed to determine the differences between groups.

RESULTS and DISCUSSION

Carcass characteristics

The averages of carcass weight, carcass yield, thigh weight, breast weight, wing weight, ridge weight, neck weight, edible internal organ (gizzard, liver and heart) weights and abdominal fat weights of broiler chickens at the end of the 6-week fattening period are given in Table 1.

Differences between the mean weights of thigh weight, breast weight and abdominal fat weight between the heavy and light groups were significant ($P<0.05$). Values related to the carcass characteristics were affected by the live weights of day-old chicks. The thigh weight was found to be higher in the heavy group, and this value was 509.5 g in the heavy group and 487.5 g in the light group. In terms of breast weight, a higher value (574.5 g) was observed in the light group, while a lower value (545.5 g) was measured in the heavy group. In terms of abdominal fat content, the heavy group had a higher value (30.0 g), while the light group had a significantly lower value (26.0 g).

In terms of finger length, the differences between the long and short groups were significant in terms of carcass weight ($P<0.01$), thigh weight, breast weight, gizzard weight and abdominal fat weight ($P<0.05$). The group with long fingers (1876.5 g) had a higher carcass weight (1575.5 g) than the group with short fingers ($P<0.01$). Similarly, higher values (502.5 and 452.5 g) were obtained in terms of thigh weight than the long-fingered group ($P<0.05$). While the breast weight was 568.5 g in the long-fingered group, it was 547.5 g in the short-fingered group ($P<0.05$). There was also a significant difference between finger length groups in terms of gizzard weight ($P<0.05$) and the long finger group had higher gizzard weight (39.5 g). In terms of abdominal fat level, the heavy group had a higher value (28.5 g), while the light group had a significantly lower value (25.5 g).

Table 1. Means and standard errors of carcass characteristics and internal organ weights of broiler chickens belonging to experimental groups.

	Body weight (g)			Finger length (cm)			Shank length (cm)			Body length (cm)		
	Heavy	Light		Long	Short		Long	Short		Long	Short	
Characteristics	≥ 47.7	< 47.7	P	≥ 2.01	< 2.01	P	≥ 2.9	< 2.9	P	≥ 2.9	< 2.9	P
Final weight (g)	2269.0±64.1a	2063.5±97.1b	**	2177.5±43.7a	2305.0±53.4b	*	2224.5±52.0a	2290.5±61.3a	NS	1945.5±66.6a	2113.5±46.4b	*
Carcass weight (g)	1707.5±36.5	1709.5±38.2	NS	1876.5±41.2[a]	1575.5±39.4[b]	**	1632.0±38.5[a]	1701.5±39.2[b]	*	1432.5±41.2	1548.0±35.2	*
Carcass perc. (%)	74 ± 0.6	74 ± 0.7	NS	69 ± 0.6	69 ± 0.7	NS	70 ± 0.6	69 ± 0.7	NS	71 ± 0.6	72 ± 0.7	NS
Thigh weight (g)	509.5 ± 0.1[a]	487.5 ± 0.4[b]	*	502.5 ± 0.4[a]	452.5 ± 0.3[b]	*	477.5 ± 0.2[b]	510.0 ± 0.4[a]	*	428.5 ± 0.2[b]	469.5 ± 0.3[a]	*
Thigh ratio (%)	29.5 ± 0.1	28.5 ± 0.3	NS	29.5 ± 0.6	29.5 ± 0.7	NS	29.5 ± 0.5	30.5 ± 0.1	NS	29.0 ± 0.3	28.5 ± 0.8	NS
Breast weight (g)	545.5 ± 0.5[b]	574.5 ± 0.5[a]	*	568.5 ± 0.3[a]	547.5 ± 0.1[b]	*	520.5 ± 0.1[b]	557.5 ± 0.1[a]	*	470.5 ± 0.1[a]	525.5 ± 0.2[b]	**
Breast ratio (%)	31.5 ± 0.2	33.5 ± 0.2	NS	30.5 ± 0.6	34.5 ± 0.5	NS	31.5 ± 0.4	32.5 ± 0.2	NS	32.5 ± 0.9	33.5 ± 0.5	NS
Wing weight (g)	187.5 ± 0.2	187.5 ± 0.5	NS	182.5 ± 0.4	180.0 ± 0.4	NS	188.0 ± 0.4	184.5 ± 0.7	NS	160.5 ± 0.5	177.5 ± 0.3	NS
Ridge weight (g)	359.0 ± 0.3	360.5 ± 0.8	NS	328.5 ± 0.3	311.5 ± 0.7	NS	345.5 ± 0.6	350.5 ± 0.4	NS	284.5 ± 0.6	294.0 ± 0.3	NS
Neck weight (g)	105.5 ± 0.2	99.5 ± 0.1	NS	95.5 ± 0.3	83.5 ± 0.25	NS	100.5 ± 0.4	99.5 ± 0.2	NS	88.5 ± 0.9	82.5 ± 0.1	NS
Heart weight (g)	15.0 ± 0.4	15.5 ± 0.0	NS	14.5 ± 0.2	14.5 ± 0.1	NS	14.5 ± 0.5	15.5 ± 0.9	NS	13.5 ± 0.3[b]	15.0 ± 0.2[a]	*
Liver weight (g)	51.5 ± 0.5	50.5 ± 0.3	NS	50.5 ± 0.3	54.0 ± 0.4	NS	53.5 ± 0.3	52.0 ± 0.2	NS	47.5 ± 0.7[b]	52.0 ± 0.1[a]	*
Gizzard weight (g)	40.5 ± 0.2	39.5 ± 0.5	NS	39.5 ± 0.2[a]	34.5 ± 0.2[b]	*	35.5 ± 0.2[b]	41.5 ± 0.4[a]	*	33.5 ± 0.1	34.5 ± 0.1	NS
Abdominal fat (g)	30.0 ± 0.2[a]	26.0 ± 0.3[b]	*	28.5 ± 0.4[a]	25.5 ± 0.5[b]	*	27.5 ± 0.4[b]	30.5 ± 0.9[a]	*	25.5 ± 0.4[a]	23.5 ± 0.4[b]	*

[a, b]: Differences between means with different superscripts in the same row are significant. *: P<0.05, **: P<0.01, NS: Non-significant.

The differences between the mean carcass weight, thigh weight, breast weight and gizzard weight and abdominal fat weights of the groups with long and short shank length were found significant (P<0.05). These properties were significantly (P<0.05) affected by the shank length. Higher carcass weight (1701.5 and 1632.0 g) was observed in the group with short shank length. The thigh weight was similarly higher (510.0 and 477.5 g) in the short shank group. Breast weight was found to be higher (557.5 and 520.5 g) in the group with short shanks than in the group with long shanks. In terms of both gizzard weight and abdominal fat weight, a higher value was obtained in the short shank group compared to the other group (P<0.05).

The differences between the averages obtained from different body length groups in day-old chicks in terms of characteristics such as carcass weight, thigh weight, breast weight (P<0.01), heart weight, liver weight and abdominal fat weight were significant (P<0.05). These carcass characteristics were significantly affected by body length. Carcass weight was higher (1548.0 and 1432.5 g) in the short-bodied group. Again, similar results were obtained in terms of leg weight and the shorter body group had a higher value. Breast weight was found to be higher with 525.5 g in the short group, while this value was measured as 470.5 g in the tall group (P<0.01). In terms of both heart weight and liver weight, higher values were obtained in the short group compared to the other group (P<0.05). In terms of abdominal fat level, the tall group had a higher (25.5 g) value, while the short group had a significantly lower (23.5 g) value.

Correlations between carcass characteristics

The correlations of body weight and some carcass characteristics of the experimental groups were calculated and given on the basis of groups. The correlations of the group with heavy body weight are shown in Table 2.

Table 2. Correlation coefficients of the group with high body weight**.**

Traits	**BW**	**CW**	**CP**	**TW**	**BRW**	**AF**
BW	1	0.47*	0.63*	0.25	0.32*	0.96*
CW	0.47*	1	0.26	0.36**	0.12**	0.41
CP	0.63*	0.26	1	0.45	0.11	0.41
TW	0.25	0.36**	0.45	1	0.19**	0.19
BRW	0.32*	0.12**	0.11	0.19**	1	0.41
AF	0.96*	0.41	0.41	0.19	0.41	1

*: P<0.05, **: P<0.01. BW: Body weight, CW: Carcass weight, CP: Carcass percentage, TW: Thigh weight, BRW: Breast weight, AF: Abdominal fat.

When Table 2 is examined, it is seen that there are significant correlations between some features of the heavy group. There is a positive and significant relationship between live weight and carcass weight, carcass percentage, breast weight, thigh weight and abdominal fat weight, between carcass weight and thigh weight and breast weight, between leg weight and carcass weight and breast weight (P<0.05, P<0.01) relationships were determined. The correlations of the light weight group are given in Table 3.

Table 3. Correlation coefficients of the group with light body weight.

Traits	BW	CW	CP	TW	BRW	AF
BW	1	0.13	0.45	0.16	0.19	0.43
CW	0.13	1	0.12	-0.09**	0.14	0.33
CP	0.45	0.12	1	0.17	0.16	0.19
TW	0.16	-0.09**	0.17	1	0.64	0.14
BRW	0.19	0.14	0.16	0.64	1	0.17
AF	0.43	0.33	0.19	0.14	0.17	1

**: P<0.01. BW: Body weight, CW: Carcass weight, CP: Carcass percentage, TW: Thigh weight, BRW: Breast weight, AF: Abdominal fat.

In Table 3, it is seen that there are significant correlations between some characteristics of the light group. There were positive and significant (P<0.01) relationships between carcass weight and thigh weight, and between carcass weight and thigh weight. Correlations of the long-fingered group are given in Table 4.

Table 4. Correlation coefficients of the long-fingered group.

Traits	BW	CW	CP	TW	BRW	AF
BW	1	0.05	0.16	0.41*	0.63	0.14
CW	0.05*	1	0.45	0.15**	0.41**	0.16*
CP	0.16	0.45	1	0.23	0.14	0.46
TW	0.41*	0.15**	0.23	1	0.15**	0.15
BRW	0.63	0.41**	0.14	0.15**	1	0.17**
AF	0.14	0.16*	0.46	0.15	0.17**	1

* : P<0.05, **: P<0.01. BW: Body weight, CW: Carcass weight, CP: Carcass percentage, TW: Thigh weight, BRW: Breast weight, AF: Abdominal fat.

It is seen in Table 4, it is seen that there are significant correlations between some traits of the long-fingered group. Positive and significant (P<0.05, P<0.01) correlations were found between body weight and carcass weight, between carcass weight and thigh weight, breast weight and abdominal fat weight, and between thigh weight and breast weight. Correlations of the short-fingered group are given in Table 5.

Table 5. Correlation coefficients of the short-fingered group.

Traits	BW	CW	CP	TW	BRW	AF
BW	1	0.15	0.64	0.45*	0.41*	0.44
CW	0.15	1	0.12	0.13**	0.44*	0.19
CP	0.64	0.12	1	0.41	0.13	0.41
TW	0.45*	0.13**	0.41	1	0.41	0.12
BRW	0.41*	0.44*	0.13	0.41	1	0.41
AF	0.44	0.19	0.41	0.12	0.41	1

*: P<0.05, **: P<0.01. BW: Body weight, CW: Carcass weight, CP: Carcass percentage, TW: Thigh weight, BRW: Breast weight, AF: Abdominal fat.

In Table 5, it is seen that there are significant correlations between some features of the short-fingered group. There were positive and significant (P<0.05, P<0.01) correlations between thigh weight and breast weight, and between thigh weight and breast weight. Correlations of the long shank group are given in Table 6.

Table 6. Correlation coefficients of the long shank group.

Traits	BW	CW	CP	TW	BRW	AF
BW	1	0.19*	0.23	0.18*	0.49*	0.41
CW	0.19*	1	0.14	0.46	0.74	0.81
CP	0.23	0.14	1	0.41	0.13	0.23
TW	0.18*	0.46	0.41	1	0.19	0.86
BRW	0.49*	0.74	0.13	0.19	1	0.14
AF	0.41	0.821	0.23	0.86	0.14	1

*: P<0.05. BW: Body weight, CW: Carcass weight, CP: Carcass percentage, TW: Thigh weight, BRW: Breast weight, AF: Abdominal fat.

When Table 6 is examined, it is seen that there are significant correlations between some characteristics of the long shank group. It was observed that there were positive and significant (P<0.05) relationships between body weight and carcass weight, thigh weight and breast weight. Correlation coefficients of the short shank group are given in Table 7.

Table 7. Correlation coefficients of the short-shank group.

Traits	BW	CW	CP	TW	BRW	AF
BW	1	0.13	0.19	0.16	0.22	0.11
CW	0.13	1	0.19	0.36**	0.41**	0.14
CP	0.19	0.19	1	0.53	0.71	0.91
TW	0.16	0.36**	0.53	1	0.49**	0.34
BRW	0.22	0.41**	0.71	0.49**	1	0.17
AF	0.11	0.14	0.91	0.34	0.17	1

**: P<0.01. BW: Body weight, CW: Carcass weight, CP: Carcass percentage, TW: Thigh weight, BRW: Breast weight, AF: Abdominal fat.

In Table 7, it is seen that there are significant correlations between some characteristics of the short shank group. Positive and significant (P<0.01) correlations were found between carcass weight and thigh weight and breast weight, and between breast weight and thigh weight. Correlations of the tall group are given in Table 8.

Table 8. Correlation coefficients of the tall group.

Traits	BW	CW	CP	TW	BRW	AF
BW	1	0.15	0.16	0.55*	0.23*	0.41
CW	0.15	1	0.19	0.44	0.32*	0.79
CP	0.16	0.19	1	0.41	0.39	0.73
TW	0.55*	0.44	0.41	1	0.41	0.13*
BRW	0.23*	0.32*	0.39	0.41	1	017
AF	0.41	0.79	0.73	0.13*	0.17	1

**: P<0.05. BW: Body weight, CW: Carcass weight, CP: Carcass percentage, TW: Thigh weight, BRW: Breast weight, AF: Abdominal fat.

It is seen in Table 9, it is seen that there are significant correlations between some features of the long-fingered group. There were positive and significant (P<0.05) relationships between body weight and carcass weight, thigh weight, breast weight.

Table 9. Correlation coefficients of the short group.

Traits	BW	CW	CP	TW	BRW	AF
BW	1	0.13*	0.63	0.46*	0.74*	0.11
CW	0.13*	1	0.41	0.33	0.41	0.12
CP	0.63	0.41	1	0.11	0.14	0.74
TW	0.46*	0.33	0.11	1	0.14	0.13
BRW	0.74*	0.41	0.14	0.14	1	0.14
AF	0.11	0.12	0.74	0.13	0.14	1

*: P<0.05. BW: Body weight, CW: Carcass weight, CP: Carcass percentage, TW: Thigh weight, BRW: Breast weight, AF: Abdominal fat.

SONUÇ ve ÖNERİLER

It was determined that the selection of chicks according to their body weight on the first day affected the thigh weight, breast weight and abdominal fat weight significantly (P<0.05) at the end of the 6-week period. In terms of thigh weight, a higher value was obtained in the heavy group, while the breast weight was higher in the light group. Abdominal fat weight was also affected by daily body weight and was higher in the heavy group. Differences between other averages of carcass characteristics were found to be insignificant. The results obtained were similar to studies showing that chicks with high daily body weight gain more thigh weight in the following periods (Hill, 2001).

In the study, it was determined that the differences between carcass weight, thigh weight, breast weight, gizzard weight and abdominal fat weight of the animals belonging to the finger length groups were significant (P<0.01, P<0.05). The fact that day-old chicks have different finger lengths affects their carcass characteristics. In terms of features such as carcass weight, leg weight, breast weight, gizzard weight and

abdominal fat weight, higher values were determined than the group with long fingers. It can be said that finger length can be an important criterion in the selection of day-old chicks.

In the study, it was observed that the selection of day-old broiler chicks according to shank length affected some important carcass characteristics. According to the results obtained, properties such as carcass weight, leg weight, breast weight, gizzard weight and abdominal fat weight were significantly (P<0.05) affected by shank length. These characteristics were found to be higher in chickens in the group with short shank length. According to this result, the short shank length in day-old chicks can be seen as an advantage. It can be said that shank length can be a criterion in terms of chick quality in selection in broiler production. The results were in agreement with the findings reported by Abiola, (2008).

The effect of chick length, which is another body criterion, on some carcass characteristics of broilers was found to be significant (P<0.05, P<0.01). The attributes affected by this criterion were carcass weight, thigh weight, breast weight, heart weight, liver weight, and abdominal fat weight. In the group with short chick length, the values of carcass weight, leg weight, breast weight, heart weight and liver weight, except for abdominal fat weight, were higher. Abdominal fat weight was measured more in the group with tall chicks. Other carcass characteristics examined in the study were not significantly affected by chick size. According to the results obtained, it can be said that body length is an important criterion affecting the carcass characteristics in day-old chicks.

Considering the correlations between some characteristics of the groups, significant (P<0.05, P<0.01) and positive correlations were found between carcass weight, thigh weight, breast weight, heart, liver and abdominal fat for body weight, finger length, shank length and body length groups.

It was observed that 4 different body criteria such as chick weight, finger length, shank length and chick length of the broiler chicks examined in this study were effective on the carcass characteristics of the chickens slaughtered after the 6-week fattening period. The body criteria in question will facilitate the selection of chicks and the determination of chick quality. However, it can be said that the studies on this subject are still insufficient and it is necessary to carry out different studies.

Çıkar Çatışması Beyanı: Makale yazarları aralarında herhangi bir çıkar çatışması olmadığını beyan ederler.

Araştırmacıların Katkı Oranı Beyan Özeti: Yazarlar makaleye eşit oranda katkı sağlamış olduklarını beyan ederler.

YAZAR ORCID NUMARALARI

Turgay ŞENGÜL http://orcid.org/0000-0002-2640-149X

Ömer ŞENGÜL http://orcid.org/0000-0001-5078-2002

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