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Research article

A Research on Fattening and Slaughter Performance of Pekin Duck[a]

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Pekin duck, fattening, slaughtering

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Abstract. The aim of this study was to determine the fattening and slaughter performance of Pekin ducks. For this purpose, a total of eighteen male ducklings were fed during 8 weeks in the first stage. 2433g average live weight (ALW) with 2,4 feed conversion ratio (FCR) were obtained at the end of fattening period. Average live weight, carcass yield, carcass weight, heart - liver weight and gizzard weight were measured as 2480 g, 65.3%, 1620 g, 124 g and 74 g respectively in slaughtered five male ducks.

Pekin Ördeklerinde Besi ve Kesim Performansı Üzerine Bir Araştırma

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Özet. Bu çalışmanın amacı Pekin ördeklerinde besi ve kesim performanslarının belirlenmesidir. Besi performansını belirlemek için palazlar 8 hafta süreyle besiye alınmıştır. Besi dönemi sonunda 2,4 yemden değerlendirme oranı (YDO) ile 2433 g ortalama canlı ağırlık (OCA) elde edilmiştir. Kesime alınan ortalama 2480 g kesim ağırlığına sahip erkek ördeklerde %65.3 randımanla 1620 g karkas ağırlığı, 124 g yürek ve karaciğer ağırlığı ile 74 g taşlık ağırlığı elde edilmiştir.

[a]This article was compiled from Master Thesis carried out in consultation Prof. Dr. Rüveyde AKBAY.

1. INTRODUCTION

Pekin Ducks are used generally for meat production. In the meat-type duck breeding, fattening period that is considered 7 or 8 weeks and divided to starting, growing and finishing periods in different length. Generally, starter feed for 0-2nd weeks, grower-finisher feed for 2-7th weeks in 7-week programs or starter feed (17.6% CP and 2420 kcal kg^{-1} ME) for 0-3rd weeks, grower-finisher feed (14.8% CP and 2432 kcal kg^{-1} ME) for 3-8th in 8-week programs are used (Knizetova *et al.*, 1991). In detailed programs, starter feed for 0-3rd weeks, grower feed for 3-5th weeks and finisher feed for 5-8th weeks are used. In addition, feeding programs are implemented that is used grower finisher feed for all of the 8-week fattening period (Dogan 1987).

For male and female pullet respectively can be reached to 3279±65 g and 3110±126 g average live weight (ALW) with 8432±417 g and 8657±366 by good management and feeding conditions at the end of 7 weeks (Leeson and Summers 1985). In 8-weeks programs, it can be reached to 2.0-2.5 kg ALW in normal conditions (Sainsbury 1980; Dogan 1987) or 2910±144 g ALW for male and 2774±196 g ALW for female (Knizetova *et al.*, 1991). It can be reached to 2480.44±24.99 g ALW in male 2353.6±25.69 g ALW for female with a single feed (Testik *et al.*, 1987). Onbasilar *et al.* (2013) reported that slaughter weights of female and male Pekin ducks at 6 week of age were 2768 and 3035g, respectively. Erdem *et al.* (2015a) showed that body weight gain of male and female ducks from 1 to 42 d of age were 3162 and 2942 g, respectively.
The aim of this study is to determine fattening performance of Pekin ducks in government farms from Turkey.

2. MATERIAL AND METHODS

A total of 18 male ducklings were used in this study. They were numbered with wing plate and were reared in battery type brooding units of The Univesity of Ankara Faculty of Agriculture Department of Zootechnics hatchery plant during first week, then they were transferred to trial house of 20 squaremeters for rearing together. In brooder unit and trial house, pan feeders and drinkers used, 16L:8D photoperiod were applied. Feed and water was given ad libitum. Fattening duration was 56 days.

In 0-3 weeks of the first period, duck starter feed containing 20.38% crude protein (CP) and 2832 kcal kg^{-1} metabolic energy (ME), in 4-8 weeks of the second period, duck grower-finisher feed containing 17.01% CP and 2836 kcal kg^{-1} ME were given to these poults. Feed consumption and feed conversion ratios in fattening period were determined weekly. Liwe weihgts and live weight gains were determined by separately every week. To calculate carcass yield and edible internal organs weights (heart, liver and gizzard), five male poults were randomly selected at the end of the fattening period and they were slaughtered.

Data were analyzed by using Khi-Square Goodness of Fit test in SPSS 22.0 software (SPSS 2013) in this research it was planned to determine and growth performance of Pekin Ducks.150 hatching eggs were used in Experiment B to determine the effects of egg cleaning. These eggs were divided into 3 equal groups as clean, dirty, and washed. Clean eggs (control group) without any treatment, dirty eggs (treatment 1) after dry cleaning with a fine abrasive paper (sandpaper tree number 0), washed eggs (treatment 2) after washing with plain water containing 1000 ppm disinfectant was placed into incubator. Clean and dirty eggs were sprayed with warm water containing 100 ppm of disinfectant prior to being placed into the machine. In the eggs were placed in horizontal position to machine, 180 degree turning horizontally were made every day.

To determine the effects of spraying 120 eggs were used in Experiment C. In this purpose, These eggs were divided equally into 2 equal groups as spraying and non-spraying. Hatching eggs were sprayed 1 times a day with warm water temperature at 18-24 ºC from 9th to 24th days of the incubation (1 to 5 minutes) in spraying group. Egg trays wee taken out of the machine during the spraying process.

Data were analyzed by using Khi-Square Goodness of Fit test in SPSS 22.0 software (SPSS 2013).

3. RESULTS AND DISCUSSION

The results obtained in this research, which was performed to determine the performance of

fattening and slaughter in Pekin Ducks, were shown in Table 1 and 2.

Table 1. The fattening performance results of Pekin Ducks.
Çizelge 1. Pekin Ördeklerinde besi performansı sonuçları.

	Average live weight (ALW) (g)	**Average feed consumption (g bird^{-1})**	**Feed conversion ratios (FCR)**
1st day	38 ± 3		
1st week	171 ± 19	182	1.063
2ndweek	332 ± 40	366	1.102
3rd week	675 ± 46	888	1.316
4th week	1063 ± 35	1595	1.501
5th week	1402 ± 51	2366	1.688
6th week	1897 ± 70	3720	1.961
7th week	2097 ± 50	4421	2.108
8th week	2433 ± 77	5809	2.387

Average live weight (ALW) of 2450 g was obtained as a result of the 8-week growing period. The obtained results are similar to reported by Testik *et al.* (1987) and Knizetova *et al.* (1991), although they are lower than reported by Leeson and Summers (1985).

Table 2. The slaughter performance results of Pekin Ducks.
Çizelge 2. Pekin Ördeklerinde kesim performansı sonuçları.

	Weight (g)	**Yield (%)**
Slaughter	2480 ± 261	
Carcass	1620 ± 164	65.35 ±1.59
Heart + Liver	124 ± 18	4.99 ± 0.25
Gizzard	74 ± 12	2.97 ± 0.21

2480 g of average slaughter weight, 1620 g of carcass weight and 65.32% of carcass yield was obtained at the end of 8-week fattening period. In the edible internal organs, on average, a total of 124 g for heart-liver and 74 g for gizzard were reached. The obtained results are similar to reported values by Pingel (1985). Erisir *et al.* (2009) reported that slaughter weight of Pekin ducks at 8 week of age was 2704 g and cold carcass percentage was 71.6%. Erdem *et al.* (2015b) showed that slaughter weight of male Pekin ducks reared under 16L:8D at 6 week of age was 2682 g and hot carcass percentage was 72.03%.

4. CONCLUSION

When chain feeders and nipple drinkers are used, it is possible to obtain lower feed consumption and feed conversiton ratio (FCR) values. However, in order to obtain higher yields, it is necessary to remember that the genetic capacity is also important besides the optimal feeding conditions. Higher ALW values can be achieved by better breeding and growing conditions. In addition, mortality not observed during the 8-week fattening period and livability have been identified as 100%. However, it is necessary to note that the number of animals is less.

It is necessary to improve the genetic capacity of ducks for higher carcass yield, heart-liver and gizzard weight. Moreover, especially the use of special feed for ducks is necessary to increase the weight of edible internal organs. Such as Turkey, for a country with a very favorable environment for ducks and other climatic conditions, this issue is more important than the other developing countries.

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