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Carcass Traits of Early and Late Feathering Baladi as Compared with Early Feathering Leghorn

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ABSTRACT. A total of 240 late (LB) and early (EB) feathering Saudi Arabia Baladi chicks were used in this study to investigate the effect of feathering genotype on carcass traits. Similar number of Leghorn chicks (EL) were used for comparison. All chicks were subjected to conventional management practices. Five birds of each sex and genotypic group were randomly selected and slaughtered at 4, 8, 12, 16 and 20 weeks of age for carcass studies. Traits were calculated in g/kg of plant weight.

Age had a significant ($P \leq .05$) effect on all studied traits and the effects of genotype, sex and interactions were also significant upon most studied traits. LB had higher ($P \leq .05$) abdominal fat and heart relative weights than their EB peers, whereas EL showed lower liver, heart and higher ($P \leq .05$) plant weight and gizzard values compared with Baladi. Males had lower liver, gizzard and higher ($P \leq .05$) plant weight and heart values compared with females. EB females had lower ($P \leq .05$) eviscerated carcass relative weight than EB and LB males whereas LB females had similar value. Generally, plant weight, eviscerated carcass and abdominal fat relative weights increased whereas those of liver, heart and gizzard decreased ($P \leq .05$) with age. EB showed higher feather and lower ($P \leq .05$) head and leg relative weights than LB but EL had the highest ($P \leq .05$) feather weight value. Males had also higher blood, head and leg and lower ($P \leq .05$) intestinal relative weights than females. With regard to the effect of age, blood and feather relative weights significantly increased at early and decreased ($P \leq .05$) at late age periods, whereas those of head, leg and intestinal started to decrease at early age period. The results revealed that sex-linked feathering genes have no or little effect upon most studied traits. However sex-linked late feathering gene seems to enhance abdominal fat deposition and to reduce feather growth. The

results also show that most of the early feathering Baladi carcass traits tended to be more similar to those of Leghorn compared with their late feathering peers.

The discovery of sex-linked genes for rate of feathering and subsequent experiments involving them led to the commercially advantageous use of early and late phenotypes to reduce incidence of barebacked broiler and simplify sexing of chicks at hatch. However few reports have been available concerning the influence of those genes on carcass traits. Goodman and Muir (1965) observed no significant difference between early and late feathering birds in eviscerated carcass weight as a percentage of live body weight or its variability. Merkley and Lowe (1988) however, reported higher plant weight, eviscerated carcass, abdominal fat and liver weights for homozygous late feathering broiler males compared with their late feathering heterozygous or early feathering peers. The same authors also observed similar carcass and abdominal fat weights as a percentage of plant weight for both genotypes. On the other hand, Katanbaf *et al.* (1989) observed no significant difference between the two types with regard to liver, gizzard, pancereas, intestines, oviduct, ovary and carcass ash relative weights but found significantly higher fat lipid percent for late feathering birds. The same authors also reported smaller relative heart weight for early feathering chicks at 43 days of age. Similar results were found by O'Sullivan *et al.* (1991) with regard to fat lipid percent but abdominal fat calculated as grams of tissue per 100 g body weight was not found by the same authors to differ significantly between the two types. Katanbaf *et al.* (1989) also reported similar shank length and relative shank weight for early feathering females compared to their late feathering counterparts. Similarly, Dunnington and Siegel (1986) observed no significant differences between the two types for absolute feather weight and as a percentage of body weight at 147 and 196 days of age. Saudi Arabian Baladi is a native breed and the informations on its carcass traits are almost lacking. The present study was therefore undertaken to assess in Saudi Arabian Baladi chicken, the effect of feathering genotype on carcass traits and to compare Baladi carcass traits with those of the well-known early feathering Leghorn Breed.

Materials and Methods

240 late (LB) and early (EB) feathering Saudi Arabian Baladi chicks were obtained from the Baladi population which has been randomely breed for several years in the experimental Poultry and Live-stock Farm of the Animal Production Department, College of Agriculture, King Saud University. Similar number of early feathering Leghorn (EL) breed under similar conditions for many years, were also used in this study for comparison. The chicks were grown in an electrically heated

battery up to 3 weeks of age, thereafter moved to floor pens in an environmentally controlled house where the maximum and minimum temperature ranged between 29-31 and 24-28 °C, respectively. The chicks were vaccinated against Newcastle disease using vaccines at 4 days (Hitchner B1) with reinforcing vaccinations at 25 days (Hitchner B1) and (Lasota) at 70 days of age. All the birds received conventional rations: starter from 1-6 week, grower from 7-11 week and developer from 11 upto 20 weeks of age (Table 1) NRC (1984). Feed and water were offered ad libitum and Light was maintained at 8h light: 16h dark from one week of age throughtout the experimental period. Five birds of each sex and genotypic group

Table 1. Commercial Diets Used in the Experiment[1]

Calculated composition	Starter	Grower	Developer
	1-6 wk	7-11 wk	12-20 wk
		g / kg	
Crude Protein	210.0	160.0	136.5
Crude Fat	30.0	30.0	30.0
Crude Fiber	35.0	45.0	55.0
Calcium	10.0	10.0	10.0
Phosphorus	6.50	6.00	6.00
Salt	4.50	4.00	3.50
Met. Energy MJ/K.G	12.27	12.15	11.27

[1]Manufactured by Grain Silos and Flour Mills Organization, Riyadh, Saudi Arabia.

were randomly selected and slaughtered at 4, 8, 12, 16 and 20 weeks of age for carcass studies. Prior to slaughtering feed was withdrawn for 12h to obtain plant weight (PW). Traits taken into consideration were: eviscerated carcass weight (EC), abdominal fat weight (AD), liver weight (LV), heart weight (HR), gizzard weight (GZ), blood weight (BL), feather weight (FR), head weight (HD), legs weight (LG), intestinal weight (IN). Carcass traits were calculated in g/kg of plant weight. Data collected were subjected to statistical analysis using SAS (1986) general linear model (GLM), KSU computer center, according to the following model:

$$Y_{ijkl} = M + G_i + A_j + S_k + (GA)_{ij} + (GS)_{ik} + (AS)_{jk} + (GAS)_{ijk} + e_{ijkl}$$

where:

Y_{ijkl} is the 1^{th} observation of i^{th} genotype, j^{th} age and k^{th} sex.
$(GA)_{ij}$ is the interaction between genotype and age.
$(GS)_{ik}$ is the interaction betwen genotype and sex.
$(AS)_{jk}$ is the interaction between age and sex.
$(GAS)_{ijk}$ is the interaction between genotype, age and sex.
e_{ijkl} is the random error associated with the Y_{ijkl} observation.

Results

Least square means and the effects of genotype (G), sex (S), age (A) and their interactions are presented in Tables 2 and 3.

Plant Weight (PW). Table 2 shows that PW was significantly ($P \leq .05$) higher for early feathering Leghorn compared with early and late feathering Baladi which has statistically similar PW. PW was significantly ($P \leq .05$) higher for males (M) than females (F) and increased significantly ($P \leq .05$) with age.

Eviscerated Carcass Weight (EC). As it is shown in Table 2 late and early feathering Baladi had statistically similar EC, whereas EC of early feathering Leghorn was significantly ($P \leq .05$) lower than that of late feathering Baladi and EC of males was similar to that of females. However EC increased significantly ($P \leq .05$) with age after 8 weeks. Fig. 1 also shows that early and late feathering Baladi males had significantly higher EC compared with early feathering Baladi females and Leghorn males.

Fat Weight (AD). Table 2 indicates that late feathering Baladi had significantly higher AD than early feathering Baladi and Leghorn which showed statisticaly similar values. Females and males did not differ significantly but females tended to have higher AD value. With respect to age, AD was significantly ($P \leq .05$) the highest at 20 weeks of age while there were no significant differences between the other age periods.

Liver Weight (LV). Table 2 shows that early feathering Leghorn had significantly ($P \leq .05$) the lowest value but LV was statistically similar for early and late feathering Baladi and males had significantly ($P \leq .05$) lower value than females. On the other hand, LV significantly ($P \leq .05$) decreased with age though 12 and 16 weeks of age values did not differ significantly.

Table 2. Effect of Genotype (G), Sex (S) and Age (A) in Weeks on Plant Weight (PW) Eviscerated Carcass (EC), Abdominal Fat (AD), Liver (LV), Heart (HR) and Gizzard (GZ) Weights of Baladi and Leghorn as g/kg of Plant Weight

Parameter	PW	EC	AD	LV	HR	GZ
	g	g/kg				
G	**	*	**	**	**	*
EB[1]	659.8[b]	649.3[ab]	4.8[b]	24.2[a]	5.2[b]	25.3[b]
LB[2]	638.4[b]	653.1[a]	8.1[a]	24.6[a]	6.3[a]	25.1[b]
EL[3]	748.9[a]	641.5[b]	4.9[b]	22.2[b]	4.7[c]	26.7[a]
Pooled SEM	±12.00	±2.96	±0.69	±0.45	±0.16	±0.60
S	**	N.S	N.S	**	*	**
F	572.6[b]	646.4	6.5	24.9[a]	5.2[b]	26.7[a]
M	792.2[a]	649.6	5.4	22.4[b]	5.6[a]	24.7[b]
Pooled SEM	±97.94	±2.42	±0.56	±0.37	±0.13	±0.49
A	**	**	**	**	**	**
4	164.0[e]	622.6[d]	6.4[b]	30.0[a]	7.4[a]	31.8[a]
8	417.7[d]	619.5[d]	4.3[b]	26.9[b]	5.8[b]	31.7[a]
12	757.7[c]	649.5[c]	6.52[b]	21.8[c]	4.8[c]	23.7[c]
16	930.1[b]	663.0[b]	3.7[b]	22.2[c]	4.2[d]	22.1[d]
20	1142.4[a]	685.3[a]	10.2[a]	17.4[d]	4.8[c]	19.3[c]
Pooled SEM	±15.498	±3.83	±0.89	±0.59	±0.20	±0.78
G * S	N.S	*	N.S	N.S	N.S	N.S
G * A	*	N.S	*	**	**	N.S
S * A	**	N.S	N.S	N.S	N.S	**
G * S * A	N.S	**	*	N.S	N.S	N.S

[a,b]Means within the same column with different superscripts differ significantly ($P < .05$).

* P(≤ .05). ** (P ≤ .01). N.S. Nonsignificant.

[1]Early feathering Baladi. [2]Late feathering Baladi. [3]Early feathering Leghorn.

Table 3. Effect of Feathering Genotype (G), Sex (S) and Age (A) in Weeks on Bladi (BL_4), Feather (FR), Head (HD), Feet (LG) and Intestinal (IN) Weights of Baladi and Leghorn as g/kg of Plant Weight[1]

Parameter	BL	FR	HD	LG	IN
			g/kg		
G	N.S.	**	**	**	N.S.
EB[1]	47.9	73.1^{c}	49.0^{b}	42.4^{b}	70.2
LB[2]	47.3	63.2^{b}	52.5^{a}	45.2^{a}	71.2
EL[3]	48.4	81.0^{a}	49.7^{b}	42.6^{b}	68.1
Pooled SEM	±0.89	±1.46	±0.64	±0.37	±1.13
S	**	N.S.	**	**	**
F	46.0^{b}	74.0	48.0^{b}	42.1^{b}	72.8^{a}
M	49.7^{a}	70.9	53.0^{a}	44.7^{a}	66.8^{b}
Pooled SEM	±0.73	±1.19	±0.53	±0.30	±0.93
A	**	**	**	**	**
4	37.1^{d}	48.5^{d}	71.5^{a}	51.5^{a}	90.6^{a}
8	49.9^{b}	64.7^{c}	53.8^{b}	48.7^{b}	82.9^{b}
12	59.1^{a}	85.4^{a}	42.7^{c}	42.2^{c}	59.7^{c}
16	46.9^{c}	85.7^{a}	42.7^{c}	38.8^{d}	63.7^{c}
20	46.3^{c}	77.9^{b}	41.9^{c}	35.7^{e}	52.2^{d}
Pooled SEM	±1.15	±1.89	±0.84	±0.48	±1.47
G * S	N.S.	*	**	N.S.	*
G * A	* *	**	**	**	**
S * A	* *	**	**	N.S.	**
G * S * A	* *	**	N.S.	*	*

^{a,b}Means within the same column with different superscripts differ significantly ($P < .05$).

* P(≤ .05). ** (P ≤ .01). N.S. Nonsignificant.

[1]Given in Table 2.

[2]Early feathering Baladi. [3]Late feathering Baladi. [4]Early feathering Leghorn.

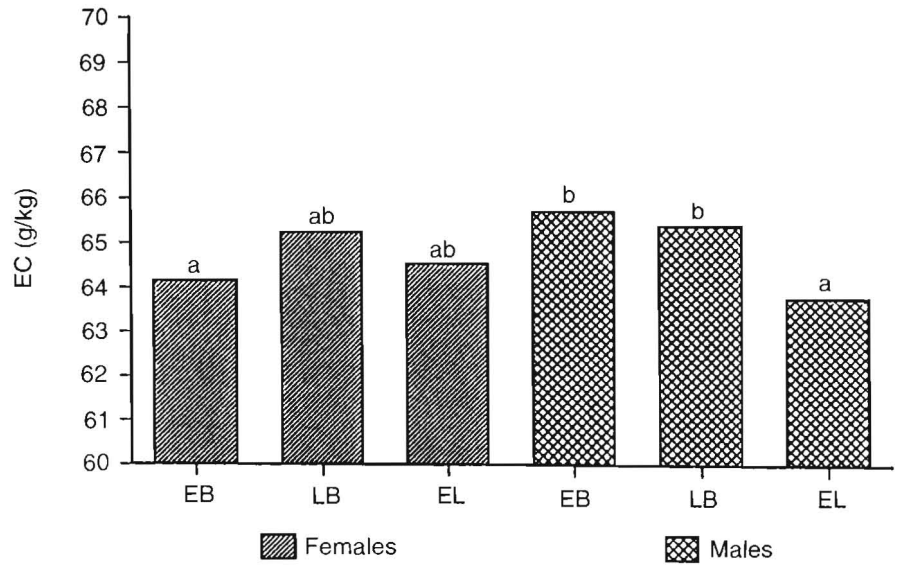

Fig. 1. Eviscerated Carcass Weight (EC) as a g/kg of Plant Weight of early (EB) and late (LB) feathering Baladi and early feathering Leghorn (EL).

Heart Weight (HR). As it is stated in Table 2 late feathering Baladi had significantly ($P \leq .05$) the highest and early feathering Leghorn the lowest HR and males had significantly ($P \leq .05$) higher HR than females. On the other hand, HR significantly ($P \leq .05$) decreased with age up to 16 weeks thereafter increased at 20 weeks of age and was equal to that of 12 weeks of age.

Gizzard Weight (GZ). As it is shown in Table 2 late and early feathering Baladi had similar GZ but significantly ($P \leq .05$) lower than early feathering Leghorn, whereas females had significantly ($P \leq .05$) higher GZ than males. On the other hand, GZ significantly ($P \leq .05$) decreased with age but only after 8 weeks of age.

Blood Weight (BL). As it is indicated in Table 3 early and late feathering Baladi and early feathering Leghorn had similar BL while it was significantly ($P \leq .05$) higher for males compared with females. BL significantly ($P < .05$) increased with age upto 12 weeks but significantly ($P \leq .05$) decreased thereafter.

Feather Weight (FR). As it is stated in Table 3 late feathering had significantly ($P \leq .05$) the lowest FR and early feathering Leghorn had the highest FR whereas males and females had similar FR. On the other hand, FR was significantly ($P \leq .05$)

increased upto 16 weeks of age thereafter significantly ($P \leq .05$) decreased. Fig. 2 shows that early feathering Baladi females and Leghorn females and males had significantly ($P \leq .05$) higher FR than the others, while early Leghorn females had significantly ($P \leq .05$) higher FR than early Baladi females and had similar value as early Leghorn males. The same figure also shows that early feathering Baladi males had significantly ($P \leq .05$) higher value than late feathering Baladi females but had statistically similar FR as late feathering Baladi males.

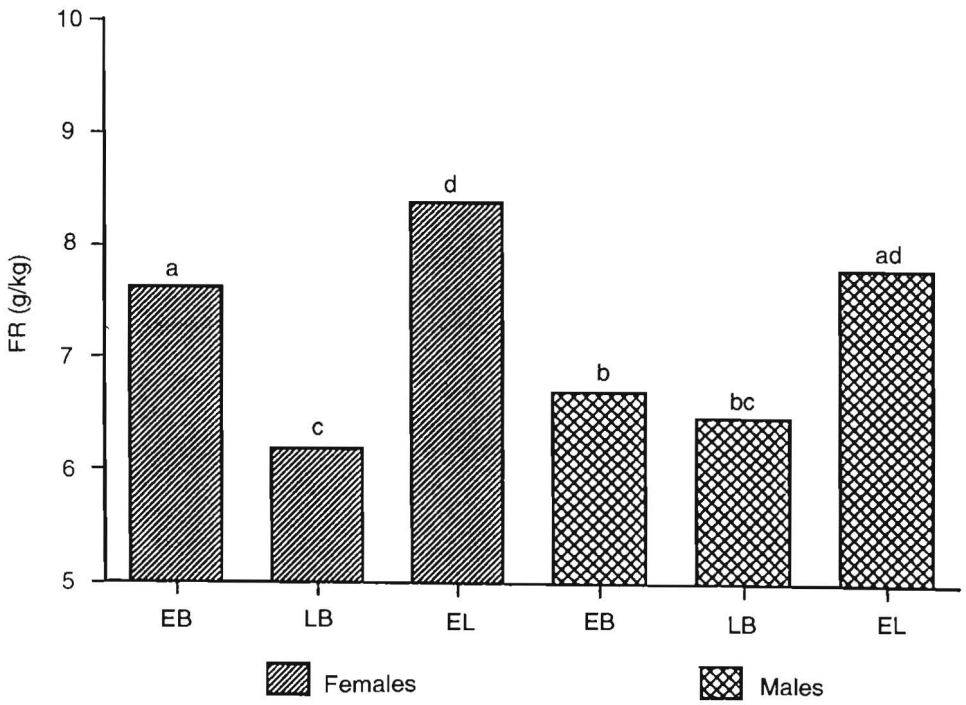

Fig. 2. Feather Weight (FR) as a g/kg of Plant Weight of early (EB) and late (EB) feathering Baladi and early feathering Leghorn (EL).

Head Weight (HD). As it is indicated in Table 3 late feathering Baladi had significantly ($P \leq .05$) higher HD than early feathering Baladi and Leghorn which had statistically similar values whereas males had significantly ($P \leq .05$) higher value than females. On the other hand, HD decreased significantly ($P \leq .05$) with age until 12 weeks thereafter did not change upto 20 weeks of age. Early feathering Baladi and Leghorn females had significantly ($P \leq .05$) the lowest and late feathering

Baladi males and early feathering leghorn males had the highest HD whereas those of the others fall in between (Fig. 3).

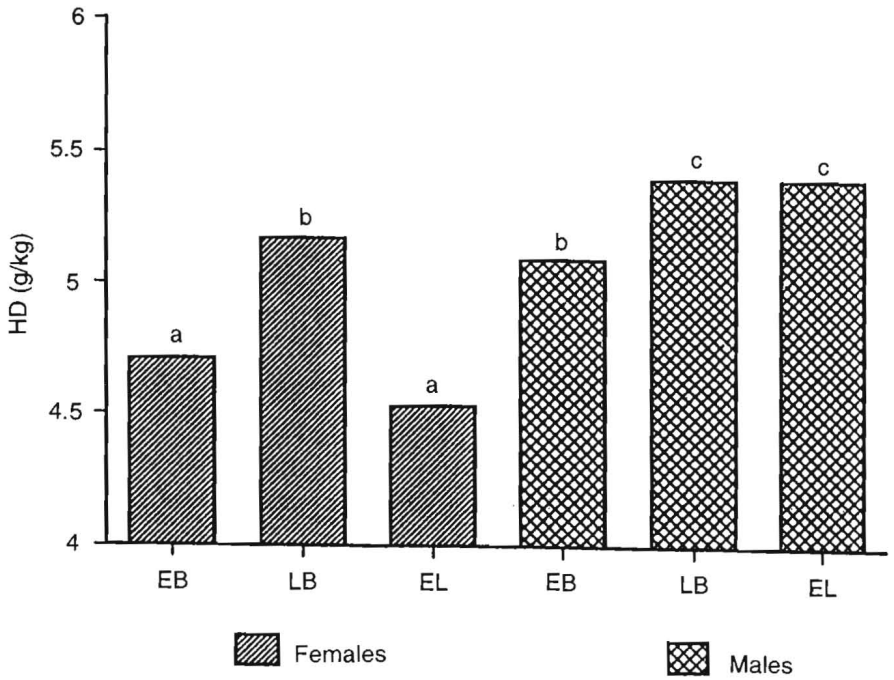

Fig. 3. Head Weight (HD) as a g/kg of Plant Weight of early (EB) and late (EB) feathering Baladi and early feathering Leghorn (EL).

Feet Weight (LG). Table 3 shows that late feathering Baladi had significantly ($P \leq .05$) higher LG than their early feathering counterpart and Leghorn which had similar values while females had significantly ($P \leq .05$) lower LG than males. LG significantly ($P \leq .05$) decreased with age and reached its lowest value at 20 weeks of age.

Intestinal Weight (IN). As it is seen in Table 3 the different genotypic groups had statistically similar IN whereas it was significantly ($P \leq .05$) lower for males than females. IN significantly ($P \leq .05$) decreased with age and reached its lowest value at 20 weeks of age. Early and late feathering Baladi females had similar IN but were significantly ($P \leq .05$) higher than early feathering Leghorn females and all males which had statistically similar values (Fig. 4).

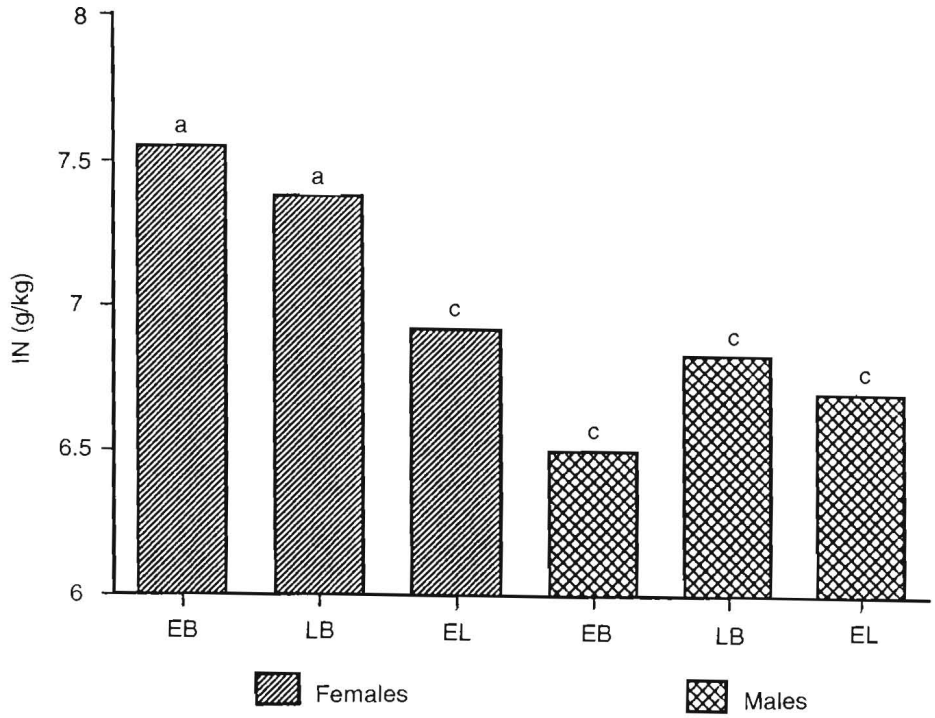

Fig. 4. Intestinal Weight (IN) as a g/kg of Plant Weight of early (EB) and late (EB) feathering Baladi and early feathering Leghorn (EL).

Discussion

Early and late feathering Baladi did not differ significantly with regard to plant weight and eviscerated carcass, liver and gizzard weights calculated as g/kg of plant weight but late feathering had higher ($P \leq .05$) abdominal fat and heart values. Similarly, Goodman and Muir (1965) observed no significant differences in eviscerated carcass weight as a percentage of live body weight or its variability between early and late feathering birds. Katanbaf *et al.* (1989) also noticed that early feathering chicks had smaller relative heart weight at 45 days of age. However Merkley and Lowe (1988) found similar plant weight and carcass and heart weights as a percentage of plant weight for early and late feathering broilers at 52 weeks of age. Contrary to our results, Merkley and Lowe (1988) and O'Sullivan *et al.* (1991) did not observe any significant differences between early and late feathering broilers in abdominal fat calculated as a percentage of plant weight and as grams of tissue

per 100 g body weight at 52 and 64 weeks of age, respectively. Leghorn showed lower liver, heart and higher ($P \leq .05$) plant weight and gizzard values but similar eviscerated carcass and abdominal fat relative weights compared with early feathering Baladi. Males did not differ significantly from females with regard to eviscerated carcass and abdominal fat relative weights but had lower liver, gizzard and higher ($P \leq .05$) plant weight and heart values. Contrary to these results. O'Sullivan *et al.* (1991) observed higher carcass percentage in favour of males and abdominal fat percentage in favour of females. Early feathering Baladi females had lower ($P \leq .05$) eviscerated carcass weight than early and late feathering Baladi males whereas late feathering females had similar values. These results are in disagreement with those of O'Sullivan *et al.* (1991) who observed higher carcass percentage for late feathering females than males but early feathering females were only higher than heterozygous late feathering males. Early and late feathering Baladi females had similar plant weight, liver, heart, gizzard and intestinal weights as g/kg of plant weight. Similarly, Katanbaf *et al.* (1989) also noticed no significant differences between early and late feathering females with regard to liver, gizzard, oviduct relative weights at different age periods. However, the same authors found that early feathering chicks had smaller relative heart weight which is in agreement with our results. Generally, plant weight, eviscerated carcass and abdominal fat values significantly ($P \leq .05$) increased whereas those of liver, heart and gizzard decreased with age. Early and late feathering Baladi had similar blood and intestinal relative weights. However, early feathering Baladi showed higher feather and lower ($P \leq .05$) head and leg weight values than late feathering Baladi. Leghorn showed higher ($P \leq .05$) feather relative weight than early feathering Baladi and males had higher ($P \leq .05$) blood, head and leg and lower ($P \leq .05$) intestinal relative weights than females. Early feathering Baladi females had higher ($P \leq .05$) feather weight value than their late feathering peers. This result is in disagreement with that of Dunnington and Siegel (1986) who reported no significant differences in feather weight as a percentage of body weight of females at 147 and 196 days of age. The discrepancies of our results from those of other investigators presumably reflected breed and/or age-related differences. Late feathering Baladi males had also higher ($P \leq .05$) head weight than their early feathering counterparts. With regard to the effect of age, blood and feather relative weights significantly ($P \leq .05$) increased at early and decreased at late age periods, whereas those of head, leg and intestinal started to decrease at early age period. From the results of this study we conclude that sex-linked feathering genes have no or little effect upon most studied carcass traits. However sex-linked late feathering gene seems to enhance abdominal fat deposition and to reduce feather growth which should be considered when feather sexable birds are used for breeding. The results also indicated that early feathering Baladi carcass traits tended to be more similar to those of Leghorn compared with their late feathering counterparts.

References

Dunnington, E.A. and **Siegel, P.B.** (1986) Feather weight of early (k+) and late (K) feathering young adult broilers. *Poultry Sci.*, **65:** 1863-1865.

Goodman, B.L. and **Muir, F.V.** (1965) The influence of comb and feathering phenotypes on body weight and dressing percentage in broilers. *Poultry Sci.*, **44:** 644-648.

Katanbaf, M.N., Dunnington, E.A. and **Siegel, P.B.** (1989) Restricted feeding in early and late feathering chickens. 3. Organ size and carcass composition. *Poultry Sci.*, **68:** 359-368.

Merkley, J.W. and **Lowe, P.C.** (1988) Association of rate-of-feathering genotypes in broilers with production and carcass composition traits. 2. Effect of genotypes and diet on processing traits and lipid deposition. *Poultry Sci.*, **67:** 914-919.

National Research Council (NRC) (1984) Nutrient Requirements of Demestic Animals. Nutrient Requirements of Poultry. *Nat. Acad. Sci.*, Washington, D.C.

O'Sullivan, N.P., Dunnington, E.A. and **Siegel, P.B.** (1991) Growth and carcass characteristics of early and late feathering broilers reared under different regimens. *Poultry Sci.*, **70:** 1323-1332.

SAS User's Guid (1986) Statistical Analysis System. SAS Institute Inc. Box 8000, Carry NC. 27511-8000, U.S.A.

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صفات الذبيحة في الدجاج البلدي السريع والبطيء التريش ومقارنتها مع صفات دجاج اللجهورن سريع التريش

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استخدم في هذه الدراسة ٢٤٠ صوص من الدجاج البلدي مبكر ومتأخر التريش وذلك لدراسة تأثير التركيب الوراثي على صفات الذبيحة بالاضافة إلى ذلك استخدم ١٢٠ صوص لجهورن سريع التريش بغرض المقارنة ، ربيت الطيور تحت نظم رعاية مناسبة ومن ثم تم عشوائياً اختيار وتوزيع عدد ٥ من الذكور ومثلها من الإناث عند عمر ٤ و ٨ و ١٢ و ١٦ و ٢٠ أسبوع من العمر لدراسة صفات الذبيحة وحسبت قيم الصفات بالجرام لكل كيلو جرام من الوزن المصوم .

دلت النتائج على أن العمر له تأثير معنوي ($P \leq .05$) على جميع الصفات المدروسة بينما تأثير التركيب الوراثي والجنس والتفاعلات بين العوامل المختلفة كانت أيضاً معنوية على معظم الصفات المدروسة ، ويتضح من الدراسة أن الدجاج البلدي بطيء التريش كان أعلى معنوياً ($P \leq .05$) من نظيره السريع في الوزن النسبي لدهن الأحشاء والقلب لكن اللجهورن سريع التريش كان الأقل معنويا في وزن القلب والأعلى معنويا ($P \leq .05$) فيما يخص الوزن المصوم

والقانصة بالمقارنة مع البلدي . الذكور كانت أقل معنوياً ($P \leq .05$) من الإناث في الوزن النسبي للكبد والقانصة وأعلى منها معنوياً ($P \leq .05$) في الوزن المصوم ووزن القلب النسبي . وزن الذبيحة النسبي للإناث البلدي سريعة التريش كان أقل معنوياً ($P \leq .05$) من ذكور البلدي السريعة والبطيئة التريش إلا أن الإناث البطيئة كانت مساوية للذكور ، وعلى وجه العموم الوزن المصوم والوزن النسبي للذبيحة ودهن الأحشاء تزداد بينما الوزن النسبي للكبد والقلب والقانصة تتناقص معنوياً ($P \leq .05$) مع الزيادة في العمر . الوزن النسبي للريش في البلدي السريع كان أعلى لكن الوزن النسبي للرأس والأرجل كانت أقل معنوياً ($P \leq .05$) من نظيراتها في البلدي البطيء ، لكن اللجهورن كان الأعلى معنوياً ($P \leq .05$) فيما يخص الوزن النسبي للريش . الذكور كانت أعلى معنوياً ($P \leq .05$) من الإناث فيما يخص الوزن النسبي للدم والرأس والأرجل لكنها أقل منها فيما يخص وزن الأمعاء ، أما فيما يخص تأثير العمر فان الوزن النسبي للدم والريش يزداد معنوياً ($P \leq .05$) في المراحل المبكرة من العمر ويتناقص فيما بعد ذلك إلا أن الوزن النسبي للرأس والأرجل والأمعاء بدأت في التناقص معنوياً ($P \leq .05$) في المراحل المبكرة من العمر . وتدل نتائج الدراسة على أن جينات التريش المرتبطة بالجنس ليس لها تأثير أو أن تأثيرها ضعيف على معظم الصفات المدروسة ، إلا أنه يتضح من النتائج أن جين التريش البطيء يشجع على ترسيب دهن البطن ويقلل من نمو الريش ، كذلك اتضح من النتائج أن صفات الدجاج البلدي السريع التريش تميل لأن تكون أكثر تشابه مع صفات اللجهورن بالمقارنة مع نظريه البلدي البطيء .