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PRODUCTION PERFORMANCE OF DIFFERENT COMMERCIAL BROILER STRAINS

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SUMMARY

The purpose of the present study is to compare production performance and carcass yields of six commercial broiler strains (Arbor Acres, Hubbard, Cobb, Lohman, Avian and ISA) reared under the same environmental conditions. The results showed that Hubbard males recorded significantly higher body weights at 49 days old compared to the males of other strains, whereas, Arbor Acres females had the highest final body weight in a descending order by those of Avian, Hubbard, ISA, Cobb, and Lohman, respectively.

Results of feed conversion ratio (on straight-run basis) revealed that Lohman chicks recorded the best values and significantly different from those of Hubbard, Cobb and Avian strains. No significant differences were found in eviscerated yield of male chicks among the evaluated strains, whereas, the Arbor Acres females had numerically the highest eviscerated yield percentage compared to those of the other strains. On the other hand, Avian females recorded the lowest percentage of eviscerated yield . Mortality rates among strains were within the normal range .

It could be concluded (from the commercial point of view) that Hubbard males and Arbor Acres females will be expected to give significantly the best economic return .

Keywords: Broiler strains, body weight, fed conversion, carcass yield

INTRODUCTION

The continuous growth of the broiler industry in Egypt has aroused great interest in the strain of chickens to be used to determine which is the fastest , the most economically , or the best suited for a particular need . In the poultry industry , with different broiler strains commercially available ; it is of major economic importance to determine the performance of these broiler strains.

Historically, the Chicken - of - Tomorrow contest conducted in 1948 could be considered the first random sample broiler test of this nature in the United States. However , in recent years few comparative tests of broiler stocks have been conducted (Stino *et al.*, 1977; Nowland 1978; Malone *et al.*, 1979; Arhelger and Poterack 1980; Kuskinen and Andersson 1982; Milosevic *et al.*, 1986 and Souza *et al.*, 1996).

In the last few years , in Egypt, there is an increase in the processing plants and fast food restaurants, therefore, it is very important to make comparison between the carcass yield of broiler strains. Carcass yield of different broiler strains have been studied by several workers (Bouwkamp *et al.* , 1973 ; Wahid *et al.*; 1974,Merkley *et al.*,1980 ; Holsheimer and Veerkamp, 1992 ; Renden *et al.*,1992 ; Sizemore and Siegel , 1993 and Souza *et al.*,1996) .

The purpose of this study was to obtain informations on live body weight, weekly and cumulative feed conversion, mortality, broiler body measurements (body conformation) and carcass characteristics for six commercial broiler strains. These informations would be useful in maximizing profits under commercial condition in Egypt .

MATERIALS AND METHODS

Three thousand hatching eggs from each of six commercial broiler breeder strains (Arbor Acres, Hubbard , Cobb , Lohman , Avian and ISA) were brought from different commercial broiler breeder companies . The breeder flock age was convergent but the Cobb was older than the other strains for that the Cobb's egg was heaviest and the eggs were free from Mycoplasma gallisepticum and synoviae . The eggs were incubated in the hatchary of Cairo Poultry Company under standerd condition . After hatching , the chicks were wing-banded and placed in traditional commercial farm (open sided house) located in Kafr-El-Amar village , Qalyubia .

One-hundred chicks of each strains were chosen randomly, weighed and distributed to 24 floor pens (4 pens for each strain) ; 25 chicks per pen at a density of 8 birds / m^2. The pens were placed in 4 rows of 6 pens each. Live - Newcastle disease vaccine (NDV) was administrated at 5 and 20 d of age using B1 and Lasota strain vaccine, respectively. Whereas live infection bursal disease vaccine (IBD) was administrated at 14 and 22 d of age . Drinking water method was used as route administration live vaccine . At 10 d , 0.5 ml bivalent inactivated vaccine (NDV and IBD) was injected subcutaneous in the back of the neck. For the first 3 days , the chicks received continuous light with an intensity of 20 Lux , thereafter periods of 23 h light with an intensity of 5 Lux and 1 h dark were employed .

During the first 4 wk. of age , the chicks were fed a commercial starter ration (3000 - 3100 Kcal ME/kg and 22% crude protein) and then fed a commercial finisher ration (3300 - 3400 Kcal ME/kg and 20% crude protein) .

Birds were provided ad lib. access to feed and water.They were brooded at 35°C in 1st wk and then reduced by 3°C / wk to 4 wk of age , at which time brooder were removed . The temperatures were maintained between 26 and 34 °C . At 6 wk of age , the birds were sexed .

Individual body weights were measured at 1 d and at weekly intervals to 49 days of age. Feed consumption by pen was recorded weekly . Mortality was recorded and taken into consideration when calculating total weight gains and feed conversions for each pen .Shank length and keel length were measured (in cm) at 3, 5 and 7 weeks of age and breast width was measured at 3 and 5 weeks of age in centimeters with a modified vurgar angle meter .

At 7 weeks of age, one pen of each broiler strains was slaughtered for carcass evaluation. The birds were deprived of feed overnight before slaughte; then they were weighed individually. They were slaughtered by cutting the gullets and the jugular veins between the first and second vertebra without separating the heads from the bodies. Feathers were removed manually after scalding the birds at 60 °C for 2-3 min. The heads , necks, shanks and viscera were removed and the weights of the eviscerated carcasses were obtained . Edible giblets, including the heart, liver and gizzard for every bird were weighed together. The meat (muscles and skin) of the breast and the leg was weighed together and individualy for each carcass to estimate the edible weight, breast meat and leg meat .

Statistical analysis

Data were analyzed using the General Linear Models (GLM) procedure of the SAS Institute (1985); with significance set at $P< 0.05$. An one-way analyses of variance with strain as main effect was used as follows : $Y_{ij} = M + S_i + e_{ij}$, where Y_{ij} is the observation on the j *th* bird in the i *th* strain , M is common mean ; S_i is the effect due to the i *th* strain and e_{ij} is the random error. Where appropriate, Duncan's multiple range test (SAS Institute,1985) was applied. Percentages were transformed to arcsine percentages .

RESULTS AND DISCUSSION

Body weight

There were highly significant differences between the hatch weights of different strains (Table 1). Body weight at hatch of the Cobb males and females were the highest .This is due to the fact that day - old chick weight is dependent upon hatching egg weight . This agrees with the results of Malone *et al.* (1979) ; Stino *et al.* (1981) Shanawang , (1987) and Renden *et al.* (1992). With regards to the body weight at 4 weeks of age , the picture was changed ,which may be due to the disappearance of the maternal effect .

Table 1. Means of body weight of different strains at different ages

Strain	sex	Age in weeks							
		DOC	1	2	3	4	5	6	7
ARBOR ACRES	m	39.20±0.45	121.33±2.18	301.93±5.85	619.00±11.07	954.26±17.36	1350.48±22.60	1786.95±28.81	2285.37±37.09
	f	38.50±0.40	120.89±1.89	300.93±5.27	588.11±10.31	885.56±15.86	1210.28±19.82	1572.96±23.71	1969.17±28.85
	m+f	38.82±0.30	121.09±1.43	301.37±3.96	601.48±8.11	915.31±13.03	1271.61±17.71	1665.32±23.17	2105.63±30.76
HUBBARD	m	39.84±0.40	129.88±1.94	343.80±5.12	701.88±9.59	1091.48±15.03	1533.52±19.93	1990.74±25.11	2480.37±32.32
	f	39.47±0.46	125.64±2.16	313.67±6.03	599.93±11.79	924.12±18.15	1253.69±22.47	1581.43±26.88	1943.21±32.72
	m+f	39.68±0.30	128.08±1.44	330.89±3.96	658.18±8.07	1019.76±12.96	1411.09±17.71	1811.67±23.04	2245.36±30.60
COBB	m	44.63±0.43	127.86±2.07	322.62±5.42	652.50±10.15	1029.52±15.91	1417.10±20.71	1849.80±26.09	2268.40±33.59
	f	43.75±0.42	123.48±2.02	308.02±5.64	584.33±11.03	880.90±16.98	1216.67±21.02	1567.71±25.14	1871.46±30.60
	m+f	44.19±0.30	125.71±1.45	315.47±3.96	619.11±8.07	956.72±12.96	1318.93±17.53	1711.63±22.81	2073.98±30.28
LOHMAN	m	34.58±0.43	106.56±2.07	283.68±5.42	614.06±10.15	978.24±15.91	1322.45±20.92	1724.79±26.63	2217.39±35.02
	f	34.18±0.42	105.24±1.98	271.76±5.53	555.60±10.81	865.08±16.63	1157.60±20.60	1484.14±24.64	1845.41±30.29
	m+f	34.38±0.30	105.90±1.43	277.72±3.93	584.83±7.99	921.66±12.83	1239.19±17.44	1602.01±22.81	2025.53±30.76
AVIAN	m	40.53±0.43	130.10±2.11	320.94±5.53	646.08±10.36	1006.13±16.23	1402.19±21.14	1859.69±26.63	2353.72±34.64
	f	39.55±0.42	127.35±1.96	314.24±5.47	606.35±10.70	923.96±16.47	1249.80±20.81	1612.65±24.89	1950.73±30.60
	m+f	40.03±0.30	128.69±1.43	317.48±3.94	625.62±8.03	963.80±12.89	1325.21±17.62	1734.90±22.93	2150.11±30.76
ISA	m	40.92±0.45	121.34±2.21	319.56±5.85	643.63±10.94	1014.12±17.15	1437.21±22.60	1819.29±28.47	2278.45±36.65
	f	40.95±0.40	123.78±1.89	311.47±5.27	606.60±10.31	937.78±15.86	1269.73±19.64	1599.45±23.49	1950.46±28.85
	m+f	40.94±0.30	122.70±1.44	315.02±3.96	622.85±8.07	971.28±12.96	1342.25±17.62	1694.64±22.93	2093.96±30.60
Significanance	m	**	**	**	**	**	**	**	**
	f	**	**	**	**	**	**	**	*
	m+f	**	**	**	**	**	**	**	**

Means within the same sex and age having different letters are significantly different (P<0.05) .

DOC = Day old chicks.

m = male f = female

* P<.05 ** P<.01

Godfrey *et al.* (1953) observed also no maternal effect after 4 weeks of age in chicken. However, Wilson (1991) and Smith and Jaap (1957) observed that maternal effect was not clear after 8 weeks of age .

At 4 weeks of age the Hubbard (on straight-run basis) recorded a significantly higher body weight compared to those of the other evaluated strain. The results showed that the Hubbard males were significantly heavier than males of the other strains. On the other hand, the ISA females were the heaviest but no significant differences were noticed between ISA and Hubbard and Avian females .

At 7 weeks of age the Hubbard males were still significantly heavier than the other males . This is in agreement with Souza *et al.*(1996) and Milosevic *et al.* (1986) , who used approximately the same strains. On the other hand , this is in disagreement with Arhelger and Poteracki (1980) . Wherese , Arbor Acres females had the highest final body weight followed in a descending order by those of Avian ,Hubbard, ISA, Cobb and Lohman, respectively. Body weight differences among commercial broiler strains have been reported by Andrews *et al.* (1975) ; Stino *et al.* (1977) and Malone *et al.* (1979) .

Feed efficiency

The cumulative efficiency of feed utilization showed no real differences between strains up to six weeks of age (Table 2) . At 7 weeks of age, the picture changed with the Lohman birds had the best efficiency of feed utilization . Arbor Acres and ISA differed significantly than Hubbard, Avian and Cobb. This agrees with the results of Stino *et al.* (1977); Amirt (1980); Arhelger and Poterack (1980) ; Milosevic *et al.* (1986) and Souza *et al.* (1996) who observed significant differnces for feed efficiency between commercial broiler strains.

The efficiency of feed utilization calculated biweekly till 7*th* weeks of age showed a gradual decrease with the advancement of age (Table 2) . Nordsyog and Ghostley (1954), observed that the efficiency of feed utilization decreased with advancement of age . Kamar and Mostageer (1963), showed that during the early weeks of life , chickens were very efficient in utilizing food. As the birds grow older , growth rate decreased and more food was required per unit increase in live weight .

Mortality

Mortality rates to 49 days of age among strains were within the normal range. Whereas, the Arbor Acres, Lohman and Avian had numerically the highest mortality percent followed in a descending order by those Hubbard , ISA and Cobb, respectively .

Table 2 . Means of weekly and cumulative feed efficiency, and total mortality (percentage) of different strains at different ages

Strain		Age in weeks							Total mortality (%)
		1	2	3	4	5	6	7	
ARBOR ACRES	WFE	1.66±0.07	1.69±0.04	1.81±0.03	1.96±0.06	2.05±0.10	2.31±0.15	2.54±0.27	
	CFE	1.12±0.04	1.46±0.04	1.64±0.03	1.74±0.03	1.82±0.04	1.94±0.04	2.03±0.04	5
HUBBARD	WFE	1.62±0.07	1.69±0.04	1.79±0.03	1.88±0.06	2.17±0.10	2.48±0.15	2.60±0.27	
	CFE	1.11±0.04	1.46±0.04	1.63±0.03	1.72±0.03	1.84±0.04	1.98±0.04	2.07±0.04	4
COBB	WFE	1.78±0.07	1.63±0.04	1.73±0.03	1.91±0.06	2.07±0.10	2.40±0.15	2.83±0.27	
	CFE	1.14±0.04	1.44±0.04	1.59±0.03	1.70±0.03	1.80±0.04	1.93±0.04	2.09±0.04	2
LOHMAN	WFE	1.79±0.07	1.66±0.04	1.70±0.03	1.83±0.06	1.96±0.10	2.28±0.15	2.44±0.27	
	CFE	1.22±0.04	1.49±0.04	1.57±0.03	1.67±0.03	1.77±0.04	1.89±0.04	1.94±0.04	5
AVIAN	WFE	1.65±0.07	1.72±0.04	1.75±0.03	1.85±0.06	2.17±0.10	2.73±0.15	3.33±0.27	
	CFE	1.07±0.04	1.44±0.04	1.57±0.03	1.66±0.03	1.75±0.04	1.91±0.04	2.08±0.04	5
ISA	WFE	1.68±0.07	1.64±0.04	1.75±0.03	1.81±0.06	1.99±0.10	2.53±0.15	2.62±0.27	
	CFE	1.15±0.04	1.46±0.04	1.62±0.03	1.69±0.03	1.77±0.04	1.93±0.04	2.06±0.04	4
significance	WFE	NS	NS	NS	NS	NS	NS	NS	
	CFE	NS	NS	NS	NS	NS	NS	NS	

- WFE = weekly feed efficiency
- CFE= cumulative feed efficiency
- NS = Non significant

Body dimensions

Lerner (1939) ; Jaap (1941) and Hafez (1963) , demonstrated that the body measurements usually give an idea about the type of birds, since they are the major factors that affect body shape and conformation. The means and standard error of body dimensions at different ages (Table 3) indicated that there were significantly differences between the strains in shank length , keel length and breast width . These results are in agreement with those reported by Khar *et al.* (1976); Verma and Choudhary (1980); Verma *et al.* (1980); Atalla (1986); Hanafi *et al.* (1991) .

At different ages, the shank length of the Hubbard males and ISA females were significantly longer than those of all strains studied. The keel length of the Hubbard males were significantly longer than the males of other strains, while there were no significant differences between the females. The breast width of the Hubbard males and Cobb females were significantly wider than those of all strains studied. It seemed that, the Hubbard strain (on straight - run basis) had the best body dimension.

Carcass characteristics

The carcass traits of male and female in different strains at 7 weeks of age are given in Tables 4 and 5 , respectively . The trend didn't show significant differencecs in carcass traits of male and female chickens among the different strains. This agrees with the results of Moran and Orr (1969) , Moran *et al* (1970) and Hayes and Mario (1973).

The eviscerated weights as a percent of live weights of the Cobb males were higher than males of the other strains. On the other hand , the Arbor Acres females were the highest.

The Arbor Acres males and females had numerically the higher value of edible percentage, breast meat percentage and legs meat percentage than birds of the other strains.

The ISA males and the Lohman females recorded the higher value of giblets percentages than birds of the other strains. On the other hand, Avian females recorded the lowest percentage of the traits except the giblets percentage. This is in agreement with Moran and Orr (1969) and Moran *et al.* (1970). Generally , carcass yield among strains were within the normal values which were reported by Orr, 1955 ; Stadelman,1959; Hayes and Marion,1973 ; Wahid *et al.*, 1974 ; Merkley *et al.*, 1980 ; Stino *et al.* , 1981 ;Yamani *et al.* , 1982 ; Renden *et al.* , 1991 ; Souza *et al.* , 1996 .

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Table 3. Means of shank length, keel length and breast width (cm)of the different strains at 3, 5 and 7 weeks of age

Strain	Sex	Shank length 3 weeks	Shank length 5 weeks	Shank length 7 weeks	Keel length 3 weeks	Keel length 5 weeks	Keel length 7 weeks	Breast width 3 weeks	Breast width 5 weeks
ARBOR ACRES	m	5.28±0.05^{b}	6.20±0.05^{bc}	6.81±0.05^{c}	7.50±0.07^{d}	9.43±0.09^{cd}	11.69±0.01^{bc}	4.71±0.06^{c}	6.18±0.08^{cd}
	f	4.74±0.05	5.58±0.05^{b}	5.92±0.07	7.20±0.06	9.03±0.06	11.09±0.01	4.48±0.05^{b}	5.78±0.08^{bc}
	m+f	4.98±0.04^{b}	5.86±0.05^{bc}	6.33±0.06^{bcd}	7.34±0.06^{c}	9.21±0.07^{bc}	11.36±0.10^{bc}	4.58±0.04^{b}	5.96±0.06^{cd}
HUBBARD	m	5.42±0.05^{a}	6.41±0.05^{a}	7.09±0.05^{a}	8.07±0.07^{a}	9.96±0.08^{a}	12.34±0.01^{a}	5.09±0.05^{a}	6.89±0.07^{a}
	f	4.73±0.06	5.61±0.05^{a}	5.96±0.07	7.10±0.07	8.78±0.10	10.94±0.01	4.50±0.06^{b}	5.96±0.09^{b}
	m+f	5.12±0.04^{a}	6.06±0.05^{a}	6.60±0.06^{a}	7.65±0.06^{a}	9.45±0.07^{a}	11.74±0.10^{a}	4.83±0.04^{a}	6.49±0.06^{a}
COBB	m	5.18±0.05^{b}	6.06±0.05^{c}	6.58±0.05^{d}	7.49±0.07^{d}	9.28±0.08^{d}	11.43±0.01^{c}	4.93±0.05^{ab}	6.66±0.08^{b}
	f	4.74±0.05	5.62±0.05^{b}	5.80±0.07	7.29±0.07	9.08±0.09	11.13±0.01	4.72±0.06^{a}	6.22±0.08^{a}
	m+f	4.96±0.04^{b}	5.84±0.04^{c}	6.19±0.06^{d}	7.39±0.06^{bc}	9.18±0.07^{c}	11.28±0.10^{c}	4.83±0.04^{a}	6.44±0.06^{a}
LOHMAN	m	5.12±0.05^{b}	6.07±0.05^{c}	6.66±0.05^{d}	7.63±0.07^{cd}	9.59±0.08^{bc}	11.96±0.01^{b}	4.69±0.05^{c}	5.99±0.07^{d}
	f	4.71±0.05	5.71±0.05^{ab}	5.90±0.07	7.30±0.07	9.18±0.09	11.27±0.01	4.44±0.06^{b}	5.68±0.08
	m+f	4.92±0.04^{b}	5.89±0.04^{bc}	6.29±0.06^{cd}	7.47±0.06^{bc}	9.39±0.07^{ab}	11.62±0.10^{ab}	4.57±0.04	5.84±0.06^{d}
AVIAN	m	5.13±0.05^{b}	6.31±0.05^{ab}	6.93±0.05^{bc}	7.79±0.07^{bc}	9.74±0.08^{ab}	11.77±0.01^{bc}	4.82±0.06^{bc}	6.27±0.08^{c}
	f	4.75±0.05	5.82±0.05^{a}	5.94±0.07	7.28±0.07	9.14±0.09	11.20±0.01	4.39±0.05^{b}	5.89±0.08^{bc}
	m+f	4.93±0.04^{b}	6.06±0.05^{a}	6.42±0.06^{abc}	7.53±0.06^{ab}	9.44±0.07^{a}	11.48±0.10^{abc}	4.60±0.04	6.08±0.06^{bc}
ISA	m	5.26±0.05^{b}	6.35±0.05^{a}	6.99±0.06^{ab}	7.85±0.08^{b}	9.89±0.09^{a}	11.91±0.01^{b}	4.83±0.06^{bc}	6.56±0.08^{a}
	f	4.79±0.05	5.69±0.05^{ab}	6.08±0.07	7.19±0.06	9.00±0.08	10.90±0.01	4.41±0.05^{b}	5.93±0.08^{b}
	m+f	5.00±0.04^{b}	5.98±0.05^{ab}	6.50±0.06^{ab}	7.48±0.06^{bc}	9.39±0.07^{ab}	11.36±0.10^{bc}	4.59±0.04^{b}	6.21±0.06^{b}
Significance	m	**	**	**	**	**	**	**	**
	f	NS	**	NS	NS	NS	NS	**	**
	m+f	*	**	**	**	**	**	**	**

Means within the same trait, sex and age having different letters are significantly different (P<0.05) .
m = male   f = female
* P <.05   ** P< .01   NS = non significant

Table 4 . Means of male carcass parts in different strains at 7 weeks of age

Traits	ARBOR ACRES	HUBBARD	COBB	LOHMAN	AVIAN	ISA	Significance
Number of birds	15	14	15	10	15	12	
Live body weight (g)	2336.00±68.68	2397.14±71.09	2237.67±68.68	2432.50±84.12	2290.33±68.68	2291.67±76.79	NS
Eviscerated weight (g)	1609.40±58.01	1640.21±60.05	1600.20±58.01	1702.50±71.05	1565.87±58.01	1593.25±64.86	NS
Eviscerated weight (%)	68.86±0.96	68.09±1.00	71.42±0.96	69.98±1.18	68.38±0.96	69.24±1.08	NS
Edible weight (g)	1377.42±62.93	1392.80±68.94	1317.40±56.29	1399.88±77.07	1261.07±58.26	1326.75±62.03	NS
Edible / live weight (%)	64.84±1.22	62.20±1.34	63.65±1.09	62.46±1.49	60.78±1.13	63.04±1.22	NS
Giblets weight (g)	115.53±3.97	119.71±4.11	110.20±3.97	122.90±4.86	119.53±3.97	123.92±4.44	NS
Giblets / live weight (%)	4.97±0.13	5.00±0.14	4.93±0.13	5.07±0.16	5.25±0.13	5.43±0.15	NS
Breast meat weight (g)	728.08±34.34	763.40±37.61	691.80±30.71	729.25±42.05	634.00±31.79	680.17±34.34	NS
Meat / live weight (%)	31.52±0.72	31.31±0.79	30.83±0.65	29.88±0.88	27.96±0.67	29.50±0.72	NS
Legs meat weight (g)	649.33±30.71	629.40±33.64	625.60±27.47	670.63±37.61	627.07±28.43	646.58±30.71	NS
Meat / live weight (%)	28.19±0.69	25.79±0.75	27.88±0.62	27.56±0.84	27.52±0.64	28.11±0.69	NS

- Eviscerated weight = (wings + back + breast + legs)
- Edible weight = (breast meat + legs meat)
- Giblets weight = (liver + gizzard + heart)
- NS = non significant

Table 5 . Means of female carcass parts in different strains at 7 weeks of age

Traits	ARBOR ACRES	HUBBARD	COBB	LOHMAN	AVIAN	ISA	Significance
Number of birds	9	11	10	14	9	12	
Live body weight (g)	2093.89±57.32	2039.09±51.85	1883.50±54.38	1938.93±45.96	2025.56±57.32	1964.58±49.64	NS
Eviscerated weight (g)	1522.67±46.03	1442.36±41.64	1331.60±43.67	1379.71±36.91	1394.84±46.03	1386.92±39.86	NS
Eviscerated weight (%)	72.69±1.25	70.84±1.13	70.78±1.18	71.13±1.00	69.00±1.25[b]	70.52±1.08	NS
Edible weight (g)	1296.00±44.08	1235.22±44.08	1122.20±41.31	1142.17±53.98	1133.75±46.75	1168.33±38.17	NS
Edible / live weight (%)	67.52±1.47	65.36±1.47	65.26±1.40	64.46±1.80	60.61±1.56	64.87±1.27	NS
Giblets weight (g)	119.44±4.39	105.18±3.97	107.10±4.16	112.00±3.52	112.67±4.39	106.83±3.80	NS
Giblets / live weight (%)	5.71±0.23	5.18±0.20	5.70±0.21	5.80±0.18	5.58±0.23	5.46±0.20	NS
Breast meat weight (g)	692.00±24.77	664.56±24.77	606.20±23.50	610.83±30.34	600.13±26.27	609.42±21.45	NS
Meat / live weight (%)	32.99±0.82	32.50±0.82	32.12±0.78	31.34±1.01	29.18±0.87	30.99±0.71	NS
Legs meat weight (g)	604.00±21.25	570.67±21.25	516.00±70.16	531.33±26.03	533.63±22.54	558.92±18.40	NS
Meat / live weight (%)	28.82±0.70	27.81±0.70	27.44±0.67	27.34±0.86	25.91±0.75	28.42±0.61	NS

- Eviscerated weight = (wings + back + breast + legs)
- Edible weight = (breast meat + legs meat)
- Giblets weight = (liver + gizzard + heart)
- NS = non significant

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تقييم الأداء الإنتاجى لبدارى التسمين التجارية

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أجريت هذه الدراسة فى أحد المزارع الخاصة فى محافظة القليوبية بهدف إجراء مقارنة بين ستة سلالات من سلالات إنتاج اللحم الموجودة حالياً فى مصر وهى: الأربورايكرز، الهبرد، الكب، اللوهمان، الإفيان، الإيزا من حيث الصفات الإنتاجية مثل: وزن الجسم ، معامل التحويل الغذائى ، نسبة النفوق ، مقاييس الجسم المختلفة ، صفات الذبيحة . وذلك تحت نفس ظروف الرعاية والظروف البيئية .

وقد أظهرت النتائج أن ذكور سلالة الهبرد وإناث سلالة الأربورايكرز تمتاز بوزن أكبر عن باقى طيور السلالات الأخرى فى نهاية فترة التجربة (٧ أسبوع) ، كما لوحظ أنه فى جميع الأعمار كان وزن طيور سلالة اللوهمان أقل وزناً بمقارنتها بباقى السلالات محل الدراسة .

لم يظهر معامل التحويل الغذائى التراكمى اختلافاً معنوياً بين السلالات المختلفة خلال الأسابيع الستة الأولى من العمر بينما كان الاختلاف معنوياً فى الأسبوع السابع حيث كانت طيور سلالة لوهمان أفضل فى معامل التحويل الغذائى التراكمى ثم بعد ذلك بالترتيب حسب الأفضلية كانت طيور سلالة الأربورايكرز ثم الإيزا فالهبرد فالآفيان وأخيراً جاءت طيور سلالة الكب .

من جهة أخرى لم يكن هناك اختلافاً معنوياً بين السلالات الستة فى معامل التحويل الغذائى الأسبوعى خلال فترة التجربة ، فى حين كان هناك زيادة هذا المعامل الأسبوعى بتقدم العمر فى جميع السلالات . كما كانت نسبة النفوق خلال فترة التجربة فى الحدود الطبيعية المتعارف عليها تجارياً وقد تراوحت بين ٢ ٪ فى طيور سلالة الكب ، ٥ ٪ فى طيور سلالات الأربورايكرز واللوهمان والإفيان .

كان هناك اختلافاً بين السلالات فى طول الساق وطول عظمة القص وعرض الصدر ، وقد أظهرت ذكور سلالة الهبرد تميزاً فى جميع المقاييس السابقة عن باقى ذكور السلالات الأخرى بينما كانت إناث سلالة الإيزا أطول ساقاً وإناث سلالة الكب أعرض صدراً عن باقى إناث السلالات

الأخرى محل الدراسة . وعموماً كانت سلالة الهبرد أفضل فى مقاييس الجسم بصرف النظر عن الجنس وهذا يتوافق مع تميزها فى وزن الجسم فى نهاية فترة التجربة .

لوحظ عدم وجود فروق معنوية فى صفات الذبيحة بين ذكور السلالات المختلفة وايضا لم يكن هناك فروق معنوية فى هذه الصفة بين إناث السلالات المختلفة الا انه كان هناك تميزاً لإناث سلالة الأربورايكرز عن إناث السلالات الأخرى بينما سجلت إناث سلالة الإفيان أقل مقاييس لصفات الذبيحة عن باقى السلالات الأخرى .

من النتائج السابقة يمكن استنتاج أن ذكور سلالة الهبرد وإناث سلالة الأربورايكرز أعطوا أفضل النتائج من الناحية الإقتصادية عامة .