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PRODUCTIVE PERFORMANCES OF TANTA G-2 GENOTYPE SELECTED FOR HIGH BODY WEIGHT

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ABSTRACT: This study was conducted to investigate the progress in productive and Reproductive performances of two line indigenous chicken genotypes namely Tanta G-2and Mamourah line (RBC) being crossing and selected since 2015 three generations data on body weight from hatch until 8 weeks also age at sexual maturity (ASM), egg production (EP) from 36-42 weeks of age and first egg weight (EW) and body weight at sexual maturity (BWSM) The average LBW of Tanta G-2and RBC lines by generation at 8 weeks of age were 907.86 g vs. 558.56g (G1), 1088.12 g vs. 554.92 g (G2), 1175.93 g vs. 551.28 g (G3), respectively, with significant differences for both lines This value was 3267gm for the Tanta G-2and 1525 gm for the RBC line , 3302 gm for the Tanta G-2and 1526gm for RBC line in generation 2 while This value was 3337gm for the Tanta G-2and 1527gm for the RBC line in generation 3. Age at sexual maturity of the Tanta G-2line was 182 days compared to 155 days for the RBC line in the first three generation that egg weight of the first egg of the Tanta G-2 line (51.66gm) was higher than that of the RBC line (34.65gm).The results indicate that genetic improvement programs has made significant progress through increasing the mean of economic traits selected in indigenous chickens Egypt.

Key word: Tanta G-2, Mamourah, body weight, BWSM, ASM, growth curve .

INTRODUCTION

Egyptian Local chicken is highly important. They produce meat and eggs, particularly in the villages. Local chickens can be easily produced in tropical conditions and are more disease resistant; nevertheless, they have a low growth performance rate and farmers must raise them for 6 to 7 months to attain market weight. (Sopannarath and Bunchasak, 2015; Jaturasitha et al., 2016) Improving economic characteristics such as body weight, carcass weight, breast meat weight, and leg meat yelled would result in increased output. Recognizing and enhancing these local genetic resources should also be primary research objectives in poultry genomics (Bahmanimeher, 2012). Thus to improve these genetics resources in local Egyptian chickens it was done through crossing and selection. This traditional phenotypic selection has made significant improvement in chickens growth rates and meat yields (Ddeeb and Lamot. 2002). They are two arms of the genetic improvement process. One is fast, which is crossbreeding, and the other is slow, which is selection. We can combine them to perform a successful and effective genetic improvement process. It should taken into consideration that selection for increased BW is negatively correlated with the onset of sexual maturity, fertility, and egg production (Siegel and Dunnington, 1985).

Crossbreeding enhances heterozygozygosity, which causes heterosis, which is vital in extreme environmental situations. In fact, crossbreeding is one of the most essential strategies for exploiting genetic variety and hybrid vigour by combining several important features of each breed (Hanafi and Iraqi, 2001). Maternal effects or sex-related features linked with certain combinations of breeds or strains should be exploited. The analysis of combining abilities and differences in performance of crossbreeds allows for the identification of the best potential combinations for the exploitation of hybrid vigour based on desired objectives (Mekki et al., 2005). Crossbreeding between adapted local chicken and high yielding exotic strains would allow for the tropics to use both the rusticity of the first and the zootechnical performances of the second to develop adapted and more productive genetic kinds. Beugre et al. (2007) and Gnakari et al. (2007) assessed the production performance of a Hubbard crossbreeding. In 2015, a selection improvement program was started at the Poultry Farm, Gimeeza Animal Production station, Animal production institute, Agriculture Research center, and Giza, Egypt, to develop the Tanta G-2line as a local broiler female line this was done. Live body weight of Tanta G-2line, which have been subjected to intensive selection for 3 generations for high eight week body weight, were compared with the random breed control (RBC) Mamourah line at the age of eight weeks.

The objectives of the current study were to determine the effects of selection for three generations, for increasing 8-week body weight, on the live body weight and reproductive performance of Tanta G-2line in comparison with the RBC Line (Mamourah).

MATERIALS AND METHODS

History of TantaG-2 line as a broiler breeder females line

A selection improvement program was started at the poultry farm, Gimmizah Animal Production Station, Animal production Institute, Agriculture Research Center, Doki and Giza, Egypt to develop

Tanta G-2 line as a local broiler females line. Twenty rosters from pure line grandparent females line (Indian River) males were crossed with 163femaless from the native Egyptian chicken's breed, Mamourah, to produce the base generation of the TantaG-1 line. The produced cross was reared until maturity and housed in individual cages. One hundred males and two hundred females were selected at random from the base generation and were mated at a ratio of one male to every 8 females. This was done by using artificial insemination to obtain pedigreed fertile eggs. Fertile eggs were collected for 15 days and hatched to produce the F1 selected TantaG-1 line. Also, fertile eggs were collected again for 15 days, from the Random Bred Control line (Mamourah), RBC line mating without any breeding program. All produced chicks were wing banded to keep their pedigree. Selected line` was reproduced by using an out breeding program, with no full or half sibs mating allowed. For all the selected generations of Tanta G-2 line, phenotypic selection was used to identify the best broiler breeders in body weight at 8 weeks to produce the next generation. The highest 8-week LBW males and females were selected as parents for the next generation in Tanta G-2 line. Tanta G-2 as local chicken line is the Egyptian females line specialized in meat production.

Males, Females and Artificial insemination

Twenty Indian River female lines, grandparent stock males, at 56 weeks of age, were donated by Tibaa Poultry Grand Parent Company and used in the study. Males were housed in individual cages and fed male broiler breeder diet and received 17 hours of light daily. Body weight was monitored by weekly to adjust feed consumption. Body weight average for the males at the beginning of the trail was 5.8 kg and daily average feed consumption was 160 gm / day.

One hundred and sixty three (163), 52 weeks old Mamourah hens, with an average body weight of 1.5 kg, were housed in individual cages (40×40×45cm) under conventional environmental condition. Hens consumed broiler breeder diet and were exposed to 17 hrs of light daily.

Semen was collected, twice weekly, from individual males beginning from 56 weeks until 62 weeks of age. At the beginning of the experiment, male's semen quality index (SQI) was determined in duplicate by diluting the semen 10 folds with 0.85 % saline. Males with lower spermatocrit value (below 22.5%) were avoided. Each male was assigned about 8 females. All hens were inseminated twice weekly during the light phase late in the afternoon after egg laying to insure that there is no egg in the uterus. Insemination was done with pedigreed semen (within 30-min) after semen collection. Each female was inseminated with about 0.03 ml of undiluted semen.

In this experiment, Indian River female line, grandparent stock males and Mamourah hens, were mated to produce the generation one (G1). Also, males and females from the RBC (Mamourah) line were mated to produce the RBC chicks. About 600 of Tanta G-2and 300 RBC pedigreed chicks were wing banded and sexed at hatch, using the vent method. All chicks were reared intermingled, 10 birds/m^2, in an open house, deep litter system. Water and feed were provided *ad libitum* form hatch until 8 weeks of age. Light was provided 24 hours per day.

Experimental measurements

In all generations, live body weights (LBW) at hatch, 14, 28, 42, 56 days were obtained individually by using a digital scale from the Tanta G-2and the RBC lines. Also, age at sexual maturity (ASM), body weight at sexual maturity (BWSM), average egg weight (EW), egg numbers (EN), and first egg weight (FEW) were recorded for each female in Tanta G-2and the RBC lines during the first 36 weeks of age.

Growth Curve Functions

Analysis of performance data, body weight (BW),), feed conversion rate (FCR) are essential to determine economic efficiency of chicken growth. The growth functions were carried out from the weekly body weight. Functions were used to identify the better function that describes the growth curve in the broiler. Growth models have been widely used to represent changes in Weight of body with age so that the genetic potential of chicken for growth can be estimated and feed consumption can be matched to possible growth. Also, growth models are used to provide evaluate of daily feed requirements for growth (Lopez et al., 2000).

Statistical analysis

Data were analyzed as a two-way analysis of variance using the xlstat software, general linear model (xlstat , 2014). The main effects were line and sex. Traits analyzed were: LBW at hatch, 14 days, 28 days, , 42 days and 56 days for Tanta G-2and the RBC (Mamourah) lines. The following model was used:

$Y_{ijk}= \mu + L_i + S_j + LS_{ij} + e_{ijk}$

Where:

Y_{ijk}: The K^{th} observation of the j^{th} sex within the i^{th} line.

μ: The overall mean.

L_i: The effect of the ith line.

S_j: The effect of the j^{th} sex

L_{Sij}: The interaction between the i^{th} line and the j^{th} sex

E_{ijk}: Random error.

For the analysis of; ASM, BWSM, EN, EW and FEW during the first 36 - 42weeks of age for Tanta G-2and the RBC lines, data were analyzed as a one-way analysis of variance using the xlstat software, general linear model xlstat 2014,).The following model was used:

$Y_{ij}= \mu + L_i + e_{ij}$

Where:

Y_{ij}: The j^{th} observation within the i^{th} line.

μ: The overall mean.

L_i: The effect of the i^{th} line.

E_{ij}: Random error. All data are reported as least square means (LSM) ± standard errors (SE). Mean values were separated, when significance existed, using Duncan's multiple range test (Duncan's, 1955). Significance level was set at 5%.

RESULTS AND DISCUSSION

1. body weight and growth performance

Table 1 shows the last square means and standard error (SE) of the body weight. The bird's body weight means at 0, 2, 4, 6 and 8 weeks of age for the selected line and control which were LBW at hatch, 14, 28, 42, and 56 days of age in comparison to the RBC line as mixed sex. Significant sexual dimorphism, in body weight, was apparent at all ages studied from the hatch until the 8 weeks of age; males had significantly ($P \leq 0.05$) higher body weight than females. Figure (1) indicator the significant sexual dimorphism of both lines. Rashed, (2012) reported that significant sexual dimorphism, in body weights, was apparent at all ages studied except at hatch. From the second week of age until the nineteenth weeks of age, males had significantly ($P \leq 0.05$) higher body weight than females. Also these results are in agreement with the results previously reported by Ramadan et al., (2014), Tixier-Boichard *et al.*, (2012) and Nassar, (2013). Ramadan, (2019)

The average LBW of Tanta G-2and RBC lines by generation at 8 weeks of age were 907.86 g vs. 558.56g (G1), 1088.12 g vs. 554.92 g (G2), 1175.93 g vs. 551.28 g (G3), respectively, with significant differences for both lines (Table 1). This results agreement with Nasser, 2017which reported that was significant improvement in 6-week LBW for Giza M-2 line from one generation to the next. The difference between Giza M-2 line and RBC line was 358 g after five generations of selection for increasing 6-week LBW. Also, females of Giza M-2 line had significantly higher BMSW, EN, EW, and FEW with comparison to the RBC line for all generations.

Sultana et al 2021 reported that mean BW of ND, HI and NN chickens increased at 8th week of age from 349.99, 380.07, 340.43g in G0 to 609.09, 704.15 and 591.39g in G7 respectively and at 40th week from 1240.71, 1448.30, 1218.34g in G0 to 1530.82, 1901.43 and 1511.66g in G6 respectively. Weight gains at 8th week of age for ND, HI and NN were 259.10, 324.08 and 250.96g respectively, and at 40th week of age weight gains were 290.11, 453.13 and 293.32g respectively for ND, HI and NN over the seven generations of selection. Hence the effect of generations of selection on body weight was highly significant ($p<0.001$). Sultana (2019) also found that generation of selection increased the body wait both at 8 and 40th week of age. Faruque *et al*. (2017) found that under Intensive management system selection improved the BW of indigenous chickens in second generation and observed that weight gains at 8 th week of age for G

were 107.34, 175.95, 150.70g respectively for of Non-descript deshi (ND), Hilly (HI), and Naked Neck (NN) genotypes and BW increased by 202.91, 337.36 and 72.82g at 40th week of age For ND, HI and NN genotypes respectively. Also Nasser 2017 mentioned to positive response in LBW and egg productive performance in Giza M-2 line associated with our breeding program. Our results indicated that for all generation, at all ages, Tanta G-2 males had significantly higher LBW in comparison to the RBC line males (Table 2). In addition, Tanta G-2males had significantly ($P\leq0.05$) higher LBW in comparison to the RBC males at hatch, 14 days, 28 days, 42 and 56 days of age (Table 2). The average LBW of Tanta G-2 males and RBC males' line, by generation, at 8 weeks of age were 960.60± 5.37g vs. 621.16± 8.88g (G1), 1138.12±5.88 g vs. 619.83±9.29 (G2), 1283.60±4.85 g vs. 618.50±9.71 g (G3) respectively. Our results indicated that, for all generation, at all ages, Tanta G-2females had significantly higher LBW in comparison to the RBC line females (Table 3). Tanta G-2females had significantly ($P\leq0.05$) higher LBW in comparison to the RBC females at hatch, 14 days, 28 days, 42 and 56 days of age (Table 3). The average LBW of Tanta G-2 females and RBC females lines by generation at 8 weeks of age were 855.12±5.50 g vs. 494.35±8.58 g (G1), 1038.12±5.88 g vs. 496.33±9.6 g (G2), and 1068.87±4.85g vs. 484.00±9.71 g (G3), respectively. Ramadan et al (2018)

and Nassar ,(2017) referred to the same results of this study, both studies were conducted on local lines in which selection and genetic improvement, where the study conducted by Ramadan et al (2018) was carried out on the female line, while Nasser et al 2017were carried out on the male line.

Growth Curve Functions

Analysis of performance data, body weight (BW),), feed conversion rate (FCR) are essential to determine economic efficiency of chicken growth. The growth functions were carried out from the weekly body weight. Functions were used to identify the better function that describes the growth curve in the broiler. Growth models have been widely used to represent changes in Weight of body with age so that the genetic potential of chicken for growth can be estimated and feed consumption can be matched to possible growth. Also, growth models are used to provide evaluate of daily feed requirements for growth (Lopez et al., 2000)

Live performance results of broilers from hatch up to 22 weeks of age by means of mathematical models are presented in fig (2, 3, 4) for (G1, G2, G3) respectively . The response of male's body weight (y) was described by a second order equation

$BW = 5.9015x2 + 236.06x - 332.67$, G1

$BW = 1.7537x2 + 121.41x - 147.4$, G2

$BW = 4.9939x2 + 235.22x - 273.79$, G3

Also feed consumption ratio FCR from hatch until 51 weeks mathematical models are presented in fig (5)

$y = -0.0889x2 + 6.9874x + 33.421$

The growth functions were carried out from the weekly body weight. The advantage of second- and higher-order polynomial models is that they can be linearized and their parameters estimated by linear regression Tompić et al (2011).

2.Body weight at sexual maturity and age at sexual maturity.

Average body weight at sexual maturity of the first generation females was recorded at the age of producing the first egg. This value was 3267gm for the Tanta G-2and 1525 gm for the RBC line , 3302 gm for the Tanta G-2and 1526gm for RBC line in generation 2 while This value was 3337gm for the Tanta G-2and 1527gm for the RBC line in generation 3 (Table 4). Rashed, (2012) reported that the Average body weight at sexual maturity of the base generation females was recorded at the age of producing the first egg. This value was 2198gm. This weight was heavier than the body weight at sexual maturity of Silver Montaza strain (2005gm) reported by Debes. (2017) reported that the Silver Montazah (SM) strain was the heaviest ($P \leq 0.01$) at sexual maturity (1550.76g) compared to the other pure strains, while the two-way cross (SM X LSL) had heavier BWSM (1553.22g) than (MT XLS) (1479.91g). This may be due to the difference in the genetic makeup of these strains. Also Nassar. (2013&2017) reported that the Cairo B-2 line and Giza M-2 had significantly higher body weight at sexual maturity (BWSM) for the last four generations in comparison to those of the RBC line. Iraqi et al. (2016) reported that Body weight at sexual maturity in the line Banha chickens (Line B) was 1742 g.

Age at sexual maturity considered one of the most important traits since it is closely associated with egg production, rate of lay and clutch size in chickens. Also, age at sexual maturity was found to be correlated with body weight at sexual maturity. Age at sexual maturity of the Tanta G-2line was 182 days compared to 155 days for the RBC line in the first three generation (table 4). Nassar ,(2013) reported that the Cairo B-2 and Giza M-2 lines had significantly higher body weight at sexual maturity (BWSM) for the last four generations in comparison to those of the RBC line. Rashed, (2012) reported that the Age at sexual maturity age of the base generation females was recorded 178 days. Rashad.,(2012) reported that the age at sexual maturity of the Cairo B-2 line was 154 days while it was 159 days for the RBC line after one generation of selection. This difference was statistically (P≤0.05) significant. Also our results were agreement with results reported by Debes. (2017) were indicated that the LSL strain matured significantly early (149.65d) compared with the other two local strains, also, with the two-way crosses. The two-way crosses (MT X LSL) and (SM X LSL)matured earlier by 1.93d and 3.28d than Matrouh (MT) and Silver Montazah (SM) strains, respectively. Generally, the pure lines matured significantly earlier by about two weeks than those of the two-way crosses (175.65d vs. 186 d). Also Balamurugan et al (2020) reported that Indian native chicken was attains maturity at 170.96 ± 1.92 days with a body weight of 1.83 ± 0.05 kg by consuming around 117.59 ± 1.95 gm feed daily, produces 101.83 ± 3.21 eggs per annum with average egg size of 46.51 ± 0.91 gm and with 73.16 ± 1.05 %.

3.Egg number and egg weight

Average egg production number in the three generation, during the first 90 days of production was 56 eggs for Tanta G-2While egg production number was 58 eggs for the RBC line Table (4). This difference was statistically significant (P≤0.05). Data presented in Table (4) indicates that egg weight of the first egg of the Tanta G-2line (51.66gm) was higher than that of the RBC line (34.65gm). This difference was statistically significant (P≤0.05). This results were agreement with Nassar, (2013) which indicated that, Cairo B-2 line had significantly (P≤0.05) higher EN, FEW, and EW in comparison to the RBC line. Also Nassar, (2017) reported that the Giza M-2 line had significantly (P≤0.05) higher EN and FEW in comparison to the RBC line. Younis et al.,(2014) studded that the average egg number during the first 90 days of laying of the base, first, and second generation were 43.9, 52.7 and 61.9 eggs for the selected line and 43.6, 44.8 and 46.1 eggs for control line, respectively. The cumulative realized response and expected response after two generations were 15.5 and 5.3 eggs, respectively. Genetic selection for growth and breast meat yield has resulted in the development of different commercial crosses designed to cover the various needs of the poultry markets. Because LBW and reproduction are negatively correlated, maximizing egg production while selecting for higher juvenile LBW becomes more complex with each generation of selection for growth and yield (Luo et al., 2007).

CONCLUSION

the study concluded that, Tanta G-2population was in ideal condition with respect to growth and production performance compared to RBC (Mamourah) that for all generation, at all ages, It should taken into consideration that selection for increased BW is negatively correlated with the onset of sexual maturity, fertility, and egg production to increase EN (through independent culling level) in Tanta G-2 line in next generations Finally we assume after several generations to achieve the cross between Tanta G-1 male line and Tanta G-2 female line to produce the Tanta G cross commercially.

Table (1): Live body weight (g) (LSM ± SE) at different ages, from generation 1 (G1) to generation 3 (G3) for both the Tanta G-2and the RBC lines (MAMOURAH CONTROL), as a straight run.

Generation	Line	Age				
		Hatch	**14 days**	**28 days**	**42 days**	**56 days**
G1	**RBC**	31.56±0.13[b]	110.16±22.49[b]	192.08±2.15[b]	369.16±3.78[b]	558.56±6.28[b]
	Tanta G-2	41.32±0.09[a]	206.40±13.77[a]	279.75±1.32[a]	528.20±2.31[a]	907.86±3.84[a]
G2	**RBC**	31.51±0.14[b]	112.83±12.70[b]	190.07±2.97[b]	367.95±4.30[b]	554.92±6.57[b]
	Tanta G-2	41.81±0.08[a]	243.75±1.55[a]	369.08±2.52[a]	655.43±2.8[a]	1088.12±4.16[a]
G3	**RBC**	31.46±0.14[b]	115.50±2.92[a]	188.06±3.80[b]	366.75±4.82[b]	551.28±6.86[b]
	Tanta G-2	42.43±0.07[a]	258.25±1.46[a]	405.87±1.90[a]	715.62±2.41[a]	1175.93±3.43[a]

* Means, within age, with different superscripts are significantly different (P≤0.05).

Table (2): Live body weight (g) (LSM ± SE) at different ages, from generation 1 (G1) to generation 3 (G3) for males of the Tanta G-2 and the RBC lines.

Generation	Line	Age				
		Hatch	**14 days**	**28 days**	**42 days**	**56 days**
G1	**RBC**	31.73 ±0.22[b]	113.66±31.80[b]	207.83±3.04[b]	422.83±5.35[b]	621.16±8.88[b]
	Tanta G-2	41.54±0.13[a]	197.80±19.23[a]	294.39±1.84[a]	574.87±3.23[a]	960.60±5.37[a]
G2	**RBC**	31.69±0.21[b]	117.08±17.97[b]	209.41±4.23[b]	417.41±6.09[b]	619.83±9.29[b]
	Tanta G-2	41.85±0.12[a]	247.09±2.19[a]	398.50±3.50[a]	691.87±3.96[a]	1138.12±5.88[a]
G3	**RBC**	31.66±0.20[b]	120.50±4.14[b]	211.00±5.38[b]	412.00±6.83[b]	618.50±9.71[b]
	Tanta G-2	42.48±0.14[a]	263.87±12.07[a]	439.37±2.61[a]	792.20±3.41[a]	1283.6±4.85[a]

* Means, within age, with different superscripts are significantly different (P≤0.05)

Table (3): Live body weight (g) (LSM ± SE) at different ages, from generation 1 (G1) to generation 3 (G3) for Females of the Tanta G-2and the RBC lines.

Generation	Line	Age				
		Hatch	14 days	28 days	42 days	56 days
G1	RBC	31.25±0.20[b]	114.50±30.80[b]	175.30±3.10[b]	317.50±5.35[b]	494.35±8.58[b]
	Tanta G-2	41.54±0.13[a]	197.80±19.72[a]	265.12±1.89[a]	481.80±3.32[a]	855.12±5.51[a]
G2	RBC	31.40±0.19[b]	106.66±3.58[b]	176.33±5.82[b]	315.50±6.46[b]	496.33±9.60[b]
	Tanta G-2	41.77±0.11[a]	240.50±2.19[a]	340.75±3.56[a]	614.06±3.96[a]	1038.12±5.88[a]
G3	RBC	31.35±0.20[b]	110.50±4.14[b]	165.00±5.38[b]	321.56±6.85[b]	484.00±9.71[b]
	Tanta G-2	42.38±0.10[a]	252.62±2.02[a]	372.37±2.06[a]	679.09±2.69[a]	1068.87±4.85[a]

* Means, within age, with different superscripts are significantly different (P≤0.05).

Table (4): Weight at sexual maturity, age at sexual maturity, egg number during first 36-week of age, average egg weight for the eggs produced during the first 36 weeks of age, weight of first egg (LSM ± SE) of the Tanta G-2and the RBC lines in the generation's studies.

Generation	Traits	BWSM (g)	ASM (days)	EN90	EN42w	EW (g)**	FEW (g)
G1	Tanta G-2	3267.22±18.58[a]	182.10±0.17[a]	56±0.19[b]	71±0.35[b]	65.85±0.10[a]	51.95±0.11[a]
	RBC	1525.66±37.16[b]	154.16±0.34[b]	58±0.33[a]	92±0.70[a]	51.36±0.27[b]	35.03±0.28[b]
G2	Tanta G-2	3302.40±12.43[a]	182.50±0.18[a]	57±0.21[b]	72±0.34[b]	65.34±0.09[a]	51.80±0.45[a]
	RBC	1526.24±20.44[b]	156.60±0.23[b]	58±0.25[a]	91±0.58[a]	51.58±0.19[b]	34.84±0.16[b]
G3	Tanta G-2	3337.58±6.28[a]	182.35±0.14[a]	57±0.24[b]	72±0.32[b]	64.84±0.09[a]	51.66±0.79[a]
	RBC	1526.63±8.89[b]	154.26±0.19[b]	58±0.15[a]	92.±0.46[a]	51.80±0.13[b]	34.65±0.10[b]

BWSM= body weight at sexual maturity, ASM= age at sexual maturity, EN= egg number, EW= egg weight, FEW= weight of first egg., EN42w= egg number 42 weeks * Means within traits, with different superscripts are significantly different ($P \leq 0.05$).
** During the first 36 weeks of age. * Significant correlation at 1 % level ** Significant correlation at 0.1 % level
*[a-b] Column with different letters, within age, are significantly different ($P \leq 0.05$)
**Error bars denote SEM.

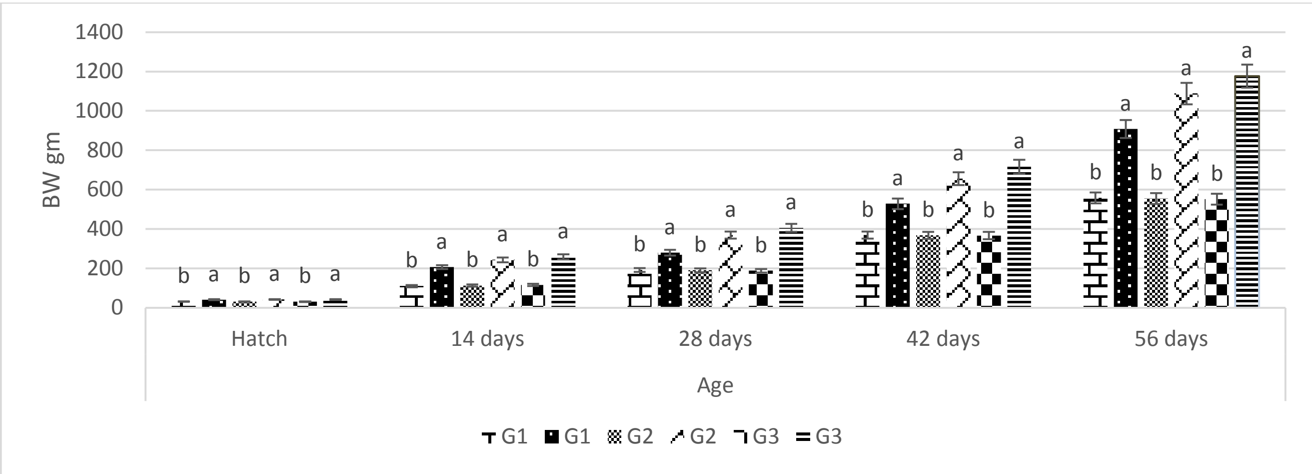

Fig. (1): Live body weight (g) at different ages, from generation1 (G1) to generation 3 (G3) of both Tanta G-2 and RBC lines as combined sex.

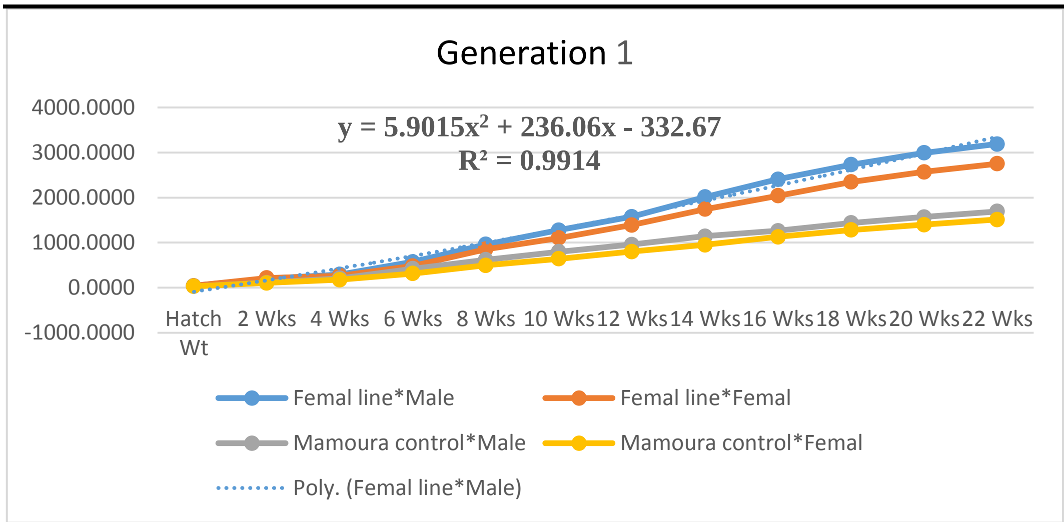

Figure (2): Polynomial function that represents Growth curve for both line male and female. Y = predicted BW (g) at age (x).for generation 1

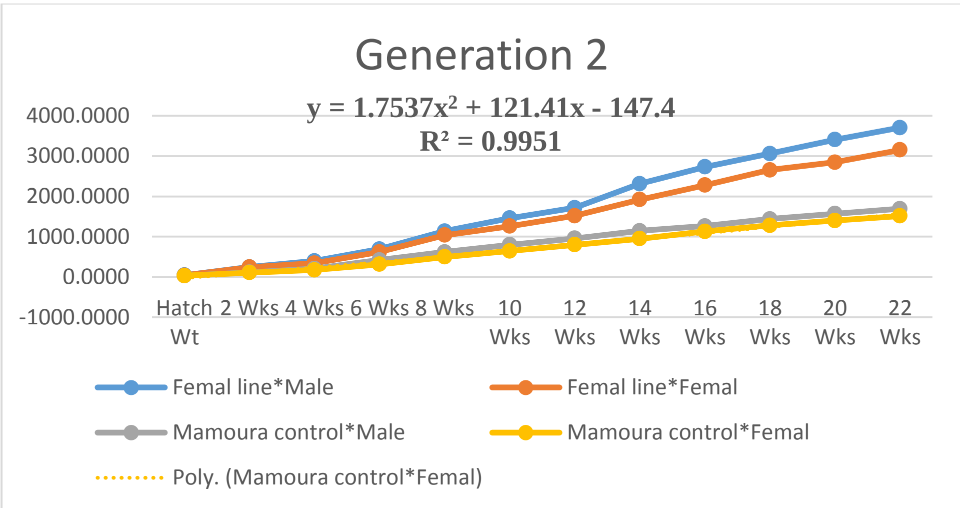

Figure (3): Polynomial function that represents Growth curve for both line male and female

Y = predicted BW (g) at age (x).for generation

Tanta G-2, Mamourah, body weight, BWSM, ASM, growth curve .

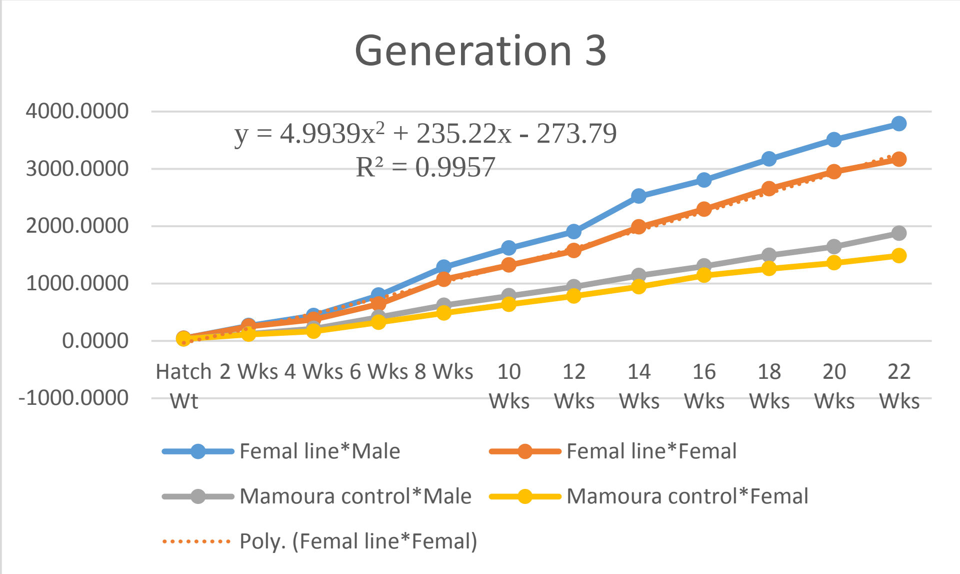

Figure (4): Polynomial function that represents Growth curve for both line male and female

Y = predicted BW (g) at age (x).for generation 3

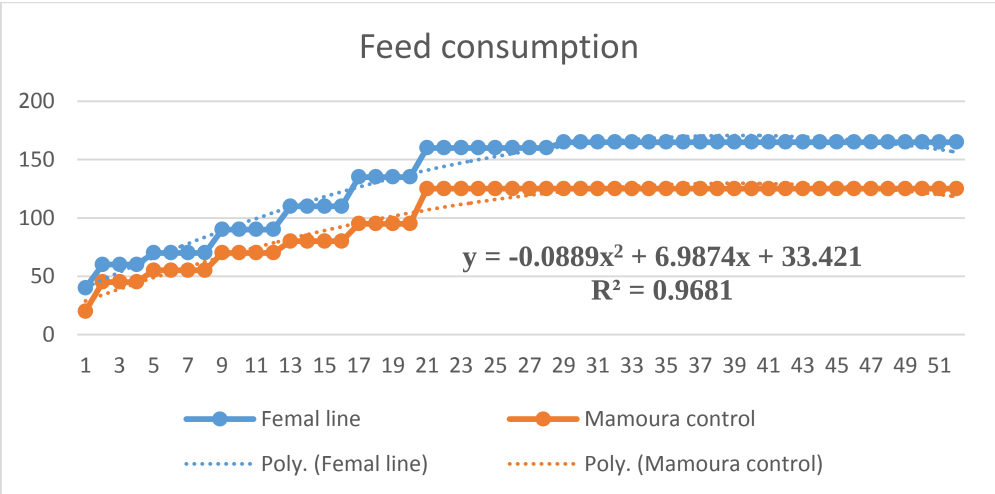

Figure (5): Polynomial function that represents daily feed consumption (gm) (DFC) for both line by age (x).

Y = predicted Feed (g) / bird / day at age (x).

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الملخص العربى

الاداء الانتاجي للطراز الوراثي طنطا جي ٢ المنتخب لوزن الجسم العالي

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أجريت هذه الدراسة للتحقيق من الأداء الإنتاجي ونسبة الخصوبة ونسبة الفقس لخطين من الدجاج المحلي هما خط طنطا جي ٢ والمعمورة كخط مقارنة تم البدء التهجين والانتخاب منذ عام ٢٠١٥ تم الحصول علي بيانات ثلاثة أجيال من وزن الجسم من الفقس حتى عمر٨ أسابيع أيضا عمر النضج الجنسي إنتاج البيض من ٣٦-٤٢ أسبوعا من العمر ووزن اول بيضة ووزن الجسم عند النضج الجنسي حيث كان متوسط وزن الجسم الحي لخط طنطا جي٢ والمعمورة كخط مقارنة عند ٨ أسابيع من العمر ٩٠٧.٨٦ جرام مقابل ٥٥٨.٥٦جرام فى الجيل الاول و 1088.12 جم مقابل ٥٥٤.٩٢ جم فى الجيل الثاني ، ١١٧٥.٩٣ جم مقابل ٥٥١.٢٨ جم فى الجيل الثالث على التوالي ،ايضا كان هناك فروق فى وزن النضج الجنسي حيث كانت هذه القيمة ٣٢٦٧ جرام لخط طنطا جي ٢ مقابل ١٥٢٥ جرام للمعمورة فى الجيل الاول وكذلك ٣٣٠٢ جرام و١٥٢٦ جرام فى الجيل الثاني و٣٣٣٧ و ١٥٢٧ فى الجيل الثالث علي التوالي . كما كان العمر عند النضج الجنسي فى خط طنطا جي ٢ (١٨٢)يوم مقارنة ١٥٥ يوم لسلالة المعمورة كمتوسط فى الاجيال الثلاثة الاولي كما ان وزن اول بيضة كان فى خط طنطا جي ٢ ٥١.٦٦ جرام مقارنة ٣٤.٦٥ فى سلالة المعمورة ومن ذلك يتضح انه مع عمليات التحسين الواثي المستمر فى خط طنطا جي ٢ سوف يودي فى النهاية الي تحسين صفاتها الانتاجية لتكون مقاربة من تلك السلالات التجارية

الكلمات الدالة : طنطا جي -٢ ، المعمورة ، وزن الجسم ، وزن النضج الجنسي ، عمر النضج الجنسي ، منحي النمو