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# EFFECT OF STRAIN AND SEX AMONG SOME LOCAL AND FOREIGN STRAINS OF CHICKENS ON PRODUCTIVE TRAITS (GROWTH AND EGG PRODUCTION) UNDER ENVIRONMENTAL CONDITION OF THE NEWLY RECLAMED AREA

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**Abstract**: *The present study was aimed to analyze the differences existing among six strains, three of them are local strains (Mandarah (Man), Golden Montazah (GM) and Gimaizah (G)), and the other three strains are foreign one Rhode Island Red (RI), Sasso (S) and Kosmos (K) during growing and egg production periods under desert conditions. The results revealed that, from 4-12 wks of age, the S strain had the highest body weight (BW), body weight gain (BWG) and growth rate (GR) than the other strains at the different ages studied expect GR at 4-8 wks of age. K strain was followed the S strain in BW, BWG and GR while Man, G, GM and RI had the lowest value respectively. S and K had the highest feed intake (FI) (101.61 and 105.06 g/hen/d) and better feed conversion (FC) (2.44 and 2.80) respectively during these periods, while the other strains had the lowest FI and bad FC. From 12-20 weeks of age, the differences among four stains chicks (G, Man, GM and RI) in BW, BWG and GR were significant. The results showed that the RI strain had the lowest FI compared with the other strains. Feed conversion of G strain had significantly lowest value while the other strains (Man, GM and RI) had the best values. S and K strains had higher egg weight at sexual maturity age (59.98 an 59.33 g) followed by RI and Man (56.37 and 56.00 g) while G stain had the lowest (52.07g). Rate of laying till 90 d of egg production was significantly higher for RI (48.33 egg/hen/90d), while these values were lower in K and S (36.60 and 36.00 egg/hen/90d) respectively. Egg mass till 90 d of egg production showed the similar trend. Results indicate a significant strain differences in the average of FI. S and K strains consume the largest amount of ration (145.09 and 141.58 g/d) respectively. While G, RI, Man and GM consumed the lowest amount (102.39, 101.85, 101.78 and 100.68 g/d).*

## INTRODUCTION

The comparative study of different genetic combinations give us better selection of the strains of birds, which are most adapted under different environmental conditions. The birds, which may give a good production of eggs, meat, fertility and hatchability the Arab Republic of Egypt may be give a low production in another country and thus causing substantial economic loss to production. The interaction between genetics, environment and provide most suitable environmental conditions for each strain of chicken will result in higher production.

Development of broiler strains in Egypt is still facing a great deal of difficulty owing to the lack of genetic information about the local strains of chickens which should be available before embarking on such a program. Also poultry industry in Egypt and chicken in particular, depends mainly on some foreign hybrids.

Broiler breeder parents are the comerstone of poultry meat production. Broiler breeder raised in Egypt has been fluctuating for the last few years because it was subject to social and economic pressure that affected the stability of poultry industry

Each performance trait such as egg production/hen, feeding efficiency has an influence on the total cost for producing one unit of the product. Performance of flock is a result of the combination of its genetic potential and adaptability to the environmental conditions such as management; housing and season of hatch. Thus the genetic potential can not be achieved without complying with the best environmental conditions.

**Bell (1985)** reported that the breeder companies published performance standards for their birds describing the most important traits. These standards were at high levels of performance and did not reflect the typical conditions and not adjusted for seasonal variations or to the different management systems.

Climate is one of main environmental factors that affect poultry production. Genotype by environmental interaction is usually described as a situation in which different genotypes (breed, lines, or strain) respond differently to different environments **(Sheridan 1990)**. Reduced broiler performance due to high ambient temperature is well established **(Leenstra and Cahaner 1992. Cahaner and Gutman 1993, Eberhart and Washburn 1993).** To achieve further improvements in the world poultry industry, breeding program need to identify genotypes that perform better in hot climates **(Cahaner, 1990)**. **Yalcin *et al.* (1997)** found that commercial

broiler from three breeding companies differed significantly in their performance under hot summer climate, despite their similar growth rate in spring climate.

The main objectives of this study were to analyze the differences existing among six strains during growing and production periods so that we can choice which strain will be the higher producing under desert conditions

## MATERIALS AND METHODS

### Plan and Management

The present study was conducted at Maryout Experimental Station which to the Desert Research Center 35 km south west of Alexandria .The experiment was performed throughout two years (2004-2006). Six pure strains were used in this study. Three of them are local strains (Mandarah (Man), Golden Montazah (GM) and Gimaizah (G)), and the other three strains are foreign one Rhode Island Red (RI), Sasso (S) and Kosmos (K). All chicks were reared on litter floor pens until 52 weeks of age and were fed a starter ration contained 22% crude protein and 2809 k cal. ME/kg. At 6 weeks of age, they received a growing ration contained 16% crude protein and 2722 Kcal ME/kg. Ration. At 20 weeks of age, a laying ration contained 16.02 % crude proteins and 2743 Kcal ME/kg. Feed and water were *ad libitum*. Pullets were vaccinated according to a vaccination program recommended by the Maryout Experimental Station

***Studied traits:*** Body weights were recorded for each genotype at, 8, 12, 16 and 20 weeks of age. Growth rate was calculated according to Broody (1945) at 4-8, 8-12, 4-12, 12-16, 16-20 and 12-20 wks intervals. Mortality percentage and feed intake (FI) (g feed/bird/day) and feed conversion (FC) (g feed/ g gain weight) was estimated at 4-8, 8-12, 12-16 and 16-20 wks of age.

Egg production was recorded daily starting from sexual maturity up to 90 days of age. Egg mass was calculated by multiplying the number of eggs per pullet by the mean egg weight in gram during the experimental period of time. Laying house mortality was estimated by the percentage of dead pullets during the first 90 days of age of laying.

***The Following Traits Were Studied:*** Egg weight at sexual maturity age (EWSM), Egg number (EN), egg weight (EW), egg mass, FI and FC (g feed / g egg) were recoded.

**Statistical analysis:**

Analysis of variance was applied according to Snedecar and Cochran (1967). Data of the traits under study were analyzed using the following model:

$$Y_{ijk} = \mu + G_i + S_j + GS_{ij} + e_{ijk}$$

Where:

Yijk = the observation of the ijk pullet

$\mu$ = the overall mean,

$G_i$ = the genotype effect

$S_j$ = the sex effect

$GS_{ij}$ = the interaction

eijk = the remainder error.

Duncan's new multiple range test was used to compare every two means (Steel and Torries, 1980).

## RESULTS AND DISCUSSION

***Body weight, body weight gain and growth rate from 4 to 12 weeks of age:***
The means of BW, BWG and GR for all strains (S, K, G, GM, Man and RI) for are presented in Tables (1), (2) and (3). The S strain had the highest BW, BWG and GR than the other strains at the different ages studied except GR at 4-8 wks of age. K strain was followed the S strain in BW, BWG and GR while Man, G, GM and RI had the lowest values respectively.

The BW, BWG and GR for male chicks were higher than females of all strains, differences between both sexes were highly significant. Statistical analysis revealed significant interaction between strains by sex ($P \leq 0.01$) in all studied traits.

Sherif (1991), Nawar (1995), Nawar an Abdou (1999) Nawar and Bahi El-Deen (2000) and Amin (2007) who found BW differences at different ages between local strains of chickens. While insignificant differences were reported by Saleh and Farghaly (1988) between BW of Dokki-4, Leghorn and RI breeds at 4 and 12 wks of age. However, at 8 weeks of age White Leghorn were significantly heavier than the other two breeds.

***Feed intake and feed conversion from 4 to 12 weeks of age:*** Results indicated significant strains differences in the average of FI and FC during 4-8 and 8-12 wks of age, Table (4). Generally, S and K had the highest FI (101.61 and 105.06 g/hen/d) and better FC (2.44 and 2.80) respectively during these periods, while the other strains had the lowest FI and bad FC.

These results were agreement with Saleh *et al.*, (1994), El Sayed *et al.*, (2001) and Younis and Abdel-Ghany (2003) who found significant differences between local stain for FI during different periods of age.

***Body weight, body weight gain and growth rate from 12 to 20 weeks of age:*** Means of BW, BWG and GR are showed in tables (5, 6 and 7). The inferences among four stains chicks (G, Man, GM and RI) in BW, BWG and GR were significantly. Moreover, Man and GM had the highest recorded followed by G and the lowest was RI.

No significant differences were showed between stains in BWG (16-20 and 12-2 wks of age) and GR (16-20 an 12-20 wks of age). The differences between both sexes were significantly ($P \leq 0.01$) in BW (16 and 20 wks of age); BWG (16-20 and 12-20 wks of age) and GR (16-20 wks of age).

Interaction due to stain by sex was significant in BW at (16 and 20 wks of age) and GR (12-16 and 16-20 wks of age) while it was insignificant in the other periods.

This results are in agreement with El-Hossari *et al.*, 1992; Saleh *et al.*, 1994, Nawar *et al.*, 1995, Mosaad *et al.*, 1995, ElSayed *et al.*, (2001) Younis and Abdel-Ghany (2003) and Amin (2007).

***Feed intake and feed conversion from 12 to 20 weeks of age:*** The result showed in Table (8) indicated that the RI strain had the lowest FI compared with the other strains. FC of G strain was the lowest significant value while the other strains (Man, GM and RI) had the best value.

***Egg production traits:*** As shown in Table (9) significant strain affect were found on egg weight at sexual maturity (EWSM). EWSM of the present study ranges from (52.07 to 59.98 g). S and K strains were the highest in EWSM (59.98 and 59.33 g) followed by RI and Man (59.37 and 56.00 g) while G stain had the lowest (52.07g). These results were in agreement with these reported by Nawar *et al.*, (1997) and Nawar and Abdou (1999), and in agreement with Nawar and Bahi el Deen (2000).

Rate of laying till 90 d of egg production was higher significantly for RI (48.33 egg/hen/90d), while these values were lower in K and S (36.60 and 36.00 egg/hen/90d) respectively. In this respect, Kosba *et al.*, (1981),

Wang and Pirchner (1992), Nawar and Abdou (1999) and Nawar and Bahi el Deen (2003) reported that the strain crossing increased rate of laying. Commercial strain egg type pullets had higher rate of laying than the other pure breeds or crosses due to the act that this strain is a commercial type of egg production.

Egg mass till 90 d of egg production showed the similar trend, since RI had the highest egg mass (16.25) while S, K and G had the lowest egg mass (9.50, 9.93 and 10.34) respectively. Similar results were reported by Nawar and Abdou (1999) and Nawar and Bahi el Deen (2003).

Results indicate a significant strain differences in the average of FI. S and K strain consume the largest amount of ration (145.09 and 141.58 g/d) respectively. While G, RI, Man and GM consumed the lowest amount (102.39, 101.85, 101.78 and 100.68 g/d). The differences among strains of chicks in FC was significant ($P \leq 0.01$). Moreover RI had the best FC (3.37) followed by Man (3.83), Gm (4.11) G (4.4), K (4.99) and S (5.27).

It is clearly noticed that in Table (10) that S strain in 4-8 wks of age gave significantly the highest mortality rate (2.50%) followed by K (2.10%) while RI and G strains (1.40 and 1.20%) recorded the lowest motility rate. Moreover, in 12-16 wks of age RI and Man strains gave significant highest mortality rate (1.12 an 0.92%) while G and GM, S, and K strains (0.67, 0.50, 0.45 and 0.40%), respectively showed the lowest mortality rate in this period.

**Table (1): Means of body weight in some local and foreign strains under the newly reclaimed area from 4 to 12 weeks of age.**

| Strain | Sex | W4 | W8 | W12 |
|---|---|---|---|---|
| Kosmos | *Male* | 651.64±7.55 | 1750.13±13.83 | 2560.31±23.74 |
| | *Female* | 493.40±4.97 | 1515.41±8.98 | 1845.85±13.71 |
| | *Overall* | 552.61±5.23b | 1603.24±8.92b | 2113.18±18.72b |
| Gimaizah | *Male* | 268.15±2.13 | 585.55±10.29 | 1002.54±17.00 |
| | *Female* | 252.37±1.620 | 474.04±4.30 | 826.80±26.44 |
| | *Overall* | 255.97±1.37d | 500.68±4.64cd | 869.83±20.70c |
| Mandarah | *Male* | 272.96±3.140 | 538.42±8.35 | 956.38±15.85 |
| | *Female* | 263.39±2.100 | 490.35±6.08 | 851.45±10.15 |
| | *Overall* | 265.88±1.77c | 503.37±5.07c | 880.04±8.87c |
| Golden Montazah | *Male* | 260.37±2.95 | 527.22±9.51 | 960.07±20.08 |
| | *Female* | 247.58±2.63 | 471.48±5.86 | 832.16±10.20 |
| | *Overall* | 250.35±2.17d | 483.57±5.15d | 861.26±9.50c |
| Rhode Island Red | *Male* | 231.68±1.62 | 486.18±8.11 | 829.62±14.68 |
| | *Female* | 222.24±1.72 | 419.39±3.80 | 720.80±3.41 |
| | *Overall* | 224.58±1.37e | 436.82±3.77e | 751.55±7.23d |
| Sasso | *Male* | 695.35±5.59 | 1951.13±25.71 | 3044.75±20.49 |
| | *Female* | 526.17±2.66 | 1641.53±8.79 | 2600.28±19.34 |
| | *Overall* | 587.14±4.87a | 1753.11±13.16a | 2760.88±17.98a |
| Significant | *Str* | ** | ** | ** |
| | *Sex* | ** | ** | ** |
| | *Str x Sex* | ** | ** | ** |

** = P≤0.01

**Table (2): Means of body weight gain (G) in some local and foreign strains under the newly reclaimed area from 4 to 12 weeks of age.**

| Strain | Sex | G4-8 | G8-12 | G4-12 |
|---|---|---|---|---|
| *Kosmos* | *Male* | 1098.50±15.38 | 810.18±25.41 | 1908.67±23.88 |
| | *Female* | 1022.01±10.57 | 330.44±13.37 | 1352.45±14.36 |
| | *Overall* | 1050.63±8.89b | 509.94±15.79b | 1560.57±16.75b |
| *Gimaizah* | *Male* | 317.75±9.60 | 417.47±12.95 | 734.64±16.52 |
| | *Female* | 222.06±3.89 | 349.20±26.23 | 574.50±26.21 |
| | *Overall* | 244.92±4.18c | 365.91±20.10c | 613.71±20.46c |
| *Mandarah* | *Male* | 265.43±7.40 | 410.84±84 | 682.52±14.92 |
| | *Female* | 227.89±5.37 | 227.89±5.37 | 587.41±9.39 |
| | *Overall* | 238.06±4.47c | 372.56±7.09c | 613.33±8.22c |
| *Golden Montazah* | *Male* | 265.67±8.33 | 430.66±17.23 | 698.24±18.92 |
| | *Female* | 223.69±5.91 | 367.56±8.89 | 584.15±10.28 |
| | *Overall* | 232.80±5.03c | 381.92±8.01c | 610.11±9.35c |
| *Rhode Island Red* | *Male* | 254.52±7.84 | 337.98±11.97 | 597.19±14.55 |
| | *Female* | 195.99±3.41 | 299.62±6.49 | 498.84±7.00 |
| | *Overall* | 211.27±3.46d | 310.46±5.82d | 526.64±6.88d |
| *Sasso* | *Male* | 1255.77±26.80 | 1093.63±31.15 | 2349.4±21.12 |
| | *Female* | 1115.36±8.63 | 958.15±21.68 | 2074.04±19.80 |
| | *Overall* | 1165.96±11.61a | 1007.10±18.12a | 2173.54±16.19a |
| *Significant* | *Str* | ** | ** | ** |
| | *Sex* | ** | ** | ** |
| | *Str x Sex* | ** | ** | ** |

** = P≤0.01

**Table (3): Means of growth rate (GR) in some local and foreign strains under the newly reclaimed area from 4 to 12 weeks of age.**

| Strain | Sex | GR4-8 | GR8-12 | GR4-12 |
|---|---|---|---|---|
| Kosmos | *Male* | 91.30±1.11 | 36.95±1.22 | 118.13±1.03 |
| | *Female* | 101.52±0.92 | 19.28±0.79 | 115.15±0.81 |
| | *Overall* | 97.70±0.74a | 25.89±0.75d | 116.26±0.64b |
| Gimaizah | *Male* | 72.77±1.43 | 52.41±1.40 | 114.24±1.17 |
| | *Female* | 60.12±0.79 | 50.98±0.90 | 103.69±0.70 |
| | *Overall* | 63.14±0.74b | 51.33±0.76b | 106.28±0.64d |
| Mandarah | *Male* | 64.41±1.36 | 54.21±1.62 | 109.90±1.23 |
| | *Female* | 58.99±0.90 | 52.73±0.93 | 103.97±0.82 |
| | *Overall* | 60.46±0.76c | 53.13±0.81b | 105.58±0.70d |
| Golden Montazah | *Male* | 66.24±1.41 | 57.04±1.67 | 112.99±1.20 |
| | *Female* | 60.97±0.97 | 55.86±0.93 | 106.90±0.89 |
| | *Overall* | 62.12±0.82bc | 56.13±0.81a | 108.28±0.75c |
| Rhode Island Red | *Male* | 69.36±1.35 | 50.86±1.46 | 111.01±1.19 |
| | *Female* | 60.38±0.80 | 51.94±0.90 | 104.98±0.78 |
| | *Overall* | 62.72±0.71b | 51.63±0.77b | 106.68±0.67cd |
| Sasso | *Male* | 93.65±1.26 | 44.35±1.33 | 125.41±0.65 |
| | *Female* | 102.66±0.50 | 44.63±0.92 | 132.02±.58 |
| | *Overall* | 99.41±0.60a | 44.53±.76c | 129.63±0.47a |
| Significant | *Str* | ** | ** | ** |
| | *Sex* | ** | ** | ** |
| | *Str x Sex* | ** | ** | ** |

** = P≤0.01

**Table (5): Means of feed intake (g/hen/d) and feed efficiency in some local and foreign strains under the newly reclaimed area from 4 to 12 weeks of age.**

| Strain | 4-8 wk | | 8-12 wk | |
|---|---|---|---|---|
| | *FI (g/hen/d)* | *FE* | *FI (g/hen/d)* | *FE* |
| **Kosmos** | 105.06±1.34a | 2.80±0.01b | 58.28±1.32b | 3.20±0.55b |
| **Gimaizah** | 27.99±3.59b | 3.21±0.20a | 64.69±2.93b | 4.95±1.29a |
| **Mandarah** | 33.16±0.72b | 3.90±0.70a | 59.89±1.27b | 4.50±0.38a |
| **Golden Montazah** | 27.44±2.70b | 3.31±0.07a | 58.65±1.49b | 4.30±0.55a |
| **Rhode Island Red** | 26.41±3.78b | 3.51±0.26a | 46.57±1.39c | 4.21±0.98a |
| **Sasso** | 101.19±8.82a | 2.44±0.18b | 136.68±1.63a | 3.81±0.40b |
| **Significant** | ** | ** | ** | ** |

** = P≤0.01

**Table (6): Means of body weight in some local and foreign strains under the newly reclaimed area from 16 to 20 weeks of age.**

| Strain | Sex | W16 | W20 |
|---|---|---|---|
| **Gimaizah** | *Male* | 1578.80±22.20 | 2473.09±31.94 |
| | *Female* | 1205.45±9.00 | 1973.49±16.90 |
| | *Overall* | 1388.13±13.53b | 2223.63±19.90a |
| Mandarah | *Male* | 1240.44±30.01 | 2421.58±84.60 |
| | *Female* | 1142.57±19.67 | 1988.67±27.00 |
| | *Overall* | 1465.82±16.86a | 2205.55±29.93a |
| Golden Montazah | *Male* | 1275.08±35.40 | 2581.48±68.37 |
| | *Female* | 1152.69±52.42 | 1898.42±20.47 |
| | *Overall* | 1481.63±41.01a | 2239.88±26.82a |
| **Rhode Island Red** | *Male* | 1078.16±28.82 | 2092.86±46.38 |
| | *Female* | 933.84±14.84 | 1809.28±22.95 |
| | *Overall* | 1277.76±14.48c | 1951.46±23.85b |
| **Significant** | *Str* | ** | ** |
| | *Sex* | ** | ** |
| | *Str x Sex* | ** | ** |

** = P≤0.01

**Table (7): Means of body weight gain (G) in some local and foreign strains under the newly reclaimed area from 12 to 20 weeks of age.**

| Strain | Sex | G12-16 | G16-20 | G12-20 |
|---|---|---|---|---|
| Gimaizah | *Male* | 575.46±18.80 | 895.28±23.77 | 1470.46±27.73 |
| | *Female* | 378.24±41.77 | 768.59±14.50 | 1146.20±50.35 |
| | *Overall* | 518.17±31.38b | 835.29±12.48 | 1353.46±37.64 |
| Mandarah | *Male* | 569.62±16.94 | 895.58±68.48 | 1465.21±72.39 |
| | *Female* | 558.55±16.54 | 578.67±20.00 | 1137.22±21.29 |
| | *Overall* | 584.96±13.23ab | 740.13±21.14 | 1325.09±22.46 |
| Golden Montazah | *Male* | 626.84±29.17 | 1024.48±51.07 | 1621.41±71,96 |
| | *Female* | 578.84±53.19 | 439.24±82.45 | 1066.26±19.38 |
| | *Overall* | 620.34±41.16a | 758.35±66.82 | 1378.69±23.46 |
| Rhode Island Red | *Male* | 524.25±22.81 | 767.26±35.95 | 1263.24±35.81 |
| | *Female* | 495.98±12.04 | 564.28±19.16 | 1088.48±19.41 |
| | *Overall* | 526.25±10.89b | 673.27±17.85 | 1199.52±18.07 |
| Significant | *Str* | * | NS | NS |
| | *Sex* | NS | ** | ** |
| | *Str x Sex* | NS | NS | NS |

NS= not significant *= P≤0.05 ** = P≤0.01

**Table (8): Means of growth rate (GR) in some local and foreign strains under the conditions of newly reclaimed area from 12 to 20 weeks of age.**

| Strain | Sex | GR12-16 | GR16-20 | GR12-20 |
|---|---|---|---|---|
| Gimaizah | Male | 44.59±1.64 | 44.19±1.36 | 84.62±1.83 |
| | Female | 37.23±1.27 | 48.33±0.99 | 81.88±1.59 |
| | Overall | 45.90±1.05b | 46.26±0.82 | 87.51±1.25 |
| Mandarah | Male | 45.89±1.37 | 45.37±3.48 | 86.75±3.81 |
| | Female | 49.40±1.29 | 34.05±1.40 | 80.08±1.57 |
| | Overall | 49.89±1.04a | 40.33±1.31 | 85.90±1.45 |
| Golden Montazah | Male | 46.33±2.28 | 50.60±2.79 | 91.56±4.24 |
| | Female | 54.72±1.73 | 26.18±2.34 | 78.10±1.44 |
| | Overall | 52.96±1.43a | 40.75±1.97 | 88.91±1.46 |
| Rhode Island Red | Male | 46.03±2.20 | 44.89±2.57 | 86.45±2.37 |
| | Female | 53.33±1.35 | 36.95±1.66 | 86.04±1.52 |
| | Overall | 51.86±1.15b | 41.70±1.40 | 88.77±1.28 |
| Significant | Str | * | NS | NS |
| | Sex | NS | * | NS |
| | Str x Sex | ** | ** | NS |

NS= not significant *= P≤0.05 ** = P≤0.01

**Table (9): Means of feed intake (g/hen/d) and feed efficiency in some local and foreign strains under the newly reclaimed area from 12 to 20 weeks of age.**

| Strain | 12-16 wk | | 16-20 wk | |
|---|---|---|---|---|
| | FI (g/hen/d) | FE | FI (g/hen/d) | FE |
| Gimaizah | 113.69±3.68a | 6.50±0.81a | 122.02±1.07a | **5.62±0.30a** |
| Mandarah | 111.88±5.52a | 5.51±0.32b | 103.32±0.00a | **4.83±0.18bb** |
| Golden Montazah | 126.33±1.22a | 5.82±0.04b | 111.15±0.07a | **5.00±0.51b** |
| Rhode Island Red | 97.27±2.27b | 5.62±0.61b | 97.78±0.09b | **4.82±0.80b** |
| Significant | ** | ** | ** | ** |

** = P≤0.01

**Table (10): Means of weight of egg at sexual maturity, egg number (Egg/hen/90), egg weight (g), egg mass, feed intake (g/hen/d) and feed efficiency in some local and foreign strains under the newly reclaimed area from 4 to 12 weeks of age.**

| Strain | Weight of egg at sexual maturity | Egg number Egg/hen/90 | Egg weight.g | Egg mass | Feed intake g/hen/d | Feed efficiency |
|---|---|---|---|---|---|---|
| Kosmos | 59.98±0.30a | 36.60±0.70d | 24.39±0.48c | 9.93±0.36cd | 141.58±0.01a | 4.99±0.09b |
| Gimaizah | 52.07±0.08d | 40.27±0.82c | 23.30±0.45c | 10.34±0.41cd | 122.39±0.19b | 4.40±0.08c |
| Mandarah | 56.00±0.29b | 42.73±0.41b | 26.59±0.35b | 12.68±0.25b | 121.78±0.74b | 3.83±0.03e |
| Golden Montazah | 54.11±0.06c | 40.80±0.61bc | 24.53±0.39c | 11.13±0.39c | 120.68±0.34b | 4.11±0.05d |
| Rhode Island Red | 56.37±0.23b | 48.33±0.88a | 30.27±0.59a | 16.29±0.68a | 121.85±0.49b | 3.37±0.07f |
| Sasso | 59.33±0.18a | 36.00±0.58d | 23.73±0.31c | 9.50±0.26d | 145.05±0.31a | 5.27±0.06a |
| Significant | ** | ** | ** | ** | ** | ** |

** = P≤0.01

**Table (11): Means of mortality percentage (%) of some local and foreign strains under the newly reclaimed area from 4 to 20 weeks of age.**

| Strain | 4-8 | 8-12 | 12-16 | 16-20 |
|---|---|---|---|---|
| Kosmos | 2.10±0.06b | 0.87±0.19 | 0.40±0.06c | 0.63±0.19 |
| Gimaizah | 1.20±0.15de | 1.07±0.07 | 0.67±0.17bc | 0.43±0.03 |
| Mandarah | 1.57±0.07c | 1.30±0.15 | 0.92±0.08ab | 0.42±0.22 |
| Golden Montazah | 1.03±0.03e | 0.95±0.10 | 0.50±0.12bc | 0.44±0.06 |
| Rhode Island Red | 1.40±0.06dc | 1.27±0.15 | 1.12±0.12a | 0.48±0.16 |
| Sasso | 2.50±0.00a | 1.30±0.61 | 0.45±0.03bc | 0.45±0.03 |
| Significant | ** | *NS* | * | *NS* |

NS= not significant *= P≤0.05 ** = P≤0.01

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## تأثيرالسلالة والجنس في بعض سلالات الدجاج المحلية والأجنبية على بعض الصفات الانتاجية ( صفات النمو وانتاج البيض) تحت الظروف البيئية للاراضى حديثة الاستصلاح

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مركز بحوث الصحراء- وزارة الزراعة – القاهرة

أجريت هذة الدراسة في محطة بحوث مريوط التابعة لمركز بحوث الصحراء في الفترة من ٢٠٠٥ حتى ٢٠٠٧ وكان الهدف من هذة الدراسة تحليل الاختلافات إنتاجية لصفات النمو و وإنتاج البيض لستة سلالات من الدجاج ثلاثة منهم من السلالات المحلية ( المنذرة والمنتزة الذهبي والجميزة ) والثلاثة الأخرون من السلالات الأجنبية احدهما متخصصة في إنتاج البيض ( الرود ايلاند ) و الأخريان متخصصين في إنتاج اللحم ( الساسو والكوزموس ) وذلك لاختيار أفضلهم في الإنتاج تحت ظروف الاراضى حديثة الاستصلاح وخاصة أن صنف الكوزموس يعتبر حديث على الظروف البيئية المصرية ( دخل عام ٢٠٠٤ – ٢٠٠٥ عن طريق إحدى الشركات الخاصة ) ولا يتوفر لدينا اى معلومات عن صفاتة الإنتاجية مقارنة بالأصناف الموجودة بمصر لذا تم تقدير صفات النمو وإنتاج البيض وكانت النتائج كالتالي: -

كان دجاج الساسو أعلى في وزن الجسم والزيادة في وزن الجسم ومعدل النمو في الفترة من ٤ – ١٢ أسبوع فيما عدا معدل النمو في الفترة من ٤ – ٨ أسبوع ٠ الكوزموس يلي الساسو في هذة

الصفات بينما المندرة والجميزة و المنتزة الذهبي والرود ايلاند سجلت اقل قيم ٠ الساسو والكوزموس سجلو أعلى استهلاك يومي للعلف ( ١٠١.٦١ جرام ) و( ١٠٥.٠٦ جرام ) على الترتيب وكانوا أفضلهم في الكفاءة الغذائية (٢.٤٤ ) و (٢.٨٠ ) الترتيب بينما المجاميع الأخرى كان استهلاكها من العلف اليومي اقل ولكن كانت منخفضة في الكفاءة الغذائية خلال هذة الفترة ٠ كان هناك اختلافات معنوية بين الأصناف (الجميزة والمندرة والمنتزة الذهبي والرود ايلاند ) في وزن الجسم والزيادة في وزن الجسم ومعدل الزيادة في وزن الجسم خلال الفترة من ١٢ – ٢٠ أسبوع ٠ كانت الكفاءة الغذائية لدجاج الجميزة اقل معنوية بينما السلالات الأخرى ( المندرة والمنتزة الذهبي والرود ايلاند ) كانت أعلى معنوية ٠ بالنسبة لصفات أنتاج البيض قد سجل الساسو والكوزمس أعلى قيمة لوز ن البيضة عند النضج الجنسي (٥٩.٩٨ جم ) و (٥٩.٣٣ جم ) على الترتيب يلي ذلك الرود ايلاند (٥٦.٣٧ جم ) والمندرة (٥٦.٠٠ جم ) أما الجميزة كانت اقلهم (٥٢.٠٧ جم ) ٠ الرود ايلاند كان أعلى في معدل أنتاج البيض في ٩٠ يوم (٤٨.٣٣ بيضة / دجاجة) ولكن كان منخفض بالنسبة للكوزموس ( ٣٦.٦ بيضة ) و الساسو ( ٣٦.٠ بيضة ) ومما هو جدير بالذكر أن كتلة البيض في ٩٠ يوم اظهرا اتجاة مماثلا ٠وكان هناك اختلافات معنوية بين السلالات في استهلاك العلف اليومي أثناء فترة أنتاج البيض فقد سجل الساسو والكوزموس أعلى قيم ( ١٤٥.٠٥ جم و ١٤١.٥٨جم على الترتيب) بينما استهلاك الجميزة والرودايلاند والمندرة والمنتزة الذهبي اقل قيمة (١٢٢.٣٩ جم) (١٢١.٨٥ جم) و (١٢١.٧٨جم) و (١٢٠.٦٨) على الترتيب ٠