Summary And Conclusion

This work was carried out at El Azab Poultry Research Center, Animal Production Research Institute.

Five hundred chicks from each line were used to study some of physiological and genetical differences among three lines of Fayoumi chickens the PP which established for high EN, the GG line which established for high BW and the control line (RR). The following criteria were measured for each line: live body weight and related traits (LBW, LBWG (g) and FC) were recorded at hatch, 4, 8, 61 weeks of age, age at sexual maturity (ASM, days). Egg production % (EP) egg number (EN), egg weight (EW), egg mass (EM) at the first, second, third months and the first 49 days of production. Body temperature (BT) and respiration rate (R.R.). Slaughter parameters in terms of (blood %), (liver weight%), (kidney weight%) and (proventriculus%) Blood plasma constituents in terms of total protein (TP), albumin (Alb), globulin (Glob), Albumin/Globulin ratio (A/G). Blood enzymes (ALT), (AST) and creatinine (creat). Some blood hormones, Triiodothyronine (T3) and growth hormone (GH) at 4, 8 and 61 weeks of age. Phenotypic correlation (rp), among plasma constituents, between live body weight and blood plasma constituents and rp among egg production traits.
Summary And Conclusion

Some of the results were as follows:

1. Production performance:
   1.1. Live body weight (LBW):
   At all ages of these study, the GG line had significantly heavier LBW than those for the PP or RR. Whereas the PP line had the lightest live body weight.
   
   1.2. Live body weight gain (LBWG):
   At all studied periods, it was observed that the best values were obtained with the GG line as compared with the PP or RR lines.

1.3. Feed conversion (FC):
   The GG line recorded better FC values than those obtained by the PP or RR lines.

2. Egg production performance:
   2.1. Age at sexual maturity:
   The PP females sexually matured at earlier age than RR and GG hens.

2.2. Egg production related traits:
   Generally during 91 days of egg production, the PP females had significantly high EP, EN and EM followed by the RR females then the GG females.
Summary And Conclusion

٨. Physiological traits :

٨.١. Body temperature (BT):

At all studied ages, there were no significant differences in BT values among different lines.

٨.٢. Respiration rate (R.R.):

At ٤ weeks of age, the GG line had significantly higher R.R. values than the PP or RR lines. Whereas, at ٦١ weeks of age, the PP line had significantly higher R.R. values than the GG or RR lines.

٨.٣. Slaughter parameters :

At all studied ages, there were no significant differences in relative organ weights except for liver weight at ٤ weeks, the GG line had significantly higher relative liver weight than PP or RR lines.

٨.٤. Blood plasma parameters:

٨.٤.١. Some plasma constituents :

At all studied ages, there were no significant differences in all studied blood constituents among the different Fayoumi lines except for the globulin values at ٨ and ٦١ weeks of age where it was significantly higher in Fayoumi chicken PP line than GG or RR lines.

٨.٤.٢. Some plasma enzymes :

At all studied age, there were no significant differences in activites enzymes (ALT and AST) and creatinine values among all lines of Fayoumi chickens except at ٤ weeks of age, the PP line had significant higher creatinine values than GG or RR lines.
Some plasma hormones:

At all studied age, the GG line had significantly higher GH levels than PP or RR lines.

Haematological parameters:

At all studied age, there were no significant differences in all studied Hematological parameters among all Fayoumi lines.

Hematimetric indices:

The RR line had significantly higher MCV values than PP or GG lines at 2 and 4 weeks of age, whereas at 4 weeks of age, the PP line had significantly higher MCHC than GG or RR lines.

Phenotypic correlation:

All lines showed mostly high in magnitude but inconsistent in direction phenotypic correlations among all plasma constituents studied at different ages or between these traits and LBW.

Phenotypic correlations estimates among plasma constituents at different ages:

For PP line, at 2 weeks, there were positive and highly significant correlation between (TP and Alb, Glob and T), negative and highly significant between Glob and A/G. At 4 weeks, there were, positive and significant correlation between (TP and Alb, Alb and A/G), negative and significant between Glob and A/G. At 6 weeks, there were, positive and highly significant correlation between (ALT and GH, TP and Alb, Alb and A/G), negative and highly significant between Glob and GH.
Summary And Conclusion

For GG line, at 4 weeks, there were, positive and highly significant correlation between (TP and both Alb and A/G, Alb and A/G), negative and highly significant correlation between (TP and Glob, Alb and Glob and Glob and A/G). At 8 weeks, there were, positive and highly significant correlation between (TP and Alb, Alb and A/G) and negative and significant correlation between Glob and A/G. At 16 weeks, there were, positive and highly significant correlation between (AST and TP, TP and both Alb and A/G, Alb and A/G), negative and highly significant correlation between (Glob and A/G).

For RR line, at 4 weeks, there were, positive and highly significant correlation between (TP and Alb, Alb and A/G), negative highly significant correlation between (Glob and A/G). At 8 weeks, there were, positive and highly significant correlation between (TP and Alb), negative and highly significant correlation between Creat and both TP and Alb. At 16 weeks, there was, positive and highly significant correlation between (TP and both Alb and Glob)

4, 8, 16. Phenotypic correlations estimates between plasma constituents and body weight:

Regardless of age, for PP line, BW positively and highly significant correlated with ALT and AST whereas negatively and significantly correlated with T3. For GG line, BW positively and highly significant correlated with AST, negatively significant with TP and negatively and highly significant with Glob. For RR line, BW positively significant correlated with AST, and negatively and highly significant correlated with both TP and Alb.
Summary And Conclusion

٤.٤. Phenotypic correlation estimates among egg production traits:

٤.٤.١. Phenotypic correlation estimates between age at sexual maturity (ASM) and egg production traits:

For PP line, there were positive and highly significant correlation between ASM and each of EN¹, EW¹, EM¹ and EM³. For GG line, ASM positively and highly significant correlated with EN¹, EW¹ and EM¹. For RR line, ASM positively and highly significant correlated with EN¹, EW¹ and EM¹.

٤.٤.٢. Phenotypic correlation estimates between egg number and other egg production traits:

For PP line, EN⁹ positively and highly significant correlated with EN¹, EN⁹, EN³, EM¹, EM³ and EM⁹.

For GG line, EN⁹ positively and highly significant correlated with EN¹, EN⁹, EN³, EW¹, EM¹, EM³ and EM⁹.

For RR line, EN⁹ positively and highly significant correlated with EN¹, EN⁹, EN³, EW¹, EW⁵, EW⁹, EM¹, EM³, EM⁹ and EM⁹.

Briefly, the results revealed that GG line showed a significant improvement in body weight; however, PP line showed a significant improvement in egg production traits. On the other hand, this result is evident for T⁵ and GH as a physiological markers for detecting the difference among lines and between sexes according to their body weight.
Summary And Conclusion

- Estimate of one of blood parameters could be used as a good indicator to the other significantly correlated parameters based on the high correlation values which obtained in these study.

- It is recommended to use selection line aiming at increasing egg production, body weight and the resistant to viral diseases in crossing programs in the future.