

Department : poultry and fish production  
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Title of Thesis : CROSSING BETWEEN SINAI CHICKEN STRAIN AND SOME OTHER LOCAL LAYER CHICKEN STRAINS  
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**ABSTRACT:** Aiming to examine the crossing between Sinai Bedouin fowls and some other local layer chicken strains. A 3x3 partial diallel experiment including three local strains (Sinai, Gimmizah and Silver Montazah chicken strains) was carried out in poultry research farm in Faculty of Agriculture – Shebin El-Kom was conducted during the period between October 2018 and December 2020. Three purebreds and four crossbred genotypes were obtained.

Results and conclusions can be summarized as follow:

- Crossing Sinai males to Gimmizah females resulted in heavier birds comparing with other crosses and reciprocals until 12 weeks of age. However, Sinai females to Gimmizah males resulted the heavier birds across all four crosses at 16 weeks of age;
- Across all crosses the SG cross (Sinai males × Gimmizah females) showed superiority in all studied egg production traits except that, the chickens of this cross sexually matured later than all other crosses in recent experiment;
- Crossing Sinai chickens with utilized strains improved some economically important traits keeping the egg quality traits and heat tolerance traits in desirable levels;
- If either growth or egg production traits represent the breeder goal, Sinai males could be mated to Gimmizah females in order to obtain the best hybrid vigor effects;
- According to results, the best cross performance in egg quality traits was the cross of S. Montazah males with Sinai females (MS).
- Further research needed to assure the results of current study and to be the first step to produce high performance egg production Egyptian hybrid.

**Key words:** Growth traits, Sinai, Gimmizah, Montazah, Crossing effect

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