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**Genetic improvement of the local Sinai strain for egg production  
by using general selection index**

**By**

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**ABSTRACT**

The present experiment was carried out in the Poultry Farm, Department of Poultry and Fish Production, Faculty of Agriculture, Menoufia University at Shibin El-Kom, Egypt. The local strain used was Sinai Bedouin fowl. The experiments lasted for four years, starting from October 2014.

The aim of the experiment was to study the rates of improvement in egg traits by applying the general selection Index (IG) for 3 generations.

1. The actual genetic gain (response of selection)  $\Delta G$  for mature egg weight were 3.33, 9.23 and 13.43 (g) in the first, second and third generations, respectively.
2. The actual genetic gain (response of selection)  $\Delta G$  for egg number during the first 90 day were 3.36, 4.03 and 6.01 (egg) in the first, second and third generations, respectively.
3. The actual genetic gain (response of selection)  $\Delta G$  for interval between clutches were -0.59, -1.40 and -1.60 (day) in the first, second and third generations, respectively.
4. The actual genetic gain (response of selection)  $\Delta G$  for clutch size were 0.36, 0.75 and 0.90 (egg) in the first, second and third generations, respectively.

So, it concluded that selection index for improving egg production traits must content selection for persistency and profitability.