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<b>Title of Thesis</b>	: Genetic and Phenotypic evaluation for some economic traits in a herd of Egyptian buffaloes.
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<b>Scientific Degree</b>	: M. Sc.
<b>Department</b>	: Animal Prod.
<b>Field of study</b>	: Animal Breeding
<b>Date of Conferment</b>	: Jun. 14 , 2023
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**ABSTRACT:** This study was carried out to investigate genetic factors affecting, and estimate genetic parameters for milk production traits of Egyptian buffaloes via animal model. The data obtained from an experimental farm (belonging to the Animal Production Research Institute, Ministry of Agriculture), located in the Nile Delta, Kafr El-Sheikh, Egypt. Data were collected from 3417 records of Egyptian buffaloes that represented the period from 2000 to 2007. The means and coefficient of variability (CV%) of milk production traits as total milk yield (TMY), day milk yield (DMY), lactation period (LP), fat percent (F%), protein percent (P%), lactose percent (L%), total solid percent (TS%), fat yield (FY), protein yield (PY), lactose yield (LY), total solid yield (TSY), solid yield (SNFY), somatic cell count (SCC) are 1905.52 kg (21.84%), 9.33 kg (18.76%), 254.15 day (9.37%), 7.68% (18.26%), 4.24% (9.61%), 5.13% (7.70%), 16.58% (7.55%), 64.93 g/liter milk (29.91%), 53.40 g/liter milk (11.98%), 48.58 g/liter milk (9.56%), 157.24 g/liter milk (7.96%), 95.75 g/liter milk (11.82%), 111.85 (\*10<sup>-3</sup>) cells/ml milk (66.94%), respectively. Sire and dam had significant effects on studied traits. Heritability estimates were 0.25, 0.39, 0.10, 0.18, 0.29, 0.14, 0.32, 0.41, 0.22, 0.30, 0.20, 0.25, 0.10 for TMY, 280-dMY, LP, F%, P%, L%, FY, PY, LY, TSY, SNFY, SCS, respectively. Estimates of rG among milk production traits were positive but it takes negative trend with PY, LY and SCC. Estimates rP among milk production traits were positive but it takes negative trend with PY and SNFY. The range of expected cow breeding values for TMY, 280-dMY, DMY, LP, SCC, F%, P%, L%, TS%, TS% FY, PY, LY, TSY, SNFY were 1902.27 kg, 3223.66 kg, 254.01 d, 111.82 (\*10<sup>-3</sup>) cell / ml milk, 8.10, 4.01, 4.99, 15.15, 64.93, 53.40, 157.24 and 95.75, respectively. Moderate heritability and positive coefficients of phenotypic and genetic correlation for studied criteria indicate to possibility of improving them using traditional selection.

**Key words:** Egyptian buffaloes, Milk Production traits, Heritability, Breeding value, somatic cell count.

**عنوان الرسالة:** التقييم الوراثي والمظهري لبعض الصفات الاقتصادية فى قطيع من الجاموس المصرى

**اسم الباحث :** إكرام ايهاب احمد محمود

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البحوث الزراعية

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**الملخص العربى**

## ABSTRACT

This study was carried out to investigate genetic factors affecting, and estimate genetic parameters for milk production traits of Egyptian buffaloes via animal model. The data obtained from an experimental farms (belonging to the Animal Production Research Institute, Ministry of Agriculture), located in the Nile Delta, Kafr El-Sheikh, Egypt. Data were collected from 3417 records of Egyptian buffaloes that represented the period from 2000 to 2007. The means and coefficient of variability (CV%) of milk production traits as total milk yield (TMY), day milk yield (DMY), lactation period (LP), fat percent (F%), protein percent (P%), lactose percent (L%), total solid percent (TS%), fat yield (FY), protein yield (PY), lactose yield (LY), total solid yield (TSY), solid non fat yield (SNFY), somatic cell count (SCC) are 1905.52 kg (21.84%), 9.33 kg (18.76%), 254.15 day (9.37%), 7.68% (18.26%), 4.24% (9.61%), 5.13% (7.70%), 16.58% (7.55%), 64.93 g/liter milk (29.91%), 53.40 g/liter milk (11.98%), 48.58 g/liter milk (9.56%), 157.24 g/liter milk (7.96%), 95.75 g/liter milk (11.82%), 111.85 (\*10<sup>-3</sup>) cells/ml milk (66.94%), respectively. Sire and dam had significant effects on studied traits. Heritability estimates were 0.25, 0.39, 0.10, 0.18, 0.29, 0.14, 0.32, 0.41, 0.22, 0.30, 0.20, 0.25, 0.10 for TMY, 280-dMY, LP, F%, P%, L%, FY, PY, LY, TSY, SNFY, SCS, respectively. Estimates of  $r_G$  among milk production traits were positive but it takes negative trend with PY, LY and SCC. Estimates  $r_P$  among milk production traits were positive but it takes negative trend with PY and SNFY. The range of expected cow breeding values for TMY, 280-DMY, DMY, LP, SCC, F%, P%, L%, TS%, TS% FY, PY, LY, TSY, SNFY were 1902.27 kg, 3223.66 kg, 254.01 d, 111.82 (\*10<sup>-3</sup>) cell / ml milk, 8.10, 4.01, 4.99, 15.15, 64.93, 53.40, 157.24, 95.75, respectively. Moderate heritability and positive coefficients of phenotypic and genetic correlation for studied criteria indicate to possibility of improving them using traditional selection.

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