5- SUMMARY

Physiological Part :

The present study was carried out during a period that lasted from March, 1989 to December, 1989, at the cow's experimental farm belonging to Animal Production Department, Faculty of Agriculture, at Moshtohor, Zagazig University.

It was aimed to detect the hormonal pattern of pituitary gland (Prolactin) as well as ovary hormone (Oestradiol-17β) during different reporductive periods (nonpregnancy period, pregnancy period and/ or postpartum period).

Hormonal assays were carried out at the different interval times in nonpregnant cows. Assays were carried also at three stages of pregnancy namely early, mid and late pregnancy, however, at three interval times postpartum period.

Besides, the relationship between both of the oestradiol, prolactin hormones and milk yield during the three interval times of postpartum period were also, investigated. Blood was were collected every week for hormonal assays.

Hormonal assays were performed in the laboratories of Endocrinology Research Unit, Radiobiology Department, Nuclear Research Center, Atomic Energy Establishment, Enshas, Egypt.

Results obtained could be summerized as follows :

Oestradiol (E2) level in nonpregnant cows :

1- Non of the factors studied (parity, cow within parity, stages of reproductive periods, parity and stages of reproductive periods) had significant effect on E_2 level during the different intervals of times.

2- Serum E_2 level showed insignificant variation among the various intervals of nonpregnant cows. Its mean for the different intervals amounted to 7.56 ± 2.24 pg/ml.

Oestradiol level in pregnant cows :

1- Variation due to either stages or cow within parity in serum E_2 level during pregnancy period was found to be significant .

2- Cow's parity or interaction between parity and stage of pregnansy show non-significant effect on serum E_2.

3- Serum E_2 level increased as stage of pregnancy stage atvanced reaching the wide individual variation particularly in the late stage where the values varied from 12.8 - 72.0 pg/ml.

Oestradiol level in postpartum cows :

1- Variation due to either intervals, cow within parity or interaction between parity and postpartum interval in serum E_2 level during postpartum intervals was found to be significant .

2- Different trend was found in serum E_2 level due to cow's parity.

3-The mean of serum E_2 level of the different intervals was 8.14±2.31 pg/ml.

Prolactin (PRL) level in pregnant cows :

1- Variation due to stages in serum PRL level during pregnancy period was found to be highly significant .

2- Non of the factors studied had significant effect on serum PRL level.

3-The mean values of the different stages amounted to 19.12 ± 3.18 ng/ml.

Prolactin level in postpartum cows :

1-Serum PRL level effect on postpartum intervals exerted highly significant.

2- Non of the factors studied had significant effect on serum PRL level.

3-The mean values of the different intervals amounted to 12.00±0.88 ng/ml.

Oestradiol hormone and milk yield in postpartum cows :

1. Variation due to either postpartum intervals or cow within parity in milk yield of postpartum intervals was found to be significant.

2- Parity and the interaction between parity and postpartum interval showed non-significant effects on milk yield.

3- Parital linear and quadratic regressions of milk yield on oestradiol hormone level were negative and nonsignificant.

Prolactin hormone and milk yield in postpartum cows:

1- Variation due to postpartum stages or cow within parity in milk yield during postpartum stages was significant .

2- Parity or the interaction between parity and Postpatum stages showed nonsignificant effect on milk yield.

3- The parital linear and quadradic regression coefficients of milk yield on PRL hormone were negative and nonsignificant.

Productive Part :

A total number of 2674 lactation records of local Egyptian cows were used. Data covered the period from 1986 to 1991. These records were used to investigate the non-genetic factors influencing 305-day milk yield (305 MY), total milk yield (TMY), bi-weekly milk yield (BMY)

lactation period (LP), number of services per conception (NSC), days open (DO) gestation length (GL) and calving interval (CI).

Results obtained can be summarized as follows :

1- Overall means of TMY; 305MY; BMY and LP were 2196.9Kg, 2189.0Kg, 100.5 Kg and 287.6 days, respectively. However, the averages for NSC DO, GL and CI were 1.78, 139.3 days, 280.9 days and 415.7 days, respectively.

2- Year of calving affected significantly ($P<0.001$) TMY, 305MY and BMY and constituted a significant ($P<0.05$) source of variance in LP and NSC. The contribution of year of calving in the variance of either GL, DO or CI was insignificant.

3- Season-of-calving effects contributed significantly ($P<0.001$) to the total variance of TMY, 305 MY and BMY and nonsignificantly to the variance of LP, NSC, DO, GL and CI .

4- Parity affected significantly ($P<0.01$ or $P< 0.001$) BMY, NSC and GL. However, no significant effects for parity on 305 MY, TMY, DO and CI were detected.

5- Most estimates of partial linear and quadratic regressions of BMY on age at calving were highly significant ($P<0.001$) while those of 305MY, TMY, NSC, DO, GL and CI were nonsignificant.

6- Most estimates of paritial linear and quadratic regressions of TMY, 305MY, BMY and LP on DO were not significant.

7- Cow effects were found to be mostly highly significant ($P<0.001$) on all milk production traits as well as NSC, DO, and CI.