

## Association of lactoferrin with some immunological and blood traits of Holstein calves in the middle of Iraq

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**ABSTRACT:**

This study was carried out at the Al-Salam dairy farm, at Latifiya, 25 km south of Baghdad. The laboratory experiments on blood analysis were conducted for a period from 3 September 2017 to 11 December 2017, for investigating the effect of adding different levels of lactoferrin (0, 3 and 6 g Lf/day) to colostrum and milk in immunity and a number of blood traits in 18 Holstein calves from birth to 60 days. The results of the study showed significant differences ( $P<0.05$ ) in the concentration of IgG in calves' blood, with increased lactoferrin concentration level at the age of 30 days in calves' blood of the control group, second and third treatment,  $10.13\pm 0.52$ ,  $11.90\pm 0.72$  and  $12.67\pm 0.63$  mg/m respectively. IgM and IgA concentrations were not affected by the treatments at the age of 30 days. At the age of 60 days, the differences were significant ( $P<0.05$ ) in IgG and IgM for the third treatment calves (6 g Lf), then for the second treatment calves (3 g Lf), while the lowest concentrations for the control group. The results of the this study showed significant differences ( $P<0.05$ ) in the transferrin concentration of the calves blood at 30 and 60 days for the control group (without Lf) compared with the calves of the second treatment groups and the third. The iron level in the blood at the age of 60 days were also significant ( $P<0.01$ ), where the concentration increased by increasing the level of lactoferrin and reached maximum ( $140.00\pm 0.67$  mcg/ml) for the third treatment of the calves and below ( $141.70\pm 1.14$  mcg/ml) in the control group. The Total Iron Binding Capacity (TIBC) and transferrin saturation ratio were not significantly affected by the addition of lactoferrin. There seen a significant difference ( $P<0.05$ ) in the logarithm of *E. coli* bacteria in the feces of calves according to the treatment given.

**Keywords:**

Lactoferrin, Immunity globulins, Holstein calves.