

## THE EFFECT OF BOVINE GRANULOCYTE COLONY STIMULATING FACTOR ON HIGH YIELDING COWS WHITE BLOOD CELLS AND INCIDENCE OF MASTITIS AND METRITIS

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**Abstract.** The objective of this study was to evaluate the response of dairy cows to granulocyte colony stimulating factor (GCSF) according to white blood cells and incidence of mastitis and metritis. Experimental cows (n = 15) received GCSF 7 days before expected calving and again within 24 hours after calving. Control cows (n = 15) injected with saline. Blood samples collected 3 times (-7;0;7 days relative to parturition) from each cow immediately before GCSF and saline injection. Total leucocyte and granulocyte in the whole blood counted using hematology analyzer. To determine the presence of polymorphonuclear leucocyte (PMN), blood smear slides were prepared and stained. In experimental group, significant increase observed on white blood cells (WBC), lymphocyte (LYM) and granulocyte (GRA) counts, especially in band and segmented groups of neutrophils. In GCSF treated group GRA count were elevated from 67.7 % to 74.5% compared to the control group. Band neutrophil cells was higher by 40.5% compared to the control group. Segmented neutrophil cells was 22 % higher compared to the control group. Lymphocyte (LYM) count in experimental group was 25.5% to 39.8% higher compared to the control group. Clinical mastitis diagnosed in both groups equally by 6.7 %. Clinical metritis with 20% occurrence ratio diagnosed only for experimental cows. In our study GCSF did not reduced the incidence of clinical mastitis in cows during the periparturient period and increased clinical metritis incidence ratio, but represents an innovative way to reduce periparturient diseases incidence by affecting immune system.

**Keywords:** Immunosuppression Pegbovigrastim, Peripartum, Granulocyte, Mastitis, Metritis