

## Effect of Bioginseng Schrot and Enterofare on the Resistance of Calfs at the Early Age

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It is commonly believed that preservation of calfs at the early age (until two months) is one of the main problem to be solved in veterinary science. In this period of time the formation of their own system takes place. Shortage of data concerning comparative description of ecological substances and their combinations which are able to stimulate immune functions of calf organism in the period of their early postnatal development predetermines the direction of our investigations.

It is known that effectiveness of natural products is more when combination of biologically active components is preserved more completely. In our experiments we investigated the effect of bioginseng schrot (waste products from pharmaceutical industry) and enterofare (intestinal flour from cattle and pig duodenum) on the cellular and humoral factors of resistance. Animals were divided into 4 groups: 1 – control (without any addition to the ration); 2 – with addition to the ration of enterofare (3g twice a day); 3 – with addition to the ration of bioginseng schrot (7g twice a day); 4 – with addition to the ration of bioginseng schrot (7g) and enterofare (3g) twice a day. All additions were given to animals during 10 days. Before the beginning of experiments and after 30 days the blood and the blood serum were let for morphological, histological, biochemical and immunologic investigations.

The results of our experiment showed reliable increase and normalization of investigated indexes of calf natural resistance in all experimental groups in comparison with control animals, especially in the 4 group. For example, total protein in the 1 group – 56,51 g/l, in the 4 group – 61,48 g/l ( $p < 0,05$ ); hemoglobin 82,0 g/l – 92,0 g/l ( $p < 0,05$ ) accordingly; erythrocytes  $5,65 \times 10^{12}$ / l –  $6,25 \times 10^{12}$ / l; bactericidal activity of blood serum 52,61 % – 78,5 % ( $p < 0,05$ ); phagocytic activity of neutrophiles 53 % – 76,5 % ( $p < 0,05$ ); average cytochemical coefficient of neutrophiles 1,632 – 2,112 ( $p < 0,05$ ); T activated RE–rosette-forming cells 9,5 – 15,5 ( $p < 0,05$ ); Ig A – 0,62 mg/ml, Ig G – 18 mg/ml, Ig M – 1,32 mg/ml – Ig A – 0,98 mg/ml, Ig G – 26 mg/ml, Ig M – 1,59 mg/ml ( $p < 0,05$ ).

Thus, application of bioginseng schrot and enterofare has positive effect on calf organism, increases protein synthesis, stimulates hemopoiesis and activates humoral and cellular protective mechanisms. These results are in correlation with clinical status. 60 % of control calfs had enteritis. Calfs in other groups had no enteritis, had increased appetite and high average daily additional weight (25,7 %).