

## EFFECTS OF TRACE ELEMENTS ON NONSPECIFIC RESISTANCE OF CALVED COWS

Raimundas Mockeliūnas,<sup>1,2</sup> Pranciškus Šakys<sup>2</sup>

<sup>1</sup> Lietuvos veterinarijos akademija, Tilžės g. 18, LT – 3022 Kaunas; tel.: (8~37) 36 18 05;  
el. paštas: [mockeliunas@one.lt](mailto:mockeliunas@one.lt)

<sup>2</sup> Lietuvos veterinarijos akademijos Veterinarijos institutas, Instituto g. 2, 56115 Kaišiadorys

**Abstract.** The protection of organism from different pathogens depends not only on specific immunity level, but also on nonspecific resistance. Therefore, it is important to stimulate the nonspecific immunity of cows particularly in calving and post-calving periods.

The liquid mixture of trace elements (Fe, Zn, Cu, Mn, Co and folic acid) in the dry period seeking to determine the possible effect on nonspecific resistance of calved cows was used. Cows in experimental group were orally treated with mixture of trace elements in dosis 30ml/day, and cows in control group received the same amount of water. Blood samples were taken before experiment and at days – 0, 5, 10 and 20 after treatment from the jugular vein of each cow. The results from this study demonstrate that administration for 20 days of the mixture of trace elements significantly increased level of hemoglobin, erythrocytes, leucocytes, and phagocytic and bacteriocytic activity in blood of experimental cows compared to the controls on water ( $p<0.05$ ). Further, in experimental cows the mucopolysacharides in the uterus secretion were found for 20 days after calving, whereas in control cows were present only for 5 days after calving. In addition, the number of microbial cells in the uterus secretion of experimental animals was significantly lower compared to the controls ( $p<0.05$ ). Although in 8-12 days after calving 40% of control cows have shown clinical signs of endometritis. These results demonstrate that mixture of trace elements markedly activated nonspecific resistance and have potential value to increase ability to resist infection and to reduce infertility of calved cows.

**Keywords:** cows, infertility, nonspecific resistance, trace elements, prophylaxis.