A MEDICAL AND BIOLOGICAL RESEARCHES
OF SELENIUM-PROTEIN DIETARY ADDITIVE
AND SAUCE WITH ITS USE

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The influence of dietary supplement "Neoselen" on the organism of linear white rats is investigated. The acute toxicity parameters of the additive (the effective and mortality dose rates, its security degree) are calculated using the Probit Analysis computer program. The solution of dietary supplement "Neoselen" was entered once a day at the amount of 0.7 to 6 ml per rat (it is the maximum allowable dose in terms of oral) that in equivalent to dose is from 4375 to 37500 mg/kg appropriately. The LD_{50} indicator of selenium-protein dietary additive at introduction into the white rats’ stomachs is 425.4636 mg/kg, the calculated value of LD_{16} is 1218.984 mg/kg, LD_{84} is 12837.145 mg/kg and the LD_{99} is 62111.528 mg/kg in recalculation on Selenium. Based on the data of the maximum available dose of selenium-protein dietary additive "Neoselen" the graph, expressing the "dose-effect" dependence, is created. The class of toxicity of additive is 5th that testifies to its relative non-toxicity.

The fundamental technological scheme of "Selenium Ketchup" emulsion-type sauce (ETS) production is developed. The ETS is enriched with selenium by using the SPDA "Neoselen" as the source of organic selenium.

The data confirming essentially complete normalization of the intestinal barrier permeability in experimental rodents are given. The influence of ETS "Selenium" with SPDA "Neoselen" on the state of the intestinal barrier in rats is studied. This is confirmed by the following data: the serum alanine aminotransferase activity in experimental animals compared to the indicators of intact rats of the control group varied slightly during the research period; there were no statistically reliable oscillations of aspartate aminotransferase activity; the alkaline phosphatase activity of serum of rats was not statistically significantly different from those in the control group of rats. Biochemical parameters of white linear rats blood serum are in the range of normalized indicators for healthy animals.

The hygienic safety of ETS "Selenium" with SPDA "Neoselen" is studied and proved.

**Keywords:** selenium-protein dietary additive (SPDA), Selenium, emulsion-type sauce, safety, toxicity.