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## The effectiveness of the microbiological express method to determine the overall toxicity in meat of slaughter animals

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### Abstract

Today, a number of chemical-analytical approaches have been developed and used to determine the presence of toxicants in food products - spectrometric, photometric, chromatographic, etc. However, despite their high sensitivity and accuracy, they do not involve the detection of a general reaction of the recipient's body to the effects of the object as a whole. This is due to the fact that the test object may contain toxicants, the content of which was not predicted during the study or little studied substances. The main disadvantage of chemical analytical methods is that they cannot take into account the nature of the combined action of toxicants on the consumer. Due to these disadvantages, the development of an express method for determining toxicity by biotesting remains relevant. The aim of the study was to determine the feasibility and effectiveness of using the microbiological express method using the *Colpoda steinii* ciliates to determine the overall toxicity in meat of slaughter animals. According to the results of research, a method of using c.p. acetone, which allows to isolate lipophilic toxicants, has been developed with the aim to determine the toxicity in meat of slaughter animals. In order to establish the general toxicity, it is proposed to carry out parallel extraction of test samples with distilled water and c.p. acetone. It has been experimentally proven that the data of the toxic properties of meat determined by the proposed method are identical to those, which were obtained with the use classical biotesting methods: bioassays on laboratory animals (white mice) and microbiological methods with the use *Tetrachimena piriformis* ciliates as a test organism. Depending on the degree of toxicity of the meat and the extractive substance, the results of the study are obtained in the period from 3 to 180 minutes, when using the microbiological express method using *Colpoda steinii* ciliates as a test object.

**Keywords:** food, meat, safety, toxicity, biotesting, ciliate *Colpoda steinii*

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