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Determination of deoxynivalenol in feed, feed raw materials and food

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Abstract

The article presents the survey data of 1830 average samples of feed, feed raw materials and food products received through the Test Center of the FSBSI «FCTRBS-RRVI»", provided by livestock and feed enterprises, agricultural companies, food manufacturers and 152 samples of feed provided by specialists of veterinary services , livestock enterprises, owners of peasant farms to determine the death of animals and birds, for the content of mycotoxin deoxynivalenol (DON) in the period from 2018 to 2020.

Determination of the DON content in the samples was carried out according to a certified procedure based on the method of thin layer chromatography.

In the course of summarizing the results, it was found that samples of feed, feed raw materials and food products received through the Test Center of the of the FSBSI «FCTRBS-RRVI» from different regions of the Russian Federation in terms of DON content corresponded to the normative indicators specified in the current regulatory and technical documentation.

When determining the cause of death of animals and birds, 152 samples were examined, received from farms of different regions of the Republics of Tatarstan, Bashkortostan, Mordovia, Kostroma and Ryazan regions. It was found that 1.97% of samples were contaminated with DON at concentrations from 0.2 to 0.5 mg/kg of feed, in the rest, the content of mycotoxin was below the sensitivity of the method (< 0.2 mg/kg), which does not exceed the limit permissible concentration. It was recommended to exclude feed contaminated with mycotoxin from the diet of animals, since at the established concentrations, DON is not the main etiological factor in the death of animals, but due to the presence of carcinogenic, mutagenic, teratogenic, embryotoxic and immunosuppressive properties, together with other factors, it is contributing.

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