

TITLE: IMPACT ON INDUSTRIAL POULTRY OF CORN CONTAMINATION BY MYCOTOXINS

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ABSTRACT:

Animal nutrition has a constant control of mycotoxins, for economic reasons and public health, to be metabolized by the animals can be present in the meat, eggs and derivatives. Among the most relevant mycotoxins for the poultry sector, the following can be highlighted: Aflatoxins, produced by fungi of the genus *Aspergillus* and reported as hepatotoxic, immunosuppressive and neoplastic; Fumonisin, which form a group of mycotoxins produced by toxigenic fungi of the genera *Fusarium* and *Alternaria*, in intoxications there are liver lesions; and the toxins T-2, mycotoxin belonging to the Trichothecenes group, produced by fungi of the genus *Fusarium*, responsible for oral lesions and immunosuppression. Thus, the objective of this study was to evaluate the levels of contamination by Aflatoxins, Fumonisin and T-2 toxins, in corn used in the composition of rations to serve the industrial poultry industry. The methodology consisted of a Competitive Enzymatic Immunoabsorption Assay (ELISA), with the commercial kit of Romer Labs®, according to protocol described by the manufacturer. A total of 103 corn samples were analyzed for aflatoxins and fumonisins and 82 corn samples for toxin T-2. Aflatoxins were detected in 15 samples (14.5%); when considering the maximum limits recommended by the Laboratory of Mycotoxicological Analyzes (LAMIC), 14.5% were above the tolerated maximum limit of 0µ/kg for broilers, 11.6% above 2µ/kg for broiler in the growing phase, 9.7% above 5µ/kg for broilers in final phase and 5.8% above 10µ/kg for commercial laying hens and matrices. Fumonisin were detected in the 97 samples (94.1%). In the determination of the samples above the maximum recommended limits for fumonisins, 92.2% were above 100µ/kg for broiler in the initial phase and 76.6% were above 500µ/kg broilers in the growth phase, final phase, commercial laying hens and matrices. The T-2 toxin was detected in 22 samples (26.8%), and these were above the tolerated limit of 0µ/kg for broiler in the initial phase, only a single sample (1.2%) exceeded the limit of 50µ/kg for broilers in the growth phase and final phase, but within the limit of 100µ/kg for commercial laying hens and matrices. The mycotoxin indexes highlight the importance of preventive actions to minimize fungal contamination of the grains and the need for continuous monitoring of these substances to ensure the quality of the final product and minimize health risks.

Keywords: aflatoxins, broiler, fumonisins, nutrition, trichothecenes

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