

عنوان مقاله:

Identification of Toxigenic Aspergillus Species from Rice of Khuzestan and Mycotoxins in Imported Cereals

محل انتشار:

فصلنامه میکروب شناسی پزشکی ایران، دوره 13، شماره 5 (سال: 1398)

تعداد صفحات اصل مقاله: 19

نویسندگان:

Razie Ranjbar - *Department of Biology, Faculty of Sciences, Shahid Chamran University of Ahvaz, Ahvaz, Iran*

Mohammad Roayaei Ardakani - *Department of Biology, Faculty of Sciences, Shahid Chamran University of Ahvaz, Ahvaz, Iran*

Mehdi Mehrabi Kushki - *Department of Plant Protection, Faculty of Agriculture, Shahid Chamran University of Ahvaz, Ahvaz, Iran*

Iraj kazeminezhad - *Department of Physic, Faculty of Sciences, Shahid Chamran University of Ahvaz, Ahvaz, Iran*

خلاصه مقاله:

Background: Due to their high amount of carbohydrate and enough moisture, cereals are a good environment for the growth of toxigenic fungi. Because of the carcinogenicity and mutagenicity of mycotoxins, preventing them from entering the food chain is essential. Therefore, the present study was conducted to determine the amount and type of contaminated imported cereals and rice produced in Khuzestan province Materials & Methods: In October and November 2015, a total of 50 random samples of rice was collected from paddy fields. Aspergillus were identified based on available diagnostic criteria and PCR. The amount and type of aflatoxin in rice samples and mycotoxins in imported cereals (winter 2015 to autumn 2016) were evaluated by HPLC Result: Based on one sample t-test and comparing the mean of mycotoxins contaminating cereals in different seasons with national maximum standard, the amount of mycotoxins in barley and wheat were within the standard range but %8.4 of corn was higher than the permitted level (ppb5). Analysis of aflatoxins in rice also showed that 16 samples were contaminated with aflatoxin B1. Aspergillus flavus was the major pollutant (%42.1) isolated from rice. Conclusion: Aspergillus flavus is the major producer of aflatoxin B1 in domestic rice. Examination of imported cereals also showed high rates of fungal growth and production of secondary metabolites, possibly due to inadequate storage conditions, high temperature and humidity. Therefore, it is recommended to strengthen the monitoring tools in the processing and storage of rice and cereals.

کلمات کلیدی:

Mycotoxin, HPLC, Carcinogenic, Aspergillus, Cereals, مایکوتوکسین، HPLC، سرطان‌زایی، آسپرژیلوس، غلات

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1159319>



