

Food and Beverages

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Aflatoxin situation in Iranian pistachios: A ten years trend analysis

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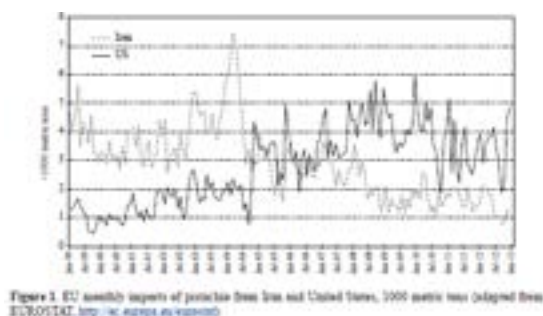
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Statement of the Problem: Aflatoxins are carcinogenic toxins produced by *Aspergillus* fungi; contaminate nuts in many regions of the world. Pistachios are the main source of human dietary aflatoxins B1 from nuts worldwide. Iran is one of the main pistachio producing countries, with US together contribute to nearly 75% of the total global pistachio market. In 1997, a national plan for reduction of aflatoxin in Iranian pistachios was conducted through implementation of food safety management system in pistachios production chain.

Purpose: The purpose of this study was to describe how hygienic factors such as food safety issues play an important role in driving the consumption trends in Europe and world. In 2004, global pistachio trade patterns shifted the year after the EU implemented a harmonized 4 ng/g aflatoxin standard in tree nuts. So capital and technical assistance to producers and processors were necessary for Iran to further integrate into the global market where the demand for food safety continues to rise. In 2009, the EU revised the aflatoxin standard in tree nuts to a more relaxed standard of 10 ng/g. As of 2010, Iran has regained the lead in global pistachio exports over the US, with over 160,000 tons exported.

Findings: During years 2009-2011 by satisfying improvement in good agricultural practices in pistachio cultivation and harvesting and implementation HACCP in post harvesting and processing practices the contamination level of aflatoxin in pistachio decreased significantly.

Conclusion & Significance: Regarding the decrease in the amount of aflatoxin in pistachio in production chain, implement and applying of food safety systems such as HACCP, good hygienic practices and conditions was useful. Establishing an efficient monitoring system for sampling, precise analyzing of aflatoxin in accredited labs and issuing export certificate for tracing pistachio consignments were main technical measures has been implemented in Iran in recent years for successful reduction of aflatoxin in pistachio



Recent publications

1. Bo Xiong (2017) Food safety and food import in Europe: the risk of aflatoxins in pistachios Research Article. International Food and Agribusiness Management Review, 20(1):129-141.
2. Bui Klimke T R, Guclu H, Kensler T W, Yuan J M and Wu F (2014) Aflatoxin regulations and global pistachio trade: insights from social network analysis. PLOS ONE 9(3):e92149.
3. Boutrif E (1998) Prevention of aflatoxin in pistachios. Food Nutr. Agric., 21:32-39.
4. Motarjemi Y and Lelieveld H (2013) Food safety management, a practical guide for the food industry. Academic London, ISBN: 9780123815057.
5. Mohammad Moradi, S R Fani and H Masoumi (2014) Population density of *Aspergillus* species belong to section Flavi and Nigri on pistachio nut in Kerman Province. Applied Researches in Plant Protection, 3:79-91.

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Biography

Hossein Nazarian has his expertise in activities in food safety and quality. He is a Food and Beverage and Food Safety Expert as well as a Secretary of Food Safety Management System Committee of Iranian Food and Drug Administration. He has developed his activities in food safety area and has an effective collaboration to writing. He has published HACCP and ISO 22000 generic models and food safety guidance documents and book for food and beverage industries and food expert such as HACCP model for pistachio processing units. In order, how they could implement and apply food safety management system in their companies. The application of these can aid inspection by regulatory authorities and promote international trade by increasing confidence in food safety and also he held some training courses such as: GMP, PRPs, HACCP, ISO 22000. He had a good cooperation with his colleagues and some deputies of Food and Drug University of Medical Sciences in the pistachio project to establishing a monitoring system to achieve successful reduction aflatoxin in pistachio.

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