

**Title: EMA Database and Portal**

**Principal Investigator:** Karen Everstine, FPDI - Food Protection and Defense Institute, University of Minnesota

**Center of Excellence:** Food Protection and Defense Institute (FPDI) (Emeritus)

**COE Lead/Co-Lead Institution:** University of Minnesota

**Project Start Date:** 07/2014

**Project Completion Date:** 06/2015

**Project Status:** Complete

**Research Theme:** Risk Analysis

**Participating State(s):** Minnesota, Maryland

**Amount Awarded to Date:** \$40,000

**Award Number:** 2010-ST-061-FD0001

**Abstract:** Economically motivated adulteration (EMA) of food is a threat to food protection and defense. The Food Safety Modernization Act (FSMA) requires heightened efforts on the part of industry and others for prevention of all hazards along the food supply chain, including EMA. NCFPD and United States Pharmacopeia have each built databases to help mitigate the threat of EMA. These are the only two publicly available databases targeted specifically at records of EMA in food products. These databases catalog past EMA incidents, known adulterants, and analytical methodologies that can be used to detect EMA in food products. This project proposes to merge the two EMA databases into one enhanced online EMA database that can be used by stakeholders in regulatory agencies, industry, and academia. This database will provide superior abilities to search EMA records and elicit relevant information about past incidents and analytical methodologies. The information in this proposed database can also inform efforts at EMA risk assessment. As a second objective, this project proposes the creation of an online "EMA Portal" that will house links to all current EMA tools, resources, and research efforts around the wasdf eb. This portal will facilitate access by stakeholders to these valuable EMA tools and other resources. This will help industry meet FSMA requirements through informing their vulnerability assessments, thereby helping to mitigate EMA vulnerability in our food supply chains.

**Project Type:** Other (enter short description)

**End User Engagement:**

- Academic Community
- Food and Drug Administration
- U.S. Department of Agriculture

**Executive Summary (2015):** Economically motivated adulteration (EMA) of food is a particularly challenging form of intentional food adulteration because it is more prevalent than food terrorism, but more difficult to detect than foodborne pathogen contamination. EMA is an important issue for the food defense community because it sheds light on gaps in oversight of the food supply that could be exploited to cause intentional harm. The Food Safety Modernization Act (FSMA) requires heightened efforts on the part of industry and others for prevention of hazards along the food supply chain, including EMA. This project was a collaborative effort between NCFPD at the University of Minnesota (Karen Everstine, PI; Kendra McCormack, Senior Marketing and Communications Coordinator; and Khalif Maalim, Research Fellow) and United States Pharmacopeia. NCFPD and United States Pharmacopeia maintain the only two publicly available databases targeted specifically at records of EMA in food products. These databases collectively catalog past EMA incidents, known adulterants, and analytical methodologies. The first objective of this project was to evaluate and outlined the scope, user

requirements, and structure to merge the two databases into one enhanced online EMA database that can be used by stakeholders in regulatory agencies, industry, and academia. We conducted two market surveys of end users to determine user requirements for a joint database. These surveys resulted in a list of six priority needs from a joint database that included both needs for additional data and needs for user-interface and visualization improvements. The results of these surveys informed our development of a joint database data structure, data entry process, and functionality requirements that will be used for IT development. The joint database will provide superior abilities to search EMA records and elicit relevant information about past incidents and analytical methodologies to inform efforts at EMA risk assessment. As a second objective, this project created an online “EMA Portal” that compiles information on EMA tools, resources, and research efforts around the web (foodfraudresources.com). The initial compilation of tools, resources, and information was completed in November 2014, followed soon after by construction of the website for beta testing. Edits, enhancements, and adjustments were made on a continuous basis from November 2014 through May 2015, based both on internal testing and on user feedback. This website facilitates access by stakeholders to these valuable EMA tools and other resources and is intended to enhance access to information and resources, foster collaboration, and ultimately to help the food industry meet FSMA requirements. Overall, this project supports industry and regulatory efforts to mitigate EMA vulnerability in our food supply chains.

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