UNIVERSITY OF MINNESOTA
Driven to Discover℠

Food Supply Protection Using Big Data (20150084, Dr. Amy Kircher)

Technology ID
20150084

Category
Express License
Software & IT/Algorithms
Software & IT/Data Mining

Learn more

The FIDES web-based application is now hosted and managed by a third-party. If you'd like fee-based access, the University of Minnesota will introduce you.

Early Warnings of Food Supply Threats

Potential food threats and adverse food events can quickly be identified and shared with food and agriculture stakeholders using the Focused Integration of Data for Early Signals (FIDES) tool. Initiated by the Food Protection and Defense Institute, FIDES integrates big data compiled from non-traditional sources (e.g., trade, economics, meteorology, global policies, social media, production and regulations) to assess supply chain vulnerabilities, identify food system disruptions and predict future system challenges. The FIDES tools and algorithms provide actionable tailored food disruption alerts and supply chain risk assessments to companies based on their ingredients and supply chain. Using this valuable information, companies can better understand and mitigate risk, rapidly identify adverse food events and increase the security of global food systems.

Rapid Food Supply Information Sharing

The FIDES tool uses geographically tagged data, trade data and expertly curated and unstructured web data to integrate with a company's supply chain data. By providing knowledge derived from big data sets, FIDES aids companies on supply chain management, risk mitigation and procurement decisions. Additionally, it provides a platform for rapid information sharing that may quickly identify and mitigate human or economic consequences of catastrophic or intentional contamination events. FIDES is less reliant on slower, conventional sources such as FDA data (PREDICT) or clinical symptomology, and its web-based dashboard displays results and features data analysis, data layering in spatial tool, discussion boards and analyst analysis, allowing designated users to quickly assess and react to situations.

BENEFITS AND FEATURES OF BIG DATA BASED EARLY WARNINGS FOR FOOD SYSTEM DISRUPTIONS:

- Non-traditional big data sources may provide faster information than conventional sources
- Rapid information sharing within and across organizations
- Early identification and communication of food threats
- Comprehensive and systematic
- Supports data fusion and predictive analytics
- Assesses supply chain vulnerabilities, identifies food system disruptions and predicts future system challenges

Phase of Development Alpha Application

Supply Chain Risk of Failure

The Criticality Spatial Analysis (CRISTAL) corporate risk software instantly traces products across multiple companies, identifying specific points in the system that are at risk of failure and is available to be licensed.

Researchers

Amy Kircher, DrPH

Director, Food Protection and Defense Institute

External Link (foodprotection.umn.edu)