Cyber Threats to Food and Agriculture

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City of Livermore, Cybersecurity Division

"This is an important part of the core mission of the City government which is to keep citizens safe."
- Mayor Bob Woerner

Initiative Goals:

- Increase public cyber safety
- Cyber-crime prevention
- Promote economic development and innovation
- Community resilience
- Empower an inclusive future

http://cybersafe.livermoreca.gov/

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California Commodities

California Provides:

- 1/3 of the United States vegetables
- 2/3 of the United States fruits and nuts
- 36% of US organic production
- 20.8 Billion in agricultures exports (2020)

Wine Specifically:

- 81% of all U.S. wine
- World's 4th leading wine producer
- $57.6 billion in state economic impact
- 325,000 jobs in California
- $17.2 billion in state wages

Sources: U.S. Tax and Trade Bureau; BW166; The Gomberg, Fredrikson Report; Global Trade Information Services; and California Dept. of Food & Agriculture; Cal-CSIC.

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Key Threat Drivers

- Vintners, Ranchers and Farmers integrate technology into their practices
- Cyber risks increase with the adoption of new technologies

Source: sourcetrace.com

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IoT

Internet of Things

- Physical devices connected to the internet
- Sensors
- Robotics (UAV)
- GPS
- Monitors (Crop Monitoring)

Operational Technology

Process Automation

- Industrial control systems (connected)
- Planting, Irrigation, Monitoring
- Sorting
- Fermentation
- Bottling and Packaging

Source: phys.org

Information Technology

Office Operations

- Data
- Financial
  - Invoice, Payments, Banking
- Shipments
- Marketing
- Communication
- Employee Personally Identifiable Information

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Supply Chain Risks

- Financial loss
  - Colonial Pipeline incident increase fuel and shipping costs
- Disruption or Delay on operations
- Reputational damage
  - A vendors incident reflects on the organization

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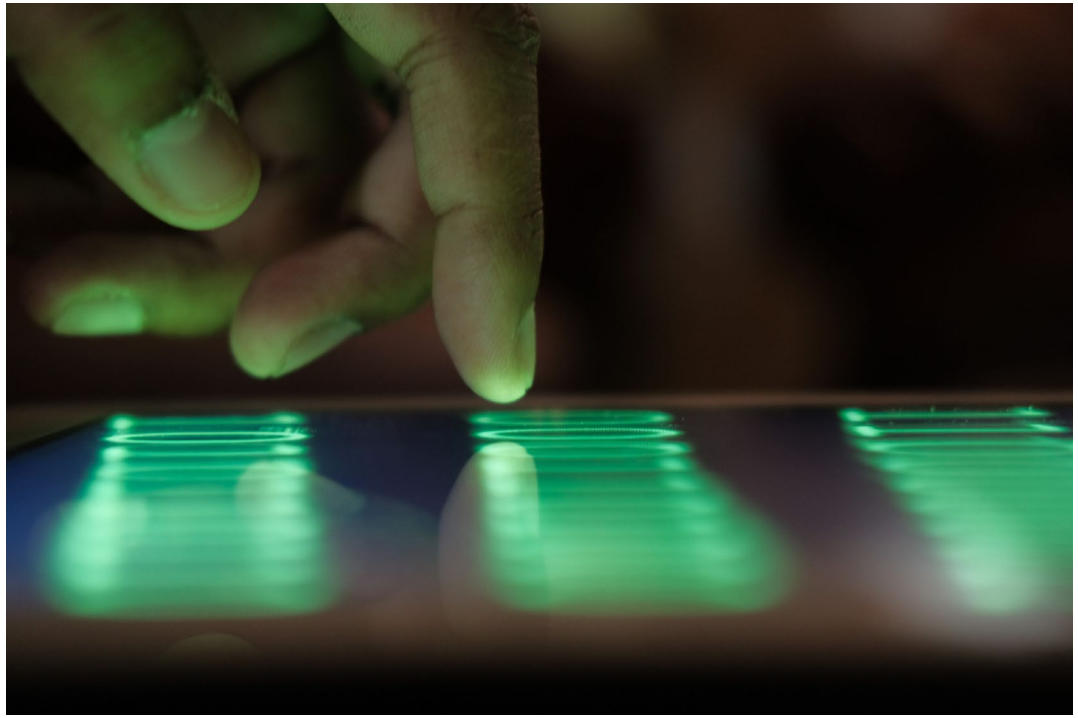
The Bad Guys

- Cyber Criminals
  - Financial motivated
  - Ransomware & Extortion
- Nation States
  - Economic advantage
  - Disruption & destruction
  - Intellectual property
- Hacktivists
  - Agenda based



JBS Foods Ransomware Attack

- May 30, 2021
- REvil Ransomware Attack
- Stop operations at 13 meat processing plans
- Russian Based
- White House contacted Russia
- Paid $11M in ransom
- Some suspects were arrested

Source: Getty Images

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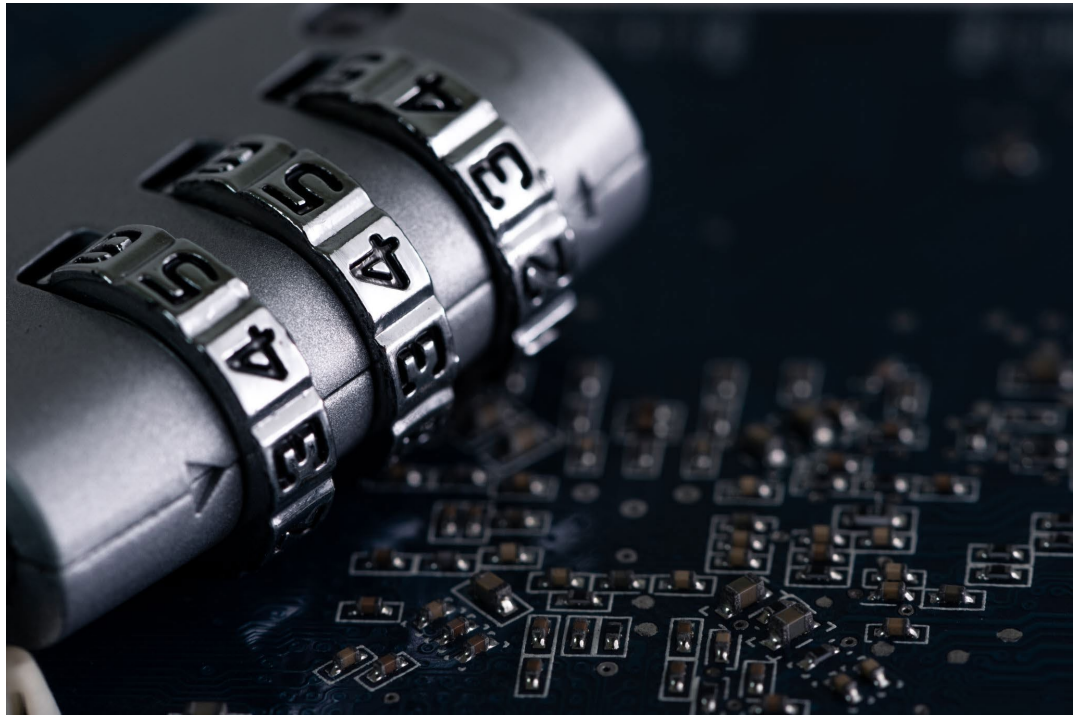
Types of Attacks on Food and Agriculture

- Ransomware
- Data Breach
- Computer Intrusion
- Malware/Scamware
- Business Email
- Compromise
- Supply Chain



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Critical Infrastructure Food and Agriculture Sector

Dependencies particularly with the following sectors:

- Water and Wastewater Systems
- Transportation Systems
- Energy
- Chemical

FOOD AND AGRICULTURE SECTOR

The Food and Agriculture Sector is almost entirely under private ownership and is composed of an estimated 2.1 million farms, 935,000 restaurants, and more than 200,000 registered food manufacturing, processing, and storage facilities. This sector accounts for roughly one-fifth of the nation's economic activity.

The Food and Agriculture Sector has critical dependencies with many sectors, but particularly with the following:

- Water and Wastewater Systems, for clean irrigation and processed water
- Transportation Systems, for movement of products and livestock
- Energy, to power the equipment needed for agriculture production and food processing
- Chemical, for fertilizers and pesticides used in the production of crops

Expand All Sections

Sector-Specific Plan +

Sector Resources –

For resources available to Food and Agriculture Sector partners, visit the Department of Agriculture and the Food and Drug Administration websites.

https://www.cisa.gov/food-and-agriculture-sector

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Cyber Safe Livermore Initiative

http://CyberSafe.LivermoreCA.gov

https://www.livermoreca.gov/departments/innovation-economic-development

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