Security

Digital Threats to Agricultural Operations

Agriculture is benefiting from technological innovation, but it also brings digital security into question. Essential software can be interrupted and sensitive data can be stolen. To protect against digital threats, consider your farm's digital security measures.

Tips for Staying Secure

✓ **Secure Your Accounts**
- Use unique passwords for important accounts
- Make long passwords that use capital letters, numbers, and symbols
- Set up dual authentication for important accounts

✓ **Identify Incoming Threats**
- Don't click any unknown links
- Don't share information over the phone or on email
- Ignore ads or messages that sound 'too good to be true'

✓ **Secure Your Devices**
- Identify all devices connected to your network as potential vulnerabilities- even Bluetooth speakers or devices
- Password protect your devices
- Install virus protection on your devices

Definitions

Digital Security: Measures taken to protect digital information, systems, and networks from unauthorized access

Dual Authentication: A security process that requires two separate methods to verify a user's identity, such as a password and a code sent to their phone

Threats

Identify Theft can tank your credit score and impede future loan opportunities

Ransomware may allow hackers to shut down your equipment and systems until ransom is paid

Access **Marylanders Online Internet Safety Resources** to improve your digital security and guard against scams. For additional assistance, call Marylanders Online toll-free **1-866-206-8467** or email **marylandersonline@umd.edu.**

by Nerice Millet-Williams, Keri Grant, and Hemendra Kumar

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Privacy

The Promise and Privacy Risks of Data in Agriculture

Precision agriculture improves farm management through massive data collection. Yield, soil, and management data pass through your Agricultural Technology Provider (ATP) before arriving on your screen. These businesses can profit from analyzing this farm data when privacy isn't promised.

Tips to Protect Your Data

✓ **Read Privacy Agreements Carefully**
- Ask questions if any part of an agreement is unclear

✓ **Understand Data Ownership and Access**
- Verify who legally owns the data and who can access the data. You may be the owner, but your ATP may be able to access or even share data access with other companies.

✓ **Check for Ag Data Transparent Seal**
- This seal indicates that a provider meets standards of transparency, privacy, and security. Learn more at agdatatransparent.com.

For more guidance, contact **Marylanders Online** at marylandersonline@umd.edu or call us at **1-866-206-8467**

Privacy Laws & Regulations

Since technology is improving at a rapid rate, laws and regulations aren't always keeping up. These are the only laws protecting our privacy:

Maryland Online Data Privacy Act (MODPA)
Set to take effect in October 2025, this act will restrict the collection and use of consumer data

Health Insurance Portability and Accountability Act (HIPPA)
Protects health information

Gramm-Leach-Bliley Act
Requires financial institutions to safeguard sensitive data

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Data Privacy and Security in Agriculture

Overview

Precision agriculture enhances farm management and efficiency through advanced technologies, allowing farmers to optimize inputs like water, fertilizers, and pesticides based on data-driven insights. However, it also introduces new challenges in data privacy and security as the use of sensors, GPS mapping, and automated equipment generates sensitive information about farm operations.

This trend brings data privacy and security into question. Farmers must now navigate the benefits of improved efficiency and the risks associated with data privacy and security. As precision agriculture becomes more widespread, addressing these challenges will be critical for Maryland's farming community.

The Digital Agriculture Landscape

- GPS Mapping systems
- Automated Equipments
- IoT Sensors
- Satellite Imaging
- Soil Sampling Technologies
- Drone Technology

Security Threats & Statistics ⚠️

- **75** Ransomware complaints in the Food & Agriculture sector (2023)
- **17.6%** success rate for agricultural cyber attacks
- **$2 million** average recovery cost from ransomware
- **27%** increase in ransomware attacks (2023-2024)
- **41%** of enterprises report malware attacks

Operational Disruption: Cyberattacks can disable critical systems, including tractors and sensors, leading to significant operational and financial setbacks.

Cyber Liability: While insurance exists to protect against such attacks, it may also make farms targets for hackers seeking higher payouts.

Key Privacy Concerns 🛡️

Data Collection & Ownership
- Unclear legal rights over farm data
- Yield information, soil composition data
- Equipment performance metrics
- Environmental measurements

Privacy Erosion
- Gradual loss of data control due to extensive data collection and unclear privacy policies by ATPs

Ransomware Risks
- Increasing cyberattacks targeting the agriculture sector, with significant financial repercussions for affected farms

Other Risk Factors
- Unauthorized data access
- Data sold to third parties
- Loss of control over farm data
- Potential misuse of aggregated information
- Limited compensation for data contributions

Privacy Laws and Regulations

Federal privacy laws and regulations in the United States play a crucial role in protecting individuals' personal information across various sectors. One of the most significant laws is the **Health Insurance Portability and Accountability Act (HIPAA)**, which sets standards for protecting health information and establishes rules for the use and disclosure of protected health information (PHI). Alongside HIPAA, the **Federal Trade Commission (FTC)** and the **Maryland Online Data Privacy Act (MODPA)** introduce rigorous restrictions for how companies collect and use consumer data, requiring businesses to minimize data collection and limit the sharing of sensitive information.

Challenges :

- **Complex Agreements:** The complexity of privacy policies obscures the actual data practices of ATPs, leaving farmers uncertain about how their data is being utilized or who has access to it.
- **Limited Understanding of Rights**: The intricate nature of privacy agreements hampers farmers' ability to recognize and enforce their data rights, increasing the risk of data misuse or unauthorized access.

Essential Protection Measures

Data Privacy

✓ Read ATP (Agricultural Technology Provider) agreements carefully
✓ Verify data storage locations and security measures
✓ Confirm data ownership rights
✓ Check for **Ag Data Transparent Seal**
✓ Review access rights and sharing policies

AG DATA TRANSPARENT

Digital Security

Account Protection
- Use strong, unique passwords
- Enable two-factor authentication
- Employ password managers
- Perform regular security updates

Device Security
- Install trusted anti-virus software
- Secure physical access
- Regular software updates
- Monitor IoT device connections

Artificial Intelligence

- AI uses farm data to generate recommendations
- **70%** of the public lacks trust in AI usage
- Companies collect data to improve AI models
- Essential to understand AI limitations and biases

Quick Tips for Farmers

DO'S
- Read all data agreements
- Use strong security measures
- Regular security updates
- Monitor data access
- Back up important data

DON'TS
- Share unnecessary information
- Click suspicious links
- Use weak passwords
- Ignore software updates
- Skip security protocols

Toll-Free:1-866-206-8467

Connecting Maryland Through Digital Literacy
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