

This is NOT Your Grandpa's Farm!



1

AI is not what it used to be...

- What is AI?
- Artificial Intelligence (AI) refers to the capability of a machine to imitate intelligent human behavior. This includes tasks that normally require human intelligence, such as understanding natural language, recognizing patterns, solving problems, and making decisions. AI encompasses a range of technologies and methods, such as machine learning, neural networks, and natural language processing, to create systems that can learn from data, adapt to new situations, and perform tasks autonomously.



2

AI is not what it used to be...

- Rapidly transforming the agricultural sector
- Offers innovative solutions for enhanced efficiency, productivity, and sustainability
- Key applications of AI
 - Crop disease detection and pest control
 - EXAMPLES: Can identify apple scab with 95% accuracy and detect yellow rust in wheat fields
 - Automated weed control
 - AI driven robots (e.g., **John Deere's See & Spray**), use computer vision to differentiate crops from weeds
 - Reduces herbicide use by up to 90%
 - Smart irrigation
 - AI powered systems monitor soil moisture and adjust water distribution in real time
 - Reduce water waste while ensuring optimal plant hydration



3

AI is not what it used to be...

- Livestock Health Monitoring
 - AI-powered sensors and cameras monitor livestock behavior
 - Enables early disease detection
 - Optimizes breeding and milk production
 - **CattleEye**
- Precision Agriculture
 - AI analyzes real-time and historical data to optimize farming practices such as placing water, fertilizer and pesticides only where needed
 - Reduces waste and boosts crop health



4

AI is not what it used to be...

Helping	Hurting
<p>Helping farmers</p> <ul style="list-style-type: none"> • Deal with labor shortages, unpredictable weather and rising resource costs • Reduce or eliminate waste 	<p>Hurting farmers</p> <ul style="list-style-type: none"> • High cost • Need for a different kind of labor • Implementation hurdles • Evil-doers

5

Not AI, But Still Pretty Smart

- Autonomous tractors and machinery
- Drones and aerial technology
- Electric and hybrid equipment
- Variable Rate Technology (VRT)
- Robotics and automation
- Smart irrigation systems
- Advanced crop monitoring and sensors
- Sustainable equipment design
- Data integration and farm management software



6

Insuring Cyber Risks in Agriculture

- Exposures
 - Data breaches and theft
 - Ransomware attacks
 - IoT vulnerabilities
 - Supply chain attacks
 - Disruption of critical systems
 - Social engineering and phishing scams
 - Loss of control over automated equipment
 - Intellectual property theft
 - Cybersecurity skills shortage



7

Cyber Risk – The Existential Threat

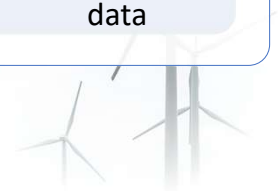
- Who has a cyber exposure?

Any organization that has equipment – computers, iPhone, iPad, etc. - with access to the Internet

Any organization that has employees and maintains their data

Any organization that has customers and maintains their data

In short, a FARMER!



8



Key Insuring Agreements

Coverage Types

- First Party Post Breach Response
- Third Party Liability Coverages
- First Party Time Element Coverages
- First Party Direct Property Loss



9

First Party Post-Breach Response

Privacy Notification and crisis management expense

- Direct expenses
 - Notification costs
 - Legal Services
 - Public Relations
 - Credit Monitoring
- Coverage limitations



10

First Party Property Coverage

- Data Assets
- Cyber Extortion
- Computer Fraud
- Funds Transfer
- Social Engineering



11

Third Party Liability Coverages

- Information Security and Privacy Liability
- Regulatory Defense and Penalties
- Payment Card Industry Fines and Assessments
- Website Media Content Liability



12



13

Regenerative Agriculture

- What is it?

California definition

- “Defining Regenerative Agriculture for State Policies and Programs” is an integrated approach to farming and ranching rooted in the principles of soil health, biodiversity and ecosystem resiliency leading to improved targeted outcomes.
- Examples of target outcomes include
 - Building soil health, organic matter and biodiversity
 - Increasing statewide implementation of conservation practices that improve soil health, sequester carbon and reduce greenhouse gases
 - Furthering sustainable pest and integrated pest management to reduce the reliance on pesticides
 - Protecting the welfare and care of animals in agriculture
 - Protecting spiritual and cultural traditions as well as supporting Native-led stewardship practices
 - Maintaining positive impact on the economic vitality/livelihoods of farmers and ranchers



14

Risks and Mitigation

- Transition period and yield variability
- Financial and capital investment
- Market and consumer demand
- Climate risks and weather variability
- Weed and pest management
- Knowledge and expertise
- Soil health and long-term sustainability
- Regulatory and legal risks



15

NOT Your Grandpa's Insurance Program

- Climate change and extreme weather events
 - Increased frequency and severity
 - Indexed insurance (parametric cover)
- Technology and data analytics
 - Data-driven risk management
 - Precision agriculture
- Risk pooling and collective risk financing
- Regulatory and policy changes
- Crop and livestock diversification
- Alternative risk financing
- Cybersecurity and technology risks
- Sustainability and carbon markets
- Global supply chain and market volatility



16