

Q4/2024

Managing cyber threats to agriculture

Do protective actions match the risks?

Farmers are more digitally connected than ever – and for good reason. Sensor-connected equipment is making it possible for the agriculture industry to manage crop growth, distribute key nutrients to crops based on data-driven intelligence, monitor livestock illness, optimize labor, oversee equipment maintenance and anticipate climate challenges, among other tasks. But what happens when the tools in place to monitor functions on a farm are suddenly compromised by cyber threats? It’s a reality that the sector is only beginning to address.

At the FBI’s second annual Agriculture Threats Symposium in Nebraska in August, cybersecurity experts joined policymakers and farmers to discuss the threat landscape. “Wherever in the country you may live – from California to Nebraska to Georgia to points in between – the cyber risk and the national security risk for farms and ranches and our food processing facilities is growing exponentially,” said Gene Kowel, special agent in charge of the FBI’s Omaha field office. “The threats are evolving. They’re becoming more complex and more severe.”

Cyber breaches can be as wide-ranging as a ransomware attack or network hack that cripples operations, or a theft of seeds worth millions of dollars in intellectual property and research, according to an FBI report of the event.

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Agricultural Commodities Outlook

As the year comes to a close, economic conditions at home and abroad, as well as trade tensions with China, are among the factors impacting the agriculture sector. Here is an overview of key agricultural commodities based on the latest data from the USDA:

Corn: The latest 2024/25 U.S. corn outlook is for larger supplies, lower domestic use, greater exports, and smaller ending stocks. Among the major corn-producing states, the USDA report indicates that yields are forecast above a year ago in Illinois, Indiana, Iowa, Missouri, Nebraska, and South Dakota, while yields in Ohio are forecast below a year ago.

Wheat: The USDA outlook for 2024/25 U.S. wheat is for lower supplies, slightly higher domestic use, unchanged exports and smaller ending stocks. Globally, the wheat outlook for 2024/25 forecasts increased supplies, consumption, trade and slightly lower ending stocks. Supplies are projected to increase 3.5 million tons primarily on larger production for Ukraine, Kazakhstan, and Australia that outweighs lower production for the E.U. and U.S. In addition, larger beginning stocks are forecast for several countries including the E.U.



Commodities

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Soybeans: Soybean prices continue to drop, decreasing from their 10-year high of over \$17 per bushel in May 2022 to less than \$11 over the summer. The USDA reported higher production, exports, and ending stocks in its 2024/2025 soybean outlook. Soybean production for 2024/25 is forecast to climb 154 million bushels on higher area and yield. Exports are up 25 million bushels on higher supplies, while the harvested area is forecast to increase by 1 million acres from July.

Pork: Consumer cravings for pork remain strong, with easing inflation and competitive pricing meeting demand. Geopolitical factors are having an impact, however, with the U.S.-China trade war giving Brazil a competitive edge and China's ongoing anti-dumping investigation into pork imports from the E.U. also threatening to impact trade. Pork production is lower in the final quarter of 2024, reflecting lower slaughter and reduced dressed weights in the third quarter. Exports for the remainder of 2024 and into 2025 are reduced due to expected reduced competitiveness in several key export markets.

Beef: Despite the rise of plant-based proteins, consumers still enjoy beef. Stronger-than-expected global demand for fed cattle recently has been driving imports, exports and prices higher lately. Price forecasts have been raised for the remainder of the year and into the first quarter of 2025, while imports and exports are expected to bump up in the fourth quarter. For 2025, beef production was lowered, reflecting reduced steer and heifer slaughter in the first quarter.



OUTLOOK

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Weather-ready foodservice planning

Earlier this year, AccuWeather meteorologists predicted an unusually active hurricane season, with 20 to 25 named storms. Meteorologists expected eight to 12 of those storms to strengthen into hurricanes and four to six storms to directly impact the U.S. The numbers add up to a hurricane season with well above the historical average number of tropical storms, hurricanes and direct U.S. impacts.

As years like this become more common, hurricane preparedness becomes more important. That includes not only anticipating potential impacts ahead of a storm (e.g. securing the property, having a backup power source and taking steps to mitigate flooding), but also ensuring you're able to reopen safely after a storm hits (e.g. requesting maintenance of equipment needing repair and notifying your utility company and insurer if needed). Beyond the functioning of your premises, it may also help to have plans set for easy-to-prepare back-up menus in case deliveries are interrupted or key supplies scarce in the days and weeks after a storm hits.



Cyber Threats
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How the nation is preparing

The government's response to managing cybersecurity threats to the agriculture industry has historically been slow. However, over the past year, government officials have begun to take more serious action to monitor and manage the risks. In January, a bipartisan group of House and Senate lawmakers introduced the Farm and Food Cybersecurity Act, which would require the USDA to conduct threat assessments and exercises. Cyber Storm was another recent effort. Sponsored by the Cybersecurity & Infrastructure Security Agency, Cyber Storm was a comprehensive tabletop exercise involving state, local, tribal, territorial, federal and private-sector organizations that assessed how well participants responded to a simulated cyber attack on food and agriculture.

But cybersecurity efforts that take place at the farm level are just as important as those made by government agencies. In remarks at the FBI symposium, Kowel urged farmers, ranchers, and others in the industry to make cyber hygiene a bigger priority. Approaches to managing cyber hygiene continue to evolve but currently include actions like using multi-factor authentication to access networks, limiting the number of people who have the authority to access important information, backing up critical data regularly, installing software updates and patches on schedule, and adopting tools such as endpoint detection and response systems that can identify and respond to cyber threats in real time. Cyber insurance can also help farms access in-the-moment support from tech experts following a breach, as well as receive data about potential vulnerabilities and exposures.