

Agriculture Tech is Reinventing Farm Management – and Just in Time

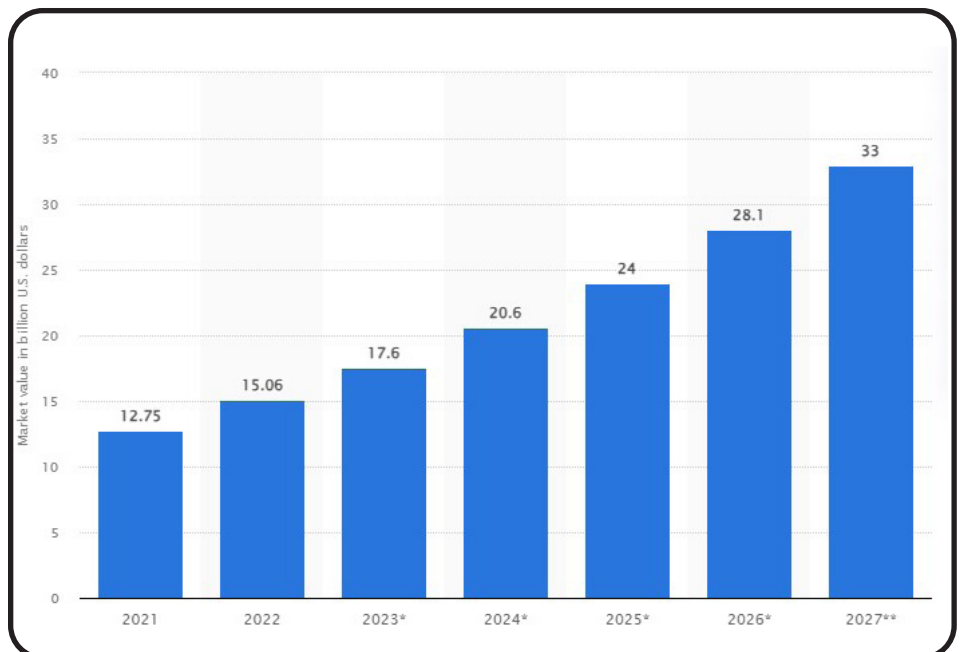
At every link in the food supply chain, technology is transforming what we know and is empowering us to take action. It’s helping businesses identify what hazards exist, what risks and opportunities may be on the horizon, and what can be done to maximize opportunities. This is true within restaurants and just as true within agriculture. As the agriculture sector juggles a growing assortment of unknown risks ranging from extreme weather to livestock disease, it could use some tools that allow for greater precision and control.

Innovations in agriculture technology are becoming an increasingly critical part of running a business in the sector – particularly as agriculture is recognized for its potential to support other parts of the economy. For instance, a recent report in the New York Times detailed how the airline industry is looking toward a future in which it can replace jet fuel with ethanol. While the innovation is framed as a potential means of containing the climate impacts of airline travel, the development would require vast amounts of corn and water – at a time when water is already a scarce resource for farms.

This is just one example of the shifting landscape for agriculture, but it demonstrates how farms will need to find new ways to be flexible and nimble in the years ahead. And much like how inventory management software can monitor the supply needs of a restaurant in real time, nascent agricultural technology promises to pinpoint how farms can maximize their resources and adapt to current conditions.

A recent report from Techwire Asia details some of the advances that have the potential to radically transform many aspects of farming by the close of this decade. For example, through smart-crop

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Forecast market value of smart farming worldwide from 2021 to 2027 (in billion U.S. dollars.) Source: Statista

Agricultural commodities update

What to expect in 2024

Climate strains and shifting global demand are impacting expectations for agricultural commodities in the coming year, though a number of forecasts for key commodities have remained unchanged since earlier in the fourth quarter of 2023. Below is guidance shared in the USDA's recently released World Agricultural Supply and Demand Estimates (WASDE).

Wheat: The USDA's latest outlook for 2023/2024 wheat called for unchanged supplies and domestic use, as well as reduced ending stocks. Exports are up 25 million bushels based on several large sales of soft red winter wheat to China. One surprise in the report was the resilience of Ukraine's agricultural sector. For the 2023/24 season, the domestic wheat crop there was expected to fall due to lower acreage. But yields have performed better than expected due to good precipitation. The issue is the country's ability to export grain to the world market, which is likely to result in higher levels of stock carried in the domestic market.

Corn: The USDA's WASDE report had few surprises since the previous report. U.S. corn ending stocks were down month-over-month. The agency is forecasting higher corn exports (for the U.S., as well as for Ukraine and Turkey) and lower ending stocks. Corn prices are expected to remain under pressure for much of the coming year.



Commodities

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Soybeans: Soybean supply and use projections were unchanged from the November WASDE. While soybean prices held up fairly well this year, global ending stocks for 2023/24 are estimated to be more than 14 percent higher year-over-year, leading to a record high of nearly 115 million tons. These expectations are the result of the view that South America will deliver strong production in 2024. This, along with anticipated larger soybean acreage in the U.S., suggests that prices may drop incrementally through 2024.

Beef: The global beef market continues to deliver strong prices amid reduced production worldwide. A recent report from Rabobank said the U.S. herd has continued to contract, mostly due to drought and its aftermath. If weather conditions improve in the months ahead, this could temper the reduction. Rabobank forecasts a 4.5 percent contraction in beef production and a 3 percent decrease in U.S. beef consumption in 2024 as beef retail prices continue to reach record highs. Imports are forecast higher for 2024 on expectations of demand for processing-grade beef.

Pork: In the USDA's recent report "Livestock and Poultry: World Markets and Trade," analysts anticipate world pork production in 2024 to remain virtually unchanged. Slightly higher production in Brazil, Vietnam and the U.S. will likely offset lower production in the EU and China. U.S. pork exports are anticipated to increase 3 percent in 2024 on demand from Canada, the Philippines and South Korea, along with increased market in China and Australia.



OUTLOOK

Q1/2024

New Year, New Outlook

As we flip the calendar to a new year, it's natural for consumers to think about how they can find ways to improve their lives. This spirit clearly infuses the key themes that Mintel expects to see represented in food and drink businesses in 2024. They tap into the psyche of the consumer, so restaurants stand to gain by weaving them into their strategies for the coming months:

Trusting the process: Food and drink businesses can help consumers make informed choices about what they eat and drink – and there is room for restaurants to communicate clearly with guests about how certain foods can fit into their diets. For example, Mintel sees growth potential for minimally processed food and drink that focuses on the positive aspects of food-processing techniques, such as those that enhance nutrition, inhibit contaminant formation or improve sustainability.

Reframing aging: How can your business debunk stigmas around aging and demonstrate how consumers can extend their healthy years? As consumers look for support in slowing the progress of age-related conditions like diabetes, bone and joint problems, and heart disease, restaurants can be partners in focusing on nutrition.

Optimizing eating: Convenience is king – and a new phase of optimized convenience is expected to emerge as technology streamlines meal planning, shopping and cooking. Artificial intelligence and augmented reality are likely to allow consumers to find shortcuts to quality food and drink experiences in their daily lives. As more consumers become accustomed to technology's role in their lives, they will adopt more emerging technologies to help them optimize their meals, snacks and drinks for their nutritional needs. How can your restaurant support this new way of living?



Ag Tech (from page 1)

monitoring, farms will be able to optimize their use of resources and manage crop growth through connected-irrigation and nutrient-distribution equipment. Drone surveillance and remote interventions will allow for more precise, frequent and cost-effective monitoring of large swathes of land. Farmers will be able to develop individualized feeding, illness monitoring and care plans for livestock based on connected body sensors. Autonomous farming equipment will help farms optimize resources and reduce labor requirements. Farmers will be able to use smart building and equipment management tools to oversee maintenance tasks and make real-time adjustments that can improve the performance and extend the life of key equipment.

There are tech tools specific to water resource management too: A recent report from the Environmental Defense Fund mentions OpenET, an open-access data platform that provides field-level, satellite-based data about the transfer of water from land to the atmosphere; and the Groundwater Accounting Platform, a platform that allows farmers to track water availability and use in near real-time.

To be sure, the sector is adopting practices beyond technology to help manage the instability of the operating environment. But the precision these tech tools can offer stands out for its potential. It's likely to be central to the health of the food supply in the years ahead.