

7 agribusiness tech trends to watch in 2021

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12 Aug 2021

Agriculture continued to grow even in the face of the pandemic, unlike many other industrial sectors that experienced a decline. In 2020, the growth of gross domestic product was 2.4% compared to 2019. In this year, the growth continues.



Image source: [Gallo/Getty](#)

Positive results are primarily achieved through investment in [new agricultural technologies](#). The introduction of innovative technologies helps growers increase the productivity and efficiency of all processes on the farm. In this article, you can learn about the technological solutions that will transform agriculture in 2021.

Artificial intelligence and machine learning

Artificial intelligence in agriculture is currently associated with detecting plant diseases, classification, and identification of weeds. Also, this technology is used in determining, counting, and harvesting. Artificial intelligence also allows you to optimize the management of water and soil management, weather forecasting. In animal husbandry, AI is used to determine the behaviour of animals.

The technology processes data received from agricultural machinery and generated recommendations for the operation of machines in real-time. In addition, AI can predict unwanted situations, which helps avoid waste, optimize performance, and also helps to save resources.

Satellite imagery

The analysis of satellite images allows farmers to obtain information about the state of crops and soils. Satellites provide high-resolution images of the Earth's surface in near real-time. In addition, you can capture images in different spectral ranges.

In 2021, it is planned to expand and modernize many satellite groups. For example, Planet Lab users already have access to satellite images with a resolution of 50 cm per pixel due to the launch of 3 new satellites into operation. Two more new satellites are expected to be launched this year.

Augmented hybridisation

Hybrid seeds make it possible to get a harvest even in unfavourable climatic conditions. Disease resistance minimises the level of chemicals needed for processing and the level of residual substances in soil and water. Short-term hybrids produce more yields in less time while consuming less water.

Hybrids provide the possibility of later sowing. In a tough year, this can help balance the harvest load. Thanks to software solutions, it is possible to increase the productivity of the hybrids, as they can be adapted to the level and needs of individual plants.

IoT and edge analytics

The Internet of Things is already one of the main trends in agribusiness. Sensors and onboard computers, combined with agricultural machinery connected to the Internet, are gradually making their way to farms. However, this technology still has a lot to develop, and in 2021 attention will be focused on Edge Analytics - a specialization of this technology.

The idea behind this innovative solution is that the equipment could make data analysis itself without the involvement of the processing center. That is, the sensor devices will themselves use the collected data and will be able to determine the area that needs processing themselves. It will significantly increase the speed of performing various fieldwork.

Precision agriculture

Precision farming gives farmers control over every aspect of crop production. The technologies involved in this practice make it possible to assess soil moisture, detect and manage weeds and crop diseases to improve field efficiency and yield. The methods of precision farming also contribute to the sustainability of agriculture. Farmers can only apply pesticides and fertilizers to areas that need them. The same goes for water distribution. Thus, the impact on the environment is reduced.

Smart irrigation

In 2021, the number of agricultural enterprises that use smart irrigation systems will continue to increase. Technological solutions offer farmers a more sustainable use of water by taking soil moisture and crop needs into account. It not only helps to save water but also leads to greater environmental sustainability. Due to remote sensing, we can receive various data on the state of vegetation and monitor specific parameters. Remote sensing is forecast to provide even more data this year.

Autonomous machinery and robots

The development of unmanned vehicles makes it possible to create fully autonomous or augmented equipment for working in the fields. Robots and autonomous agricultural equipment significantly increase harvesting accuracy and reduce losses. At the same time, thanks to self-driving technologies, the burden on human personnel is reduced. Agronomists can focus on solving more complex analytical tasks.

Final thoughts

The development and implementation of innovative solutions for agriculture bring many benefits. Such solutions allow increasing yields, optimising many agricultural processes, reducing the burden on human personnel, and reducing the environment's impact. The agricultural industry continues to attract investment, which means that in 2021 the market and the number of new solutions will continue to grow.

ABOUT THE AUTHOR

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