

Be an Insider of Precision Farming in the Next 120 Seconds

According to a [UNICEF](#) study, nearly 690 million people went hungry in 2019. The root cause of this disparity underlies the population and agricultural growth rates.

To be precise, the traditional farming industry and its implications cannot keep pace with the steady population rate.

This is the reason why precision agriculture is becoming relevant. Before delving deeper, we would like you to know about the basics of precision agriculture.

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What is precision farming?

By using precise inputs and its widened applications, precision agriculture is used globally to maximize profitability and improve crop yield. With precision agriculture, the global scenario of crop yielding has changed. This practice has boosted sustainability, efficiency, and profitability.

According to [McKinsey](#), advanced analytics capabilities and big data have shaped the way of precision farming. It also includes sensors, aerial imagery, local weather forecasts, etc. Put simply, precision farming entails the procedure of collecting and using the data for managing and optimizing crop production.

Why does precision farming matter?

- Prevents the degradation of soil
- Enhanced agricultural productivity
- Efficient usage of water resources

- Dissemination of smart farming theories for improving quality, quantity, and other cost
- Improved socio-economic status

A brief history of precision farming

With the advent of technologies including global positioning and global informational systems, precision farming spectated the breakthrough in 1990. Apart from the technology, various sensors, controllers and monitors were there to pave the way for precision farming. Also, the development of the internet and mobile computing plays a pivotal role in boosting the efficacy of those processes.

Methodology of precision farming

A plethora of technologies is there which can tackle different stages of farming practices. Farmers use the same to get the desired result within a stipulated time.

1. Land preparation tools

Understanding the soil's nature and composition is important to achieving success in precision farming. With science-baked modern tools, precision agriculture allows the farmers to operate the farming lands with ultimate accuracy and precision.

Tools like soil information systems are a burning example of technology. It helps the farmers to understand the soil better. Based on that, they can take action accordingly. These intricated systems help to determine the soil's health nature. Also, it can be done by going through various components like soil texture, soil fertility, root zone depth, and moisture retention capability.

Once the farmers get the idea, they can plant the crops accordingly to yield better results. Aerial technologies are also there for identifying problems from a macro point of view. Few land and soil problems can be observed from this point. It generates aerial infrared images that helps the farmers to stay ahead. Accordingly, they can gather the information that may not be possible from the ground systems.

2. GPS technology

The role of GPS technology is playing a critical role in the sector of precision agriculture. This same technology also drives the PA system progress, including GPS-guided seeders, sprayers, and tractors.

With precise positioning capabilities, irrigation and cultivation of crops are now simplified—the variations of those preferred conditions allow the farmers to work systematically within the given situation.

Also, the guidance systems play an instrumental role in eliminating overlaps and redundancies. This also provides considerable benefits that reduce stress related to resources and mindsets. Automated steering systems can operate and handle the equipment with accuracy. This helps the farmers to focus mainly on ancillary processes.



For a better understanding of the role of GPS, knowledge of mobile mapping is also necessary. It helps collect field data, geospatial time tags, and other attributes. With mobile mapping, data can be collected anytime, in any manner. Accumulated data can be used to decipher crop quality in a given situation.

3. Yield monitoring systems

Besides GPS systems, yield monitoring systems are crucial for crop production and management. It can provide insights like moisture levels, grain loads, auto-cut width, etc.

This helps the farmers make informed decisions, ultimately maximizing the yield profitability.

Other technologies

- Variable rate technology
- Data integration system
- Water management system
- Flow and application control

Advantages of precision farming

With the technology and tools, precision farming has helped the agricultural industry to reach new heights. The outcome of various implementations has served the individuals. It led to factors like less time-consuming and desired results.

1. Enhanced profitability

Precision farming and its implications helped the farmers to yield favorable results. It reduces the production cost while increasing profitability. Through technology, farmers can offer the lowest price packages to market. It signifies the present landscape of the agricultural market, which is suitable to cater to the demands of mankind.

2. Improved sustainability

Making sure that the crop input materials used to reach the plant rather than elsewhere in the environment has a positive impact on the environment and the bottom line and can potentially open up new markets for the crops in the future.

3. Better harvesting

Understanding farm nutrient levels and soil types across the farm is one of precision agriculture's most significant advantages. Different fields and regions have various water retention capacities, nitrogen mineralization rates, and other characteristics. Understanding these variations prevents future overapplying of nitrogen. It may cause lodging or boost minerals like potassium, which improve standability in regions where it is deficient.

Final words

The introduction of precision agriculture has helped the agricultural sectors to go back and forth. From improving farm management to maximizing the potential of lands, precision farming can cater to the hungry mouths in the future. Indeed, it's a boon.