

Importance of good agricultural practices and precision farming

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Definitions of GAP and Precision Farming

Today, the significance of reaching and consumption of healthy and safe food is increasing owing to world population growth. Good Agricultural Practices (GAPs) come in sight in this context and can be easily defined as doing things well and assuring it has been done so (FAO, 2007). According to FAO, GAPs are a sum of rules to be applied during production (on-farm and post-production processes), which help to obtain safe and healthy food and non-food agriculture products, while considering sustainability criteria (economic, social and environmental) (FAO, 2016).

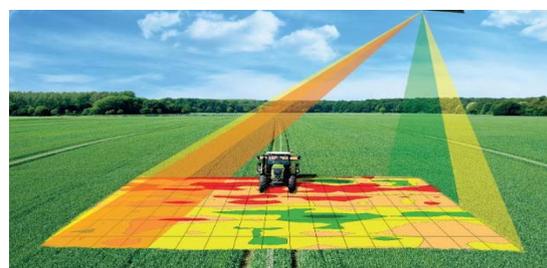
For many years, "Precision Farming" or "Precision Agriculture" terms have been used in agricultural science. In most wider definition, the precision farming is regarded as an information technology applied to agriculture. Different technologies and agronomic principles are applied in precision agriculture to direct spatial and temporal variation related to agricultural production so as to increase crop performance and environmental quality (Beluhova-Uzunova and Dunchev, 2019).

Importance of GAP and precision farming

A major worry for all food producers is food safety. Unsafe food owing to microbial contamination takes part in the center of this concern. The unsanitary harvesting, handling, water source, employees with poor hygiene, improper fertilizer and a variety of other factors are some of contamination sources. By means of GAPs, farmers may prevent contamination of agricultural products. GAPs are a new way of thinking about food safety and these practices are also used to increase the quality of products. Each producer should learn food safety hazards and apply some preventive steps to avoid contamination with harmful microorganisms. GAP standards protect people's business by means of the right steps. GAPs both protect people from illness and farm business from economic results of the pollution (Kumar, 2017). The application of GAPs supports the optimum use of resources like water, pesticides and fertilizers. The protection of farmers' health from improper use of chemicals is its social dimension (FAO, 2016).

Today, for farmers, one of the biggest problem is the necessity to assure food products for a rapidly increasing population, while balancing climate change and scarce water problem. Climate change leads to new demands on land and environmental resources. It is supporting opportunities for the development of novel crops and systems, which increases food production and protects the environment. Engineering developments and technology are used in precision farming to create novel efficiency dimensions and environmental management. Some of these technologies are nanotechnology, use of GPS and drones to advocate more accurate farming methods. By means of precision farming, farmers can select the right inputs and apply the right amount at the right rate.

For instance, technology can be used by farmers to determine fertiliser where it is most needed. Fertiliser is applied more accurately in terms of doses across the field instead of applying it at the same amount in whole field. In the end, the cost decreases, the yield increases and the effect on the environment diminishes due to decrease in the spread of liquid and solid based applications.



References

- Beluhova-Uzunova, R.P. and Dunchev, D.M. (2019). Precision farming-concepts and perspectives. *Problems of Agricultural Economics*, 3(360): 142-155.
FAO (2016). A Scheme and Training Manual on Good Agricultural Practices (GAP) for fruits and vegetables. Volume 1.
Kumar, S. (2017). What is the importance of agricultural practices? <https://www.quora.com/What-is-the-importance-of-agricultural-practices>

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