Special Issue on
Sensors in Precision Agriculture for the Monitoring of Plant Development and Improvement of Food Production

CALL FOR PAPERS

The use of sensors for monitoring the growth and development of plants is an increasing and indispensable practice to increase the productivity and quality of food, which can help to satisfy the hunger of the humanity with a constant growth and can help population to prevent diseases, principally some of the deadliest. The generation of high-quality food, nourishment with high nutraceutical or functional characteristics, is an increasing challenge, principally when the food is produced through environmental-care practices and low-cost concept in order to reduce the damage of the environment and increase the benefit to the poorest population.

In precision agriculture, the use of sensors can help to create the optimal conditions to maximize the production of low-cost food with high nutraceutical quality through environmental-care practices by incorporating suitable sensors based on different transduction principles (e.g., electrical, chemical, optical and radiation, thermal, and biological), processors, and actuators. The sensors in precision agriculture must have the capacity of sensing and detecting chemical elements, biomolecules and variables related to vigor and sanity and must be able to communicate with almost all processing units to extract the information of interest that could help to create the necessary conditions to maximize the production and nutraceutical characteristics of functional food.

In general, it is possible to find out information about the technology used by sensors in precision agriculture applied to produce high-quality and low-cost food with high functional characteristics generated through environmental-care practices. However, this information is widely dispersed and it is not analyzed in a critical way to be integrated into a global vision of how the technology could facilitate the different aspects of precision agriculture.

For these reasons, this special issue has the objective of offering a medium of information related to technological developments aiming to monitor and process the data of variables involved in the plant development and improvement in food production. This knowledge could be applied to potentiate the results of sensors in order to help in the generation of high-quality and low-cost food with high functional characteristics by mean of sustainable practices.

The editors welcome papers reporting original and high-quality work that have not been submitted or published in other journals or publication media.

Potential topics include but are not limited to the following:

- ▸ Sensors for application and monitoring of nutrients in plants

- ▸ Sensors for sanity management in plants

- ▸ Sensors for monitoring of nutraceutical bioactive compounds of foods

- ▸ Sensors for monitoring of bioactive compounds of plants defense

- ▸ Sensors for monitoring of environmental variables in protected agriculture

- ▸ Sensor technologies for remote and proximal soil and crop sensing

- ▸ Vision systems for monitoring the development in plants

- ▸ Vision systems for improving food production

- ▸ Monitoring, modeling, and information fusion and management of variables in sensor based precision agriculture

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/js/paifp/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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