

Precision Agriculture

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Abstract—Precision agriculture is expected to deliver production solutions for a world population nearing 7.4 billion people. This includes understanding that both the developed and developing world will need to adopt practices that operate at the by-plant resolution. Precision Agriculture is generally defined as information and technology based farm management system to identify, analyse and manage spatial and temporal variability within fields for optimum productivity and profitability, sustainability and protection of the land resource by minimizing the production costs. Increasing environmental consciousness of the general public is necessitating us to modify agricultural management practices for sustainable conservation of natural resources such as water, air and soil quality, while staying economically profitable. The use of inputs (i.e. chemical fertilizers and pesticides) based on the right quantity, at the right time, and in the right place. This type of management is commonly known as “Site-Specific Management”. The productivity gain in global food supply have increasingly relied on expansion of irrigation schemes over recent decades, with more than a third of the world's food now requiring irrigation for production. All-together, market-based global competition in agricultural products is challenging economic viability of the traditional agricultural systems and requires the development of new and dynamic production systems. Hence it is a comprehensive system to increase production efficiency, improve product quality, improve the efficiency of crop chemical use, conserve energy and protect environment. The precision farming developments of today can provide the technology for the environment friendly agriculture of tomorrow. Especially in the case of small farmers in developing countries, precision farming holds the promise of substantial yield improvement with minimal external input use.

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