

SMARTFARMER – IoT ENABLED SMART FARMING APPLICATION

LITERATURE SURVEY

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According to **DR. V. Nagaveni**, one of the important applications of Internet of Things is Smart agriculture. Smart agriculture reduces wastages of water, fertilizers and increases the crop yield. In the current agriculture system the specification such as temperature, moisture, humidity are detected manually which increases the labour cost, time and also monitoring cannot be done continuously. In their paper, irrigation process is done automatically using different sensors which reduces the manual labour. Here a system is proposed to monitor crop-field using sensors for soil moisture, humidity and temperature. By monitoring all these parameters the irrigation can be automated.

According to **Abhilash Lad**, India's agriculture sector, on either side, is losing ground every day, affecting the ecosystem's output capacity. In order to restore vitality and put agriculture back on a path of higher growth, there is a growing need to resolve the issue. A large-scale agricultural system necessitates a great deal of upkeep, knowledge, and oversight. The IoT is a network of interconnected devices that can transmit and receive data over the internet and carry out tasks without human involvement. Agriculture provides a wealth of data analysis parameters, resulting in increased crop yields. The use of IoT devices in smart farming aids in the modernization of information and communication. For better crop growth moisture, mineral, light and other factors can be assumed. This research looks into a few of these characteristics for data analysis with the goal of assisting users in making better agricultural decisions using IoT. The technique is intended to help farmers increase their agricultural output.

According to **K Chandhini**, The IoT (Internet of Things) based agricultural convergence technology is a technology to create a high value such as improvement of production efficiency, quality increase of agricultural products in the whole process of agricultural production. In addition, implementing precision agriculture, which is an alternative to the future agriculture, through the convergence technology allows prediction of supply and demand, real-time management and quality maintenance during the entire life cycle of agricultural products. We make a literature study on the cited title and present it in the form of this note.

According to **Sobitha**, Agriculture is the most important sector of the Indian economy that provides employment to almost half the population of the country. Traditional way of farming had less concentration on humidity, water level and climatic condition which affects a farmer dreadfully. This farming will lead a loss to farmer because of labour insufficiency, water scarcity, inefficient knowledge about pest, crop selection for their land. To overcome these issues smart farming comes into existence. Automation of the farming process is called as smart farming. Internet of Things help in collecting information about various conditions like weather, moisture, temperature and fertility of

soil. Based on this information farmer can irrigate their crop with required amount of water, add required amount of fertilizer, and cultivate suitable crop based on the soil nature. This paper discusses about various technologies used in smart farming, various application in smart farming and issues of IoT in agriculture.

According to **Vishruth ND**, The survey proposes smart agriculture using various devices. Related work is the foundation for advance in agriculture practice. Using smart agriculture a farmer can control the activities of agriculture like irrigation, animal intrusion, etc. The communication between the devices is increased by the use of IoT. Using IoT in agriculture improves the functionalities used in farming. Until now, the only way of handling the agricultural activities is by traditional method. In this survey Using WSN, data acquisition and transfer and monitoring becomes easy. This technique provides smart solution for crop growth using IoT.

According to **Tanya Recalde** , The digital breach between agricultural producers and IoT technologies has reduced in the last years. In the future, these technologies will allow improving productivity through the sustainable cultivation of food, as well as to take care of the environment thanks to the efficient use of water and the optimization of inputs and treatments. IoT technologies allow developing systems that support different agricultural processes. Some of these systems are remote monitoring systems, decision support tools, automated irrigation systems, frost protection systems, and fertilization systems, among others. Considering the aforementioned facts, it is necessary to provide farmers and researchers with a clear perspective of IoT applications in agriculture. In this sense, this work presents a systematic literature review of IoT-based tools and applications for agriculture. The objective of this paper is to offer an overview of the IoT applications in agriculture through topics such IoT-based software applications for agriculture available in the market, IoT-based devices used in the agriculture, as well as the benefits provided by this kind of technologies.

According to **Nuno Costa** , The world population growth is increasing the demand for food production. Furthermore, the reduction of the workforce in rural areas and the increase in production costs are challenges for food production nowadays. Smart farming is a farm management concept that may use Internet of Things (IoT) to overcome the current challenges of food production. This work uses the preferred reporting items for systematic reviews (PRISMA) methodology to systematically review the existing literature on smart farming with IoT. The review aims to identify the main devices, platforms, network protocols, processing data technologies and the applicability of smart farming with IoT to agriculture. The review shows an evolution in the way data is processed in recent years. Traditional approaches mostly used data in a reactive manner. In more recent approaches, however, new technological developments allowed the use of data to prevent crop problems and to improve the accuracy of crop diagnosis.