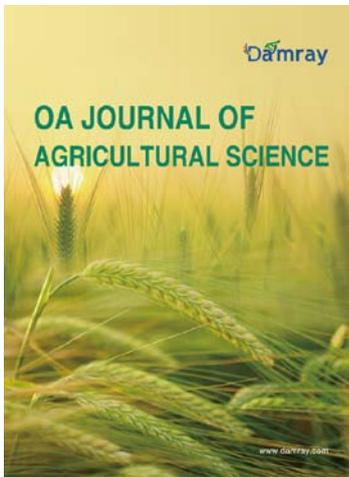# Application of Internet of Things Technology in Intelligent Agriculture

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Abstract

In the new era of social development, my country's agriculture has developed rapidly. At the same time, the application of Internet of Things technology has been paid more and more attention, and it has been widely used in the agricultural field, becoming an important means to increase crop production. Under the current social background, how to take effective measures to give full play to the advantages of the Internet of Things technology and enable the further development of intelligent agriculture is a key topic of concern and research in my country at this stage. Therefore, this article briefly analyzes the basic concepts of the Internet of Things, and proposes a series of applications of the Internet of Things technology in smart agriculture.

Keywords

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Introduction

In the current agricultural development, from the perspective of the development of Internet of things technology in intelligent agriculture, there are various problems due to the relatively short development time. For example, lack of rich experience, problems in industry standards and so on, these problems have been repeatedly proposed by relevant scholars, affected by various factors, have not been fundamentally solved. In this regard, it is necessary to further strengthen the research on internet of things technology to provide scientific theoretical basis for the development of intelligent agriculture, so as to provide favorable conditions for the development of China's agriculture.

1. Basic Concepts of the Internet of Things

The internet of things, in simple terms, is mainly based on the Internet to establish corresponding connections be-

tween specific things. At the same time, there will be a certain role between different objects, which will have an impact. From another level, the composition of the Internet of Things technology involves more and more complex content, but it has strong practicability. The advantages of the Internet of Things technology are self-evident and can be applied to different fields, but in order to make it truly play an important role, a series of measures need to be taken. For example, improve the intensity of technology, improve the level of management and so on [1].

2. Key technologies of Internet of Things in intelligent agriculture

2.1 M2M technology

The understanding of this technology, in general, refers to the communication and exchange of information between two different things, which can be understood from the following two aspects: First, through a variety of forms of information exchange, so that people and machines can communicate. For two different equipment, in the specific information exchange process, the data can be transmitted at the same time, according to the information to complete the corresponding instructions, such as remote measurement work. The communication and interaction between human and machine equipment, simply speaking, refers to the machine equipment, can collect all kinds of information needed, and then the information is transmitted to the system, through the system, relevant personnel can timely understand the information related to agriculture. According to the analysis of these information, personnel can issue corresponding instructions to the equipment, so as to achieve remote operation and control, so that the normal operation of agriculture can be achieved; Second, joint action between machines. Specific, based on the role of the network, information on various types of equipment for processing, then the corresponding orders, any a mechanical device to run are not isolated, but with other types of machinery and equipment to maintain a certain correlation between, and highlights the agricultural artificial intelligence features of Internet of things [2].

2.2 WSN technology

Under the application of this technology, the data related to crop growth can be grasped in time. For example, temperature data, soil data and so on. The technology can be transmitted by sensor in agricultural greenhouses to receive the information, and to transfer information at the first time into the system, and set up a good standard index comparison, the corresponding instructions to the relevant equipment, mainly in order to guarantee good growth environment for the growth of crops [3].

2.3 Radio frequency identification technology

This technology in the specific application process, mainly through the use of radio waves, for the collection of all kinds of data information transmission, communication, interaction. It should be noted that in the process of information transmission, it has been separated from the application of communication lines, and the network architecture can be directly utilized, so that all data and information can achieve the purpose of non-contact interaction. When data and information exchange and interact with each other, the recognition system will receive instructions, so that the original structure of the data information is presented. At the same time, through the identification and determination of electronic tags, the operation information of the docking device can be further determined, and the information can be accurately positioned, so as to realize the function of data pretuning [4].

3. Application of Internet of Things technology in intelligent agriculture

3.1 Application in intelligent agricultural information management

In the development process of intelligent agriculture, it is necessary to deal with various data information related to agriculture through understanding and discovery. In terms of information management, the Internet of Things technology can be used to collect various types of information and form a database. Through the analysis of the database, we can extract the important information and master the data related to agriculture. In this way, we can not only dig out important information, but also provide scientific basis for the development of intelligent agriculture. At the same time, in the development of intelligent agriculture, for the information users want to query or want to statistics, through the application of technology, it can meet the real needs of users for information. In this regard, for relevant departments, it is necessary to improve the scientific nature of agricultural information management under the application of this technology. For example, relevant platforms for information release and expert consultation platforms can be established [5].

3.2 Application in intelligent agricultural information monitoring

In the detection of agricultural information, the application of this technology can help agricultural producers to understand the growth and growth status of agricultural products in a timely manner. If it is found that the growth environment of agricultural products is abnormal, agricultural producers can adjust and control various factors in the growth environment according to the actual situation. For relevant departments, under the application of technology, attention should be paid to the construction of a temperature sensing system to avoid errors in temperature measurement and make temperature measurement more accurate [6].

3.3 Application in intelligent agricultural circulation

The application of the Internet of Things in agricultural circulation is mainly reflected in the following aspects: First, when agricultural products enter the processing process, different types of agricultural products can be classified, and corresponding electronic labels can be made according to the categories, and the labels can be input into the transportation system. Processing enterprises can grasp all kinds of information related to agricultural products through the identification of labels; Second, the Internet of Things technology can be used to plan the corresponding transportation routes in the system and reasonably arrange the corresponding transportation quantity in the transportation process according to the requirements of transportation. In this way, the costs incurred in the transportation process can be greatly reduced. At the same time, the application of this technology can make the transportation process more automated; Third, through the application of this technology, whether in the storage of agricultural products, or storage links, can realize the control of various work procedures. For example, the warehouse of agricultural products, agricultural products after sale and so on. At the same time, through the application of Internet of Things technology, according to the characteristics of agricultural products, the storage temperature of agricultural products can reach the corresponding standards, control the storage temperature, and the warehouse storing agricultural products for comprehensive monitoring; Fourthly, after agricultural products enter the sales link, relevant personnel can be timely reminded to replenish agricultural products according to the sales situation, so as to make the management of retail link more standardized [7].

3.4 The application of intelligent agricultural security traceability system

The safety traceability system of agricultural products has been gradually improved in recent years. Simply speaking, it is mainly through the application of technology, so that consumers can know about every process in the production process of agricultural products anytime and anywhere. In this way, food safety can be guaranteed to a large extent [8].

4. Conclusion

To sum up, under the new situation of rapid development of agriculture, the application of Internet of Things technology in intelligent agriculture is very important. In this regard, it is necessary to continuously improve the application level of Internet of Things technology, improve the application degree of intelligent agriculture, and seize the opportunity of agricultural development. For example, in terms of management and crop mass production, further research and application are needed to continuously improve the application degree of the Internet of Things, play a greater value in the agricultural field, and lay a solid foundation for the long-term and stable development of China's agriculture [9-17].

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