S.No	Paper name	Author name	Published year	Absract
1	IoT-Enabled Smart Agriculture: Architecture, Applications, and Challenges	Vu Khanh Quy , Nguyen Van Hau , Dang Van Anh , Nguyen Minh Quy , Nguyen Tien Ban , Stefania Lanza , Giovanni Randazzo 4and Anselme Muzirafuti	27 March 2022	The IoT integrates a series of existing state-of-the-art solutions and technologies, such as wireless sensor networks, cognitive radio ad hoc networks, cloud computing, big data, and end-user applications. This study presents a survey of IoT solutions and demonstrates how IoT can be integrated into the smart agriculture sector. To achieve this objective, we discuss the vision of IoT-enabled smart agriculture ecosystems by evaluating their architecture (IoT devices, communication technologies, big data storage, and processing), their applications, and research timeline.
2	Survey, Comparison and Research Challenges of IoT Application	Dimitrios Glaroudis, Athanasios Iossifides, Periklis Chatzimisios	26 November 2019	In this context, the Internet of Things (IoT) technologies have become the major path forward

	Protocols for Smart Farming			towards novel farming practices. The unprecedented capability of data collection and management offered by IoT is based on several factors of the underlying communication network architecture and technology, one of the most important being the application level protocol that is used among IoT nodes, gateways, and application servers.
3	Smart Farming using IoT, a solution for optimally monitoring Farming conditions	Jash Doshi, Tirthkumar Patel, Santosh kumar Bharti	Novembe r 4-7, 2019	Internet of Things (IoT) is present and future of every field impacting everyone's life by making everything intelligent. It is a network of different devices which make a self-configuring network. The new developments of Smart Farming with use of IoT, by farmers and reducing crop wastage. The aim is to propose a technology which can generate messages on different platforms

				to notify farmers.
4	A Literature Survey on Smart Agriculture Monitoring and Control System Using IOT	Abhilash Lad , Sumit Zarkhande , Krishna Raichurkar , Sumitra Nandre , Dr. Priya Charles	Feb 2022	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.
5	A Literature Study on Agricultural Production Syste m Using IoT as Inclusive Technology	CHANDHINI. K	January 2016	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,implementi ng 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.
6	Literature Survey on Smart Farming using IOT	S. Kavya1 Dr. K. M. Anandkumar Dr. S. Sobitha Ahila G. Dinesh4	Feb 2020	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.
7	A Survey on Smart Agricultural Farming Using IOT	Pakruddin B, Vishruth ND, Shreeshyam H S, Saurabh, Osama Mustaquim	Novembe r 2018	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.
8	IoT Based Smart Agriculture System	Durgesh Raghuvanshi Apurva Roy Dr. Vaibhav Panwar	June 2021	This paper describes the concept of featuring and elasting an agriculture platform to the internet world. Agriculture is the most important of human life so it can be improvised by using IoT technology. IoT technology gives a grasp to enhance the power of automation systems in agriculture. Smart agriculture System

				that uses the advantages of cutting-edge technologies such as Arduino and Wireless Sensor Network.
9	Smart Farming Using IOT	Amandeep1,Arshia Bhattacharjee2 Paboni Das3 ,Debjit Basu4,Somudit	June 2017	Even today, different developing countries are also using traditional methods and backward techniques in agriculture sector. Little or very less technological advancement is found here that has increased the production efficiency significantly. To increase the productivity, a novel design approach is presented in this paper. Smart farming with the help of Internet of Things (IOT) has been designed. A remote controlled vehicle operates on both automatic and manual modes, for various agriculture operations like spraying, cutting, weeding etc. The controller keeps monitoring the temperature, humidity, soil

				condition and accordingly supplieswater to the field
10	Smart Agriculture Using Internet of Things	Ibrahim Mat, Mohamed Rawidean Mohd Kassim, Ahmad Nizar Harun, Ismail Mat Yusoff	January 2018	Recent researches hypothetically shown the potential of Internet of Things (IoT) to change major industries for a better world, which includes its impact towards the agriculture industry. Farming industry must grasp IoT to feed 9.6 billion of global population by 2050. Challenges such as extreme weather conditions and rising climate change shall be overcome to fulfil the demand for food. Smart farming based on IoT technologies will enable growers and farmers to reduce waste and enhance productivity ranging from the quantity of fertilizer utilized to the number of journeys the farm vehicles have made.
11	Smart Farming Using IoT and Machine Learning Techniques	Sanjana G,Nipun M Davasam,N.Mohan Krishna	May 2021	Farming is an age old practice, practiced by humans for survival. With the exponential increase in consumers,

				reduced number of farmers, and inadequate knowledge on farming there has been a huge loss of produce over the years. With the help of IoT and computing algorithms, it is possible to predict the suitable crop for a particular environment and piece of land to improve the yield. The proposed approach consists of an agriculture stick that will capture live data from sensors when the stick is erected on the soil. This raw data will be sent to the cloud for data processing
12	Smart Farming Implementation using Phase based IOT System	R. Deepa, Vaishnavi Moorthy, Revathi Venkataraman and Soumya Snigdha Kundu		The major part of the rural population in India depends on the agricultural industry to make a livelihood. Smart farming helps in providing easy labor free solutions to labor intensive and precision intensive tasks. The devised soil management system helps in reducing the toil and workload of any farmer by feeding

				them information through a curated application generated by the implementation of IOT, Cloud Computing and sensors. The new proposed model functions in three major“phases”where the novelty developed was a real time monitoring system of soil parameters such as moisture, pH which help to increase the crop yield
13	IoT for Smart Farm: A Case Study of the FertilizerMixer Prototype	Sumaran Chaikhamwang,Chalida Janthajirakowit,Srinuan Fongmanee	June 2021	study, design and developfertilizer mixer using Internet of Things. 2) develop applicationcontrol the fertilizer mixer using mobile application. Theresults shown that the fertilizer mixer using IoT technologyand conFig.d with application via smartphone. The research isdivided into 2 parts: 1) hardware 2) software. The hardwareusing ESP32S platform for control devices and applications,

				Users can mix fertilizers according to the formula they wantwith the program that runs on their smartphones, calculatingformula N-P-K to get the mixed fertilizer by weight of thefertilizer. The user can set schedule for the fertilizer mixer in 2ways: 1)the fertilizer mixer immediately 2) set the scheduledate, time for the fertilizer mixer. User can also choose fromtwo forms of blending: 1) select according to the recommendedformula or saved formula (by selecting from plant name andplant age) 2) by setting N-P-K values such as 16-20-0 or 15-15-15, etc. The results of automatic fertilizer mixer was found thatthe automatic fertilizer mixer was able to perform the work

14	IoT Sensor Network Approach for Smart Farming:An Application in Food, Energy and Water System	Yemeserach Mekonnen,Lamar Burton,Arif Sarwat,Shekar Bhansali	May 2018	As the global population soars from today's 7.3 billion to an estimated 10 billion by 2050, the demand for Food,Energy and Water (FEW) is expected to more than double.Such an increase in population and consequently, in the demandfor FEW resources will undoubtedly be a great challenge forhumankind. A challenge that will be exacerbated by the needfor humankind to meet the greater demand for resources witha smaller ecological footprint. This paper is proposing a systemdeveloped to optimize the use of water, energy, fertilizers foragricultural crops as a solution to this great challenge. It isan automated smart irrigation system that uses real time datafrom wireless sensor networks to schedule an irrigation

15	Smart Farm and Monitoring system for measuring the environmental condition using wireless sensor network – IOT technology in farming	Tharindu Madushan Bandara Wanninayaka Mudiyanselage, Mansoor RAZA	JUNE 2020	IoT is used in every domain like smart city, smart university, smart car park system, etc. This paper is about the implementation of the smart farm. IoT concept helps in cost-efficient farming activities like crop and other resource management. With a wireless sensor network, it is easy to connect with every sensor node placed in the farming environment. Also, with the wireless sensor network, it can connect with long-distance ranges. With the help of a sensor network, it can collect the data from the farming environment and analyze it according to the pre-defined values. The proposed system used IoT sensors to collect the data are soil moisture sensors, temperature sensors, water volume sensors, etc