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IoT Based Food Management and Environmental Change in Cattle Shelter

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***Abstract*— The majority of major retailers and manufacturers worldwide now require their suppliers to implement competent food and animal feed safety management systems all the way through the supply chain. The trickle-down effect of this mandate, as well as the introduction of the Food Safety Modernization Act in the U.S., has brought animal feed safety control to the forefront of industry discussion over the past two years. he implementation and certification of animal feed safety systems is not a recent development in some international circles. The "GMP Plus" program based in the Netherlands was one of the first that required ingredients exported to that country for use in animal feed to be independently certified against standardized Good Manufacturing Practices. In 1997, the Animal Nutrition Association of Canada sponsored the development of a third-party trained and audited feed safety control program, Feed Assure. This program has been adopted by the majority of leading animal feed manufacturers in Canada for over 15 years. The program has become so popular that the Canadian Food Inspection Agency has now reviewed the industry driven program and found it to be competent in controlling significant feed safety hazards, backed up with rigorous, annual third-party verification. To compete in the new world of supply chain food safety, animal feed manufacturers across the U.S. are going to have to design, implement, and ideally undergo independent certification of their feed safety control systems. In this article, we will summarize some of the key implementation steps and areas of focus you must include to implement an effective safety control system within your animal feed manufacturing company**

Keywords: Node MCU,IoT, Humidity, Temperature, Automation, etc.

I INTRODUCTION

The majority of major retailers and manufacturers worldwide now require their suppliers to implement competent food and animal feed safety management systems all the way through the supply chain. The trickle-down effect of this mandate, as well as the introduction of the Food Safety Modernization Act in the U.S., has brought animal feed safety control to the forefront of industry discussion over the past two years. he implementation and certification of animal feed safety systems is not a recent development in some international circles. The "GMP Plus" program based in the Netherlands was one of the first that required ingredients exported to that country for use in animal feed to be independently certified against standardized Good Manufacturing Practices. In 1997, the Animal Nutrition Association of Canada sponsored the development of a third-party trained and audited feed safety control program, Feed Assure. This program has been adopted by the majority of leading animal feed manufacturers in Canada for over 15 years. The program has become so popular that the Canadian Food Inspection Agency has now reviewed the industry driven program and found it to be competent in controlling significant feed safety hazards, backed up with rigorous, annual third-party verification. To compete in the new world of supply chain food safety, animal feed manufacturers across the U.S. are going to have to design, implement, and ideally undergo independent certification of their feed safety control systems. In this article, we will summarize some of the key implementation steps and areas of focus you must include to implement an effective safety control system within your animal feed manufacturing company.

II PROBLEM STATEMENT

NOW a day's human cannot imagine their life without technology surrounding us diverse technology are helping people to live their lifestyles with more luxury. In general, animals feeding require a lot of time and effort spend by the cattlemen. Part of the feeding amount is consumed by the animals to save its life.

In this project we propose a control system that manages the forage process. The number of feeding animals using sensor network.

III LITERTURE SURVEY

A Microcontroller Based Food Temperature Regulating System
Jacob Tsado, Onunka Chimdinma, OdunAyo IMORU, Enesi Asizehi Yahaya, (IJERT),
November – 2013

Low-power CMOS 8-bit microcontroller based on the AVR enhanced RISC architecture, 32K bytes of in-system programmable flash with Read-While -Write capabilities. The AVR architecture has two memory spaces, the Data memory and the program memory space. It also has an EEPROM memory for data storage. The design and construction of food temperature regulating system was carried out, the result obtained from the test carried out shows that the system is working to the prescribed specification.

Integration of an automatic agricultural and livestock production management system and an agriculture and food traceability system based on the Internet of Things technology
Joe-Air Jiang ; Tzu-Shiang Lin ; Chien-Hao Wang ; Min-Sheng Liao ; Chu-Yang Chou

The goal of sustainable agriculture, the government in Taiwan has established a product traceability system. With the traceable marks, all agricultural products' information can be

inquired through farmers' records on the production and sales via the Taiwan agricultural products security traceability information network. For example, farmers must prepare cultivation records and upload the records to a specified website established by the Council of Agriculture. This might run into two problems. First, most farmers are elderly citizens, and it might be difficult to teach them to use computers. Second, the product traceability records are created through manual inputs, the correctness cannot be ensured. Therefore, the study develops a farm production traceability system.

Driving factors of purchase intention towards organic food: A conceptual study Mohamed Bilal Basha

Increasing awareness of the organic diet to be a healthy food option has become a global phenomenon. Many people have started to accept the fact that organic food does not contain harmful chemicals like the non-organic food. The buying behavior of people globally is changing due to the concern towards health and environmental issues. The increasing number of incidents of food contamination due to the usage of chemical fertilizers and chemical pesticides in agriculture has increased the number of consumers turning towards natural products. Consumers are becoming more environmentally conscious and prefer taking organic products. As a result, the global organic food industry is growing at a rate of 20-22 per cent annually. Thus, the promotion of organic agriculture is not only beneficial for producers, but it also will respond to consumers' desire for a high food quality and food production that does not damage the environment. This conceptual paper outlines 11 major factors which affect the consumer purchase intentions for organic foods.

IV PROPOSED SYSTEM

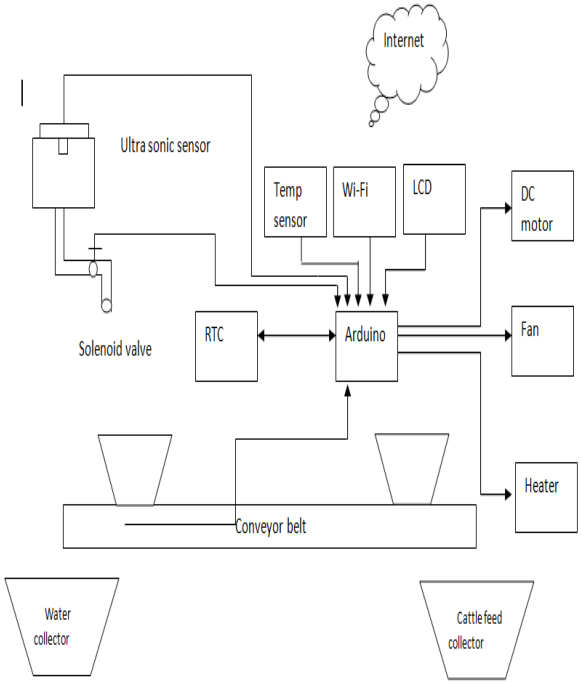


Figure 1 Block Diagram1

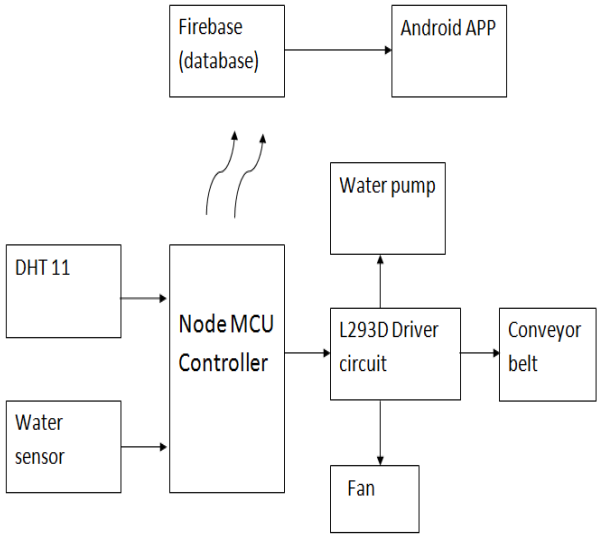
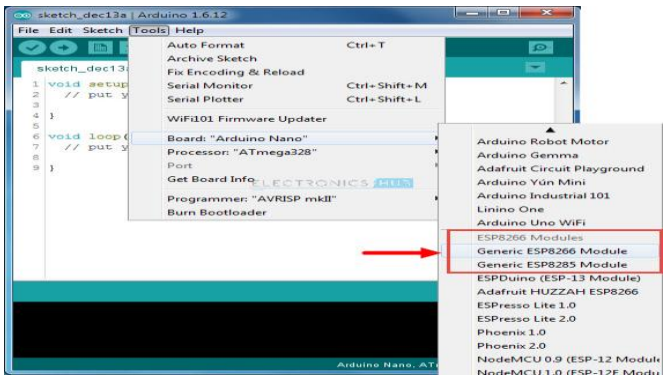


Figure 2 Block Diagram2

V EXPERIMENTAL RESULTS



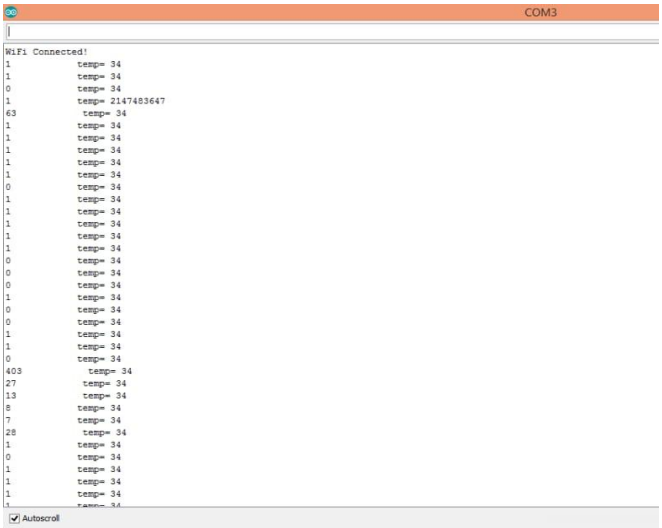
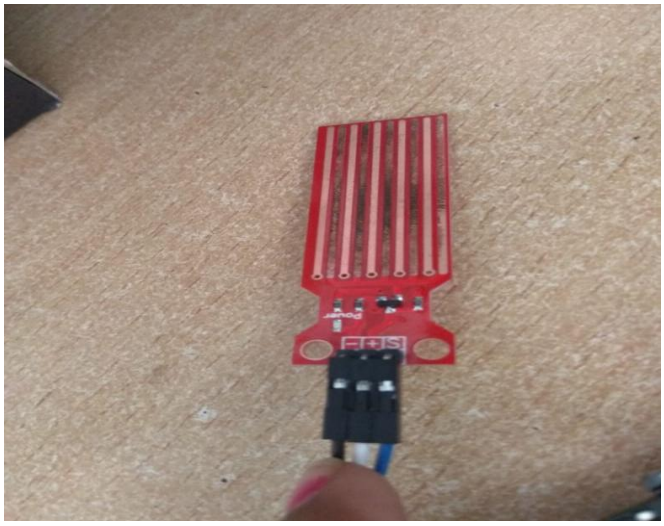
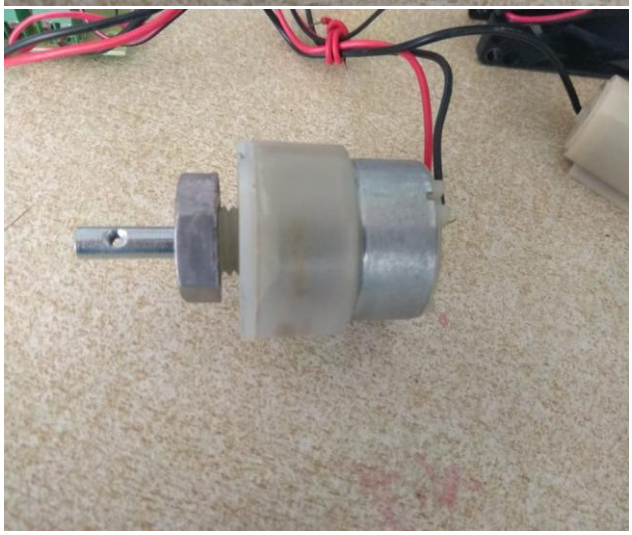
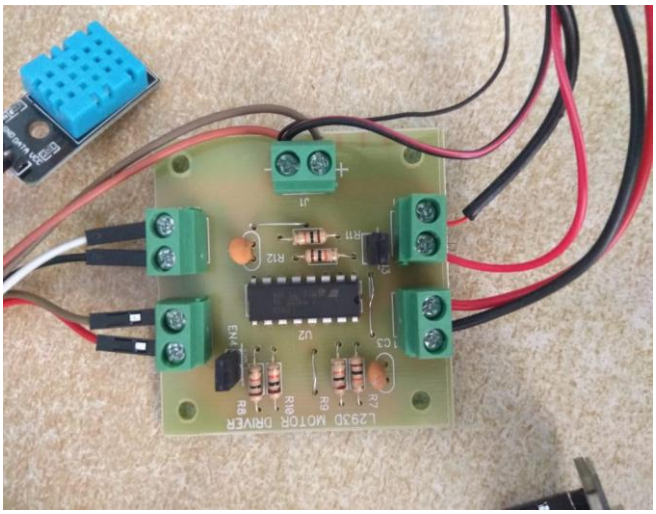
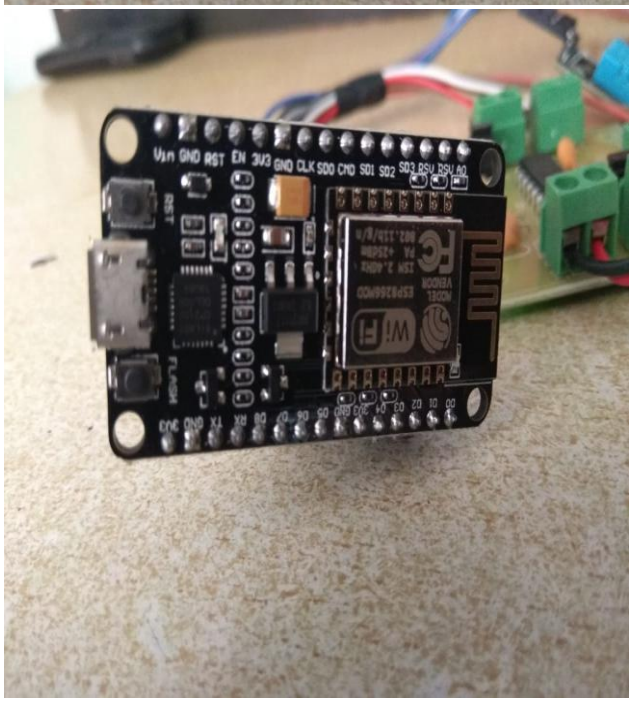


Figure 3 Com Port Values









VI CONCLUSION

With the help of this system the food management for animal will become easier and optimized. The system was made quite portable for easy handling and it could be re-programmed for other types of application of temperature monitoring and control systems.

Hence we have studied all required data and component information.

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