

Auto Indoor Hydro Phonic Fodder Grow Chamber

S.Bhoopalan, k. Dinesh, J.Madhavarajan, R.Kiruthika,
Assistant Professor, Dept. of Electronics and Communication Engineering,
UG Student, Dept. of Electronics and Communication Engineering,
Muthayammal Engineering College, Rasipuram, India.

Abstract-- In many parts of India rain and is not enough for traditional way farming. This hydroponic system does not require any soil to grow fodders and will absorb 80% less water as compared to the traditional method of farming. Greater topic for work to upgrade the Hydroponic Fodder Grow room for proper management of cattle fodder in any period during the year. This is usually a completely automated system. In seven to for eight days the room provides fodder as a ready-to-feed product any cattle or grass-eating animals. For age seeds use H₂O, or solutions that enrich the nutrients of the drug food within the absence of soil. The amount of water is additionally calculated by microcontroller atmega328p. Also, we visit the average temperature [14] and humidity of our room.
Keywords-- AIS, IDE, OLED, PWM, RGB

I.INTRODUCTION

Green fodder is a natural animal feed. Its production to meet this need has been a good challenge among livestock farmers. For many reasons, green food production has been the big problem, then the livestock product. Due to the proliferation of a powerful system of livestock rearing, the need for green fodder great. because the gap between demand and supply green fodder is invincible, Researchers and subsistence farmers to find i another fodder or method of producing that fodder it can restore fodder production and livestock. Hydroponics is what modern technology has reversed the change in green fodder production within the 21st a hundred years. Hydroponics can be a way to grow green [11] fodder without soil in a controlled environment houses or equipment. Many livestock farmers belong to them switching to hydroponic fodder production from common methods of production, for fodder produced in this way is very nutritious, provide sustainable year-round sheep production once save water. Although this method has made way for positive impact within the fodder production system, most of farmers face some difficulties for profit using a hydroponic machine to obtain stable fodder production.

HYDROPHONICS

Hydroponics comes from the ancient Greek formation of “hydro”, meaning water, and “phonics”, meaning labor [1, 6]. The water is doing the work here and enabling the fast growth of plants. At its core, hydroponics is a method of growing plants. But instead of using soil, hydroponics depends on a water-based nutrient-rich solution. The idea may seem like a novel “hack”, but has actually been around for thousands of years and helped to enable population growth as the availability of arable land decreases. As we discussed earlier, the ability to not use soil and instead use organic substances like perlite, coco coir, rock wool, clay pellets, peat moss, or vermiculite has provided numerous benefits to growers everywhere. Increased growth results from allowing the roots of each plant to come in direct contact with the nutrient solution. This is further enabled by the increased access to oxygen compared to its soil counterpart.

EXSISTING SYSTEM

Artificial neural systems are utilized to select the edit and expect the crop’s generation rate utilizing information obtained by cultivating sensors [2]. Parameters such as soil, temperature, weight, precipitation, and mugginess are included in this information. In paper, the effect of these characteristics on trim development is depicted, and the discoveries are dissected. It has been found that air parameters, soil sort, and soil composition have an effect on edit generation rates. In expansion, the method depicted in this inquiry is about predictions and fitting trim generation rate in development.

Fake neural systems are a valuable apparatus for demonstrating and anticipating agrarian generation rates, and they make strides trim expectation exactness. Precision agriculture (PA), along with other important approaches, is a critical farm management system that enables farmers to reduce the application of critical elements such as water and/or fertilizers by combining the use of robotics and sensors, drones,

advanced GPS and GNSS (Global Navigation Satellite Systems), the Internet of Things (IoT) [3, 4], weather modelling, and customized input application. Furthermore, PA entails the application of techniques and technologies that emphasize the significance of implementing specific ecological principles and 18 biodiversity management procedures into aerospace management while optimizing inputs for maximum yields.

To meet this challenge, a large number of agricultural specialists and farmers will be needed to analyse the economic and environmental consequences of these new technologies [10]. Furthermore, greater research investment will be required to improve the execution of these techniques in all aspects of a culture's output while limiting agricultural system degradation. The main outcome of this research is stated in twofold: (1) Predicting the farm requirement from the historical previous data sets (2) Enhancing the farmer productivity using IoT platform [12].

In the Existing System, people used to check and verify the moisture content in the fields manually. This is very difficult and risk process to check the condition in the mid-night. Even though the climate is good the humidity is unknown, so in the previous system we have some dis-advantages.

PROPOSED SYSTEM

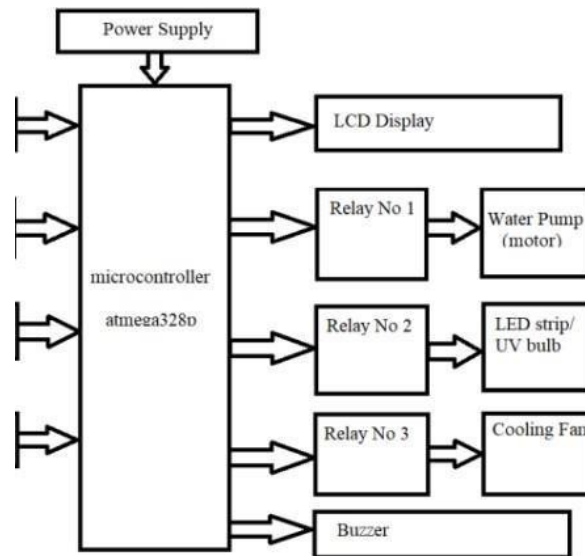


Fig 1. Block Diagram of Proposed System

The system makes use of a temperature controlled chamber to maintain a cool air flowing environment along with grow lights to simulate sunlight along with water and moisture monitoring to ensure proper indoor grow conditions for a good growth [15]. The system makes use of Arduino controller interfaced with a keypad to get user inputs on the water change and flow, indoor optimum temperature parameters. The system then monitors the indoor conditions using water sensor [5, 6], moisture and temperature sensor to always keep a tap on indoor conditions.

Hydroponics is changing the agriculture industry slowly [9]. The system makes use of a temperature controlled chamber to maintain a cool air flowing environment along with grow lights to simulate sunlight along with water and moisture monitoring to ensure proper indoor grow conditions for a good growth. The system makes use of Arduino controller interfaced with a keypad to get user inputs on the water change and flow, indoor optimum temperature parameters [7]. The system then monitors the indoor conditions using water sensor, moisture and temperature sensor to always keep a tap on indoor conditions.

The system uses the motor to ensure water level is maintained using the pump motor to adjust water level, the moisture and temperature sensors are monitored to maintain best temperature and moisture conditions for growth. The indoor artificial sunlight is switched on and off as per specified by the user automatically. This entire operation is efficiently managed by an Arduino controller to ensure the entire process is repeated regularly without fail. The system also sounds an alarm if the water tank runs out of water. Thus the system ensures automatic indoor fodder grow system using Arduino controller.

III.RESULTS

The fodder grow chamber maintains the temperature and flow of air help to maintain humidity and grow plant easily. Fodder grow chamber basically work on some of the sensor like Arduino, temperature sensor etchant use of some pump. Fodder grow chamber is a modern way of farming to grow fodder, in traditional way of farming land is required but in grow chamber we are framing in some unit of water and some nutrients. First step add some liter of water and nutrients in tub, and they are circulate in added in the tub. Seed are added in the tub where water in passed to grow their plant and they are maintain their temperature and cooling some help of light and fan also help to maintain humidity[13]. Humidity sensor sense the soil temperature and control the moisture of the soil. Ventilator fan one inhale the polluted air and pass through the hydroponic plants. The Hydroponic plants recycle the air and turn into fresh air and circulate through ventilator fan two [8].

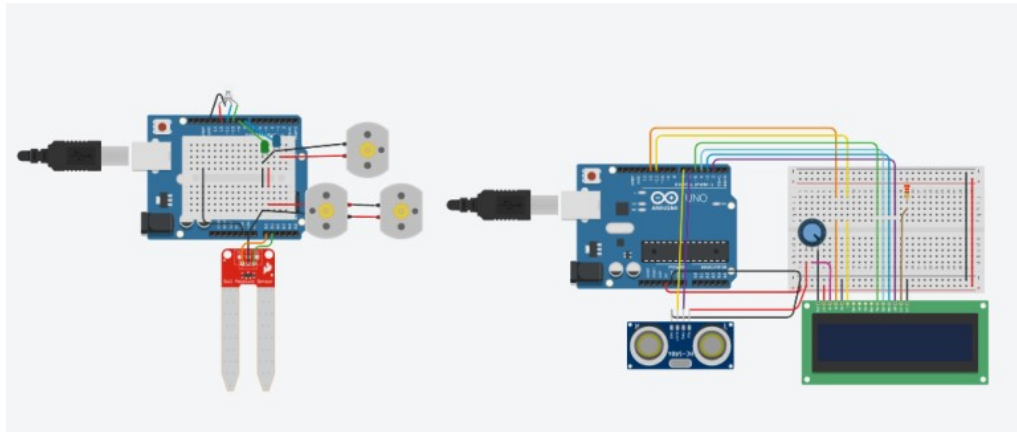


Fig 2. Simulation Circuit

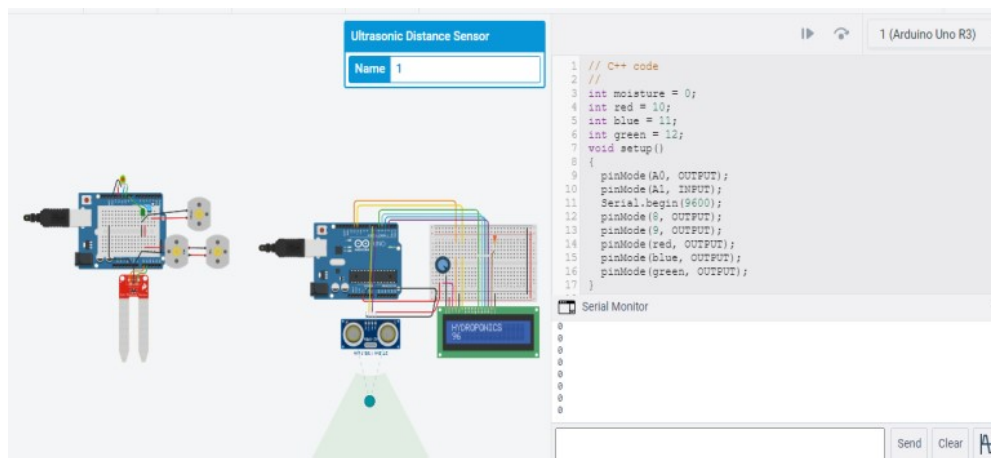


Fig 3. Simulation Output

IV.CONCLUSION

This project shows how automatic hydroponic system can be implemented using electronic circuit. It describes a how the mix of water and nutrient solution automatically delivered to the roots of plants. System automatically supply nutrient into Water in every week and regularly re-circulate mix of water and solution form reservoir. System use less water and fertilizer as compared to soil system.

Although system can control the water flow to reach the desired range and distribute it equally, next research can design a system that can distribute water faster and with more accurate result using different method. So that, all actuators can be connected one another to sensors, to get better performance on distributing water equally. In controlling and monitoring the water flow, system should use a more interesting and easier user interface.

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