GROW IT YOURSELF

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Introduction

Aeroponics is the process of growing plants in an air or mist environment without the use of soil or an aggregate medium.
The word aeroponics is derived from the Greek meanings of aer and ponos.
It is the practice of growing plants without soil, with roots in a misty environment.

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Ardunio is gaining popularity day by day.
Right from Industrial Automation to Software to manufacturing, Ardunio is making its way.
However the agricultural practices used even today are far way from the deployment for the benefit.
People still follow the obsolete agricultural practices.
The crop plantation requires lot of hard work for a farmer while factors such as soil fertility,water and many such environmental conditions and additional to them the crop diseases will affect the larger percent of agricultural produce for most of the farmers.
While some nutrient values may vary which creates a major impact on crops.
To find a proper solutions to these particular problems this project is created.

Methodology

- Grow LED light
- Ultrasonic Atomizer (fog maker)
- ph sensing
- Air Control System

Hardware used

- pH sensor
- Ardunio Mega 2560
- UV Sensor
- Temperature sensor
- Light intensity sensor
- UV and normal leds
- Relay
- Ultrasonic sensor
- 2.4 inch touch display
- DHT11 Humidity sensor
- Power supply

SOFTWARES

1. Ardunio IDE
2. Serial monitor

Advantages

- No Soil
- Easy to automatize
- Controlled environment
- Shorter grow cycles
- Vertical farming possible
- Less water
- Indoor
- Air quality enhancement

Disadvantages

- Power Dependency in Aeroponics System
- Initial setup for Aeroponics System
- Technical Knowledge Is Required

Applications

- Retail /hotel/fast food Chains
- Private Investors
- Public Sector Companies
- Railway Catering companies(IRCTC)
- NASA
- Corporate Hospitals
- Fresh Fruits and Vegetables Exporters
- Large land owners
- NGO's
- Foreign Retail Companies

Conclusion

- We did a lot of research and analysed carefully the strengths and weaknesses of the available projects, and considering the market response,came up with a new advanced open source system, which will reduced the disadvantages and will implement only the best features.
- The Commercial Aeroponics industry is a successful industry and is rapidly expanding.
- The market is larger than opined as produce is sold on quality rather than production method.
- Aeroponics cannot displace bulk commodity items.
- The industry is expected to grow exponentially as conditions of soil growing is becoming difficult.
- Government intervention and university interest can propel the use of this technology.