A Systematic Level Review on usage of Internet of Things (IoT) technologies in mushroom cultivation

Nisha Aggarwal[1], Dinesh Singh[2*]

Email ID: dineshsingh.cse@dcrustm.org*

Abstract With the advent of new technologies, IoT came into existence and created its niche in the technological world with its outperforming functionalities. Without human intervention, things can communicate with each other and perform their defined actions. Integration of different sensors helps in collecting real time data in different applications. Smart farming is described as the application of modern technologies to farming practices in order to achieve continuous improvement in farming procedures, resulting in increased productivity. The Internet of Things (IoT) is blending with modern agriculture because it enables farmers to track their farms in real time and access all of the information they need from any place at any time. Mushroom cultivation has also experienced the similar trends. Improved production and quality of crops can be obtained by controlling the climate for mushroom cultivation, as the ideal environmental conditions such as temperature, carbon dioxide, humidity level, sunlight, nutrient, and pH can be monitored and regulated using modern IoT enabled techniques.

This research article presents the systematic literature review (2007-2020) of the current technologies been used in mushroom cultivation using IoT with sensors. Review of IoT technologies such as gateway, types of sensors, communication system, nature of experiment and user interface is presented. The advantages and disadvantages of usage of these modern technologies in mushroom cultivation are also discussed. A SWOT analysis on Indian mushroom industry has also been presented for better mushroom cultivation for cost effective methods which will help in further future analysis.It is found that wireless sensor networking is helpful in maintaining and controlling optimum environmental parameters such as humidity, temperature and carbon dioxide level. Automated systems overcome traditional methods in an efficient way.

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