



Emerging Technologies

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I. INTRODUCTION

To cope up the requirement of current population's need that is "food" new Technology emerge called as Hydroponics Technologies. Currently world's population is nearly 7.5 Billions global prosperity and the desire for more resource-intensive foods rising steeply too – it's clear that farming needs to become more productive. (Source Wikipedia)

HYDROPONICS

The term hydroponics originates from the ancient Greek "hydros," meaning water, and "ponos," meaning work

“Necessity is the mother of Invention “

Key Word: Artificial Intelligence, Pollution Control, Save Environment.

II. HOW DOES IT WORK?

In conventional agriculture, soil supports a plant's roots – helping it to remain upright – and provides it with the nutrients it needs to grow. In hydroponics, plants are artificially supported, and a solution of ionic compounds provides nutrients instead.

The thinking behind this is simple. Plant growth is often limited by environmental factors. By applying a nutrient solution directly to a plant's roots in a controlled environment, a farmer can ensure that the plant always has an optimal supply of water and nutrients. This nutritional efficiency makes the plant more productive.

III. FUTURE TECHNOLOGY

Hydroponics is the fastest growing sector of agriculture, and it could very well dominate food production in the future. As population increases and arable land declines due to poor land management, people will turn to new technologies like hydroponics and vertical farming to create additional channels of crop production. Currently, arable land comprises only around 3 percent of the Earth's surface, and the world population is around 6 billion people, resulting in around 1/5 hectare (2,000 square meters) of arable land per capita. By 2050, scientists estimate that the Earth's population will increase to 9.2 billion, while land available for crop and food production will decline. To feed the increasing population, hydroponics will begin replacing traditional agriculture [source: Chamberlain].

Hydroponics also has been used successfully in Israel, which has a dry, arid climate. A company called Organitech has been growing crops in 40-foot (12.19-meter) long shipping containers, using hydroponic systems. They grow large quantities of berries, citrus fruits and bananas, all of which couldn't normally be grown in Israel's climate. The hydroponics techniques produce a yield 1,000 times greater than the same sized area of land could produce annually. Best of all, the process is completely automated, controlled by robots using an assembly line-type system, such as those used in manufacturing plants. The shipping containers are then transported throughout the country [source: Organitech]

Hydroponics also will be important to the future of the space program. NASA has extensive hydroponics research plans in place, which will benefit current space exploration, as well as future, long-term colonization of Mars or the moon. As we haven't yet found soil that can support life in space, and the logistics of transporting soil via the space shuttles seems impractical, hydroponics could be key to the future of space exploration. The benefits of hydroponics in space are two-fold: It offers the potential for a larger variety of food, and it provides a biological aspect, called a bioregenerative life support system. This simply means that as the plants grow, they will absorb carbon dioxide and stale air and provide renewed oxygen through the plant's natural growing process. This is important for long-range habitation of both the space stations and other planets [source: Heiney].



IV. CONCLUSION

At the end of the day to fulfilled the need of current scenario we need to innovate that will help us to sustained but be not with the cost of Environment. Pollution is greatest problem of the current situation of all over world. Development happened in such a way that also help environment which sustained last long for next generation. In Agriculture sector Hydroponics techniques is bless both the way production and help of Environment. Also it's solving the problem of crisis of land required for Agriculture Production.

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