Simplified Hydroponics Cultivation in India

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Preamble

“Hydroponics” Cultivation (water culture in “Soil-less cultivation”) has always existed in India and the rest of the world immemorial from hanging gardens to floating rafts on the lake shores. Nature has its own method of cultivation that is even better than anything that man has invented. “LOTUS” is a classic standing example of Natural “Hydroponics” along with certain other aquatic species.

All we are doing is, nurturing the practiced existing system with the presently available resources sustainably to suit our climatic/environmental conditions.

In India, Farmers are loyalists in their hearts and minds, anything different is hard to embrace for them as they still believe in their "Ancestral farm Lores" i.e. practiced, proven, known methods of cultivation, which of course, still works for certain produce and production. Their wisdom was defined, tried for “A” certain existent pure organic world "which becomes difficult to rely upon, considering our present ever-changing parameters.

In recent times, “change” has occurred in water, soil and air which demands for newer practice/methods of adaptation and hence “soil-less cultivation” is bubbling as futuristic and a “need”.

Any change has to be gradual and return on investment quantifiable. Newer methods/discoveries progressing into commercial application, is always a faint whisper to form a voice.

Introduction/Birth of “simplified hydroponics” has ignited well in our country as the investment is low, easy to adopt and ROI is convincible.

Simplified Hydroponics’ “Deep water culture” and “substrate culture” using the locally available natural resources/materials growing was accepted with ease as it was executed with “Human and sun’s energy”. Rural /urban farmers feed-back of this cultivation are, they being effortless, less time consuming, less water, Nutrition rich and more yield.

Grassroots level introduction to implementers and carriers are important as the implementers being “farmers” are the original entrepreneurs from time unknown and the carriers “youth” being nurtured with futuristic knowledge will make them the drivers of this farming for the generations to come by.

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Types of simplified cultivation that are popular in India

Trench method

In this Cultivation, We dig 7 - 10 inches deep (depending on the varieties of produce, mostly leafy/herbs) into the soil, laid with agrigrade pond-lining sheets that are tucked firmly from inside to outside to hold the Grow nutrient water. To anchor the plants, we use thermocol/Styrofoam or sun board floating sheets which are sterile in Nature. This is very economical, that has worked in rural villages and with the urbanities. A good level entry to change the mind-set of people who still think that farming and gardening must be next to zero investment.
Bracket/in-lay/in-set structure

In this cultivation, the bricks/hollow bricks/bamboo/cement blocks/plastic/steel/wood (8 to 12 inches) tall/depth is fixed to the ground to make square/rectangular bracket or boundary. These are laid with agri-grade pond lining sheets that are UV resistant and has the toughness to hold grow nutrition solution firmly. They are covered with thermocol/Styrofoam sheets/sterile material to float and anchor the plants.

Figure 1
Figure 2
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Grower bed/grow bag/containers/troughs

In this method, we use standing grower bed at a waist height (ergonomically advantageous for all ages), with grow nutrient water as well sterile, microbe free substrates.

Grow bags are used to hold the sterile substrates.

Container/trough (Agri-garde) are inlaid with pond lining sheets to hold the water/substrates.

Here, we fill the grow nutrition water for “deep water culture” that are sealed firmly.

In substrate method—it is filled mostly with coco-peat/coco-peat+perlite/coco-peat+gravel/cocopeat+husk whichever is locally available and are cost-effective.

At present, sugar cane (treated, compressed and sterile) molasses’s are also being tried as a substrates.
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Beginnings of “Simplified Hydroponics”lores

In this simplest and basic way of growing, we were able to achieve 2 kg per day of vegetable/leafies/herbs compilation in a growing area of 200sqft. This produce can easily sustain a family of 5 in India.

This also Goes to show that Simplified Hydroponics is for just about anyone, anywhere in the world, of any age group and is the answer to the burning problems of sustainability and livelihood.

Solution for the masses is the key for popularizing soil-less cultivation (hydroponic) cultivation through a “simplified way” of cultivation that, will eventually unlock into corporate agriculture of “Environmentally controlled Greenhouses couple with LED, IOT, mapping softwares and vertical Farming.

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