

Department of Biotechnology

Hydroponic farming on campus

Leafy vegetables such as Coriander, Amaranthus, Spinach, Mint, Methi, Flax along with money plants and table rose were grown in the hydroponics unit. Students of final year Ms. Tanuja, Ms. Kiranmai, Ms. Hasitha and Ms. Navena, & 3rd year students Mr. Chandresh, Mr. Shanmukh are doing project by growing chilli plants under the direct supervision of Dr. Md. Nazneen Bobby and Prof.S. Krupanidhi are attending regularly to maintain the plantlets in the hydroponics system. Analogous to cash-less transaction, Hydroponics does facilitate soil-less plantation. This technique also promotes in-door plantation, roof garden, home-agriculture etc without the use of a traditional soil medium. Hence, this technique can be developed by any one as a habit with a low space in his/her proximity and therefore, it is maintained in the Department of Biotechnology to promote among students of all disciplines to cultivate this habit of growing plants in their vicinity. The foremost advantage being that the plants grown in Hydroponics are free from soil-born bacterial, fungal and nematode infections. Hydroponic gardening virtually eliminates the need for herbicides and pesticides compared to traditional soil gardening. Further, the required plantation depending on the available labor can be cultivated i.e., one individual can take up for house-hold acquirements or 10 individuals also can take up depending on the commercial requirement of the yield. All leafy vegetables and ornamental flower bearing shrubs can easily be brought through Hydroponics. They just need to select nutrients and water from Hydroponics system and sunlight to grow. Further, they grow a lot better with their roots in water instead. Water conservation and further the least utilization of water is the hallmark of this Hydroponics technique, wherein mineral enriched each water drop is being absorbed by the plants without getting percolated away from the system or wasted. This habit of home gardening away from traditional practice inculcates among the inhabitants of the house a sentimental attachment to live together and grow-together with plants. We have designed a Recovery drip Hydroponics system wherein the conditioned nutrient water is made to circulate with the aid of $\frac{1}{2}$ HP motor through 500 L Syntex tank and PVC pipelines (4" diameter) with a total of 60' length arranged in 6-parallel rows and kept elevated by 3' high on the ground in second floor of U Block using a frame made of L angles and a green-shade net. To make the plantlets grow in the Hydroponics system, 8-10 slots are made on each parallel row with

the dimension of 3" each and a total of 60 slots are being used for the plantation. Each slot is fit with 3" vertical bottom-perforated PVC device to accommodate coco-peat in gauge cloth which is replaced soon after harvest. N, P, K,Mg, Zn, Ca, B, SO₄ in the chosen proportions are made to dissolve in 500Lwater in Syntex tank for circulation. Once in a week, the nutrient water is circulated in the Recovery-drip Hydroponics system for ½ hour and the valves are closed to retain the nutrient water in the system so as to make available to the growing plants. The water in the system is replenished with nutrients once in a month.

UGC –AICTE Team Visited Department of Biotechnology in the year 2017



Chili plants grown through Hydroponics system

