

HYDROPONICS

Hydroponics is the cultivation of plants without using soil. Hydroponics is a Latin word meaning “working water.” In the absence of soil, water goes to work providing nutrients, hydration, and oxygen to plant life. Using minimal space, 90% less water than traditional agriculture, and ingenious design, hydroponic gardens grow beautiful fruits and flowers in half the time. Hydroponic flowers, herbs, and vegetables are planted in inert growing media and supplied with nutrient-rich solutions, oxygen, and water. When a plant is grown in soil, its roots are perpetually searching for the necessary nutrition to support the plant.



Scope of hydroponics in India

Indian population is growing day by day, with this huge speed the challenges of meeting food needs also need to set its pace high is equally important. One way of meeting future food needs could be hydroponics – growing plants without soil, instead using a nutrient-rich solution to deliver water and minerals to their roots. Despite sounding like something out of science fiction, it’s nothing new. While it’s hard to predict the future, it’s easy to state the present state: hydroponic farming is as popular in India as it is on the moon. Most of the time, farms are owned by individuals hovering around the poverty line who work on the farm as well. Their lack of knowledge, lack of investment and lack of willingness to move out of their

comfort zone all influence the unpopularity of hydroponics here. And a majority of farmers doesn't even know that something like hydroponics exist too. The cost for setting up hydroponics across hundreds of acres would not be cheap, around a Crore Rupees. However, there are possibilities of reduction of cost through improvisation. But as a whole it is much expensive than the conventional method. Hydroponics in itself is a great technique for increasing agricultural production in the country. This phenomenon is not meant to be adopted in rural areas of India as of now, but it's an excellent farming technique that can be adopted in urban areas. People can use hydroponics in their homes while doing kitchen farming, terrace farming or gardening. They can enjoy the benefit of fresh chemical free products, simultaneously this will reduce pollution as well thus eliminating chances of diseases. As it needs low sunlight and can be grown in normal light, it can be efficiently use inside homes as well. Hydroponics encourages urban farming in an efficient manner.



Adopting Hydroponics – factors to consider

- Productivity claims
- Financial considerations
- calculating the nutrient composition of fertigation mixes
- safe handling of chemicals

- accurate procedures for mixing fertilisers and chemicals
- monitoring nutrient application rates
- monitoring crop development to detect any early signs of nutritional imbalances.
- calculating crop water requirements, irrigation run time and interval
- maintaining an irrigation water budget
- keeping reliable and accurate records.

Advantages of hydroponics

- No soil means no weeds or soil borne pests and disease.
- Plants will maintain optimum nutrient and moisture levels in hydroponics systems, which has several benefits: healthier plants, faster growing plants and plants that will be more disease resistant as they are not stressed by drought.
- The root systems stay smaller on hydroponically grown plants, so the plant can concentrate it's growth energy on producing plant mass, rather than roots. This can result in up to 30% faster growth.
- Hydroponically grown plants never get root bound, so they do not need repotting.
- Hydroponics produce has a longer shelf life than soil-grown produce.