



Columbia Nursery

Growing Vegetables with Hydroponics – Customer Handout

Hydroponics is a method of growing plants without soil, using a nutrient-rich water solution instead. It's ideal for home gardeners, schools, and small farms looking to grow healthy, productive vegetables in less space and with fewer inputs.

Benefits of Hydroponics

- Grow fresh vegetables year-round indoors or outdoors.
- Use up to 90% less water than traditional gardening.
- Faster growth and higher yields due to direct nutrient absorption.
- Minimal weed, pest, and disease problems.
- No need for tilling, digging, or soil preparation.
- Great for small spaces—can be vertical or compact.
- Suitable for elderly, handicapped or child gardeners.

Overview of Common Hydroponic Methods

1. Aeroponics / Grow Towers

Plants are suspended in air, and roots are misted with a nutrient solution. This high-tech method allows maximum oxygen access to roots and very efficient nutrient absorption. Grow towers are a common home-friendly version using vertical stacking.

2. Kratky Method

A simple, passive system. Plants are suspended over a container of water and nutrients. As the plant uses the water, the water level drops and roots gain access to air, eliminating the need for pumps. Great for leafy greens and beginners.

3. Deep Water Culture (DWC)

Plants are suspended in a reservoir of nutrient solution. An air pump and air stones provide constant oxygen to roots. This method supports fast growth and works well for lettuce, herbs, and even fruiting crops like tomatoes.

4. Recirculating Deep Water Culture (RDWC)

An advanced version of DWC where multiple growing containers are connected and share a single reservoir. Water and nutrients are pumped continuously through the system, offering stable conditions and supporting larger-scale setups.



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5. Dutch Bucket Method

Each plant grows in its own bucket filled with a soilless medium like perlite. Nutrients are delivered via drip lines and drain back into a reservoir for reuse. Ideal for large, fruiting plants like tomatoes, cucumbers, and peppers.

6. Nutrient Film Technique (NFT)

A shallow stream of nutrient-rich water flows continuously through sloped channels where plant roots dangle. The thin film of water ensures roots receive oxygen and nutrients simultaneously. Popular for herbs and greens.

Ask Us!

Visit Columbia Nursery to learn more about hydroponic growing systems, see working models, or get help selecting the best system for your space and goals.