



SELECTING VEGETABLES AND HERBS TO GROW HYDROPONICALLY

Hydroponics is growing plants without soil, using just mineral nutrient solutions and water. Some types of hydroponics use perlite, gravel, or other medium. Indoor gardeners and those with limited space, may wish to explore hydroponic gardening. You can get started with a basic hydroponic garden fairly easily, with a minimum cost.



There are several methods of hydroponic gardening.

Water Culture One of the simplest and most inexpensive systems is Water Culture. The plant is placed in a basket above a reservoir filled with nutrient solution. From there, the roots hang down, completely submerged in the solution.

Nutrient Film Technique (NFT) The NFT system is a popular choice for home gardens. It involves a shallow stream of nutrient solution which flows through a downward sloped channel. This creates a thin film of nutrient along the bottom of the angled grow channel which can then be absorbed by the plant roots that hang into the channel.

Aeroponic In Aeroponic systems the roots hang in midair within a growing chamber, without growing medium, so the entire root system can be exposed to oxygen. Within the growing chamber, the roots are sprayed at regular intervals with aeroponic misters.

Ebb and Flow The Ebb and Flow, or Flood and Drain, technique uses a water pump on a timer. It floods and then drains the root system with water and nutrients.

Drip System In a drip system, the plants' roots are placed in a growing media such as perlite or gravel. Then, a water and nutrient solution is pumped from a reservoir, through tubes, to drip onto the roots.

Wicking System A wicking system is very simple. Plants sit within a wicking medium, such as vermiculite or perlite. They are in a container directly above the water and nutrient solution reservoir. A wicking rope or strips of felt are used to connect the wicking medium to the solution.

The table that follows identifies the growing needs of the best vegetables and herbs for beginners. Use this information to help decide on the hydroponic system that is best suited for your garden and select plants that have the same temperature and pH requirements.





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Vegetables

Plant Name	Temp	PH	Description
Beans Payru, Payaru, Payar M	warm	pH: 6.0	Beans are one of the most productive and low-maintenance vegetables that can be grown hydroponically. You can grow a variety of beans including green beans, pole beans, pinto beans, lima beans. You will need a trellis or other support for the plants if you plant pole beans. Seed germination usually takes 3-8 days. Harvesting begins after 6-8 weeks. After that, you can continue the crop for 3-4 months
Cucumbers Vellarikkai M Kheera, Kakadi H	hot	pH: 5.5 - 6.0	Cucumbers are a common vining plant that is grown at home and in commercial greenhouses. They enjoy a rapid growth under good conditions and give very high yields. There are several types and sizes of cucumbers, including the thick-skinned American slicers, long thin-skinned seedless European, and the smooth-skinned Lebanese cucumbers. All can grow well in hydroponics, especially with a drip system. Cucumber is a warm plant so be sure to supply it with enough light and temperature. Cucumber plants need support with a wire cage or large trellis
Kale keil M	cool to warm	PH: 5.5 - 6.5	Kale is a very nutritious and delicious plant for home and restaurant dishes. It is a great vegetable with proven health benefits and can be eaten raw or cooked. Kale has been grown hydroponically for many years and is easy to grow and thrives well in the Water Culture system
Lettuce Pachadi Cheera, Uvar Cheera M	cool	pH: 6.0 - 7.0	Lettuce, the perfect ingredient for a salad and is probably the most common vegetable that is grown in hydroponics. It grows very fast in a hydroponic system and little care. Lettuce can be grown in any hydroponics system, including the NFT, Aeroponics, Ebb & Flow, etc. It is a great plant if you are just starting with hydroponics.

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<p>Peppers</p> <p>Kuda mulag M shimla mirch H</p>	<p>warm to hot</p>	<p>pH: 5.5 - 6.0</p>	<p>Peppers need the same hydroponic growing condition as tomatoes, warm temperature and large amounts of lights. Peppers often take two to three months to mature. You can either start growing them from seeds or from plants. Capsicum is best grown using a drip hydroponic system</p> <p>Recommended varieties for hydroponically growing are Jalapeno and Habanero for hot peppers; Mazurka, Cubico, Nairobi, Fellini for sweet peppers.</p>
<p>Radishes</p> <p>Mullanki M Moolee H</p>	<p>Cool</p>	<p>pH: 6.0 - 7.0</p>	<p>Radishes are a vegetable that makes a good flavoring mix with other vegetables. Radishes are one of the easiest vegetables to grow, either in soil or hydroponics. Radishes grow well in deep water hydroponics systems. It's better to start from seeds, and you can see seedlings within 3-7 days. Radishes thrive in cool temperatures and do not need any lights.</p>
<p>Spinach</p> <p>Cheera M Paalak H</p>	<p>cool to warm</p>	<p>pH: 6.0 - 7.0</p>	<p>Spinach is a popular vegetable that can be either eaten raw or cooked. It grows well in a Drip Water System. Spinach is a cool temperature plant, so it does not require too much light. You can harvest it all at once or tear off some leaves. You can get up to 12 weeks of continuous harvesting under a good condition of climate and growing environment</p>
<p>Tomatoes</p> <p>Thakkali M Tamatar H</p>	<p>hot</p>	<p>pH: 5.5 - 6.5</p>	<p>Many types of tomatoes, including traditional and cherry, have been grown widely by hydroponic hobbyists and commercial growers. Tomatoes require a great deal of light. Purchase grow lights if you want to grow indoors.</p>
<p>Herbs</p>			
<p>Plant Name</p>	<p>Temp</p>	<p>PH</p>	<p>Description</p>
<p>Chives</p> <p>Pyāza, Sakunda H</p>	<p>warm to hot</p>	<p>pH: 6.0</p>	<p>It's easier to grow chives from a plant in a hydroponic system. So better to get them from your local garden supplies. It grows well in Ebb and Flow hydroponic systems. Under a standard growing condition, it takes 6-8weeks before it is fully mature. Then you can harvest it regularly - it needs 3-4 weeks later to fully regrow. Chive requires lots of light, 12-14 hours of light each day.</p>

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<p>Basil</p> <p>Orinam thulasi M Tulasee H</p>	warm	pH: 5.5 – 6.5	Basil thrives very well in a hydroponic system and it is indeed among the most grown herbs in hydroponic. You can grow basil in an NFT or a Drip system. Once this plant reaches the mature stage, you harvest and trim it weekly. Basil needs lots of light. It will undergo a poor growth when you do not provide it with over 11 hours of lightning each day
<p>Ginger</p> <p>Pacha Inchi M Adarak H</p>	warm	pH 5.5 - 8.0	Ginger is well suited to protected cultivation in a humid with warm environment and grows well in hydroponics. The grow bag should be more than 1 foot deep
<p>Mints</p> <p>Pudina ila M Pudeena H</p>	warm	pH: 5.5 - 6.5	Mints, mainly peppermint and spearmint, have been grown extensively whether in soils and hydroponics. The aromatic compounds in mints are refreshing, and pungent, which proves their use as a flavor for food and beverages. Mint roots spread so quickly, making it ideal to grow with hydroponics
<p>Strawberry</p> <p>Stroberry M</p>	warm	pH: 6.0	Strawberries are well suited for hydroponic growing. They are one the most popular plants grown in commercial hydroponic production. They have been grown in large-scale NFT systems by the commercial farms for decades. Delicious fresh strawberries can be grown and harvested all year long.
<p>H-Hindi Name M-Malayalam Name</p>			



Additional Notes

Other plants can be grown, such as mustard for green leaves, coriander for leaves, and amaranths for leaves. Maize can be grown for fodder mat, strawberry for planting material. Tomato, capsicum, chili, cucumber set fruits but are not economical to produce in hydroponic systems. Produce must should be ready for harvest within 15-25 days to be economical. However, you can still grow them in your home hydroponic system.

Deep Root Veggies

Vegetables that need a lot of depth for roots are not recommended for beginners. This includes potatoes, carrots, turnips, etc.

For root crops, you need a substrate with sufficient length and high depth to support the roots. And these types of plants tend not to give as good results as they do in the soil. If you have a large growing environment like a greenhouse or large patio, you can set up a more advanced system and grow sizable plants, root veggies, and other hard-to-grow vegetables.

Check pH & EC Regularly

It is important to check the actual pH & EC of the nutrient solution regularly. Electrical Connectivity (EC) is a measure of the salts in your system—that is, the level of nutrients in your system. EC should be kept between 1.2 and 2.0. Valuation of EC helps you to choose when should you replace or dilute the specific nutrient solutions with fresh water.

A pH test shows whether a substance is acidic or alkaline. The pH scale ranges from 0 to 14, with 0 being the most acidic, 14 the most alkaline, and 7 is the pH-neutral point. The optimal pH must be 5.5 to 6.5 (slightly acidic). Micro hydroponics nutrients reach the plants in a slightly acidic form, but pH below the optimal level causes micro nutrient toxicity. EC and pH meters are affordable and often come as one dual meter

Pest and Disease Management

Based on the growth form and climatic condition, vegetables are attacked by various diseases and pests. Mealybugs, thrips, aphids and jassids are small sucking pests, injuring the hydroponic plants especially in the early stages of plant growth. This can be controlled by spraying with garlic, ginger and chili extract which can be prepared once in a week during the vegetative stage.