

WELCOME TO THE WORLD OF HYDROPONICS



Dear Hydroponics Enthusiast,

Namaste and welcome to a whole new way of growing food.

Your decision is truly a benediction.

The very fact that you have the Hydroponic Hobby Kit in your hands today is because somewhere inside your sub-conscious mind there is that urge to grow a plant, be it an herb, a flower, a vegetable or even a fruit.

This hobby kit contains all that a newbie needs to make his debut into hydroponics. It's a very simple kit using simplified hydroponics as its core and does not require you to be an agricultural expert to get started and see success.

There are many methods in hydroponics/soil-less cultivation and systems that can cost from a few Rupees to several thousands of Rupees. Hobby Kits are in this kind of range, but as a starter we understand that a newcomer you need more substance than style. Focus on substance and style will surely follow in the times to come.

You have everything to get started and remember the way we have designed this kit you don't need even a single watt of power created from fossil fuels except for the energy of the Sun and your little effort.

If you bought this kit during the training program then you are already armed with a Hydroponics Training DVD. If you are buying this separately then you may like to buy the DVD and our Hydroponics E-Book that explains a lot of detail about this futuristic science.

Humanity is living in dangerous times, food insecurity is not something we expect to happen, it is happening and is our living reality.

The benefits that you will gain from practicing this science may make you a Commercial Hydroponics grower or just a simple kitchen gardener but someday you will be truly joyful in knowing that you have the ability to grow your own food to support yourself and your near and dear ones.

In this kit we have provided world class nutrients, highest quality seeds of leafy vegetables so that you can see results very quickly and thus be inspired to do more.

It is our mission and vision to see hydroponics as a technology reach every human on earth and this kit is a result of lowering the barriers to entry for just anyone wanting a sneak peek into this wonderful and amazing science.

I wish you the very best in your efforts and please remember we are there to answer any questions that may crop up from time to time.

I remain,

Hydroponically Yours

Lt Cdr (retd) CV Prakash

Farmer-in-Chief

The Pet Bharo Project

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FOR BEST RESULTS DO NOT USE SOIL AND/OR SOIL GROWN SEEDLINGS FOR ANY PURPOSE WITH THIS SIMPLIFIED HYDROPONICS KIT

Step 1: Hydrating Cocopeat:

1. Open the sealed Cocopeat and place it in tub (without drains)
2. Slowly pour water up to 8 Litres and let the Cocopeat absorb the water. The compressed block will absorb the water and expand loosening the Cocopeat, until all the cocopeat is wet and loose.

Note: Please use as pure water as possible for hydrating the cocopeat as it is preferable for the substrate EC to be as low as possible.

Step 2: Seedling Trays:

1. Apply the hydrated cocopeat into the cups in the seedling tray making sure that cocopeat is not too much compacted within each cup
2. Using an object like a pencil, make holes in each cup to a depth of $\frac{1}{4}$ - $\frac{1}{2}$ inches. This process is called dibbling.
3. Place 1 seed per cup by seeding with hand.
4. Spread hydrated cocopeat on top of the cups and cover the holes by patting down the cocopeat until the cocopeat layer is about $\frac{1}{4}$ inch higher than the top of each cup.
5. Water gently using a watering can making sure that water does not erode cocopeat on top of the cup. Please note that seeds exposed by erosion of cocopeat will not germinate.
6. Water gently 3-4 times a day, and keep in dark, cool place until the seeds are germinated and the second set of true leaves have started to grow.
7. As soon as the second set of true leaves are seen on the seedlings, harden the plant by slowing exposing them to sunlight and giving $\frac{1}{4}$ strength 'Grow' Nutrient Solution, until the second set of leaves are fully developed and/or the seedling height has reached 3 inches. At this stage the seedlings are ready to be transplanted.

Step 3: Nutrient Solution:

1. In a clean 45 Litre Tank of Water, add Nutrients in the following proportions and mix with a clean plastic pipe.

For Making 45 Litres	¼ Strength Grow Solution	½ Strength Grow Solution
Add		
Grow	0.75 Tea Spoon ($\frac{1}{2} + \frac{1}{4}$)	1.5 Tea Spoons ($1 + \frac{1}{2}$)
Calcium Nitrate	1 Tea Spoon	2 Tea Spoons
Magnesium Sulphate	½ Tea Spoon	1 Tea Spoon

2. Take a small sample in a cup (preferably white cup, about 10 ml capacity) and dip one leaf of the pH paper and note the colour. If the colour is bluish, add Acid (Nitric Acid, Phosphoric Acid or White Vinegar) slowly in steps of 10-20 ml to the 45 litre tub and note the pH once more by taking a small sample from the tub as above. Repeat until colour of pH changes to Green (6 pH). Note down the total amount of Acid added. Use the Volume Measure Cups for preparing the next batch with the amount of acid to be added.

3. Nutrient Solution is ready. Keep the Container closed at all times, in a cool place, preferably away from direct sunlight.

4. Store the Nutrient Powder in a cool, dark place and away from moisture at all times.

CAUTION: KEEP NUTRIENTS AWAY FROM REACH OF CHILDREN. IF INGESTED CONSULT PHYSICIAN IMMEDIATELY.

Step 4: Setting up Hydroponic Trays:

Step 4a: Setting up Deep Water Culture Tray:

1. Fill the DWC Tray (aka Floating Raft Tray) with Nutrient Water.

2. Cut $1\frac{1}{2}$ inch X $1\frac{1}{2}$ inch by $1\frac{1}{2}$ inch pieces of sponge and split the pieces from one end as shown in the figure.

3. Remove seedlings from the seedling trays gently and straighten the roots by dipping them in a solution of ½ strength grow solution, thereby loosening the cocopeat around the roots.

4. Place the seedling in the sponge so that the root node is just below the top of the surface of the sponge.

5. Plug the seedlings with sponge into slots in the thermocol sheet.

6. Place the thermocol raft on the nutrient water in the tub, so that it floats.

7. Aerate the water for two minutes once a day by lifting the thermocol and shaking the water with your hand thereby generating bubbles and replenishing the oxygen levels in the water.

8. This method is suited for growing leafy vegetables. The tray needs to be placed in an area that has access to sunlight (either direct or diffused sunlight)

9. On hot sunny days, it is recommended that ½ Strength Grow Nutrient solution be sprayed on the leaves using the hand spray pump provided with the kit.

Step 4b: Cocopeat Trough Trays:

1. Disassemble the tank fitting into 2 parts: Locking nut with rubber washer and the tank pipe with rubber washer.

2. Fit the tank fitting into the drain hole in the plastic tray as shown in the figure.

3. Fill hydrated cocopeat to the brim of the tray.

4. Seeds may be directly sown into the cocopeat tray by making ½ inch holes for sowing or seedlings may be transplanted.

5. Provide nutrient water by using watering can atleast twice a day.

6. Drain water from the tank fitting is generally rich in nutrients. This may be collected and reused to conserve water.

7. Once a week provide regular water (preferably water with acid as detailed in Step 3, point no. 2) to purge any build up in substrate salinity. This step is very important and cannot be ignored.

8. This method can be used to grow any shoot vegetables including leafy vegetables. In case flowering plants are grown (e.g. Tomato, Brinjal, Green Beans, and Flowers etc.) Switch from Grow Solution to ½ Strength Bloom Solution once the first flower is noticed. . The tray needs to be placed in an area that has access to sunlight (either direct or diffused sunlight)

9. On hot sunny days, it is recommended that ½ Strength Grow/Bloom Nutrient solution be sprayed on the leaves using the hand spray pump provided with the kit.

Step 5: Daily maintenance and precautions:

1. Keep away from known sources of insects and pests. Ant repellent powder may be spread around the tray on the ground to keep away ants.

2. Neem, Garlic, Chilli, Milk and Turmeric Sprays can be prepared at home and sprayed on the plants on a weekly basis as a preventative measure. Use the spray pump provided with the kit with a typical strength of X.XX%. (details of preparation to be attached below)

3. Companion Crops like Marigold and Mustard can be grown alongwith the plants to keep away most pests.

Need Help?

Please send us a mail at ceo@petbharoproject.co.in or coo@petbharoproject.co.in

A New Way To Grow