

BY: SONALI JEPAL

WHAT IS HYDROPONICS?

Hydroponics is a way of growing plants without soil. They are often a combination of nutrients and controlling the water and oxygen flow to help a plant grow.

How is it beneficial?

According to General Hydroponics...

1. Higher yield

2. Can be grown in areas not suited for agriculture.

3. No need for pesticides!

What's the Kratky method?

The Kratky Method is a passive form of hydroponics in which people grow plants suspended in a bucket of water with nutrients. The gap between the plant roots and the water delivers the needed oxygen for the roots, while the leaves receive ample sunlight from where they are placed. There is no need for fancy equipment such as air stones, air pumps, tubing, costly lighting, and more. It is by far the easiest hydroponics method!

How is it beneficial?

According to Grow Supply Shop, the Kratky Method is...

1. Easy to learn

2. B/c each plant is separate, easy to control placement.

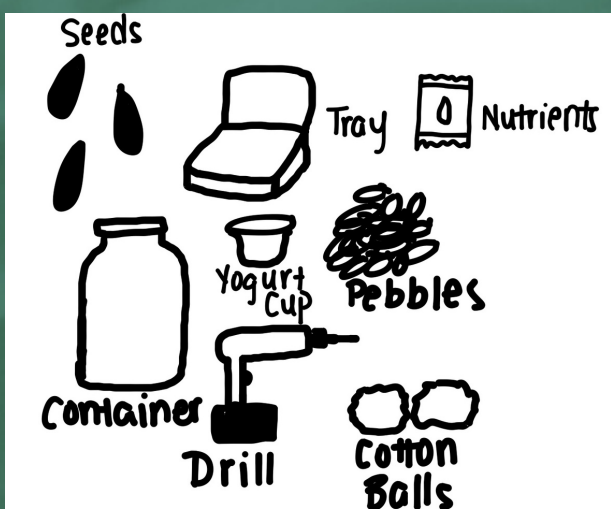
3. Cheap to set up

4. No electricity required.

LET'S GET STARTED!

HOW TO SET UP YOUR OWN KRATKY HYDROPONICS SYSTEM!

SIMPLE STEPS TO GROW SUSTAINABLY



STEP 1: GATHER MATERIALS:

YOU WILL NEED:

Seeds (as a beginner, the best bet would be leafy greens and herbs), water, a small tray, a large container (like a protein container), an empty yogurt cup, a drill (ask an adult for help!), small pebbles (anything to support the plant), cotton balls (untreated and unbleached), nutrients (any liquid or solid water soluble nutrients will do).

STEP 2: GERMINATE SEEDS

GERMINATION: PERIOD OF GROWTH FROM WHICH A SEED TURNS INTO A SPORE.

To germinate your seeds, thoroughly soak the cotton ball and then squeeze excess water. Should not be too dry nor soaking wet. Make a small hole in the cotton ball and gently drop the seed into the hole. You want the seed to use the cotton ball for support, not need to fight its way to grow beyond the cotton ball.



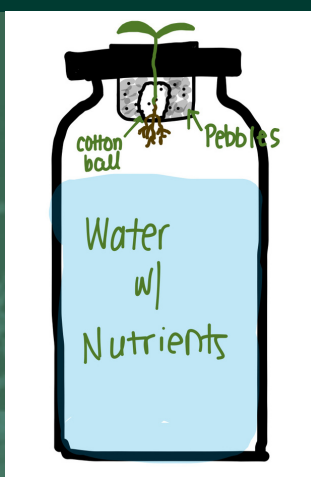
STEP 3: WAIT FOR SEEDS TO GERMINATE

The seeds should germinate in as little as 4 days or as long as 3 weeks. For a better estimate, look at the seed packet or research the germination period of the specific plant online. The seedling should be about 3 inches tall, and/or have one or two sets of sprouted leaves. Once the seed has germinated, get ready to transfer it into a Kratky bucket - you don't want to wait too long!



STEP 4: PREPARE THE KRATKY BUCKET! YOU CAN DO THIS WHILE THE SEEDS ARE GERMINATING.

For the following steps, ask for help from an adult - never use power or sharp tools on your own! Drill or cut multiple holes in the yogurt cup, including on the base. Next, drill a hole on the lid of the large container so the yogurt cup can sit inside the lid. Next, fill the large container with the proper amount of water and nutrient solution, which can be researched using any online nutrient calculator. If you are using Masterblend, the best amount is a 2.0g-1.0g-2.0g per gallon ratio of Masterblend, Epsom Salt, and Calcium Nitrate, respectively.



STEP 5: TRANSFER GERMINATED SEEDS INTO KRATKY BUCKET

THIS IS WHERE THE MAGIC HAPPENS!

Place the cotton ball with the germinated seed in the yogurt cup and stabilize the plant with pebbles. Make sure the cotton ball touches the bottom of the yogurt cup. Allow at least a 1/2 inch gap between the bottom of the roots and the water level to let the plant breathe. You should let your roots grow into the water. Just make sure to keep them moist.

STEP 6: LET IT GROW!

MONITOR GROWTH

That's it! You're done. There's really not much more to the Kratky method other than waiting. That's why it's such a popular growing method. There's very little maintenance. Just be sure to place the plant so that it receives enough sunlight and heat best for its growing conditions. You can use a grow lamp if you have one, but it is definitely not required. Well, go ahead! Name your plant (it makes the process a whole lot better) and watch it grow!



TIPS, TRICKS AND RESOURCES

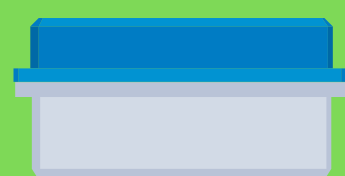


Here are some tips, tricks, and resources as you get started on your hydroponics journey!

by Sonali Jepak

1 GERMINATION TRAY

If possible, try to use a germination tray that has a lid. This will help trap more heat to speed up the germination process, especially if you are germinating in a colder climate or season. However, don't forget to add a few holes for breathing room!



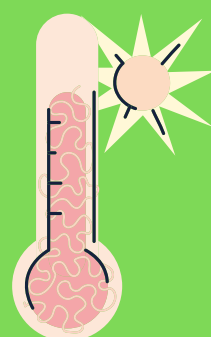
2 YOGURT CUP HOLE

If you don't have the right drill-bit to make the hole big enough to fit a yogurt cup in the larger container's lid, no worries. Try this instead! Using a drill, make multiple holes very close to each other the size of the diameter of the yogurt cup. Ultimately, you'll have a dotted hole that'll pop out as one big circle and will fit your yogurt cup just fine!



3 WATER TEMPERATURE

The ideal water temperature for a hydroponics system is between 18°C and 26°C. If it gets too hot, you might want to sprinkle the water with cold water and move the plant to a shaded area.



4 ALGAE

If your Kratky Bucket is transparent or translucent, and you let your plant receive ample sunlight, you might see the water starting to turn green. Instead of letting this happen and having to clean and prepare your nutrient solution all over again, take a big black garbage bag and wrap the container with it to stop algae growth.



5 WATER REPLACEMENT

The Kratky method works naturally to lower the water level and increase the oxygen level over time. You can replace the water and nutrient solution once the water level is very low, or, according to Grow Supply Shop, as early as every week.



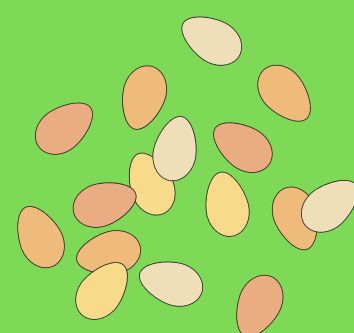
6 PLANT GROWTH

If your plant starts yellowing, wilting, stagnating, etc., see the following resource to find some solutions. [12 Common Plant Problems in Hydroponics and How to Fix Them - Small Scale Gardener](#)



7 PLANT MULTIPLE SEEDS

As it goes generally with gardening, it's a good idea to germinate multiple seeds at the same time. Some seeds might not germinate depending on the unique conditions everyone else, while someone else might see all of their seeds sprout. Don't be discouraged if nothing sprouts! Keep trying!



8 HAVE FUN!

Hydroponics is a wonderful world to dive into. Enjoy the process and be fascinated by it! Think about it: you get to see the actual roots of the plant that you wouldn't otherwise be able see! Read more about hydroponics on here: [Hydroponics: A Better Way to Grow Food \(U.S. National Park Service\) \(nps.gov\)](#)

enjoy!