

Did you know that you can hydroponically grow plants in a container without needing electricity, air stones, pumps, or much else?

The Kratky method is a passive hydroponics system where you “set it and forget it” because once you set the system, you just let the plants grow until they are ready to harvest. You don’t even have to make changes to the reservoir/container’s nutrients. The method requires no soil and is the most basic system that you can begin with.

## **WHAT YOU WILL NEED**

**Reservoir/container:** You need these to grow your plants in, so the size of the container/reservoir depends on the size or number of your plants. If your plants are big and you want a big Kratky system, you will need a large container/reservoir. On the other hand, for smaller plants, you can even use milk jars.

**Lid:** If your container/reservoir does not come with a lid, you must buy one. Plastic or Styrofoam lids will work. A lid protects your plants from diseases and pests and the water from evaporating. Also, it supports a plant .

### **Net Pots**

To anchor the plants, you need **net pots**. They are usually made from plastic mesh to help circulate air and promote drainage. Again, the size of your plants will determine the size of your net pots.

### **Grow Medium**

We suggest **Hydroton** or **rockwool** because they are easy to use and have a neutral pH level.

### **Nutrients**

Good quality hydroponic nutrients (like **NutriGold**) ensure plants grow healthily. Always check the exact measure of your container before preparing the solution to obtain a perfect ratio between water and nutrients. Fill your bucket up near the brim, but leave a space for oxygen. Then place the lid with the net pot on top and fix the lid down.

**Measurement tools:** With a good **pH meter**, you can frequently check your pH level, which is recommended.

**PH Control Kit:** Helps in adjusting the pH level if the meter shows pH to be too high or too low.

## **HOW KRAKTY WORKS**

Oxygen, lighting, and moisture are mandatory for plants to grow. To reach their full potential, plants also need micro- and macro-nutrients. This method supplies all these needs in a simple way: when the plants grow, they absorb the water. Also, as your seedling draws water up into the net pot, the water level in your container/reservoir will decrease. This lower water level will fill with air and provide oxygen for the roots . The “air gap” ensures the roots are exposed to air.

Fast-growing plants like cannabis grow best in the Kratky system because, by the time the water gets absorbed, the plant is fully grown and ready to harvest. If you want your plant to continue growing, simply add more water and nutrients to the system.

Generally, it’s better to germinate in a small pot/Jiffy and then transfer it to your Kratky system. Once your seedlings have sufficient roots, it’s time to move them to your hydroponic system. Simply fill your net pot with growing medium and transfer into your hydroponic system.

## **Setting up a Kratky system**

Step 1: Fix the lid on the container/reservoir. Drill/cut the lid to create a hole you place the net pot in. Make the hole big enough to fit the net pot. Make sure the net pot fits in the opening only up to its neck so that it doesn't fall through the lid. You want a snug net pot in place so it's not entirely dunked into the nutrient solution.

Step 2: Fill the container with clean water. Ensure that it is not contaminated or unclean water.

Step 3: Add the nutrients to the container. Keep in mind the suggested amount on the packaging. Stir the mixture well so that all nutrients get dissolved.

Step 4: Check the pH level of the solution. If it shows between 5.5 and 6.5, it is good enough. If the pH meter shows other numbers, fix the pH solution before proceeding further.

Step 5: Use the pH kit to fix the pH levels of your solution. The suggested pH levels are between 5.5 and 6.5.

Step 6: In the drilled lid, place the net pot with growing media and your plant. Make sure that the roots hang freely in the air while the other parts are in the nutrient solution.

### **Pros**

1. Easy to assemble and operate.
2. Affordable.

### **Cons**

1. It is difficult to grow long-term crops.
2. If the reservoir is not checked regularly, the stagnant water can be a breeding ground for algae and pests. Having the bucket painted in solid colour, like black, will reduce the chance of pests as it prevents light from getting in. The reservoir also should be checked periodically for insect larvae and the pH measured every 4-5 days to ensure the required level of pH.
3. Best for smaller plants - leafy green plants like cannabis, spinach, and lettuce.
4. Challenges and Disadvantages of the Kratky Method
5. The Kratky method is known for being an easy and efficient way of gardening. However, there are some things worth considering before you choose to use this method.

### **Other Variables that are hard to control**

You need to correctly check the pH level of the nutrient solution before you place your plant to grow. The appropriate level of pH is crucial.

The temperature is difficult to maintain because the water sits in place. Set up the system in a place where there are no rapid changes in temperature. IA ventilation system is a good idea. Shade clothes are also effective.

### **Water quality issues:**

Keep the PPM low to avoid a concentration of salt. Also, keep your plants protected from heavy rainfall. If the system is outside, move it to protect it from rainwater. Otherwise, the level of water will increase, and your plant will drown. Even strong winds will harm your plants.



The Kratky method. Source: Maximum Yield



Plants growing in a water bottle and mason jar showing their roots. The bigger you want your plants, the bigger the container/reservoir must be. Source: Shutterstock



The Kratky method in action. Source: Maximum Yield