Growing Systems

Growing systems are typically used for growing vegetables and herbs. Before making a final decision on a purchase, it makes sense to check with the professionals at your local hydro store first. They have a large variety of systems available and can explain your options. Keep in mind that you can also build or customize your own system.

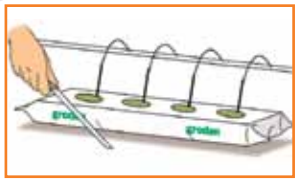
- For herbs, refer to Grodan's ***TRANSPLANT*** guide for details on using NFT and aeroponics systems.
- For vegetables, use GRO-BLOCKS™ and GRO-SLABS™ or pot the plant up in Grodan granulate, GROW-CHUNKS or GROW-CUBES.

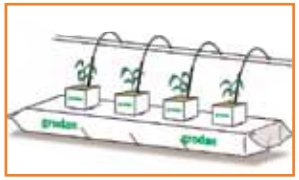
WATERING GUIDELINES

The most common problem involves poor watering routines. Refer to Grodan's ***WATER*** guide for helpful recommendations. Beyond that, make sure to read and follow the manufacturer guidelines instead of accepting random advice.

USING THE SLAB SYSTEM

- Make a slit in the bag and fill the GRO-SLABS completely with pH 5.5 water and soak for 30 minutes.
- Cut 2-3 drain holes on either side as shown. Then cut holes on top of GRO-SLABS to fit the Grodan GRO-BLOCKS.
- Flush to waste with your nutrient mix, using the same mix as you did for the plants growing in the GRO-BLOCKS.





- Place the GRO-BLOCKS directly on the plant holes.
- Stick the drip stake into the GRO-BLOCKS, but do not water for the first 2-5 days (misting only if needed). This will encourage the roots to extract all the moisture from the block and then race to get water from the slab.

Baby plants require special care - so remember that healthy seedlings and young plants must be fully rooted throughout the blocks. To achieve this, only water these young plants when the Grodan is halfway dry.

Basic Irrigation Tips

Attach the drip stake to a 1/4" tubing. An insert at the other end connects the tublet to the 1/2" tubing. Do not use gallon/hour emitters because they will clog. To measure how much water the stake delivers, stick the stake in a measuring cup, start the pump and see how long it takes to reach the desired water volume.

- Soft stems or dull leaf color indicates too weak or old plant food, or the pH in the tank is preventing nutrient uptake.
- Wilted leaf edges can indicate too much fertilizer salt in the tank. Due to rapid growth, the pH will rise quickly. Keep the pH between 5.5 and 6.8 to enable the plant to absorb food.
- Check and adjust pH frequently using a product like pH down liquid available at a local hydro store. An alternate pH control method (but not full proof) is to float one lemon cut in half, per 10 gallons of reservoir water.
- Veggies will quickly deplete the nutrients, so we suggest changing the reservoir weekly. Use the leftover solution on decorative plants.
- Always keep the growing system clean to minimize bug-problems.

Your local store:

Grodan Web Link
SCAN THIS CODE
using cell phone

To locate a Grodan supplier, go to grodan101.com, and use the search locator.

Collect all six tri-folds to achieve greater success with Grodan:

INTRO Introduction to Hydroponics
TRANSPLANT Rooting and Transplanting
WATER Watering and pH Conditioning
GROW Growing Huge Plants
START Starting Seeds and Cuttings
RECYCLE Recycling Used Grodan

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Hydro for Hunger

Grodan donates a percentage of all sales to Hydro for Hunger. To learn how you can also contribute, visit www.hydroforhunger.com.

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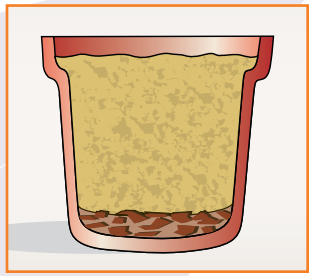
Growing Container Plants

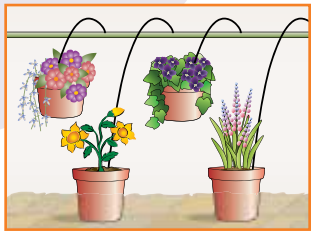
There are many ways to grow container plants.

POTTING MIX SUGGESTIONS

- Choose a potting mix according to the plant's individual requirements and climate. For water-hungry plants, choose Grodan absorbent granulate. For plants that are less water-hungry, use Grodan GROW-CUBES™ or GROW-CHUNKS™ alone or mixed with granulate.



- Create an inexpensive drain layer using clay rocks, or broken clay pots.
- Add a top décor layer using rocks, bark, or moss.
- Consider mixing Grodan products with other media especially drier/coarser media such as clay rocks. For more information on potting mixes, see "Growing Tips" on grodan101.com.



- One advantage in using Grodan by itself is that it lasts for the life of the plant, meaning there is no need to change the potting mix.
- If growing something huge like a ficus tree, it is best to use granulate to provide greater support as the tree grows taller.

Fertilizer Tips

- Basically, the faster the plant grows the better food it needs, and the more frequently it will need it.
- Decorative plants usually grow quite well as long as some slow release fertilizer (e.g. Osmocote®) is added into the potting mix.
- Depending how quickly the fertilizer releases all the nutrients, you may need to apply 2-3 times a year to the top of the container. Always read and follow the directions on the specific fertilizer label for best results.
- Vegetables and herbs are a lot more picky and tend to prefer a water soluble hydroponic fertilizer.

House and Patio (Decorative) Plants

HAND-WATERING

- Choose Grodan's absorbent granulate as potting mix. Its high water holding capacity will enable you to extend the time between watering. Always remember to add fertilizer and a drain layer.
- Choose a container that is a little larger than normal so your plants can last longer between watering. There must be holes in the bottom of the container so excess water can run out.
- Use the 'kick-the-bucket' method to determine when to water. Tap your foot against the plant container. If it moves (container feels light), it needs water. Water enough so that at least 25% of what is added runs out to remove old depleted fertilizer and replace with fresh oxygenated water. Typically, house plants can last 2-4 weeks between watering. But with patio plants, it depends on the climate.
- In areas with hard water, adding the juice of a half lemon per gallon of water will keep plants happy. If the plant is experiencing a growth spurt or is flowering, consider adding water-soluble fertilizer to the water in addition to the slow-release fertilizer. This will help support what the plant is trying to do.

AUTOMATIC WATERING

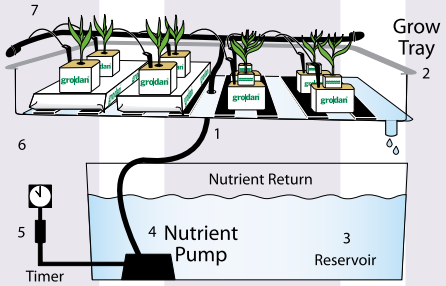
For house plants, check out the self watering pots available at your local hydro store or simply make your own. Visit grodan101.com to see pictures to inspire you.

Here, a garden hose is connected to a timer that is strung along the top studs. Inserted into each plant is a stake with a 1/4" tubing attached to the garden hose. A drill bit was used to make the holes. Plants hang with fishing line, so they appear to be suspended in mid air.

What is a Growing System?

A growing system generally refers to one that incorporates automatic watering and recirculation of the used water back to the plant. For this reason, growing systems are the most environmentally friendly way to grow. Not only does it conserve water, it also alleviates fertilizer (organic or in-organic) from leaching into the ground and contributing to the pollution of drinking water. Best of all, a growing system enables the plants to stay healthy and gives the grower the freedom to go away without worrying about the survival of the plants.

The principle of a growing system (ready-made or custom) is the same whether used for one plant or for many. It includes a tank with a timer, pump and a drain water collection tray/place for the plants. Some systems will fill the tray with water (ebb/flood) and some will use top irrigation like illustrated here. Since an ebb & flood system tray comes with two holes, it can easily be converted to a top irrigation system.



The illustration above depicts the following:

1. A plant in a large block or on a slab.
2. A tray or trough to collect the drain water.
3. A reservoir to hold the nutrient mix. Tank should be minimum of 2-3 times the volume it takes to soak the Grodan stone wool in the tray.
4. The more plants, the higher gallons per minute (gpm) pump required. Assume approximately 175 gph pump to water 16 large plants.
5. For good growth rate use intermitting watering. Connect a timer to the pump and set according to watering frequency/cycles.
6. Half inch tubing connects to a pump up through a hole in the tray. Tube extends the length of the tray, then is bent and tied securely to prevent water from running out the end.
7. Each plant has a 1/4" tublet with drip stake inserted in one end and a barbed insert at the other which is inserted into a hole drilled in the 1/2" tubing.

Before watering, always make sure there is a hole in the tray so the drain water can run back into the tank.