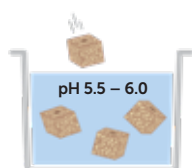


# Easy Steps to Growing in Grodan



## Step 1: Saturate

Saturate Grodan Starter Plugs® and Blocks in a nutrient solution with a minimum EC of 1.5 mS/cm and pH adjusted to 5.5 - 6.0 until fully saturated.

Saturation methods include soaking plugs and cubes in the solution for several minutes or via overhead saturation through a watering wand fitted with a coarse spray head. If saturating via a watering wand, ensure multiple passes. Facilities with wetting lines or irrigation booms can automate the overhead saturation process but must allow the substrate to pass under the nutrient solution multiple times.

After initial saturation, allow the excess nutrient solution to drain away. Measure the weight of a few starter plugs or trays to ensure they are uniform and fully saturated. Now you are ready to take cuttings.

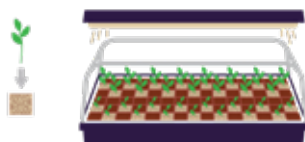


## Step 2: Sow Seeds or Take Cuttings

- **Seeds:** Use clean, good quality seeds. Place one seed into the hole of a saturated Grodan Starter Plug. Measure and note the starting weights of completed plugs to help determine when to apply irrigation.
- **Cuttings:** Take cuttings from sturdy, straight, upright shoots, preferably from the top of the plant. Apply rooting solution to the area of the cut and only the part of the stem that you will insert into the saturated Grodan Starter Plug. Avoid excess powder or gel on the stem, as this can potentially cause disease and/or slow down root development. Insert stem around 1/2in (1cm) into the starter plug. This allows for root initiation in the plug from the top. Measure and note the starting weights of completed clone trays to help determine when to apply irrigation.

Place starter plugs into a propagation dome or humidity tent. Use medium sunlight or supplemental lighting for best results.

Once wet weight of the starter plugs or trays reaches about 50% of the initial weight, apply an irrigation with a nutrient solution of 1.5 EC and 5.5 pH, drain excess to prevent mold, algae, and disease.



Moisture loss can be controlled via a humidity dome or by maintaining a consistent high relative humidity and low vapor pressure deficit throughout the propagation chamber. Humidity domes can be gradually vented and eventually removed once root colonization is underway. This process of hardening off must be monitored closely and performed gradually until the relative humidity matches the relative humidity of the environment that plants will be transferred to in the vegetative stage. Acclimating plants to slightly lower humidities, as they approach transplant, will ensure a seamless transition from the propagation stage to the vegetative phase.



### Step 3: Transplant to blocks

Saturate the Grodan Delta NG2.0® Block with a balanced nutrient solution with a minimum EC of 1.5 mS/cm and a pH adjusted to 5.5 - 6.0. Keep the blocks submerged until the bubbling stops. Remove the blocks from the solution and place them on the growing bench or gutter with the grooves pointing in the direction of the drain/slope. This enables the excess nutrient solution to drain from the block on flat surfaces that do not have drainage grooves.

It is important to ensure full saturation of Grodan Delta NG2.0® products to prevent dry areas that might affect root development. To properly assess saturation, we advise checking the wet weight of the blocks. You must weigh several blocks in different parts of your bench and facility to ensure there are no outliers.

Insert the well-rooted Grodan Starter Plug® into the hole of the fully saturated Grodan Delta NG2.0® Block.

Insert drip stakes:

- DNG 32 – 2 drip stakes in opposite corners of the block
- DNG 10, 6,5 or 4 – 1 drip stake per block

Apply at least one irrigation within 1 hour after lights on. The second irrigation should be applied close to mid-day. Achieve 10 - 20% nutrient runoff of the daily irrigation for proper re-saturation and nutrient replacement.

For the first few days after transplanting, please ensure adequate irrigation to prevent the plug from drying. Drainage is important to achieve the desired nutrient balance, EC levels, and uniform WC. Extra care must be taken throughout this process to prevent plant shock, delayed growth, and poor root development.



### Step 4: Transplant to slabs

Insert 1-2 drip stakes into each plant-hole. Do not push drip stakes all the way through the slab. Fill the Grodan Vital NG2.0® Slab bag with a balanced nutrient solution with a minimum EC of 1.5 mS/cm, pH adjusted to 5.5 - 6.0. by turning on the drip irrigation. Allow the drip stakes to fill the bags until they are completely full and ballooning at the seams. Alternatively, you can also use a hose and watering wand to fill the slabs. If using a watering wand, ensure you have filled the bags with enough nutrient solution to make them taught at the seams, nearly overflowing. Once the bags are completely full, let them soak for a minimum of 30 minutes.

Cut a drainage slit across the lowest point of the slab, beneath the seam, closest to the drain. If using a flat table, cut one (1) slit in each of the four corners of the slab. Make sure slits go fully to the base of the slab to allow excess water to drain correctly.

Place a well-rooted Grodan Delta NG2.0® Block onto the plant hole(s) you cut so that the base of the block is in direct contact with the top of the slab. Press down very gently to ensure contact.

For best results, irrigate using 2 - 3 L/hr with 1-2 drip stakes inserted into the top of each block.

**For more information on Grodan products and using them for optimal crop quality and yield, check out [www.grodan.com](http://www.grodan.com)**

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