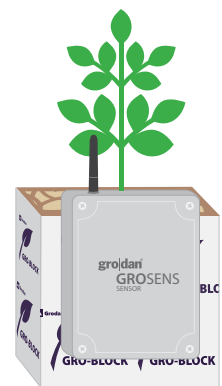
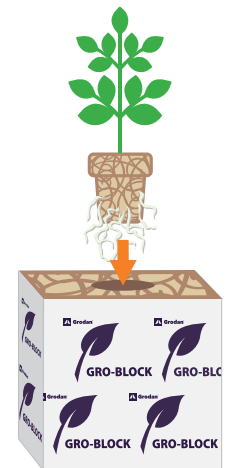


Best Practices For Hugo Blocks

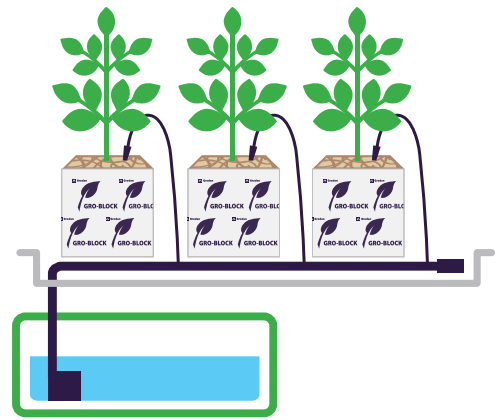
The Grodan® Hugo™ (6" x 6" x 6") Gro-block is a popular choice for growing larger plants. The block allows a grower to transplant a cutting into a final block configuration that will carry plant growth through harvest. Created as a slab alternative for home growers, this block has become popular among commercial and hobby growers alike. Due to the large volume of water this substrate can hold, careful irrigation practices must be employed to avoid delays in plant development and encourage uniform root colonization. Employing the best practices outlined below will allow you to maximize the performance of your Hugo blocks quickly and efficiently with minimal input.

Start with a healthy, vigorous cutting that has a well-developed root system. Weak or stressed cuttings with under-developed root systems are not ideal candidates for transplant into Hugo blocks due to the large volume of media the roots must colonize. Select healthy and uniform cuttings with roots present throughout the starter plug. These cuttings should already be accustomed to daily irrigations with a well-balanced nutrient solution that has a minimum of 1.5 EC and a pH of 5.5 - 6.5. Because rockwool is completely inert, nutrients are needed from the onset to provide the essential fuel for plant growth. Condition the Hugo with the same strength nutrient solution you were applying to the cuttings prior to transplant. Apply the nutrient solution with a watering wand using a course spray to wet the media multiple times until fully saturated. Alternatively, you can submerge the block in the solution for about 30 seconds. After initial saturation allow excess nutrient solution to drain away. Check the weights of the blocks (water content (WC)) to ensure they are uniformly saturated. Insert your rooted cutting in the Hugo block and apply an initial irrigation using the same nutrient solution used to condition the block.

After the initial, transplant measure the weight of the block to determine when to apply the next irrigation. Wait to irrigate until the block weighs 20%-30% less than its initial weight at first saturation. If using Grodan GroSens to measure volumetric water content, you should wait until WC is about 55%-65% before applying the first irrigation. Work to apply 1 or more irrigations per day for the first 1 to 2 weeks to steer the plant vegetatively and grow more leaves and stems.



Growers should use drip systems to apply irrigations at 3% to 6% of the total volume of the growing media. For a Hugo, this is about 100 mL to 200 mL per irrigation event. If hand watering, you can apply larger volumes of 200 mL to 500 mL per irrigation event.



Throughout the plant's life cycle the irrigation strategy will have to be adjusted based on genetic variety, stage of growth, environment, and root zone conditions. During early vegetative growth, growers should aim to apply smaller volumes of water (3%) at greater frequencies in order to encourage vigorous growth of leaves, stems, and structural tissue. As the plant progresses towards flower and fruit production, growers should begin generative steering by applying larger volumes of water (6%) at lower frequencies. Properly balancing vegetative and generative growth in the Hugo blocks will allow you to maximize your plant's potential productivity and ultimate quality. For more detailed information on crop steering refer to Grodan's brochure, Basics of Precision Growing.

Taking regular measurements of block weights will help you determine when irrigations should be applied. Toward the third week after transplant you will want to achieve 10% to 20% runoff of the total daily water gift applied to each plant. It is important not to over-saturate the block after initial transplant. Over-saturating the root zone will lead to algae establishment, slow plant growth, and increased pest and disease pressure. Over application of water and nutrient is also harmful to the environment and wastes valuable resources. Conversely, it is important not to allow the block to dry back below 50% of its weight at initial full saturation. Drying back too aggressively will diminish root development, slow growth, and create inconsistencies between plants in different blocks. Dry backs beyond 50% of the initial saturation WC will also make it harder to re-saturate the media, creating dry spots in the blocks.

Irrigating Large Blocks

Ideally, a pressure compensated drip irrigation system should be used to deliver precise amounts of nutrient solution to each plant. For large blocks such as the Grodan Hugo, 2 drip stakes per block should be used, each with a flow rate of 0.5 GPH (2LPH). Drip stakes should be placed about 1.5 inches into the top of the block at opposite ends of the block and away from the plant stem in order to ensure full re-saturation.

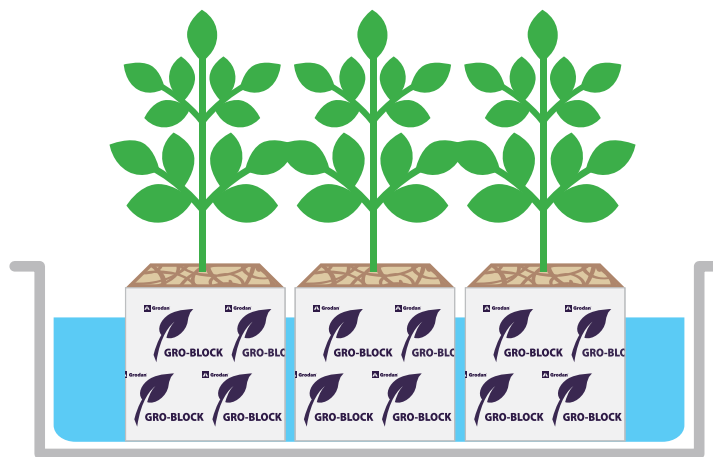


* When figuring out shot size per plants on each slab, divide by total number of plant per slab and add the size of the block you are placing on the slab. I.E. When transplanting (3) Delta10 Block onto (1) slab the 3% shot size would be $304 / 3 = 101 + 30$ (Delta10) = 131ml per plant on the slab.

If hand watering during flower, the timing of the first irrigation is important to ensure the plant does not dry out during the middle of the day.

Try to apply at least one irrigation within the first hour after the lights come on. If possible apply a second irrigation around mid-day. It is important to ensure that you achieve 10% to 30% runoff of your total daily water gift. This ensures proper re-saturation of the blocks and substantial nutrient replacement.

The use of flood systems can be challenging when using such a tall block. This method of irrigating necessitates a deep table capable of flooding up to 1 inch from the top of the block to avoid late-stage salt build-up. If you are unable to flood the block that high, it is recommended to hand water the top of the block once a week with the same solution used to flood the block.



In conclusion, the Grodan Hugo block is an excellent choice for growers looking for a one-touch product that allows them to grow from the vegetative stage through harvest without having to root into another block or slab. Using a well rooted cutting, the proper nutrient concentration, and a controlled irrigation strategy will ensure healthy plant growth. Through regular measurement of block weights, you can monitor WC to determine the optimal times to irrigate the plants.

For more information on Grodan products and using them for optimal crop quality and yield, check out www.grodan101.com

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