

Water Source: Use RO Water (Reverse Osmosis) or some form of filtered water. Yes, some plant species do well with tap water. The majority we've seen with the best results have used RO water.

Optimal Room Temperature: 70 degrees F(21 degrees C)

Optimal Water Temperature: 72 degrees F (22.2 degrees C)

Optimal PH range: 5.7 – 5.8

**Lighting:** T5 Fluorescent Bulbs (One 6500K, the other 2500K to get a good spectrum, 8-12 inches from the top of the cutting canopy).

**Cleaning:** Always clean the system before a kloning cycle (use H2O2 from the grocery store (3% kind). Add the minimal amount of water in the reservoir (so that the intake grid on the pump is completely submerged), on the T24 - add half a cup of H2O2 (120ml for the T24 / 240ml for the T48 / 350ml for the T96 / 470ml for the T144). Run the system for 30-45 minutes, then drain & rinse thoroughly.

Cuttings/Root Stimulator: Leave at least 2 sets of nodes above the cut & 2 sets of leaves if possible. Make the cut 1/8 " (0.3 cm) below a node at an angle of 45-60 degrees with a sterile blade. Also, shave off the bottom 1.2cm of the sheath or stem wall on two opposite sides of the stem, immediately place the base of the cutting in a gel (Ezi-Root Gel is best), then place in the system as its running. The gel will wash off fairly quickly, this wash off will create a good nutrient base for the first 3 days. At day 4, now add Roots Excelurator by House & Garden. There isn't much uptake of nutrients prior to root nubs developing – hence, no adding Roots Excelurator until a few days into the grow cycle. It is also an option to add 5ml of H2O2 (3% kind) at day 5. This helps freshen the grow chamber, adds additional O2 – without harming the cuttings.

**Water temperature:** Temperature can be manipulated by either placing the system on the ground (coolest air will be on or near the floor – this will help get cooler temps). The cooler the water – the greater % of dissolved oxygen in the water. Or, raise the system on a shelf or table to increase temps slightly. If needed, use a heating pad under the reservoir to increase temperatures even more. In extreme hot conditions, a timer might be an option. Typically, all hydroponic systems suffer when in conditions warmer than 80+ degrees F (26.7 degrees C). The warmer the air/water, the more prone to bacteria. Always make sure the system is on a flat surface. This will keep the air from the fan circulating along the side & bottom of the system. The constant flow of air against the system will help stabilize the water temperature & give you consistency.

**Humidity Dome:** The humidity dome is particularly important in growing environments with 35% humidity or less. Spray the canopy of leaves with water or a foliar spray – at least once a day if the humidity levels in the grow room are low.

**Optimal results:** Always coincide with good air circulation in the grow room. Stale & stagnant air will stunt healthy root development.

This is a guide only, some plants/cuttings may like warmer temps than others. Some may perform better in higher PH levels. Ultimately, some trial & error may be necessary to pin-point 'optimal' conditions for specific plant species.