

In this system, nutrient solution is pumped up through the growing medium from a reservoir in the bottom of the planter. However, unlike the pump and timer method, this procedure does not require the timer or sealed reservoir. The solution is pumped up by an aquarium pump with a bubbler valve submerged in the solution. This valve sends solution, plus air bubbles, up to the top of the growing medium, where it continuously drips through, returning to the reservoir through drainage holes.

Build this low-cost system with two stacked pans, or use a plastic-foam ice chest. To use an ice chest, cut a piece of one-eighth-inch-thick plastic sheeting to work as a second bottom; fit it where the ice chest narrows. Then run a piece of plastic pipe (about two inches around) through a hole drilled in the plastic insert. Make drainage holes in the insert at the same time. Cover the insert with window screen, and fill the top growing space with perlite. Next, add solution until the reservoir below is full.

Insert the bubbler valve into the tube, and connect one end to the aquarium pump. Connect the other to a piece of perforated half-inch tubing. Lay the tubing along the top of the growing medium. Holes in the tubing permit the nutrient solution to spread evenly.

Plug in the aquarium pump, and you're ready to grow. The solution will rise and drip out across the growing medium.

Add new solution each week to replace that which evaporates. Every two or three months, pump the old solution into a bucket and use outdoors in the garden. Replace the fluid in the reservoir.