

Building a Cheap System to Grow Hydroponic Lettuce

In an earlier post, I talked about a static hydroponic lettuce system that needed no aeration or recirculation and worked by providing an air space between the nutrient solution and the plants. Today I am going to explain how to build this very simple system from cheap materials. These are the things you will need :

- 8 Nails – 2 inches (5cm) long
- 40 Nails – 1 inch (2.5cm) long
- 4 wooden boards – 100 x 10 x 2cm
- Plastic lining (greenhouse polyethylene) – 1.20m x 1.20m
- Knife
- Styrofoam board – 100 x 100 x 2 cm
- Silicon Paste Sealant
- 1/4 gallon white latex paint
- painting brush

The first thing you need to do is nail the boards together forming a 1 x 1m frame. To do this I used 8 large Nails.



After the boards are nailed together (like it is shown above) paint the outside using white latex paint. This provides protection for the wood from water, light, bacterial and fungal damage. Now line the frame with the plastic, nailing it on the borders using small nails.



Your system should look like the one shown above. After this part, we need to build the cover of the system that will hold the lettuce plants. Cut 42 2×2 cm holes on your Styrofoam board in a 6 x 7 fashion, keeping a distance of 12 cm between holes. This is shown below.



Now you need to glue this Styrofoam piece on top of the frame

you built before. Do this using silicon paste, taking care to afford a good seal along the whole structure. This will prevent light from reaching the nutrient solution. The holes are fit to accommodate 42 plants (but you may do less holes if you desire to nurture less plants) germinated in polyurethane foam. Later this week I will continue to explain how plants need to be germinated and transplanted in order to use this system and how the nutrient solution is used and replaced. Below, a picture of the finished system (total cost for me, 25 USD).

