



The Achiltibuie Garden

...let's grow

Multi-planter system for tomatoes

Kit contents:

3 drilled planter with open grommets at both ends
1 drilled planter with 1 open grommet and 1 top hat grommet
4 bracing strips
8 pyramid pots
4 large planter spacers (155mm x 335mm)
4 planter fleeces
30 litre *Gold* growing medium
Liquid Tom Feed: 5 litre A & B, 2.5 litre C
2 minipropagators
8 tomato hooks
30ml measure
1 tank with lid
1 float valve (for connection to mains water)
1 Hydor PICO pump – 400lph
1.5m x 16mm pipe
3m x 7mm pipe
1 pump adaptor
4 x 16mm elbows

Finding the ideal site

There are several ways in which you can arrange the planters. You can set them out in a straight line, parallel rows, an “L” shape, or even in a square.

Whichever way you choose, each planter must be level or gently sloping, and each successive planter must be slightly lower than the preceding one. This allows the water to flow easily through the system. This can be achieved by chocking up each planter to the right height or by setting up the system on a sloping bench or shelf.

Position the tank just below the planters (near to the outlet planter) so that the water can be pumped up into one end of your planter arrangement. Bear in mind that the pump is designed to lift water no more than 85cm (33”). The water will then flow from planter to planter via connecting pipes and finally run out of the other end, back into the tank, continuously recirculating. The wicks hanging beneath the pots will draw water up to the *Gold* growing medium inside.

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Assembly

The system may be run connected to mains water for automatic topping up of the tank with water. This would normally require the use of an EC meter (see later). Alternatively the tank may be filled manually at intervals with liquid feed made up according to the instructions given.

Place the pump in the tank ensuring that the flex comfortably and safely reaches a mains electricity supply, which should ideally be fitted with an approved circuit breaker. Ensure that the flow control is fully open by turning the pump outlet.

If you are connecting the system to mains water: Take one of the locking nuts off the threaded end of the float valve arm and push the end through the hole below the rim of the tank. Secure in place using the nuts. Fit the float to the end of the float arm. The protruding threaded end is ready for connection to the mains water supply. You may decide to use a plumber to make the connection. Check that your supply conforms to local regulations with regard to a non-return valve. If you cannot provide mains water to your system, the ball valve can be connected to a rainwater butt or a large water tank that can be refilled.

Arrange the planters in your desired positions ensuring the one with the small (top hat) grommet is at the inlet end nearest the tank. Connect the planters together using lengths of 16mm pipe cut to desired length using a sharp blade - simply push the pipes into the grommets so that the ends just appear on the insides of the planters. Use the elbows as appropriate to get the pipes round corners in your arrangement (the elbows can be pushed into the 16mm pipe when the pipe has been dipped in hot water). At the outlet end of your system push a piece of pipe into the outlet hole and using an elbow and another piece of pipe make an L-shaped return to the tank.

Dip one end of the 7mm pipe in hot water for a few seconds and push it onto the pump adaptor pipe as far as it will go. Slide the large end of the pump adaptor onto the pump outlet. Take the other end of the 7mm pipe and push it into the small grommet at the inlet end of the planters.

Before you set up the pots test the system. Switch on the mains water supply and adjust the ball valve so that the water level settles at about 10cm (4") below the brim of the tank. Now switch on the pump. The water will flow into the first planter, then it will overflow through its outlet into the next planter and so on until it runs back into the tank. The float valve will maintain the water level by adding more as required. At this point you can make any adjustments necessary. Planters can be levelled up with blocks of wood or tiles. Remember that the planter with the water inlet must be at the highest point and the planter with the outlet to the tank must be at the lowest point. Check for leaks and tighten up connections as necessary. When you have satisfied yourself that the system is running properly you can set up the pots.

Raising seedlings

Assemble the minipropagator according to the instructions attached to it. Sow individual tomato seeds spaced about 1" (2.5cm) apart in the minipropagators provided. The seeds should be planted on the surface of the *Gold* growing medium, then given a light covering of more *Gold*.

Place the fleece cover loosely over the top of the propagator and keep it in a warm position (20-25°C) until the seeds begin to germinate. Check the propagators daily after the fourth day from sowing, as it is very important to place germinated seed in a good light position as soon as the first seeds germinate. There is no need to remove the fleece covering, which will maintain humidity while allowing light and air to get to the tender young seedlings.

Allow the seedlings to grow two full pairs of "true leaves" before transferring them to the pyramid pots in the tomato planter kit. (True tomato leaves are serrated and hairy, as opposed to the first pair of smooth edged seed leaves).

Setting up the pyramid pots

1. Slide a bracing strip onto end of each planter and move it to half way along the planter.
2. Ensure that the capillary matting wicks are threaded through the slots in the bases so that the ends protrude below the pots. Thread the tomato hook twine through the slit in the base of the pyramid pot (to one side of the wick) making a large retaining knot beneath the pyramid base. Then completely fill the base of the pyramid pot with *Gold*,
3. Feed the tomato hook through the round hole in the pyramid pot top. Clip on the pyramid pot top and using a scoop (you can make one from an old plastic bottle cut in half) pour in *Gold* to the top of the pyramid top. Gently tap the pots to settle the *Gold*. (Do not compress with your fingers as the air gaps in the *Gold* are vital to good aeration for the plant roots.)
4. Place one pot at each end of each planter; the tabs on the rim of the pot base which secure the lid in place should hang over the long edges of the planter. Place a black plastic spacer between the pots in each planter. Fill the tank with nutrient mix (seedling strength) and allow the planters to fill with the nutrient. Leave the pots until the *Gold* is damp.
5. Gently lift the seedlings together with any adhering *Gold* from the minipropagator by placing a teaspoon or plant label well under the root system as a lever and hold only the seed leaf of the young plant to transfer it to the damp *Gold* in the pyramid pots. Never touch the fragile stem or the true leaves of the seedling, to avoid permanent plant damage. Shake the pyramid pot gently to settle the seedling, adding a little more *Gold* if necessary to bring the level up to just below the rim of the pot. As before, don't compress the *Gold* too much as this will compact the mixture and affect the aeration properties of the *Gold*. If you are using plants which have been raised in peat or soil based composts, then gently shake off excess compost from the root ball before introducing the plants to the *Gold*. It is not essential to remove all compost or peat from the roots as over handling will cause damage to the roots. Cover young plants with fleece to provide a perfect micro-climate.
6. Attach the tomato hook emerging from the top surface of the *Gold*, to a very secure point as high as possible above the planter set in such a way that the leading shoot can be wound gradually around the soft string; 1.5 – 2m is ideal.

Using tomato liquid feed in the planter greenhouse kit

The tomato feeds are constituted to suit the needs of all plants and comprise of three components "A", "B" and "C". These are in concentrated form and must be diluted. The concentrates must never be mixed directly, but must be added to the water separately.

Some plants are more hungry than others, and an individual plant's needs vary at different stages of its growth. The dilution rates given on the attached sheet are, therefore, a guide and may be adjusted according to the types of plants you want to grow.

For systems topped up manually with water and nutrients:

Make up a volume of liquid feed according to the instructions below. This may be added directly to the tank or stored in a capped container for topping up as necessary.

For systems topped up with water automatically from a float valve:

As your plants use up water and feed from the system and the level in the tank drops, the float valve introduces fresh water to top up the tank. This dilutes the feed solution making it weaker and so feed concentrates must be added to restore the strength of the solution. Maintaining the strength of the feed solution is the key to the quality of your crops.

Test the tank frequently with a conductivity (EC) meter to check the strength of the solution. In the summer this means every one or two days. Add measured quantities of the liquid feed concentrates according to the instructions on the attached sheet and stir the tank well. Add small amounts initially and with experience over time you will get an idea of approximately how much should be added each time. Test the resulting solution and add further amounts until the desired EC is achieved.

If you accidentally add too much nutrient, then introduce more fresh water to reduce the EC by holding the float valve down.

It is also advisable to clean your pump from time to time as salts do tend to build up and may cause your pump to fail.