



The Achiltibuie Garden
...let's grow

ACHILTIBUIE GARDEN TOMATO FEED FOR HYDROPONIC GROWING - instructions for use of feeds in powder form

A hydroponic feed must supply all the nutritional requirements of a plant because even if you are using a growing medium, this is inert and does not contribute to the nutrition of the plant. Our plant feed is the product of many years' research at the old Hydroponicum in Achiltibuie and is specially formulated to contain all the nutrients need for healthy plant growth in the correct balance, supplied in such a way that they are very easy for the plant to take up. In hydroponic systems, the plants have no source of nutrients other than what you give them so it is important that you use a complete feed such as this one.

This three-part tomato feed is supplied in powder form; the parts are labelled A, B and C. Note that part C has 2 different bags. Please refer to the label on each bag for a breakdown of the constituents. Each of these three parts is needed to ensure healthy growth at specific stages of growth and these instructions give details of which part(s) to use at which stage. Each of the three parts must be dissolved in a volume of water to make the concentrated stock solutions; keep these in lidded containers in a cool place out of bright light to prevent deterioration due to bacterial or algal growth.

The three stock solutions must then be diluted according to the directions given below to provide a complete and balanced liquid feed for your plants. In case the constituents interact (which would affect their availability for your plants), make sure that you dilute each of the concentrates separately. For the same reason, do not mix the concentrates together and only mix the diluted solutions when adding them to your hydroponic system.

If you like, you can make up large quantities of diluted feed for each of the three parts and store them in lidded containers until you need to top up your system.

If your system is controlled using an EC meter (essential if your system is plumbed in for automatic topping up of the tank with water) then use the proportions of feeds stated to give the desired EC. If you top up your system manually, add the feed concentrates to the total amount of water with which you are topping up.

Avoid topping up your planters or pots with pure water but always use the diluted feed. This will ensure that your plants will always have the optimum amount of feed available to them. Never allow the *Gold* growing medium to dry out. It provides optimum aeration at the roots and the pot and planter systems will not allow overwatering.

Making the stock solutions

You will need:

- * pair of rubber gloves
- * measuring jug
- * funnel
- * 3 sealable 5 litre containers
- * boiling water
- * cold water

Each pack is sufficient to make 5 litres of stock solution.

Fit the funnel to the neck of one of the 5 litre containers and carefully add the contents of the bag marked Tomato A. Add 1 litre of boiling water, remove the funnel and screw on the lid of the container. Shake vigorously until the powder has fully dissolved (be careful when opening to check as it will be very hot). Leave to cool for about 10 minutes, check that all the powder is dissolved, then add 4 litres of cold water to the container and shake gently to mix. Clearly label the container *Tomato A concentrate*. This is your first stock solution. Prepare the other two stock solutions, Tomato B & Tomato C, using the above method. For part C, add the contents of both bags to the container before adding the water. Please note that this solution may froth once you have added the water and shaken it: leave it to settle before adding the rest of the water.

Tips on feeding your tomatoes

Frequency of feeding is determined by the rate of plant growth and the rate of transpiration of water from the leaf area (this is related to the air temperature and humidity). In hot weather, for example, the plant will lose more water through its leaves (transpiration), so it will require to take up more water. We suggest that you cut the strength of the feed by 25% in these conditions with no detrimental effect on the plants.

You can help to reduce transpiration rates by removing the lower leaves of the tomato plants, leaving only the top 75-90cm (2.5 – 3 feet) of the plant with leaves on.

The dilution rates given are therefore a guide and may be adjusted as necessary. By using the three concentrate solutions you can be sure that your plants are getting all of the essential growth elements.

This Tomato feed can also be used for other high-yielding fruiting plants such as cucumbers and courgettes. Less greedy plants will do well on our General purpose feed, or we can supply dilution rates to allow you to use Tomato feed at lower strength for these plants. All our feeds are available from **www.thehydroponicum.com** or by telephoning The Achiltibuie Garden on 01854 622202.

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Dilution rates for different stages of plant growth.

Stage 1: from seedling stage (fully expanded seed leaves) to the third true leaf stage:

Desired EC =approx. 3.0 mS/cm above the EC of make-up water

Make a solution using EQUAL QUANTITIES OF TOMATO A & TOMATO B with water as follows

Volume of diluted solution required	Amount of Tom A	Amount of Tom B	Amount of Tom C
1 litre	10ml	10ml	----
5 litres	50ml	50ml	----
25 litres	250ml	250ml	----

Stage 2: from 3rd true leaf stage to 1st fruit set (small fruit the size of a pea can be seen):

Desired EC =approx. 5.0 mS/cm above the EC of make-up water

Make a solution using 2 PARTS TOMATO A, 1 PART TOMATO B & 1 PART TOMATO C with water as follows:

Volume of diluted solution required	Amount of Tom A	Amount of Tom B	Amount of Tom C
1 litre	20ml	10ml	10ml
5 litres	100ml	50ml	50ml
25 litres	500ml	250ml	250ml

Stage 3: the remainder of the fruit production season:

Desired EC =approx. 3.0 mS/cm above the EC of make-up water

Make a solution using EQUAL QUANTITIES OF TOMATO A & TOMATO B with water as follows

Volume of diluted solution required	Amount of Tom A	Amount of Tom B	Amount of Tom C
1 litre	10ml	10ml	----
5 litres	50ml	50ml	----
25 litres	250ml	250ml	----