



Cultivation Advice



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Coco

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General points are discussed here in relation to cultivation in coco.

When growing in coco it is first necessary to ensure that you have a good coco type. A good coco can be recognised by its high degree of "buoyancy", which ensures that there is adequate air (oxygen) in proximity to the roots. The coco should also have a low E.C. value and preferably a pH of 5.5 to 6.0.

There are various ways of proceeding. Here we describe the method, which results the majority of the time in the most successful crop.

First the seedling is repotted to a "small" pot, so that in the course of a week it will dry out and require watering twice. The drying out of the pot gives the seedling chance to spread its roots thereby ensuring that it is well established.

Use a pot with a diameter of about 12.5 cm.

First of all fill the pot with soil.

Next make up a container with Ferro coco growth feed in it. Enrich this by adding Enzym Plus, Bio Crop and Bio Roots, and adjust the solution to have an E.C. between 1.3 and 1.7, and a pH of 5.6.

If pH and E.C. meters are not available, mix together 20 ml of feed A and 20 ml of feed B for every 10 litres of water and add the required doses of Enzym Plus, Bio Crop and Bio Roots to the feed container.

Enzym Plus, Bio Crop and Bio Roots should be used for the entire cultivation cycle in coco (and soil). Enzymes are referred to as bio-catalysts because they accelerate the chemical reactions taking place in organisms. Enzymes are compounds which remain unaltered by the reaction. They are comprised of proteins.

Bio Roots ensures good root establishment and a large number of (flower) buds.

Bio Roots active ingredients are heteroauxins.

Bio Crop increases plant chlorophyll concentrations and consequently the sugar concentration too. Sugar concentration can be measured using a Brix refractometer.

Use the coco growth feed solution to wet the coco. Then plant out the seedlings - use your finger to make a hole in the coco in the 12.5 cm pot, insert the seedling and lightly firm the coco around it. Weigh the pots to get an idea of their starting weight, referred to as 100%.

These young plants are going to be rendered free of bacteria and fungus using Deon, so that the cutting is given a huge spurt in growth without there being any resistance.

The lower shoots will also fully sprout, resulting in a beautifully full plant.

Spray the young plants on day 1, day 5 and day 9.

Transfer the cuttings to their designated area, ensure a temperature of about 26-27 Celsius and, where possible, a Relative Humidity (RH) of about 70%.

To maintain an RH of about 70%, perforated plastic sheeting may be suspended above the plants for the first week.

The pots should be allowed to dry out to about 60 to 70% of their starting weight.

When this is the case, the plants can be watered for the first time, using coco growth feed in combination with Enzym Plus, Bio Roots and Bio Crop.

Start using this with the same E.C. used previously in the coco growth feed, and a pH between 5.6 and 6.0. CAUTION: the first watering is probably the most important of the entire cultivation cycle. If you water too soon the seedlings will get too "wet", resulting in a greater likelihood of root rot and stem rot setting in, and of the plant being unable to root properly.

Always ensure that the first watering is given at the right time.

In the event of the seedlings being received on rockwool, it should be remembered that the water affinity of the coco will be greater than that of the rockwool.

In practice, this means that after transferring the seedlings to the coco, the rockwool will "dry out", usually within 24 hours.

To solve this problem the seedlings should be watered with 50 ml feed every 24 hours. If this is not done there's a risk that the plant will dry out and consequently the roots won't establish properly (i.e. it will be stunted). Do NOT use more than 50 ml per seedling per day - the coco should still be able to dry out.

When the seedlings have rooted through the 12.5 cm pot they should be transplanted to larger pots (or a bed).

Water this coco too with coco growth feed (in combination with Enzym Plus, Bio Crop and Bio Roots), again using the same initial E.C. and a pH of 5.0.

Use an empty 12.5 cm pot to make holes in the new pots/bed. Transplant the plants and lightly firm the coco around them.

If using pots these can be weighed to get an idea of their starting weight, again referred to as 100%. Allow the pots to dry out to about 60 to 70% of their starting weight, prior to watering with coco growth feed.

When the plants' roots are established, the E.C. value should be gradually increased, until it gets to about 2.0, using a maximum increment of 0.1 to 0.2 between waterings.

Make sure the plant is well established in the coco since this will be a key factor in determining the final crop yield.

After 14 days, change over to Ferro coco bloom feed and continue to use this right to the end of the cultivation cycle.

At the same time continue to use Enzym Plus, Bio Crop and Bio Roots.

When buds begin to set use PK bloom booster (enriched or normal) too. Continue using the latter until 1 week before harvest.

Enzym Plus, Bio Crop and Bio Roots should be used for the entire cultivation cycle.

In the last 2 weeks of the crop the plants will not require as much feed as they did in previous weeks. It's also usual to lower the E.C. by a few tenths of a point during the last 2 weeks from, for example, 2.0 to 1.6. Continue to feed right to the end of the cultivation cycle, i.e. don't transfer to using water alone - only the E.C. value should be reduced.

Whilst it isn't possible to control everything during the cultivation cycle, watering is one control method, which can be well managed. Therefore ensure that the plants don't get too dry or wet.

If this proves difficult purchase a moisture meter for coco - they're available in all good shops and don't cost too much.

E.C. problems can also arise during cultivation, whether this is the result of too high a value being applied or of the plant taking up too little in a particular time period. This can always be checked by taking a coco sample as follows: take a container with 500 ml of demineralised water in it. Fill it up to 750 ml with the coco to be sampled (ensure this is representative, by sampling from different depths in pots and from various locations in the bed). Stir it well and after 24 hours filter out the solids (for example, by running it through a coffee filter paper). Subsequently measure the pH, then the E.C. If the results obtained are different from the desired values, this should be corrected during watering by adjusting the pH and/or E.C. of the feed container.

The general rule regarding EC is that you add to plants the amount you would like to see in the substrate (soil, mineral wool, etc.). An example: a grower supplies nutrients with an EC of 2.0 to a plant. After testing the substrate (soil, mineral wool, etc.), he establishes that the EC is 1.9. This is the ideal situation - the plant absorbs a little bit more than is supplied to it.

If, in this example, an EC of 2.4 had been measured in the soil, then the right course of action would be to bring the EC in the nutrient barrel down to 1.6, for example. This should be done gradually with a maximum difference of 0.2 in EC between waterings.

General tips:

Ensure that the climate is favourable and try to keep temperatures under 30 degrees Celsius. At higher temperatures stomata slowly close up, making photosynthesis no longer possible. (Hang temperature meters at flower height in order to gain an insight into peak temperatures.)

Ensure that ground temperature is at least 20 degrees Celsius at sunrise. Do not allow the temperature to drop below this in order to avoid problems caused by the ground being too cold. If the ground temperature is too cold, the plant will force practically no water and nutrients upwards, or none at all, causing the stomata to close up again due to a lack of water and therefore cooling. This means that photosynthesis can not take place. This process will only start up again properly once the ground temperature reaches temperatures in excess of 20 degrees Celsius. If plants are started off on ground temperatures of under 20 degrees Celsius, then losses of several hours per day are to be expected. This can quickly develop into production losses of 20-30%.

Avoid cold air on your plants. If the air intake imports cold air, it is advisable to avoid this "falling" onto the plants.

If this does happen, the stomata will once more close up, resulting in photosynthesis stopping. The problem can be avoided by installing an air sock in the air intake, which will ensure that incoming air is suitably dispersed (through millions of perforations rather than one big hole). The effective dispersion of incoming air will also make temperature control easier and more effective.

Feed water should be replenished at least twice a week. When making up a new container don't use warm or (pre-)boiled water, otherwise this will lower the oxygen concentration in the container and the plants will be able to take up fewer nutrients. Heat the cold water used in the feed container gradually to a maximum of 24C using an aquarium water heater. Above this temperature the water will lose oxygen, the plants will no longer be able to take up any nutrients and water, and photosynthesis will result in less energy being produced.