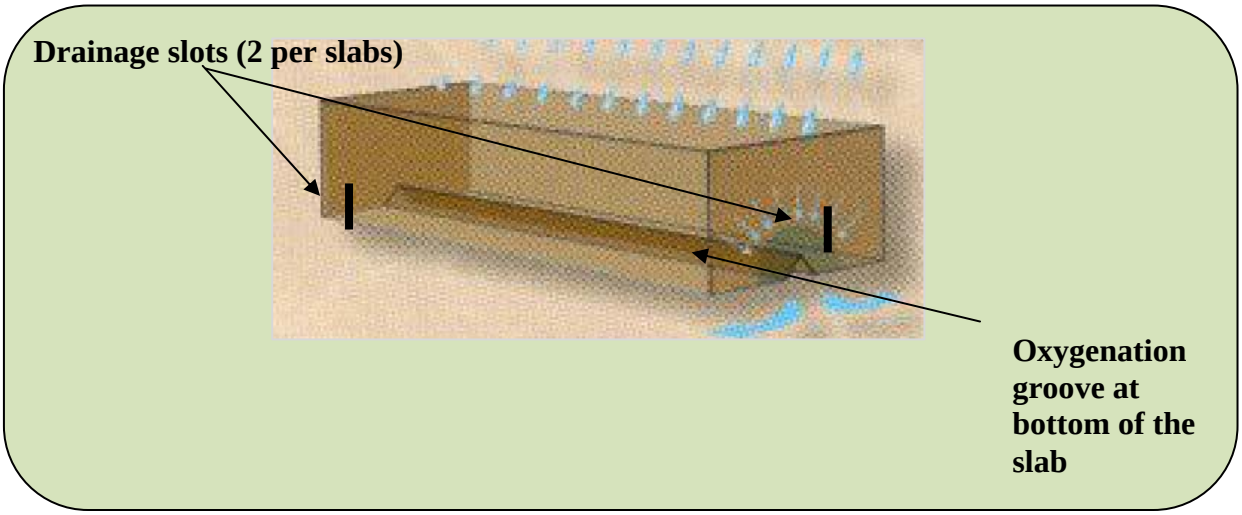
Instructions for the use of coco coir Performa Globalys

1 - Setting up bags of culture in greenhouses

Distribute substrates on a compacted surface, drained and levelled. Make sure the oxygenation groove is on the bottom of the bag. Make sure the substrate is well centered in the plastic envelope to facilitate the expansion of product at inflation. Be careful to respect a minimum spacing of 3 cm between each bag in a row. This way the slab can reach its final wetted length without being compressed by the surrounding slabs which could cause uneven inflation.



2 – Inflation and calcium saturation

The coco are low in calcium. They will therefore fix the calcium in the first input and create deficiencies at the plant for fertilization if calcium saturation is not done before planting. To find a balance and a good nutritional environment for roots, we must take the following 4 steps for the filling:

- ✓ Irrigate the dry slab with a solution of calcium nitrate of a salinity of 2.5 to 3 mS (1 g Calcium nitrate per litre of water is equivalent to 1.2 ms) The pH should also be adjusted around 5.8 pH. It is also possible to use a complete nutrient solution.
- ✓ Provide water for 60% of the total volume of substrate (eg. a coil that contain 22.1 litres of substrate must be wet with roughly 13.26 litres of water). The water volumes per shot should be around 250 ml / emitter (1 emitter per plant) at intervals of 1 hour (even at 2 hours during the last watering shots). It is important to let the substrate incorporate the water before re-watering to prevent the structure from being damaged. In the case of over-watering, the thin fibbers would accumulate in the down-part of the substrate which would tend to loose its porosity. We must therefore avoid creating a balloon of water in the sides of the bags.

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References: many

- ✓ A well inflated slab will have “sharp” edges and be square. There will be no more free space in the bag. At this point you are ready to cut out the drainage slots. It is suggested to cut 2 slots for drainage at the bottom of the bag (4 cm on the lower edge and 4 cm on the bottom of the bag); one on each side of the length. Eventually, it will be interesting to add some slots for the end of the culture to create a substrate more drainable, and therefore more reproductive.
- ✓ To control the salt content of the substrate, salinity of the liquid leaving the bag (the drainage solution) must be measured. Ideally the tomato plants must be deposited in a substrate with a salinity of 3 to 4 mS. The cucumbers must be deposited in a substrate with a salinity of 2 to 3 mS. The strawberry plants must be deposited in a substrate with a salinity of 1 to 1.2 mS. If salinity is higher, it is necessary to make additional irrigation with water or low conductivity complete solution to reduce it to the desired target. The pH must also be controlled and be between 5.5 and 6.2 pH.

3 – Plantation watering

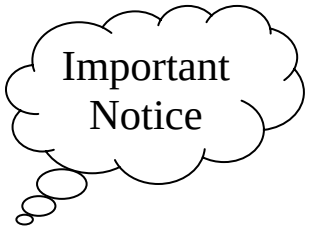
In coir, watering at the plantation is critical and requires close monitoring to promote root colonisation. At plantation, the plants should have been previously well irrigated. Be ready to irrigate 20 minutes after the first plant has been deposited on the substrate. Any delay will cause dehydration of the roots and in some cases the complete destruction of the root system.

Ideally, you should use a propagation block of coir or Rockwool. If no coir propagation blocks are available, Rockwool blocs works fine with coconut. However, it is an inert substrate much more porous than coconut. You can expect the coconut slab to literally drink the water contents of the Rockwool and that the plant will require irrigation fairly quickly in order to prevent water stress to the plant. We must therefore ensure a balanced pH and salinity in the propagation slab and in the irrigation solution before depositing them on the coconut slabs.

The watering schedule should be as follows:

Watering schedule for maximum root zone colonisation

Stade	Irrigation start time (hours after the sun dawn)	Irrigation stop time (hours before the sun dusk)	Interval between irrigations	Night irigation every
Transplantation	1 hr	1hr	20 minutes	3 h
Roots fixed to the top of the coir slab	1 hr	1 hr	40 minutes	4 h
Roots at 1 cm deep in the coir slab	2 hr	2 hr	1 h	1 shot
Roots at 3 cm deep in the coir slab	2 hr	2 hr	1 hr	0
Roots at mid height of the coir slab	3 hr	3 hr	2 hr	0



It is very important to go see how the roots are migrating inside the coir slab and not just on the outskirts. The roots in the periphery are the first to grow but it is important to ensure that the roots in the middle of the slab are also following a penetration growth pattern to have sufficient root system development to ensure a good supply of water in hot and sunny seasons. The intervals between watering should be increased in case of bad weather. The intervals between watering should be decreased (more irrigation per hour) in case of hot weather or tropical climate.

4 - Management of watering during production

The volume of each watering shot during production should be around 100 to 200 ml. Proper management of water supply and leaching (drainage) in terms of volume, salinity and pH are simple to achieve in Performa Globalys coco coir.

EC targets generally ranges from 1.2 to 3 mS in the watering solution for tomato, form 1 to 2 mS for cucumbers and from 0.8 to 1.8 for strawberries. For EC and pH targets adjusted to your crop, please refer to your agronomic consultant. The targets in the slabs (drainage water) should never be more then 1 to 1.5 mS higher then the feed solution.

To maintain the balance of the substrate during sunny days, the rule of thumb is to generate 20% leaching for a high volume of substrate (> 6 l. coconut / plant) and up to 40% of leaching for a low volume of substrate (<4 l. coconut / plant). The use of a tensiometer (water tension reading) or a humidity sensor to monitor the roots zone water content is ideal for the management of irrigation.

Good luck and have a nice crop!!!

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References: many