

## Fibrgro Instructions

## COCO BAGS

**01**

### Positioning the Fibrgro Coco Bags

The Fibrgro Coco Bags can be placed directly on the ground or on (hanging) gutters. They must be placed completely horizontal, so drain water can drain out completely during the cultivation process. Make sure there is always a gap of at least 5 cm between the Fibrgro Coco Bags.



Each Fibrgro Coco Bag has at least one stick hole. Drippers must be placed in these stick holes to ensure uniform expansion. Drainage slits are pre-cut in the cover at the bottom of the Fibrgro Coco Bag.

Fibrgro Open Top Bags must never be left in a layer of water. If the ground is not completely flat, Fibrgro Coco Bags can be placed on polystyrene foam plates.

**02**

### Saturating the Coco Bags

To saturate the Fibrgro Coco Bag, we recommend that water is added in small quantities of 50 to 75 cc per dripper, with an interval of 5 to 10 minutes between watering. This minimizes water losses, and allows the Fibrgro Coco Bag to expand completely in a few hours. It is important to continue watering until the Fibrgro Coco Bags are completely saturated, to ensure that the Fibrgro Coco Bags expand properly.

The volume of water needed to make the Fibrgro Coco Bag expand completely can be calculated by referring to the maximum moisture percentage of the Fibrgro Coco Bag at full saturation.



- ◆ **Minimum Air Percentage: 25%**
- ◆ **Maximum Air Percentage: 65%**



**02*****Saturating the Coco Bags (Cont.)***

The amount of water is calculated by multiplying the maximum moisture percentage by the volume of the Fibrgro Open Top Bag:

- ***Volume of water (L) = Max. moisture % \****
- ***Volume of Fibrgro Coco Bag after expansion (L)***

**Example:** the volume of a Fibrgro Open Top Bag with dimensions 20/20/20 cm (2 Gallon) is 6 liters after expansion. The maximum moisture percentage is 60%. A total of 3.6 liters of water will be needed to expand this Fibrgro Open Top Bag to its full dimensions:

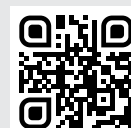
- ***Volume of water (L) = Max. moisture % \****
- ***Volume of Fibrgro Coco Bag after expansion (L)***
- ***Volume of water (L) = 60% \* 6 L = 3.6 L***

Once the point of full saturation has been reached, water will start to drain from the Fibrgro Coco Bag. Since the Fibrgro Coco Bags are produced from washed coco material, drip irrigation of the Fibrgro Coco Bag can be stopped at this time. Additional irrigation to wash any salt from the coco material is unnecessary. The top layer of coco material in the Fibrgro Coco Bag may feel dry. However, after placing the propagation cube, this layer will quickly saturate evenly, enabling the roots to grow into the Fibrgro Coco Bag without any problems.

We recommend on expansion EC of 0.5 mS/cm lower than the last cloning EC. This will at transplant stimulate the plants to forage for nutrients, hence increase root mass and reduce potential stress.

The quantities of fertilizers on page 6 were calculated for 1000-litre contain a concentration factor of 100 and an irrigation water EC of 2.5. The figures also assume the use of initial water of A.O.O.O quality, rainwater, or osmosis water with an EC of 0.0 mS/cm. If nutrients are already present in the initial water, these must be deducted from the irrigation schedule.

We recommend setting the pH value to at least 5.2. The pH in the Fibrgro Coco Bags will increase in the first weeks after planting. In contrast to rock wool, drip irrigation with water with a pH of 5.2 is not a problem. During cultivation, continue to use irrigation water with a pH of 5.2. Aim for a pH of 5.5 - 6.0 to a maximum of 6.5 in the drainage water.



**03**

### Rooting Phase

The Fibrgro Open Top Bags drain easily. During the first week after planting, the best method is to drip irrigate frequently, so that the propagation block makes good contact with the Fibrgro Open Top Bags. In this phase, we recommend 75-100 cc per dripper per dose. As soon as the propagation block is firmly fixed, the irrigation frequency may be gradually reduced.

The irrigation frequency depends on the type of crop and the desired crop growth; generative or vegetative. For the first three weeks of cultivation, we recommend following the initial schedule specified on page 6.

**04**

### Control Phase

The steps in the control phase vary according to the crop.

**05**

### Irrigation Doses

The irrigation table on page 6 can be used for a crop in production.

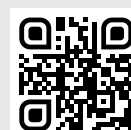
**06**

### Irrigation Frequency

The irrigation frequency is determined by the cumulative number of joules/cm<sup>2</sup> between two water doses, and can be calculated based on the previously mentioned rule of thumb and the number of drippers per square meter. The amount per water dose is determined by the type of coco. As a rule, the following quantities apply:



- **Water dose (ml) per dripper: 100-125 ml**



**06**
**Irrigation Frequency (Cont.)**

Irrigation frequency (J/cm<sup>2</sup>/dose) = D \* M / I

- ◆ **Number of drippers per m<sup>2</sup> = D**
- ◆ **Maximum dose (cc/dripper) = M**
- ◆ **Desired water dose per m<sup>2</sup> per day (ml/m<sup>2</sup>/day) = I**

**Example:** tomato in a Fibrgro Coco Bag

- two drippers per m<sup>2</sup>
- maximum irrigation dose = 100 cc/dripper
- desired water dose per m<sup>2</sup> per day (ml/m<sup>2</sup>/day);  
1 J / cm<sup>2</sup> > 3 ml/m<sup>2</sup>

**Irrigation frequency (J/cm<sup>2</sup>/dose) = D \* M / I**  
 = 2 \* 100 / 3  
 = 67 joules / cm<sup>2</sup>

*This means that a irrigation cycle follows a insolation sum of 67 joules / cm<sup>2</sup>.*

**07**
**Starting and Stopping Times**

To keep the root system in optimum condition, we recommend allowing 10% of the moisture content to be absorbed each night. This absorption can be monitored by for example (moisture) sensors.

NB: the 10% absorption relates to the maximum amount of moisture in the Fibrgro Coco Bag (see table on page 6), **NOT to the total weight.**

Minimum air %: 25%

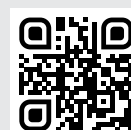
Maximum moisture %: 65%

Decrease based on max. moisture content: 10%

Decrease based on volume Fibrgro Open Top Bag: 6.5%

\*Decrease in moisture (%) based on the Fibrgro Open Top Bag's volume (%).

The weighed Fibrgro Coco Bags must have the same inclination as all the other Fibrgro Coco Bags.



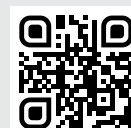
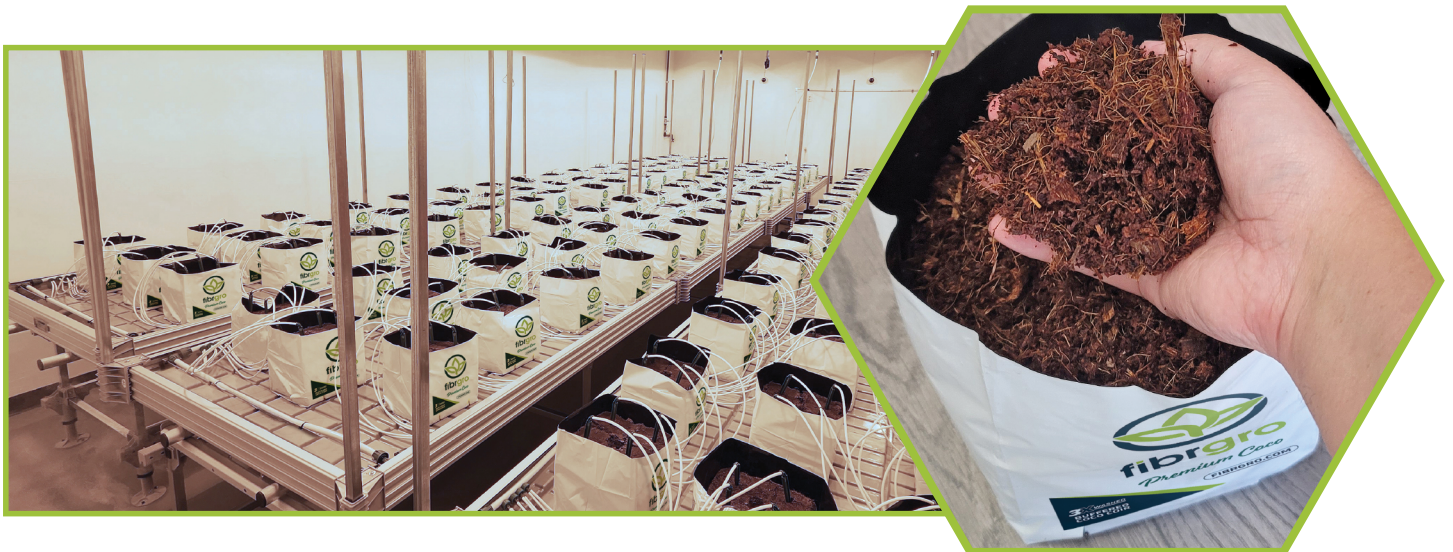
**07****Starting and Stopping Times (Cont.)**

**Example:** For a Fibrgro Open Top Bag, a 10% decrease in moisture corresponds to a 6% decrease in the Fibrgro Open Top Bag's volume. So a 10% decrease in moisture in a Fibrgro Open Top Bag of 2 Gallon 20/20/20 cm with a volume of 6 liters corresponds to a loss of weight of 360 grams (6% of 6 L).

If the weight loss during the night represents less than 10% of the moisture, watering should be stopped earlier in the afternoon. As a rule of thumb: about 200 J/cm<sup>2</sup> should be measured after the last water dose.

A moisture sensor can be used to gain better insight into the method of watering and how to adjust the irrigation strategy. Proper measuring provides a clear picture of what is happening in the substrate around the roots.

**Note:** This advice is entirely non-committal.



08

## Flowering Phase

**EC 2.5 mS/cm, pH 5.5**

Recommended start recipe for flowering.  
EC 2.5 mS/cm, pH 5.5

|  | Main Elements   |        |        |       |                 |        |                                |                 |
|-----------------------------------------------------------------------------------|-----------------|--------|--------|-------|-----------------|--------|--------------------------------|-----------------|
|                                                                                   | NH <sub>4</sub> | K      | Ca     | Mg    | NO <sub>3</sub> | CL     | H <sub>2</sub> PO <sub>4</sub> | SO <sub>4</sub> |
| mmol/l                                                                            | 1.4             | 5.4    | 7.1    | 2     | 13.7            | 3.5    | 1.1                            | 3.2             |
| PPM                                                                               | 25.25           | 211.13 | 284.55 | 48.61 | 849.47          | 124.09 | 107.89                         | 307.39          |

|  | Trace Elements |      |      |      |      |      |
|------------------------------------------------------------------------------------|----------------|------|------|------|------|------|
|                                                                                    | Fe             | Mn   | Zn   | B    | Cu   | Mo   |
| mmol/l                                                                             | 21             | 6    | 5.4  | 45   | 2    | 2    |
| PPM                                                                                | 1.17           | 0.33 | 0.35 | 0.49 | 0.13 | 0.19 |

| A Tank                    |          | B Tank                         |       |
|---------------------------|----------|--------------------------------|-------|
| Calcium Nitrate           | 115 kg   | Mono Potassium Phosphate (MKP) | 15 kg |
| Calcium Chloride          | 25 kg    | Magnesium Sulfate              | 50 kg |
|                           |          | Potassium Nitrate              | 20 kg |
|                           |          | Potassium Sulphate             | 20 kg |
| Trace Elements            |          | Trace Elements                 |       |
| IJzer Chelate 6% (liquid) | 3.750 ml | Manganese Sulphate 32%         | 350 g |
|                           |          | Borax 11%                      | 150 g |
|                           |          | Zinc Sulphate 24%              | 200 g |
|                           |          | Copper Sulphate 25%            | 24 g  |
|                           |          | Sodium Molybdate 40%           | 24 g  |

