

Quick user guide

Grodan vermiculite-free plugs guide

Plantop NG2.0 Plug Funnel M

This manual is to be used as guidance for sowing and germinating in the Plantop NG2.0 Plug Funnel M. The indicated steps remain a guideline; adjustments at a detailed level may be required to achieve an optimal result.





Plantop NG2.0 Conical Plug

Saturating the product

The initial saturation of Grodan Plugs is crucial to the success of the cultivation process. It forms the foundation for root development and growth of the plant. To guarantee successful use of your Grodan Plugs, it is essential that you follow the wetting instructions below.

Preparing the nutrient solution:

To saturate the stone wool plugs, prepare a balanced nutrient solution:

- with an EC level that is suitable for the plant that will be cultivated.
- with a pH level that is suitable for the plant that will be cultivated.
- with a nutrient solution temperature that is suitable for the plant that will be cultivated.

Notice:

Ensure that the pH of the nutrient solution is not lower than 5.2. A lower pH used during initial saturation and at any time in the cultivation process will dissolve the stone wool fibres resulting in a loss of structural integrity.

Saturating the plugs

The preferred method of saturating the plugs is to use a 'wetting line' as shown in the picture left. On the wetting line the plugs in their trays travel at a set speed beneath a series of beams each of which applies a precise volume of nutrient solution.

Notice:

The wetting line is the preferred saturation method to consistently achieve the correct WC in Grodan Plugs. The use of other saturation methods please contact your Grodan Account Manager or Customer Service for more information.

Ideally the wetting line should have an 'open belt conveyor'. This allows the applied nutrient solution to drain fully from the plugs as they pass from beam to beam. The open belt system prevents air from being trapped inside the plugs and ensures an even distribution of nutrient solution. In addition, it is advised, that the wetting line should contain five (5) spray beams. The distance between the beams should be 50 cm. The belt speed should be 13 cm/second with a water pressure of 2.5 bar (measured at the spray beam) and a nutrient solution temperature of 20°C. These variables are interdependent on to one another. As such, a change in one will require a change in all to achieve the desired outcome.

Place the plugs on the conveyor belt ensuring that the seed holes face upwards.

Notice

Check the beams regularly for (partial) blockages. It is your responsibility to ensure that a balanced nutrient solution was applied at the intended EC and pH level. However, as a simple check it is advised that you check EC and pH levels following initial saturation.

Sowing into a Grodan Plug:

Once a Grodan Plug is properly saturated, a seed can be planted into it.

Notice:

The instructions in this section only describe the planting activities that are unique to Grodan Plugs. After planting a seed into a plug, it will need special care to develop into a mature plant. This care is the responsibility of the propagator.

- Manual sowing: the plug can easily be sown manually.
- Automatic sowing: because the sowing-hole is slightly narrower than the conventional plug, the sowing machine may have to be adjusted more precisely to get a good sowing result. If necessary, ask your machine supplier to optimize the sowing process.
- Seed position: at the bottom of the seed hole for optimal germination results.
- DO NOT cover with vermiculite.

Spraying overhead with water after seeding either on the sowing line or in the germination room can help position the seeds in the bottom of the hole. This will be more necessary with un-pelleted seed than with pelleted seed. Avoid using too strong water-jet, as it can flush the seeds out of the plug.

Germination-phase:

- No need to cover with foil.
- Make sure there is enough moisture during the germination phase. With a higher room temperature and higher radiation, the water requirement of the plug will be greater than with a standard plug with vermiculite.
- After the germination phase, the Plantop NG2.0 Plug Funnel M can be treated the same as the standard plug. The difference will be that the automatic machines and water systems will remain clean.



Designed to grow

Grodan is the global leader in supplying [soilless rootzone management solutions](#) for Controlled Environment Agriculture. These solutions are applied to the cultivation of vegetables, medicinal crops and flowers such as tomatoes, cucumbers, sweet peppers, eggplants, roses and gerberas.

At Grodan, we aim to help feed and treat the world's growing population by innovating solutions from our stone wool growing media to enable 'more-with-less' growing. Through the method known as out-of-soil, our [stone wool substrates](#), [sensor systems](#), [software](#) and [expertise](#) support the reliable, informed growing of healthy, fresh, high quality produce. Our material is 100% recyclable, and supports growing methods that use up to 50% less water, 20% less chemical plant protection products and 75% less land. Sustainability plays a prominent role within Grodan, from manufacturing stone wool substrates to [recycling solutions and services](#).

Grodan has more than 50 years of cultivation experience. We pioneered the development of hydroponic growing methods in the 1960s, and today, our soilless rootzone management solutions are used in large-scale commercial greenhouses and indoor facilities in over 70 countries across the globe. The head office is located in Roermond, the Netherlands.

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