Grodan Plantop Plugs

Fast and healthy development of young plants

Brochure

Grodan®

Part of the ROCKWOOL Group

Grodan Plantop Plugs

Grodan's stone wool plugs show a high degree of uniformity, complemented by an ideal water and air balance. Their firmness, good shape retention and stability make Grodan plugs perfect for mechanical as well as manual processing, including sowing, transplant selection and transplanting into Grodan blocks.

Uniformity

A fundamental aspect of the germination process is uniformity. It determines whether an even batch of plants is produced. Each Grodan plug is identical in density and fibre structure. The distribution of water, nutrients and pH is consistent. The result is uniform germination, which results in more useable transplants as well as saving time during the selection process.

Precision-shaped plug

The automatic selecting and transplanting of plants requires plugs that are fixed and precise in shape. Each Grodan plug has the same volume and the same amount of available water. Loose fibres that are released during drilling of the seed hole are removed as part of the production process. This eliminates residue in the plugs, producing a seed hole free of loose fibres for trouble-free germination.

Root growth throughout the entire plug

The uniform Grodan plugs have a vertical fibre structure. The fibres provide equal resistance for root growth and, as a result, roots fill the entire volume of the plug.

Optimal firmness and flexibility

The fibre structure of Grodan plugs is strong and flexible. This protects the roots preventing damage during (automatic) selection and transplanting, while allowing for optimal root growth. The vertical layering of the fibres gives the plugs the resistance they need, which is a practical advantage when they are automatically transplanted into the block. As the plugs retain their shape they fit the block hole perfectly, which stimulates immediate root growth.

Ideal water and air balance

The correct balance between the small and large pores in the stone wool ensures an optimum ratio of air to water in the plugs. When saturated for the first time, the water flows easily downwards resulting in the plug becoming uniformly saturated.

Providing services for optimum germination results

The way the seeds are sown has a direct influence on their germination. Germination depends on a multitude of elements including the position of the seed in the seed hole of the plug, the irrigation strategy and the climatic conditions imposed.

Following germination root growth can be influenced by other factors such as: the type of tray used, how the plug is located within the tray itself, and the effects of the greenhouse climate.

Grodan understands that it is crucial to provide professional propagators with the right tools and technical support to further optimise the germination process. User advice therefore comes as standard with all deliveries of Grodan Plugs.

Benefits for cultivation

- Perfect uniformity
- Optimal firmness and flexibility
- Ideal water and air balance
- Consistent shape of the seed hole
- Root growth throughout the entire plug
- Foundation for Precision Growing

Consistent shape of the seed hole

The seeding process can be performed using a variety of systems. Grodan has developed the optimum seed holes, available in various types of trays, to match each system.

Conical Plug

The standard version of the plug is the conical seed hole (see Seed hole diagrams), where the seed rolls to the bottom. A ring of stone wool surrounds the hole so the seed cannot roll over the edge and out of the plug. The holes are uniform in depth to ensure there is always sufficient and equal seed depth. In addition, there is enough space for the roots to develop.

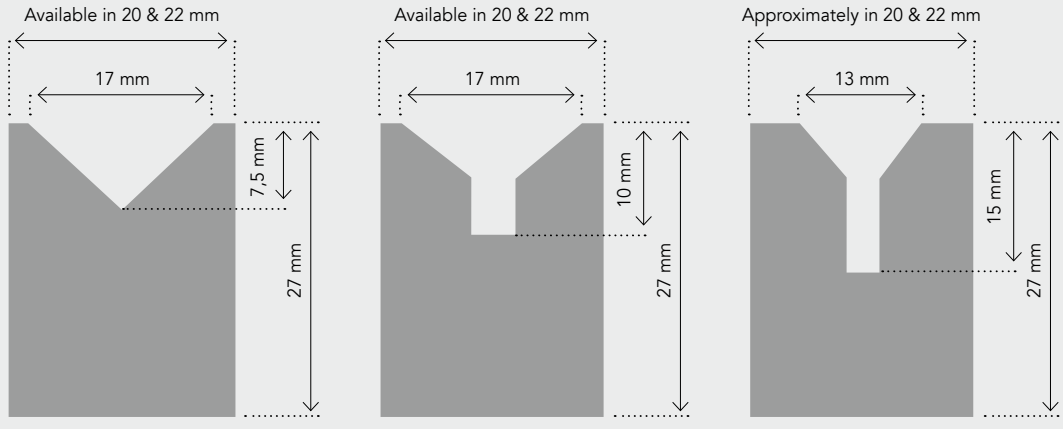
Deep Seed Hole Plug

The groove in the centre of the hole allows seeds to nestle deeper and more firmly into the plug. This plug is ideal for root stocks.

Funnel Plug

The funnel plug has a small, deep seed hole. The conditions for the seed are therefore optimal for germination without vermiculite.

Seed hole diagrams



Vermiculite-free Funnel Plug

The Grodan Plantop NG2.0 vermiculite-free Funnel Plug no longer requires the addition of vermiculite after sowing. This eliminates the dependency of propagators on an increasingly scarce resource. In addition, the vermiculite-free Funnel Plug brings several major advantages to the propagation process:

- Keeps the work environment clean
- Decreases pollution of the greenhouse water system
- Saves on labour for cleaning and maintaining machinery
- Ensures a more efficient production process

Grodan stone wool growing media

Grodan stone wool as a growing media offers many advantages. Thanks to the controlled manufacturing process Grodan stone wool is of a consistently high quality. The production process which takes place under an extreme temperature ensures that the product is clean and sterile. Its unique hydrophilic fibres give the growing media unique properties when it comes to managing both water content and electrical conductivity. The propagator and grower can administer the amount of water and nutrients the crops need in a very directed and controlled manner for optimal growing results. Waste becomes a thing of the past.

Efficient use of water and nutrients keeps yield per square metre high, and energy consumption per unit of product low. The product is lightweight, making it easy to use. Also stone wool can be easily recycled, hence it is a sustainable and environmentally friendly product.

Plantop NG2.0 portfolio

The Grodan Plantop portfolio, consisting of Plugs and Blocks, is equipped with Grodan's NG2.0 technology, providing optimal water and nutrient distribution. This guarantees maximum utilisation of the entire growing media volume and promotes fast, healthy development of young plants. The result: the plants develop faster, better and healthier. This translates into higher yields, improved quality, more growing power throughout the year, and reduces the sensitivity of the crop to diseases. This makes the Plantop NG2.0 portfolio the perfect foundation for top propagation and growing performance.

To learn more, scan the QR code or contact your local Grodan account manager.

Plantop NG2.0 for propagators

- Optimal steerability of water content (WC) and electrical conductivity (EC)
- Fast and effective distribution of water and nutrients
- More uniform batches of plants for delivery to growers
- Optimal root development through the entire plug and block
- Quicker and secured initial saturation due to lack of dry spots in plug and block
- Better developed root system results in more healthy and vigorous plants.

Plantop NG2.0 for growers

- Outstanding uniformity within block and between blocks, enabling more accurate steering of WC and EC.
- Better distribution of fine, branched roots inside the block ensures more balanced uptake of water and nutrients
- Quick EC refreshment for optimal control of EC level during changing weather conditions
- More optimal, finely branched root system stimulates ongoing vigour of the crop
- Optimal block-slab interaction
- Quick rooting in and rooting through when block is being positioned on slab.

Growing a better future

Grodan is the global leader in supplying innovative, sustainable stone wool growing media solutions for the professional horticulture industry, based on Precision Growing principles. These solutions are applied to the cultivation of vegetables and flowers, such as tomatoes, cucumbers, sweet peppers, egg plants, roses and gerberas. Research shows that high-tech greenhouses have the biggest positive impact on the UN Sustainable Development Goals compared to all other growing systems and score highest for water and nutrient efficiency. Using stone wool Precision Growing media in a greenhouse can produce higher yields with significantly less resources than other cultivation methods.

The key is precision. The essence of Precision Growing is the use of less soil, less water, less fertiliser, lower CO_2 emissions, and higher yield. Combined with stone wool growing media, Grodan offers a MultiSensor system, a software platform, and personal advice to help maximise crop potential with data-driven cultivation.

Grodan's innovative growing media solutions facilitate the sustainable production of healthy, safe, and fresh food produce. Furthermore, it creates the possibility to use biocontrol and reduce, or even eliminate, the use and risk of chemical plant protection products.

Sustainability plays a prominent role within Grodan, from the manufacture of stone wool growing media to end-of-life solutions. Grodan was founded in 1969 and is active in more than seventy countries worldwide. The head office is located in Roermond, the Netherlands.

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The substrates from Grodan are the only stone wool growing media awarded an EU Ecolabel.

EU Ecolabel
www.ecolabel.eu
EU Ecolabel: NL/048/001

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