

ABSORBER

Absorber is a water retainer that, when incorporated into soil or a substrate, absorbs and retains large quantities of water and nutrients. Unlike most products that become hydrated, Absorber has the property of easily releasing the absorbed water and nutrients, thereby allowing the plant to have water and nutrients available at will as a function of the absorption – release cycles.

COMPOSITION

Absorber is a range of super absorbent anionic polyacrylamide polymers. They are cross linked copolymers of acrylamide and potassium acrylate that are water insoluble. Absorber products have the property of absorbing up to 500 times their weight in distilled water and they become gels.

HOW IT WORKS

The polymer consists of a set of polymeric chains that are parallel to each other and regularly linked to each other by cross-linking agents, thus forming a network. When water comes into contact with one of these chains, it is drawn into the molecule by osmosis. Water rapidly migrates into the interior of the polymer network where it is stored. As the soil dries out, the polymer releases up to 95% of the absorbed water into the soil.

PERFORMANCES & ADVANTAGES

Absorber is offered in different particle sizes of which the absorption and release capacities vary depending on the conditions in the soil environment.

An outstanding absorption capacity: In general, the finer the particle size of the polymer, the greater its absorption capacity and speed.

A buffering effect on the availability of fertilisers: Absorber significantly reduces the leaching of fertilisers because they are stored in the network. The fertilisers are available to plants for a longer time due to a delay effect on their release.

The influence of salts: The presence of electrolytes in the aqueous medium significantly diminishes the absorption capacity of Absorber. This explains the fact that the water holding capacity of Absorber in a substrate varies around 100-150 times its weight.

The wilting point is delayed: Absorber makes it possible to increase the Water Holding Capacity of soils and to delay the wilting point. A sandy soil treated with 2 grams of Absorber per kg of soil holds water twice as long as untreated soil.

HOW TO USE ABSORBER

FORESTRY / TREE CROPS

Absorber is beneficial in tree planting. It helps to increase the survival rate and healthy growth of trees through continuous availability of water and nutrient in the root zone.

Absorber can be applied from 2g to 40g per tree depending upon the method used The greater the amount of Absorber applied the higher the water holding capacity

Option 1 Planting Hole:

1. Dig a hole about the size of a 20 litre mutungi /jerican of water.
The rate of application depends on the sand content of the soil. The higher the sand content, the higher the rate of **Absorber**.
Absorber needs to be **evenly** mixed with the backfill.
Some untreated backfill must be set aside as the top 5 cm of backfill should not be mixed with **Absorber** to avoid UV deterioration.
2. Put the seedling in an up-right position and replace the backfill progressively into the hole. Make sure the backfill is evenly distributed all around the root zone. Finally cover the top surface with 5 cm of the untreated backfill
3. If planting is done during a dry spell or under irrigation, the planting hole should be watered liberally for 2 weeks to allow full water absorption of **Absorber**. Then watering could be reduced by half (50%).
4. If planting is done under rain fed conditions, **Absorber** will retain large quantities of water and then will release it progressively. Nevertheless, it is recommended to water the planting hole liberally for one week to allow an immediate action of the polymer
5. **Be especially careful not to put unmixed dry product at the bottom of the hole as after hydration, the product would destabilize the plant.**

Recommendations: Absorber KM 40g per 20 Litre planting hole

Option 2 Rolling Plugs:

1. Spread Absorber on a plastic sheet
2. Roll the plugs onto the Absorber and place in the planting hole in an upright position.
The plugs must be moist to enable the Absorber to stick
3. Cover the hole and top surface with the backfill
4. Water the plant as per step 3 & 4 in Method 1

Recommendations: Absorber KM Grades

Option 3 Applying Hydrated product:

Hydrated gel has an advantage over dry product as it becomes immediately active after planting thus availing the plant with instant moisture if needed. This would be of great importance especially when planting during a dry spell.

1. Mix 1 kg of Absorber in 100 litres of water. Amounts of water vary depending on the salinity of the water. In case of high pH, buffering is required.
2. Slowly pour in the product while stirring the water to obtain a dressing without clumping of particles.
3. Let the mixture stand for 20 minutes, the time needed for Absorber to reach its maximum absorption.

Recommendations: Absorber KM Grade 2 Litres hydrated gel per tree equal to 20g of dry product per tree

SOIL MIXES

Mixed into a substrate, Absorber provides a reduction in water stress. It ensures that cuttings and transplants have better rooting and seedlings grow faster. Irrigation frequencies are spread out. It is an ideal solution in substrates for containers, hanging plants and houseplants.

Watering frequencies are commonly reduced by 30% to 50%, which likewise reduces labour costs, and the amount of water used.

- * Evenly mix Absorber into the substrate. The amount must be adapted to each type of substrate based on water requirements and characteristics of the plants and cultivation and weather conditions. As a general rule, the more permeable the substrate, the greater the need for Absorber
- * In permeable substrates made of bark, wood fiber or coconut-residue, the recommended amount is 2-3 kg/m³
- * In less permeable substrates, such as peat or composts, the recommended amount ranges from 1 to 2 kg/m³

Recommendations: Absorber KM - 1-3 kg/m³

Please Note: The efficacy of Absorber in the field is subject to proper use and initial availability of moisture so as to activate the product and subsequent availability of water. The period of effectiveness depends on particle size and agro-climatic conditions.

INFORMATION ON PRODUCT USE

APPLICATION OF THE DRY OR HYDRATED PRODUCT:

- * After hydration of the dry product, it becomes a transparent gel that is greatly expanded.
- * When the product is mixed dry into a substrate, it is recommended that an empty space of a minimum of 15% be left in containers. During hydration, the substrate could overflow its container.
- * Dry products must not be placed under plugs. The plant could be destabilised after Absorber hydration.
- * It is preferable to mix the dry product in an irrigated soil or substrate.
- * On the other hand, hydrating the product in a non-irrigated soil is recommended so that it becomes active immediately.

CHOICE OF PARTICLE SIZE:

This is an important factor to consider based on the soil type.

- * In general, the finer the particle size of the polymer, the greater its capacity and speed of absorption and vice-versa.
- * When applying Absorber to very porous soils (e.g. sand, compost) use a smaller particle size for more rapid absorption.
- * In heavy soils (for example, clay), granules are preferable. They improve the porosity of the soil due to their great expansion capacity.

ADDITIONAL INFORMATION

- * The higher the water temperature, the faster the absorption of water by Absorber.
- * All products in the Absorber line have a high absorption capacity. If the product is spilled, be sure not to rinse it with water. The ground would become extremely slippery. Shovel or vacuum it up.
- * To clean equipment, blow off the powder traces with compressed air.
- * Avoid contact with eyes and skin (use of gloves and goggles is recommended).

ENVIRONMENT

Biodegradation

The polymer is sensitive to the action of ultraviolet rays that, by breaking bonds, degrade the polymer into oligomers (molecules of much smaller size). It thus becomes much more sensitive to the aerobic and anaerobic processes of microbiological degradation. Absorber therefore degrades naturally in soils (up to 10% - 15% per year) in CO₂, H₂O and nitrogen compounds.

Bioaccumulation

The polymer is much too voluminous to be absorbed into the tissues and cells of plants. Its potential to bioaccumulate is therefore nil.

The period of effectiveness of Absorber in the field ranges from one to five years depending on particle size and agro-climatic conditions.

Toxicity:

Absorber products demonstrate no systemic toxicity (oral LD50/rats > 5000 mg/kg).

Available in pack sizes of 100 Grams, 1 Kilo and 25 Kilos bag

READ THE LABEL CAREFULLY BEFORE USING