

Polyter®

Polyter is a new practice for the sparing management of our hydrous heritage and takes part in integrated projects of sustainable development and environmental preservation, including a social economic and creative aspect to the project.

HydroRetaining Fertilizer



*The Partner of the Professionals
of the Vegetable World*

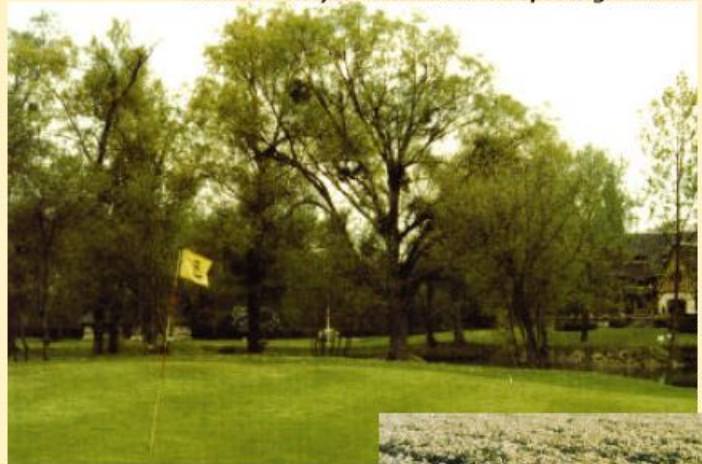
A technology which brings concrete and powerful solutions

Polyter is a hydro retaining polymer enriched with balanced fertilizers (N.P.K) and trace elements

Concept

Polyter is a hydro retaining Fertilizer with a very high capacity to optimize the needs and development of plants. *Polyter's* semi-permeable polymeric membrane allows a very quick absorption of liquids which are released very slowly and in small quantities according to local parameters (evaporation and type of vegetable). A procedure of encapsulation specific to the technology makes it possible to join together balanced fertilizing products (N.P.K) and trace elements (Bo. Cu .Fe. Mn. Mo. Zn) within the polymeric chambers.

- France - *Polyter* treatment on sports grounds



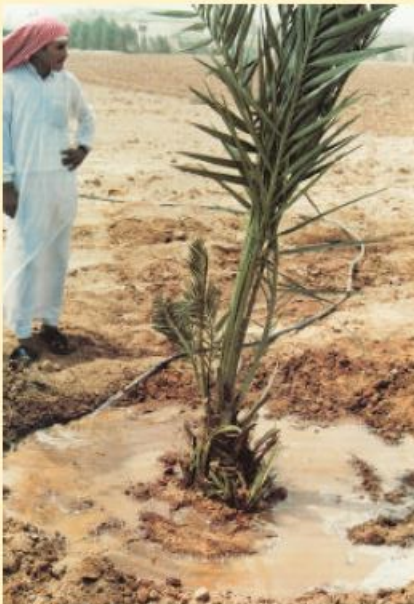
Photos : PODGE®

- Morocco -
High yield
irrigated
potato
culture



Fields of application

Photos : PODGE®



- Middle East -
Date palm plantation

Polyter's efficiency is recognized worldwide today in many fields of vegetable production:

- Agriculture,
- Arboriculture,
- Horticulture,
- Landscaping,
- Tree nurseries,
- Reforestation,
- Vegetalization...

- Morocco - Strawberry culture



Photos : PODGE®

Solutions at the leading edge of technology and creativity to make your projects alive

Mode of action

Polyter is blended with the soil. Each particle of *Polyter* (Grp powder or Gr granule) has a semi permeable wall, which enables it to absorb the water from 160 to 500 times its initial dry weight, as well as the elements supplied by fertilization and phytosanitary products. *Polyter* stores water and nutritious and treating substances to save at least 50% of water and 30% of fertilizing and treating products and to strongly optimize the effects of these reduced supplies on the plant.

The restitution of these essential elements fixed in the particles of *Polyter* is done mainly towards the plant. The release in the support of culture is infinitesimal, depending on the conditions of the medium (Nature of the soil, temperature, evapo-perspiration).



Plantoide© Hippopotamus - Supplier of the Euro-Disney Flower Festival - Disneyland Paris

Photos : PODG®

Photos : PODG®



- United Arab Emirates - Date palm

Effects

Polyter plays the role of a temporizer and a stabilizer for the plant's needs while enhancing the beneficial effects of water, fertilizers and phytosanitary products which, moreover, are brought to the plant in smaller quantities. These positive effects are measurable

On the plants

The plant is protected from hydrous stress and/or deficiencies in nutrients. It protects itself against diseases and bacterial attacks. The association of *Polyter* with the plant favors a fast and harmonious growth of the vegetable fabric (resumption and development), shortens the culture cycle of the species, increases the plant's resistance to diseases and its yield.



- Egypt- Mini cucumbers under greenhouse

Photos : PODG®

On the soil

Polyter can be associated with any support of culture (in or out of ground). *Polyter* will loosen and improve the porosity of soils and compost; it will ventilate the culture environment through better air circulation and the enhanced capacity of the product to release oxygen.

It will also play the role of a thermal regulator for the roots of the plant by favoring a ground temperature by several degrees lower than that of ambient air; it will reduce the harmful effects of soil salinity and water irrigation, of the losses through evaporation and percolation and those of scrubbing on the structure of the ground.



Out of ground flower cultures

- Choisy-Le-Roi Town hall -

Photos : PODG®

Technology and products



Photos: POLTER

- Normandy -
After three months of Polyter application

The restitution mechanisms to the plant

The roots of the plants, naturally attracted by the sources of water in the ground will perforate the inflated particles of *Polyter*. The crystals transpierced by the roots of the plant will then graft a corresponding number of synthesis nodules associated for several years (3 to 5 years) with the root system of the plant, whose development will have been strongly stimulated by *Polyter* (3 to 5 times the usual volumes).



Photos: POLTER



- Cameroon- Banana tree root

These nodules of *Polyter* become an integral part of the root system. Water, nutrients and/or phytosanitary substances caught into the *Polyter* nodules << grafted >> on the root will be used by the plant through radicular push.

By this system of valve of regulation, the plant can extract 95% of the water contained in these solid crystals according to the level and rate of its needs in time. In-depth displacement in the ground

of the roots carrying the hydrous and food tanks consisting in the *Polyter* nodules will occur according to the usual characteristics of development of the plant.

Range of products and their technical characteristics

	Gr	Grp	 
Polyter Granulometry	Granulates 3/5mm	Powder	
P.H	6,5 / 7	6,5 / 7	
Saturation times (according to water pH)	around 3 hours	around 5 min	
Retention rate (according to water pH)	160 to 500g	160 to 500g	
Fertilizers	N.P.K Total 3% releasable minimum		
Trace elements	Bo Cu Fe Mn Mo Zn		
Temperature	Resists to extreme temperatures in the ground		
Use period	All year round, in relation to the climate and the vegetable cycle		
Conditioning	25 kg and 10 kg bags		

Specificities and modes of usage of the various products

Polyter Gr

Polyter Gr is recommended for growing in greenhouses, nurseries, open ground, industrial and/or market-gardening, public gardens, sports grounds, parks, golf courses, seedbed and plating grass, open ground flower beds; it is also recommended to plant trees and shrubs, to bed out young seedling, for the reforestation of arid regions (dune), forest repopulation and for substrates of any kind intended for sowing, plants in pot or container, out-of-ground culture, green growing of sloping zones (slope, slope of hill, spoil heaps).



Photos: FODDe

- Egypt - Plantation of olive-trees

Polyter Gr is conditioned as granulates which, once hydrated, will bring 3 essential elements for the development of the plants: water, fertilizers and the ventilation of the soil in relation to the swelling mechanics of the product. *Polyter* is effective for the plants after association with their roots. The " graft " needs 2/3 weeks to take under usual conditions. During this period, the water contributions must be normal according to the possibilities of the place, the reduction of the quantities of water offered to the plant will intervene later.

The effectiveness of *Polyter Gr* is proved with any support of culture. For some applications, the product can be hydrated beforehand, which allows a more directly effective association with the roots of the plant, a better installation and distribution into the substrate and the absence of competition between the plant and the product as regards the water available. In creation or on existing plants, *Polyter Gr* is used for dry for the substrates intended for sowing, bedding out and repotting (2g per liter of soil), in local supply into the hole of plantation or the furrow of culture, in mixture in the surface layer of the soil and by coring of the soil in the zone of root activity.

Polyter Grp

Polyter Grp is recommended for sowing, bedding out young seedlings, repotting plants and seedlings resulting from in vitro culture, dressing plants with naked roots to protect them from drying during transport and storage and to limit the stress of replanting. The fine granulometry of *Polyter Grp* allows a good distribution into the supports of culture. It stimulates germination and a significant multiplication of the rootlets of seeds or young plants at the initial stages in their development, thus enhancing the conditions of a good future growth.



Photos: FODDe

- Morocco -

Plantation of tomato seedlings

Polyter Grp is used

- for dry for the substrates intended for sowing, bedding out and repotting (2g per liter of soil),
- to powder plants with naked roots,
- to dress plants with naked roots after hydration and transformation of the product into gel.

Polyter Gr* associated with *Polyter Grp is recommended

- for nursery cultures and hydrophilic cultures.

Principal applications and modes of use

Polyter is a Hydro-retaining / Fertilizing product whose effectiveness is recognized in many fields of vegetable production : Agriculture, Arboriculture, Horticulture, Landscaping, Tree Nurseries, Reforestation, Green growing...

The doses of *Polyter* indicated below for a few applications can be adjusted, without any damage for the plant, to take into account the local climate, the nature, size and age of the plant, the nature of the soil or support of culture, the water retention rate of *Polyter* (this variable value depending on the water pH will be established in the zone of culture), the hydrous stock necessary to the plant compared to its needs, the frequency and mode of irrigation and the pursued production targets.

USE	DOSE	APPLICATION
Sowing	2g <i>Polyter Gr</i> per liter of substrate	- Fruit, vegetable and floral seedlings in nursery - Seedlings intended to pots, containers, boxes...
Bedding out	Forest plants: 5g to 10g	- <i>Polyter Gr</i> applied in every plantation hole
	Fruit plants: 20g to 100g	
	Ornamental ligneous plants: 20g to 50g	
	Market garden and flower seedlings: 2g to 5g	
Vegetal transplantation	20g to 100g of <i>Polyter Gr</i> per plant	- Applied in every plantation hole
	20g to 100g of <i>Polyter Gr</i> per plant	- Coring of the clod of earth
Transplantation of trees with a tall stem	2g of <i>Polyter Gr</i> per liter	- Soil volume used for root development
Grass seedling	20g <i>Polyter Gr</i> per square meter	- Mixed with the upper 5cm of soil
Plating grass	20g <i>Polyter Gr</i> per square meter	- Applied on the surface
Hydro seeding	1kg of <i>Polyter Grp</i> per 25kg of seeds	- Mixed with seeds
Root dressing	<i>Polyter Grp</i>	- Powdered on moistened roots



- Burkina Faso - 1998 before Reforestation



- Burkina Faso - 2002 after Reforestation

Lot of studies worldwide have confirmed that *Polyter* saves 50-80% of irrigation supplies and 30-50% of fertilizer inputs.