ANT Systems™
AGRICULTURAL NANO-TECHNOLOGY

nanotern™

SMART SUBSOIL WATER RESERVOIR

Nanotern™ is a patented
product of ANT Systems™

70%

of **global fresh water** is consumed by the agriculture sector

9.25

billion liters of water is lost annually due to inefficient practices

50%

of the global population experiences severe **water scarcity**

Global water scarcity & climate change

are the two main challenges in agriculture today.

Rising drought and water scarcity demand urgent sustainable water solutions.

Customers face higher food prices, **farmers** battle lower yields and increased costs, and **companies** experience supply chain disruptions and soaring expenses.

Grows better with nanotern

Landscaping

FLOWER
Jasminum sambac

FLOWER
Tagetes

FLOWER
Petunias

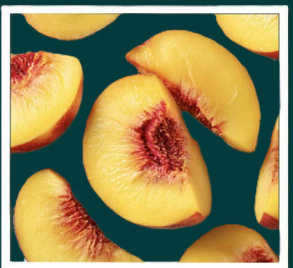
FLOWER
Bougainvillea

Agriculture

Tomato

Strawberry

Lettuce



Peach

We are here to **revolutionize** the **industry**

by enabling farmers to grow crops without relying on inconsistent weather patterns and expensive irrigation.

Our advanced nanotechnology uses hydrophilic, **cross-linked 3D polymer network** that absorbs, stores, and slowly releases water in the soil.

Dry granules expand into a gel when exposed to rain or irrigation, keeping plants hydrated longer and more efficiently, even in water-scarce environments.

01 NANOTERN™ (UP CLOSE)

Nanotern is applied to the ground or area in a granule form

02 ABSORBS

Nanotern absorbs water and additives/fertilizer

03 STORES

Nanotern stores water within polymer network

04 RELEASES & ABSORBS AGAIN

Nanotern releases then absorbs water & additives/ fertilizer again

Product Overview

What is **nanotern?**

Nanotern™ is a biodegradable super absorbent polymer designed to act as an underground water reservoir for plants. By absorbing irrigation or rainwater and releasing it gradually, Nanotern reduces water stress and boosts plant resilience in drought-prone or soilless conditions.

Nanotern improves soil health, protects the root zone from extreme temperatures, and enhances yields, making agriculture more efficient, sustainable, and climate-resilient.

A proud product of ANT Systems™ Nanotern is engineered to solve one of farming's biggest challenges:
doing more with less water.

What is?
nanotern

01

INNOVATION

Nanotern is a biodegradable superabsorbent polymer

02

REVOLUTION

Nanotern absorbs excess water and nutrients, releasing them during droughts

03

ADAPTATION

Nanotern is compatible with all soil types, climates, and even soilless conditions

nanotern contributes to

Global Reforestation

As part of ANT Systems™ sustainable living plan, **Nanotern™ contributes to global reforestation**. Our aim is to support Africa's Great Green Wall to the UAE's mangrove restoration, and to individuals' own gardens and communities.

This biodegradable super absorbent polymer boosts soil hydration and nutrient retention, **helping young trees survive** drought, develop deeper roots, and thrive in degraded landscapes or soilless environments.

nanotern contributes to

United Nations

6/17 of UN Sustainable Development Goals

50%

up to water savings

1800x

maximum swelling capacity

25%

up to crop yield increase

7x

longer water retention compared to other products

BIODEGRADABLE

environmentally safe and biodegradable

3.5x

more strength underground compared to other products

Unique Features

01 BIODEGRADABLE

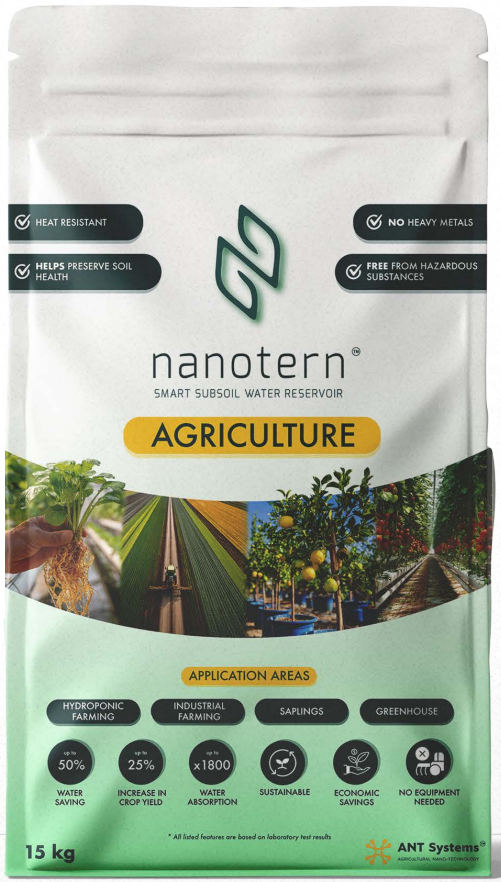
Only biodegradable superabsorbent polymer on the market

02 CUSTOMIZABLE

Customizable to specific soil conditions and climates

03 SUSTAINABLE

Supports eco-friendly farming practices



nanotern and soil types

Universal Adaptability

Nanotern™ is engineered for universal adaptability, making it effective across all major soil types; including sandy, loamy, clay, silty, peaty, and chalky soils.

Its performance remains consistent in a wide range of climates, from arid and semi-arid zones to temperate and tropical regions. The **United Arab Emirates** serves as a **perfect example** of Nanotern's capabilities: despite its extreme temperatures, limited rainfall, and predominantly sandy, nutrient-poor soils, Nanotern supports healthy plant growth by retaining moisture longer, reducing irrigation needs, and creating a more stable root environment. This versatility makes it an ideal solution for challenging agricultural and reforestation efforts around the world.

Product Range: Agriculture

NANOTERN™

Nanotern is a **polyacrylate-based** nanocomposite superabsorbent polymer enriched with **calcium and zinc fertilizers**, incorporating **halloysite nanotubes** (HNT) for enhanced strength and water absorption.

It absorbs up to **1800 times** its weight in water, releases and reabsorbs water in 40 days. Stays on soil for **5 years**, suitable for all soil types.

NANOTERN™ **Nutri**

Nanotern Nutri is a **cellulose-based** biodegradable superabsorbent polymer enriched with essential micro-nutrients like **boron, iron, and zinc,** providing superior water absorption and retention.

It absorbs **600–1800 times** its weight in water, and releases nutrients to plants for up to **40 days**, making it ideal for all soil types. Nanotern Nutri **fully biodegrades** within one year.

NANOTERN™ **Bio+**

Nanotern Bio+ is a **cellulose-based** biodegradable superabsorbent polymer in granular powder form, providing superior water absorption and retention.

It absorbs **600–1800 times** its weight in water and releases in **40 days.** Fully biodegrades on soil without any harmful effects within **1 year,** making it suitable for all soil types and agricultural applications.

NANOTERN™ **Custom**

Nanotern Custom is a tailored superabsorbent polymer designed to meet the specific needs of your soil.

This **custom-engineered product** ensures optimal water retention and nutrient delivery for enhanced agricultural performance.

Product Range: Agriculture

5KG

Designed for smallholder farmers, nurseries, and landscape contractors managing limited plots of land or ornamental plantings

15KG

A practical choice for mid-sized operations, such as orchards, vineyards, or diversified vegetable farms

25KG

Optimized for large-scale field applications, including cereal crops, legumes, and industrial farming

Application Areas for Agriculture

APPLICATION MANUAL

01

LARGE SCALE FARMING

02

GREENHOUSES

03

HYDROPONIC SYSTEMS

04

TREE NURSERIES

05

VERTICAL FARMING

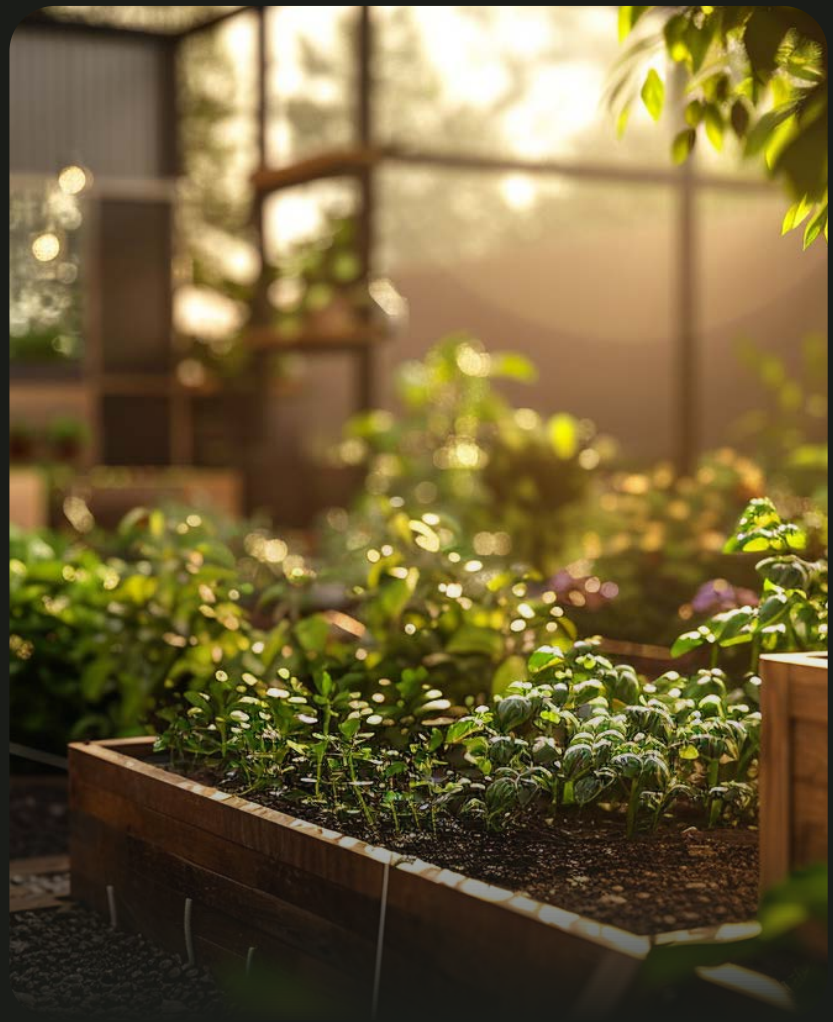
06

MARGINAL LANDS

Product Range: Landscaping

NANOTERN™

Nanotern Landscaping is a polyacrylate-based nanocomposite superabsorbent polymer **designed to enhance water retention** and promote healthy vegetation in landscaping projects.



Product Range: Landscaping

5KG

~50 m² lawn or 20 pots

Home gardens, balconies, landscaping projects

15KG

~150 m² lawn or shrub beds

Medium commercial/ residential landscaping

25KG

~250 m² lawn or full park beds

Parks, municipal plantings, large estates

Application Areas for Landscaping

APPLICATION MANUAL

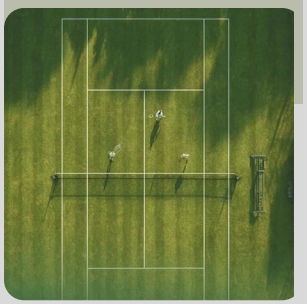
01

PARKS & URBAN STREET SCAPE

02

GOLF COURSES & TURF MANAGEMENT

03

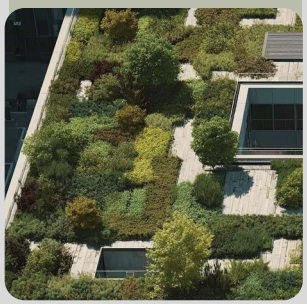


SPORT COURSES & RECREATION

04

HOMESTEAD GARDENS

05



GREEN ROOF SYSTEMS

06

VERTICAL GARDENS

Product Summary

	Granule Size	Stays in Soil	Swelling	Biodegradable	Large Scale Farming	Greenhouse	Hydroponic Farming	Saplings	Landscaping	Drone
Nanotern™	Ø 15mm	5 year	x 1800	♻	✓	✓	✓	✓	✗	✓
Nanotern™ Bio+	Ø 30mm	1 year	x 1800	♻	✓	✓	✓	✓	✗	✓
Nanotern™ Nutri	Ø 15mm	1 year	x 1800	♻	✓	✓	✓	✓	✗	✓
Nanotern™ Custom	Ø 8–30mm	1–5 years	x 1800	♻	✓	✓	✓	✓	✗	✓
Nanotern™ Landscaping	Ø 8mm	5 years	x 1800	♻	✗	✓	✓	✓	✓	✗

Product Prices

	Barcode	Granule Size	Price Per Kilogram ($USD)
Nanotern™	3 684939 982006	Ø 15mm	**$25 USD** (per kg)
Nanotern™ Bio+	8 684939 982020	Ø 30mm	**$30 USD** (per kg)
Nanotern™ Nutri	3 684939 982037	Ø 15mm	**Upon Request**
Nanotern™ Custom	3 684939 982044	Ø 8–30mm	**Upon Request**
Nanotern™ Landscaping	3 684939 982013	Ø 8mm	**$20 USD** (per kg)

Ø8mm

Ø15mm

Ø30mm

Visual representation
of the granule size:

The Advantage Points

01 **WATER SAVINGS**

Efficient water usage, **reducing overall consumption**

02 **YIELD INCREASE**

Enhanced crop productivity and **higher yields**

03 **SALINITY RESISTANCE**

Tolerance to soil salinity, **maintaining crop health**

04 **ACTIVE AGENT RELEASE**

Controlled release of beneficial agents for **sustained effectiveness**

05 **INCREASED SODIUM UPTAKE**

Ability to **manage sodium levels effectively**

06 **NANO COMPOSITE STRUCTURE**

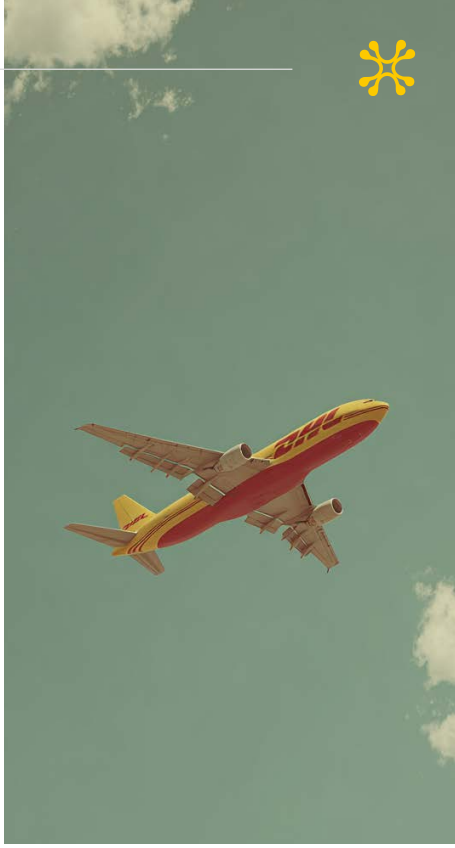
Advanced technology for **optimal performance**

Global Shipment

International Connections

ANT Systems™ delivers its technologies globally, with active shipments to countries including Peru, Brazil, Türkiye, Iraq, the United Arab Emirates, Egypt, and more.

Our logistics network is built to support diverse agricultural and environmental needs, from desert restoration to large-scale farming, ensuring timely and secure delivery. With production and fulfillment centers strategically located, we efficiently serve partners across **Latin America, the Middle East, Europe, and beyond.** Each shipment is handled with care and complies with international standards to ensure quality, reliability, and impact at every destination.



Client Testimonials

“ **Since using Nanotern**-treated produce, I’ve noticed a **significant difference in taste** and freshness. It’s reassuring to know that my fruits and vegetables are grown sustainably.”

CONSUMER | TÜRKIYE Zeynep M.

“ **Nanotern** has transformed how we **manage water on our farm.** We’ve seen higher crop yields and reduced irrigation costs, making our operations more efficient and environmentally friendly.”

FARMER | PERU Milagros D.

“ As a company committed to sustainability, **integrating Nanotern into our operations** has been a game-changer. It aligns perfectly with our goal of reducing environmental impact while maintaining high-quality crop production.”

COMPANY | UAE Zainab S.

Frequently Asked Questions (FAQs)

“ What is Nanotern and how does it work?”

A: **Nanotern™** is a smart subsoil water reservoir designed to enhance water retention and availability in the root zone. It uses advanced nanotechnology to store water and gradually release it to plants as needed.

“ What makes Nanotern different from traditional soil additives or hydrogels?”

A: Unlike conventional additives, **Nanotern** integrates with the soil structure and operates passively over extended periods.

“ In what types of environments or climates is Nanotern most effective?”

A: **Nanotern** is ideal for arid, semi-arid, and drought-prone regions but is also beneficial in standard agricultural settings where water efficiency and soil improvement are priorities.

“ Is Nanotern safe for crops, soil, and the surrounding ecosystem?”

A: Yes. **Nanotern™** is engineered to be environmentally friendly, biodegradable, and non-toxic. It supports healthy root development and promotes microbial balance in the soil.

“ How long does Nanotern remain effective after application?”

A: Depending on soil conditions and climate, **Nanotern** can remain active in the soil for several seasons, providing long-term benefits without the need for frequent reapplication.

“ Can Nanotern be used alongside fertilizers and other soil treatments?”

A: Absolutely. **Nanotern** is compatible with most standard agricultural inputs and can even improve the efficiency of fertilizer uptake by keeping nutrients accessible in the root zone.

“ Is Nanotern biodegradable?”

A: Yes, **Nanotern**™ is fully biodegradable. It is designed to break down naturally over time without leaving harmful residues in the soil, ensuring long-term environmental safety and sustainability.

“ Is Nanotern non-toxic?”

A: Absolutely. **Nanotern** is non-toxic and safe for plants, soil, microorganisms, and humans. It contains no harmful chemicals, making it suitable for both conventional and organic agriculture.

“ How many times do we have to renew Nanotern?”

A: **Nanotern** typically remains active in the soil for up to two growing seasons, depending on climate and soil conditions. Reapplication may be done every 18–24 months for optimal results.

“ Do we need specific equipment to apply Nanotern?”

A: No special equipment is required. **Nanotern**™ can be applied manually or mechanically, either mixed into the soil or placed directly around plant root zones. It integrates easily into existing farming or landscaping workflows.

“ How does Nanotern work in soil-less conditions?”

A: In soil-less systems like hydroponics or urban landscaping setups, **Nanotern** helps retain moisture and nutrients around the root zone. Its absorbent and slow-release properties provide added stability and efficiency even without traditional soil.

“ Can Nanotern be used in all soil types and climates?”

A: Yes, **Nanotern** is formulated to be effective across all soil types—sandy, loamy, clay—and in a wide range of climates, from arid to temperate. Its adaptability makes it a valuable tool for water retention and plant health worldwide.

www.nanotern.com

nanotern

SMART SUBSOIL WATER RESERVOIR

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ANT Systems™
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Nanotern™ is a patented product of ANT Systems™