



Miconovo NOVOGROW

Product Brochure

*An organic additive for plant health in horticulture – Comprehensive
Protection & Enhanced Vitality*

Version 0.4

What is NOVOGROW

The Science Behind Healthy Soil

At the heart of every productive crop, pasture, and landscape lies the **rhizosphere**—the thin but biologically rich layer of soil surrounding plant roots. This zone is a **microbial hotspot**, where soil bacteria, fungi, and plant roots interact in ways that directly impact plant health, nutrient availability, and soil stability.

Within the rhizosphere, **plants and microbes form symbiotic relationships** that regulate nutrient cycling, suppress disease-causing pathogens, and enhance root development. Plants release **root exudates**—a mixture of carbohydrates and organic compounds—that nourish beneficial microbes. In return, these microbes break down nutrients into plant-available forms, protect against soilborne diseases, and improve soil structure.

However, **modern agricultural practices, soil depletion, and chemical overuse** have disrupted this delicate microbial ecosystem, leading to reduced soil fertility, increased input costs, and vulnerability to drought and disease.



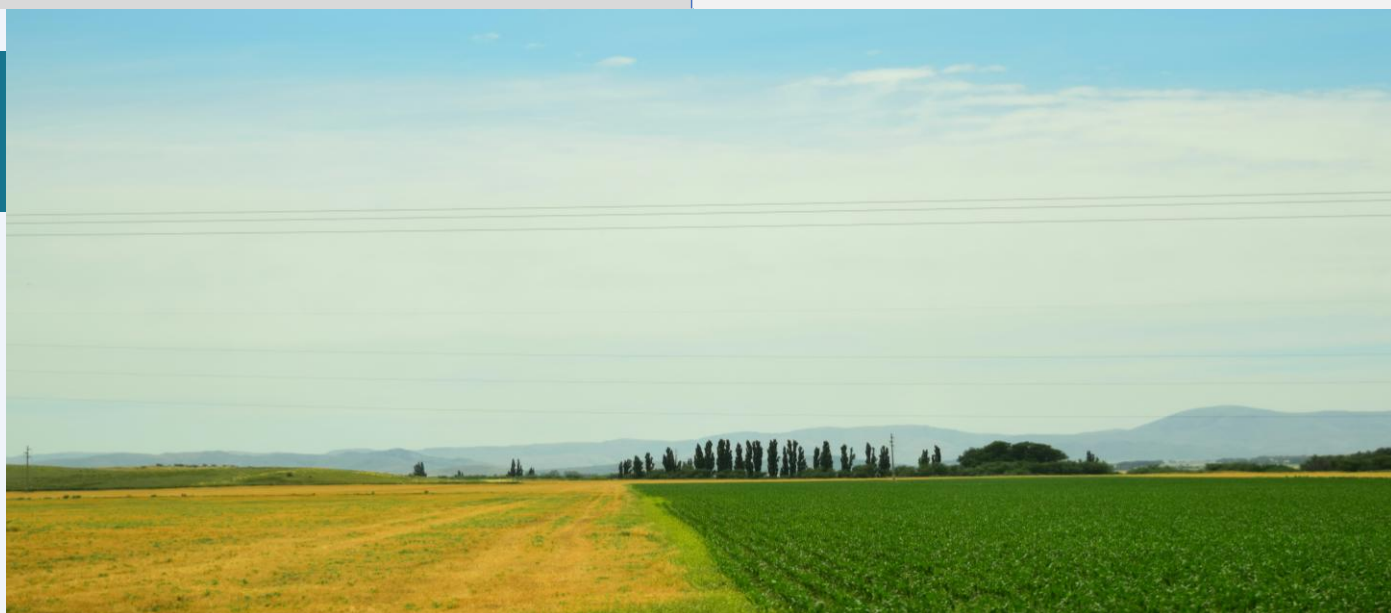
What is NOVOGROW

How NOVOGROW Restores the Rhizosphere

NOVOGROW is a precision-formulated **microbial consortium** designed to reintroduce and amplify beneficial microbial activity in the rhizosphere. By delivering **a specialised blend** of nitrogen-fixing bacteria, phosphorus-solubilizing microbes, and plant growth-promoting **rhizobacteria (PGPR)**, NOVOGROW enhances the soil's biological function, allowing plants to maximize nutrient uptake and thrive in diverse growing conditions.

By restoring **biological soil function**, NOVOGROW supports a **self-sustaining soil ecosystem**, reducing reliance on chemical inputs while promoting **healthier, more resilient crops**.

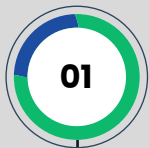
- **Microbial Colonisation & Nutrient Exchange** – Upon application, NOVOGROW microbes rapidly colonise root surfaces, forming a **protective biofilm** that expands root access to nutrients.
- **Biological Nitrogen Fixation** – Certain bacteria in NOVOGROW convert atmospheric nitrogen into **bioavailable** forms, reducing the need for synthetic fertilizers.
- **Phosphorus & Micronutrient Solubilisation** – NOVOGROW microbes secrete organic acids that unlock phosphorus and trace elements, ensuring **optimal plant nutrition**.
- **Enhanced Root Growth & Plant Resilience** – Through the production of **phytohormones** like auxins, cytokinin's, and gibberellins, NOVOGROW stimulates root elongation, improves plant **stress tolerance**, and enhances overall growth.
- **Soil Structure & Moisture Retention** – By promoting microbial diversity, NOVOGROW contributes to **soil aggregation**, improving aeration and **enhancing the soil's ability to retain moisture**, critical for drought resilience.



What benefits will NOVOGROW provide?

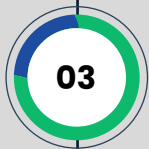
NOVOGROW transforms plant growth by enhancing soil microbiology, fostering stronger root systems, and optimizing nutrient absorption. By introducing beneficial microbes directly to the rhizosphere, it naturally boosts plant vigor, improves resistance to diseases, and reduces reliance on synthetic fertilizers. This leads to **healthier, more productive crops** while supporting sustainable farming practices that preserve soil health and biodiversity. Additionally, NOVOGROW improves water retention in the soil, helping plants withstand drought conditions and reducing irrigation costs.

For farmers, the **long-term benefits** are clear: **increased yields, lower input costs**, and a more resilient agricultural system that aligns with **eco-friendly and organic farming** principles. Whether used in large-scale agriculture, orchards, pastures, or commercial landscaping, NOVOGROW delivers a cost-effective, environmentally responsible solution that maximizes both productivity and profitability.



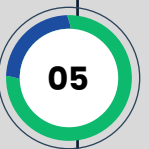
Improved nutrient access

The presence of NOVOGROW microbes alongside the roots results in a larger surface area for nutrient absorption, as the microbes rapidly channel plant nutrients to the roots.



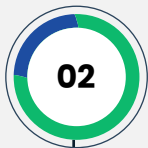
Less reliance on nitrogen fertilizer

Certain cultures in the NOVOGROW consortium rapidly fix atmospheric nitrogen to nitrates and nitrites, resulting in a decreased need for synthetic fertilizer.



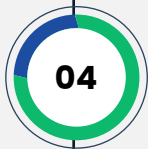
More robust plant growth

Certain NOVOGROW microbes release phytochemical growth factors that, once absorbed by the plants, stimulates tissue growth.



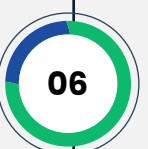
Higher disease resistance

Not only does NOVOGROW suppress pathogens that occur in the soil, but the microbes release immune stimulating biochemicals that give crops and advantage against most pathogen infections.



Efficient water use

The presence of a healthy microbial ecology means that the plant roots have better access to moisture under severe conditions.



Verified organic solution

Safe, environmentally sustainable, non-GMO and proven to support long-term intense agricultural production

Product Applications

By recognizing the critical role of soil microbiology in plant health, NOVOGROW provides a targeted solution that enhances nutrient availability, plant resilience, and overall productivity. Its carefully formulated microbial consortium works at the root level, addressing the fundamental challenges of modern agriculture. With its natural, sustainable approach, NOVOGROW empowers farmers, landscapers, and growers to cultivate healthier plants, optimize resource efficiency, and achieve more profitable, long-term growth.



Agricultural Crops (Grains, Veg, Fruits): Enhances nutrient availability, improves plant resilience, and increases crop yields with reduced input costs.

Fruit & Nut Tree Orchards: Supports deep root development, enhances nutrient uptake, and increases resistance to environmental stresses, ensuring stronger yields.

Forestry & Reforestation Projects: Aids in tree establishment by improving root anchoring, soil regeneration, and nutrient cycling in degraded lands.

Urban Landscaping & Public Parks: Strengthens plant resilience in high-traffic areas, improved soil structure, and reduces chemical dependency for maintenance

Greenhouses & Hydroponic systems: Provides a natural microbial ecosystem in controlled environments, strengthening root structures and improving nutrient absorption

Golf Courses & Sports fields: Promotes healthier, denser turf with improved soil aeration, reducing the need for chemical fertilizers and enhancing durability

Pastures & Livestock Grazing fields: Enhances soil fertility and plant biomass, producing more nutrient-rich forage for livestock. Increased carbon absorption

Commercial Flower Growers: Promotes vibrant blooms, extends flowering periods, and enhances plant resilience, ensuring higher quality flowers for market sale.

Product Data

Product Composition

CAS #	CAS # COMPONENT
Not Available	Enzyme and Microbial Blend
7727-37-9	Nitrogen
7440-09-7	Potassium
7440-44-0	Organic Carbon
Not Available	Organic matter
7732-18-5	Water

Physical & Chemical Properties

- **Appearance:** Brown
- **Odour:** Molasses like
- **Physical state:** Liquid
- **pH Range:** Optimum pH range is 6.2
- **Boiling point:** 100C
- **Solubility (H₂O):** Soluble
- **Vapour pressure:** None
- **Vapour density:** None
- **Specific gravity:** Approx. 1.0g/cc3
- **Evaporation rate:** ND
- **VOC:** NA
- **Octanol/H₂O Coeff.:** ND
- **Flash point:** None

Safety

Handling & Storage Instructions:

Handling Procedures: Avoid eye contact

Storage Procedure: Store in cool dry area. Protect containers from damage.

Personal Protective Equipment (PPE):

- Personal Protective Equipment: Eyes/Face – Wear goggles.
- Personal Protective Equipment: Skin – Use impervious gloves.
- Personal Protective Equipment: Respiratory – If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

First Aid Measures:

- **Eyes:** Check for and remove any contact lenses. Immediately flush with plenty of water for at least 15 minutes. Get medical attention if irritation persists.
- **Skin:** In case of contact, wash off with water.
- **Ingestion:** The product will produce an emetic effect.
- **Inhalation:** Not expected to require first aid measures. Remove to fresh air. Get medical attention for any breathing difficulties.

Full Material Safety Data Sheet (MSDS): MSDS is available separately

Use Case

Golf Course

Golf Course – Highly contaminated soil

The Challenge

In early 2024, the management of a golf course in a draught-stricken area sought assistance in restoring the health of its greens and fairways. The club was experiencing **persistent turf die-off and discoloration**, with even newly transplanted turf struggling to establish itself. The suspected root cause was **contaminated irrigation water**—sourced from an adjacent dam affected by sewage and industrial wastewater. Additionally, the club's fertilization strategy relied on liquid organic fertilizer being added directly into the irrigation system, which did not appear to be yielding the expected results.

A Proven Solution with NOVOGROW

To address these challenges, the grounds management team implemented a **combined treatment approach** using **NOVOPREP** and **NOVOGROW**. As a **proof of concept**, the products were first applied to newly transplanted turf to assess their effectiveness in **improving root establishment and turf vitality**.

How NOVOGROW worked in this setting

Following the successful establishment of the test turf, **NOVOGROW** was introduced directly into the golf course's **irrigation system** to maximize coverage across the greens and fairways. The microbial solution enhanced soil microbiology, improving nutrient availability and **strengthening turf resilience against environmental stressors**. Over time, the course exhibited **noticeable improvements in turf health**, including:

- Greener, more uniform grass coverage
- Improved root establishment and soil structure
- Reduced water and fertilizer requirements



Image: Test patch before treatment test patch



Image: Test patch after treatment test patch

These results led to **significant cost savings on inputs**, while also improving the playing experience for club members.

Real-World Validation

Midway through the trial, the golf course's irrigation system experienced a failure, resulting in a **three-week period of irregular or insufficient watering** across the greens and fairways. Despite this unexpected challenge, the treated turf **continued to show significant improvement**, demonstrating **enhanced resilience and adaptability**.

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Conclusion

The introduction of **NOVOGROW** provided an **effective, sustainable solution** for restoring and maintaining high-quality turf at the golf club. The positive results observed—including **improved turf establishment, colour retention, and overall health**—underscore the effectiveness of NOVOGROW in **supporting plant vitality** even under suboptimal irrigation conditions. The club's groundskeepers, management, and members all expressed **satisfaction** with the improvements in **turf quality, resource efficiency**, and overall course aesthetics.

For optimal results, it is recommended that **NOVOPREP** and **NOVOGROW** be used in conjunction, particularly in **challenging soil and water conditions** where traditional fertilization methods may be insufficient.

*Note: In this particular scenario, **Novoprep** was used prior the application of NOVOGROW to treat the heavily acidic soil after years of contamination with untreated sewage and industrial wastewater.*



Image: Green before treatment



Image: Green after treatment

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