



tritordeum

VIVAGRAN
Regen



In partnership with:



Index



Tritordeum	the golden cereal	page 3
About		page 4
Introduction	Sustainability along a cereal value-chain	page 5
Value-Chain	Integrated farming model	page 7
Tritordeum Regen'	Our value-chain	page 8
Tritordeum Regen'	Our objectives	page 9
Tritordeum Regen'	Our approach	page 10
Tritordeum Regen'	Our farming methods	page 12
Tritordeum Regen'	Our actions	page 13



Francesc Font. Founder **The Regen Academy**

Regenerative agriculture is a new way of producing food that helps mitigate the environmental, social, and economic crises affecting our planet. Through practices that restore degraded soils, capture atmospheric carbon, and provide nutritious food, it also supports a fair livelihood for farmers.

Tritordeum

the golden cereal

In 2014, Spanish researchers introduced a new cereal crop to the Spanish market after 40 years of plant breeding efforts, opting to retain its scientific name, **Tritordeum** (*Triticum* x *Hordeum*).

As a metaphor, they use the image of a young boy standing in the Tritordeum field, symbolizing the significance of this newborn crop.

Today, **Vivagran** is carrying forward the legacy left by those pioneers.

In 2024, we celebrate the 10th anniversary of Tritordeum in the market.



About

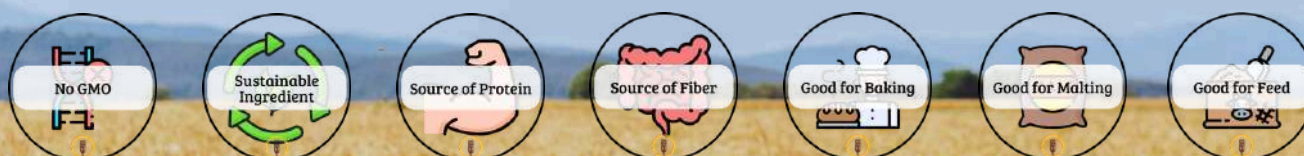
Tritordeum is a **novel natural cereal crop**, resulting from a cross between durum wheat (*Triticum durum*) and wild barley (*Hordeum chilense*). It distinguishes itself through its **nutritional, agronomic, and sensory qualities**.

This new Spanish crop has been developed using traditional breeding techniques; it is not a genetically modified organism (GMO). It marks the first instance of a newly created cereal suitable for human consumption. As a natural crop species, it is registered with the Community Plant Variety Office (CPVO) of the European Union.

From an agronomic perspective, **Tritordeum is a resilient crop**, with yields comparable to wheat and displaying strong resistance to pathogens. Its minimal water and fertilizer requirements contribute to its reputation as a more **sustainable cereal**. Currently, it is cultivated in the Mediterranean region and Australia in both conventional and organic farming methods.

From a nutritional standpoint, Tritordeum excels due to its **lower content of indigestible gluten proteins** compared to wheat, rendering it a more easily digestible cereal. Additionally, Tritordeum is notable for its **high content of protein, dietary fiber** - arabinoxylans and fructans, active prebiotic carbohydrates that support the maintenance of intestinal bacterial flora, **lutein** - an antioxidant associated with eye health.

Tritordeum possesses **unique qualities and functionalities**, making it highly suitable for producing a diverse array of innovative functional products (i.e. baking, malting,...). This capability aligns with current consumer demands and emerging market trends.



Introduction

Sustainability along a cereal value-chain

Sustainability in farming involves a holistic approach that addresses environmental, economic, and social aspects to ensure long-term productivity and benefits for all stakeholders.



Environmental Sustainability



Soil Health: Practices such as crop rotation and reduced tillage enhance soil fertility and structure.



Water Management: Efficient use through techniques like drip irrigation and rainwater harvesting conserves water resources.



Biodiversity: Planting diverse crops and maintaining natural habitats support ecosystem balance and pest control.



Climate Change Mitigation: Reducing greenhouse gas emissions via carbon sequestration and renewable energy use mitigates climate impact.

Economic Sustainability



Profitability: Efficient resource use and diversification help maintain profitable farming operations.



Market Access: Providing farmers with market access ensures they can sell their products at fair prices.



Risk Management: Strategies to manage climate variability and market fluctuations protect farm income.



Introduction

Sustainability along a cereal value-chain

Social Sustainability



Labor Rights: Fair wages and safe working conditions for farm workers are essential.



Community Engagement: Involving local communities in farming decisions ensures benefits are shared.



Food Security: Producing sufficient, nutritious food contributes to global food security.



Education and Training: Access to education on sustainable practices empowers farmers.

Technological and Innovative Approaches



Precision Agriculture: Technology optimizes crop management, enhancing efficiency and reducing waste.



Agroecology: Integrating ecological principles into farming creates resilient systems.

Policy and Governance



Regulatory Frameworks: Policies promoting sustainable practices support long-term farming viability.



Subsidies and Incentives: Financial support for sustainable innovations encourages adoption of best practices.

By focusing on these aspects, sustainable farming can achieve environmental protection, economic viability, and social equity, ensuring benefits for current and future generations.

Tritordeum value-chain

An integrated farming model

Tritordeum is cultivated through a robust economic and social value-chain model designed to benefit both farmers and the broader agricultural community. This model involves repurchasing contracts with farmers, ensuring a reliable market for their produce and stabilizing their income.

1

Repurchasing contract



Vivagran and its licensees, who hold the production rights for Tritordeum, enter into repurchasing contracts with farmers. These contracts **guarantee that farmers do not need to find commercial outlets** for their harvest, as Vivagran commits to buying back the produce.

2

Price Stability and Premiums



The repurchasing price for Tritordeum is calculated based on other commodity prices over a minimum period of six months to **mitigate volatility**. Additionally, a premium is included to **compensate for potential yield loss** and seed price differences. An extra incentive of at least **10% is added to encourage farmers to integrate Tritordeum into their crop rotation**.

3

Versatility in Applications



Tritordeum is versatile, suitable for both food (baking, malting) and feed applications. This **versatility increases the chances of finding a suitable market outlet**, even if the crop does not meet the highest quality standards.

4

Agronomic Support



Farmers receive comprehensive **support from a team of agronomists** to ensure they understand the best practices for cultivating Tritordeum. This guidance helps farmers **reduce input costs and optimize their yields**.

5

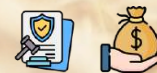
Local Production



Whenever possible, Tritordeum is **produced locally, near processing facilities** such as mills and malting plants. This local production reduces transportation needs and emissions, contributing to environmental sustainability.

6

Financial Incentives



In certain regions, like Greece, **farmers receive additional subsidies for cultivating Tritordeum** instead of water-intensive crops such as cotton, corn, or soy. This makes Tritordeum an economically attractive option, promoting sustainable agriculture practices.

Introducing Tritordeum Regen'

Our Regenerative Agriculture value-chain

Regenerative agriculture is an approach that focuses on restoring and enhancing **soil health, increasing biodiversity, and improving water cycles**. It aims to **sequester carbon, reduce reliance on chemical inputs, and build resilient ecosystems**. The goal is to create sustainable, self-renewing systems that benefit both the environment and agricultural productivity.

An Holistic approach considering Soil, Plants, Animals, Water and People

Rebuild Soil Health



Improving the physical, chemical, and biological properties of soil to make it more resilient and fertile.

Improve Bio-diversity



Increasing the variety and abundance of living organisms—plants, animals, insects, and microorganisms—within the ecosystem.

Protect Wildlife



Safeguarding the natural habitats and species that exist within the ecosystem from harm or destruction.

Efficient Water use Superior Farmer Incomes



Maximizing the benefits of water with minimal waste by applying it in ways that meet the needs of crops.



Earning higher or more stable profits from their agricultural activities compared to conventional practices.

Introducing Tritordeum Regen'

Our Objectives

We are on a mission to reduce the use of inputs* in farming thanks to our climate-resilient varieties.

-20% Water Use



-25% N / Fungicides



-40% CO₂e/t



*in comparison to wheats

Tritordeum is a resilient cereal that enables farmers to **reduce the use of water, fertilizers, and fungicides, while also lowering greenhouse gas (GHG) emissions.**

Its natural drought tolerance requires **less irrigation**, making it ideal for water-scarce regions.

Tritordeum also **uses nutrients more efficiently**, reducing the need for fertilizers.

Additionally, its **strong resistance to diseases**, such as rusts and septoria, minimizes the use of fungicides.



By cutting down on chemical inputs and water, Tritordeum contributes to lower GHG emissions, supporting more sustainable farming practices.

Introducing Tritordeum Regen'

Our Regen' Approach

A Mindful Supply Chain from Seed to Table.



Sustainable Production Practices.

Our supply chain uses regenerative farming, supports a local-only value chain, avoids storage chemicals, and focuses on mono-varietal crops for purity and sustainability.

Auditing and Certification.

All farms are audited during production to ensure regenerative practices are properly applied. We conduct thorough carbon sequestration analyses and soil health assessments to track improvements. Certification is provided by The Regen Academy, ensuring adherence to the highest standards of sustainability.

Traceability from Seed to Food.

We ensure full traceability across the entire value chain with a unique code per lot, allowing identification of the seed, farmer, post-harvest processor, variety, and the year and location of production. All data is transparently reported on our website for easy consultation.

About



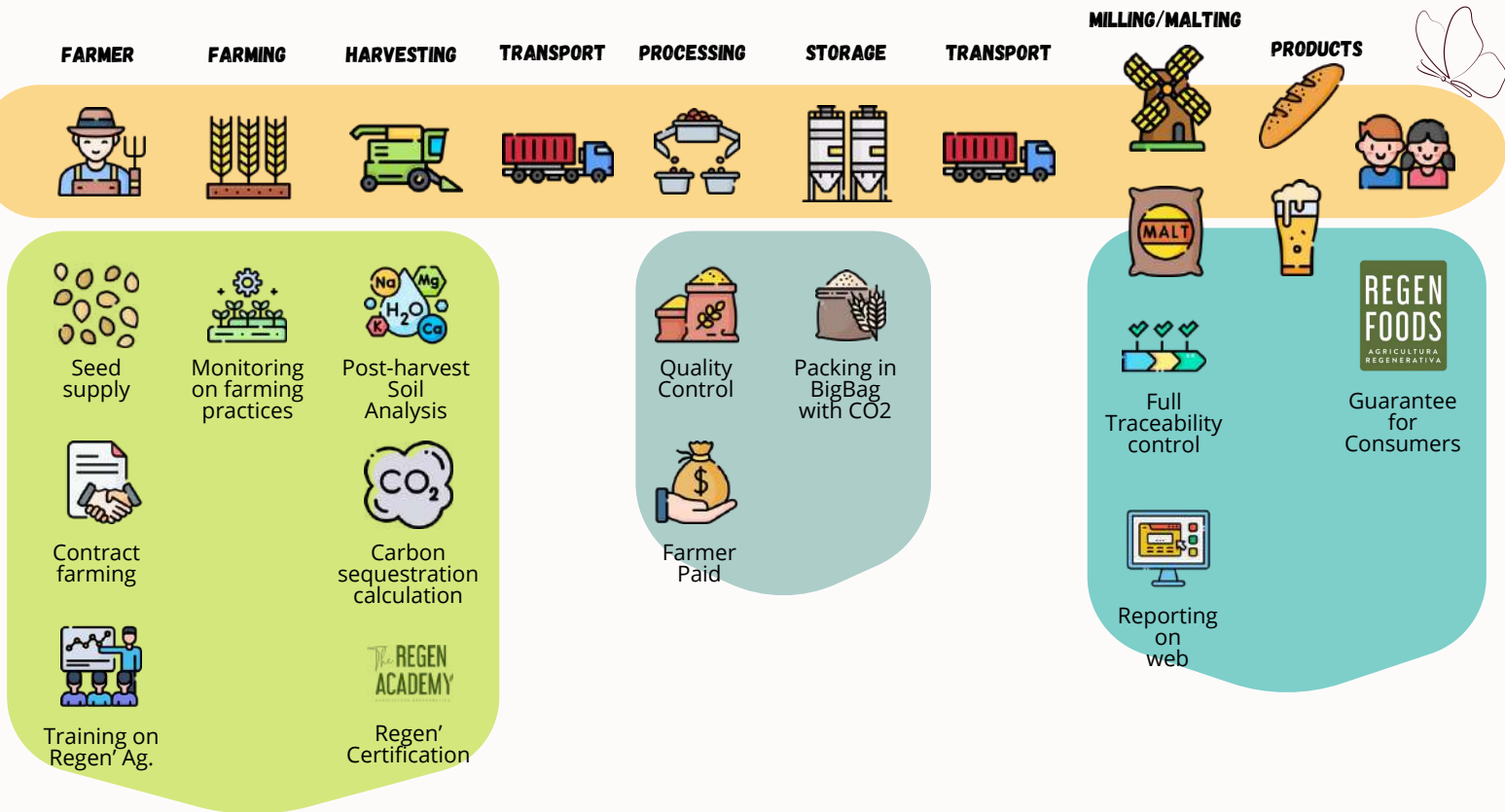
The Regen Academy is a company dedicated to **training and supporting local farmers** in their **transition from conventional to regenerative agriculture**. With a comprehensive 360° approach, it covers everything from teaching regenerative practices to **monitoring progress**, analyzing improvements in **soil health**, measuring **carbon sequestration**, and ultimately reducing **CO₂ emissions**.

more at: <https://www.theregenacademy.com/>

Introducing Tritordeum Regen'

Our Regen' Approach

Our Exclusive value-chain of production of Tritordeum under Regenerative Agriculture standards.



About



The **Regen Foods certification** is a private, non-profit label awarded to foods produced using regenerative farming practices. This certification follows standards developed and closely monitored by The Regen Academy's team of expert agronomists.

The certification serves as a mark of **Sustainability** and **Excellence**.

more at: <https://theregenfoods.com/>

Introducing Tritordeum Regen'

Our farming methods

Learn about the Regen' Practices we apply.

No-Till Farming



Inputs: Specialized no-till equipment, crop residue.
Outputs: Improved soil structure, increased organic matter, reduced soil disturbance, enhanced carbon sequestration.

Cover Cropping



Inputs: Seeds of cover crops (legumes, grasses), water (minimal).
Outputs: Increased soil fertility, reduced erosion, improved water retention, enhanced biodiversity.

Rotational Grazing



Inputs: Livestock, fencing for grazing management.
Outputs: Healthier pastures, improved soil fertility, reduced overgrazing, increased biodiversity, manure as natural fertilizer.

Organic Compost



Inputs: Plant residues, manure, organic waste.
Outputs: Rich compost to improve soil health, enhanced nutrient cycling, reduced waste.

Crop Rotation



Inputs: Diverse crop seeds, minimal additional inputs.
Outputs: Reduced pest/disease pressure, improved nutrient cycling, healthier soils.

Agro-Forestry



Inputs: Trees, shrubs, and perennial plants.
Outputs: Enhanced biodiversity, increased carbon sequestration, improved microclimates, soil stabilization.

Mulching



Inputs: Organic material (straw, leaves, compost).
Outputs: Improved moisture retention, reduced weed growth, enhanced soil fertility.

Water Management



Inputs: Drip irrigation systems, rainwater harvesting setups.
Outputs: Optimized water use, reduced water waste, improved crop yields in water-scarce environments.



Introducing Tritordeum Regen'

Our actions

Learn about the Regen' Actions we monitor.

PRE-SOWING

SOWING

EMERGENCE

HEADING

PRE-HARVEST

HARVEST

QUALITY CHECK

PROCESSING

SALES



On-farm visit



Monitoring on farming practices



On-farm visit



Water management



On-farm visit



Packing in BigBag with CO2



Quality Control



Full Traceability control



Regen' Certification



Soil sample collected



Soil pH



Biodiversity assessment



Diseases control



Carbon sequestration calculation



Post-sowing Soil Analysis



Reporting on web



Erosion and Compaction measured



Pre-sowing Soil Analysis



Weeds control

The 7 Regen Academy principles:

3 on-farm visits from agronomist of The Regen Academy

Evaluation of lands: soil organic matter, erosion and compaction

Definition of farming practices to be applied and monitoring

Evaluation of Bio-diversity with presence of bio-indicative flora/fauna

Water use efficiency calculation

Carbon sequestration calculation

Soil Health analysis: bacterial and fungal biomass



vivagran

Vivagran S.L.

c/ Calabria 35, SA2
08015, Barcelona, Spain
tel: +34 667 234 534

www.vivagran.nl
www.tritordeum.com

CEO:

Etienne Vassiliadis
evassiliadis@vivagran.nl

CFO:

Wiro Nillesen
wnillesen@vivagran.nl

Senior Breeder:

Alba Martinez
amartinez@vivagran.nl