Tritordeum Malt

Use in baking industry

tritordeum

VIVAGRAN

Index

Introduction	page 3
About	page 4
Malting process	page 5
Use in baking	page 6
Portfolio	page 7
Malt	page 8
Organic malt	page 10
Malt flour	page 11
IP, GMO, Declaration, Allergens	page 12

Introduction

In 2024, **Boortmalt**, a leader in the global malt market, unveiled a fresh line of Tritordeum-based malts. This launch comes at a time when the global malt industry is experiencing exponential growth, not only within beverage sectors like brewing and distilling but also in food applications, where malt ingredients are prized for their functional and nutritional properties.

With the introduction of the "**Atlantis Malt Series**" by Boortmalt, Vivagran steps in to spotlight a selection of malt flours crafted from Boortmalt's malt grains. Malt flours play a crucial role in the baking industry, traditionally sourced from barley or wheat, enhancing dough workability and imparting desirable sensory attributes to baked goods.

Now, **Tritordeum malt flour** emerges as a compelling alternative to its barley and wheat counterparts. Explore our innovative malt range and unlock the potential it holds for enhancing your product developments.

Discover more about Tritordeum at: www.tritordeum.com

About

Tritordeum is a **novel natural cereal crop**, resulting from a cross betyween 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.

Malting process

The malting process is a crucial series of steps that transform raw grains into malt. This three-step process not only alters the structure of the grain but also enriches it with essential enzymes vital for baking.

Steeping

The journey begins with steeping, where the grains are immersed in water and allowed to absorb moisture.

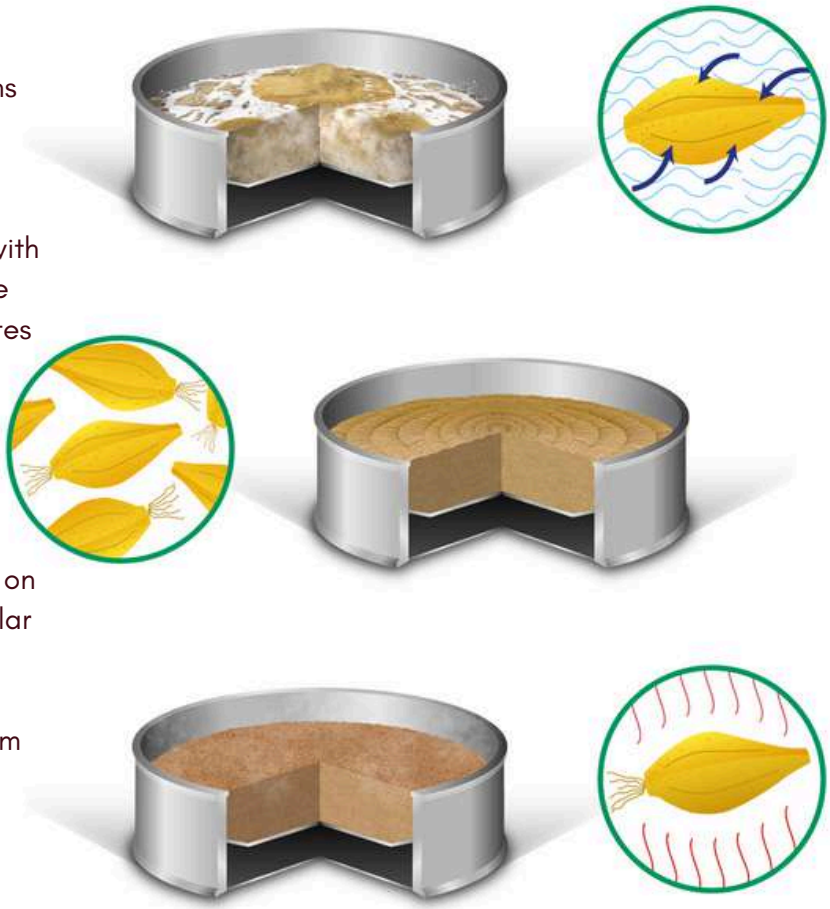
Subsequently, the dampened grain is left to air, with this cycle of soaking and drying repeated multiple times over a span of two days. This process initiates the grain's germination, preparing it for the next stage.

Germination

Following steeping, the damp grain is spread out on perforated floors to control its germination. Regular turning of the grain ensures uniform growth and prevents overheating. By carefully monitoring this phase, maltsters prevent the developing roots from intertwining, maintaining the grain's quality and consistency.

Kilning

The final step, kilning, involves drying the germinated grain, now known as green malt, to halt further growth and preserve its enzymatic properties. Controlled volumes of hot air are circulated through the grain according to precise recipes tailored for each malt variety. This meticulous drying process not only stops germination but also imparts specific flavors and colors to the malt, influencing the character of the final malt.



source: Boortmalt website

Through these meticulously orchestrated steps, the malting process unlocks the full potential of tritordeum, transforming it into a versatile ingredient for the food industry.

Discover more about Tritordeum at: https://www.boortmalt.com/journey-malt

Use in Baking

Malt is used in baking for several reasons, primarily due to its unique properties that enhance the flavor, texture, and appearance of baked goods.

Flavor Enhancement

Malt contributes a rich, complex flavor profile to baked goods, adding subtle sweetness, nuttiness, and depth. This flavor enhancement is particularly noticeable in bread, where malt can impart a pleasant malty taste and aroma. Other applications include pizza, biscuits, pasta,...

Browning

Malt contains sugars and amino acids that promote browning during baking, leading to a desirable golden crust on bread, and other baked items. This caramelization reaction enhances the visual appeal and flavor of the finished products.

Moisture Retention

Malt's hygroscopic nature helps retain moisture in baked goods, resulting in a softer texture and prolonged freshness. This moisture retention also contributes to improved shelf life, keeping baked goods from becoming stale too quickly.

Yeast Activation

Malt contains enzymes, particularly alpha-amylase and beta-glucanase, which break down starches into fermentable sugars. These sugars serve as food for yeast, promoting fermentation and leavening, leading to a lighter, fluffier texture in bread and other yeast-raised products.

Dough Development

Malt enzymes aid in gluten development, improving the elasticity and structure of dough. This enhanced dough strength facilitates better gas retention during fermentation, resulting in improved volume and crumb structure in baked goods.

Portfolio

Malts, Malt Flours

CATEGORY	ARTICLES	ORIGINS	FORMATS
 Malt	GE-M		25kg bag
	GC-M-CADIZ		
	GC-M-ATLAS		
 Cristal Malt	GC-M-CERES		25kg bag
 Malt Flours	HCCI-M-CADIZ		25kg bag
	HCCI-M-CERES		25kg bag

Malt

Brewing and Food Specifications

ATLANTIS MALT SERIES

	CADIZ THE SWEET	CERES THE FIERY	ATLAS THE TITAN	PERYTON THE CREATURE (LIMITED STOCK)
Applications				
Color (EBC)	4,5 - 9,5	33 - 100	15 - 25	15 - 25
Extract (%)	min 80	min 77	min 80	min 80
Diastatic Power (Wk)	350 - 550	NA	500 - 650	250 - 400

BOORTMALT
MASTERS OF MALT

Malt

Specifications - typical values

	CADIZ THE SWEET	CERES THE FIERY	ATLAS THE TITAN
Extract (%)	80	-	83
Wort color (EBC)	9,5	-	13,7
Color KZ (EBC)	13,5	-	18,4
Moisture (%)	6,1	-	6,2
Total Protein (%)	16,5	-	16,7
Soluble Protein (%)	6,4	-	8
Kolbach Index (%)	38,8	-	48
Viscosity (cP)	1,67	-	1,50
pH	5,67	-	5,69
Diastatic power (Wk)	380	-	529
FAN (ppm)	173	-	267
BetaGlucan (ppm)	78	-	70

BOORTMALT
› MASTERS OF MALT

Organic Malt

Specifications

CCPAE: CT-004020 CE

	typical value
Extract (%)	80
Wort color (EBC)	9,5
Color KZ (EBC)	13,5
Moisture (%)	6
Total Protein (%)	13
Soluble Protein (%)	6
Kolbach Index (%)	40,5
Viscosity (cP)	1,67
pH	5,67
Diastatic power (Wk)	380
FAN (ppm)	170
BetaGlucan (ppm)	75

Our organic Tritordeum malt is used in baking as an inclusion in the bread crumb.

This ingredient is produced exclusively for Vivagran by:

LO VILOT

Malt Flour

Dosage and Applications

Savory Products:

- Bread
- Pizza-Focaccia
- Crackers-Snacks

Ideal dosage* on flour base:
2 to 5%

Sweet Products:

- Brioche
- Croissant
- Biscuit-Cake

Ideal dosage* on flour base:
5 to 8%

*replace the corresponding % of flour in the recipe by the malt flour.

IP, GMO, Declaration, Allergens

Intelectual Property

Vivagran holds an exclusive license granted by the Spanish Research Council CSIC in May 2006, authorizing the commercial exploitation of Tritordeum. Since assuming responsibility from the CSIC in 2006, VIVAGRAN has maintained rights over all Tritordeum germplasm and has been actively involved in funding and managing the breeding program.
In the European Union, Vivagran has successfully registered two Tritordeum varieties with the CPVO (Community Plant Variety Office): Aucan in 2013 and Bulel in 2015.

Additionally, Vivagran currently oversees a group of advanced breeding lines in the final stages of evaluation before registration. This ongoing dedication underscores our commitment to advancing Tritordeum cultivation and innovation in agriculture.

GMO Statement

Tritordeum has been obtained through traditional inter-species breeding technique, and under no circumstances has gone through genetic modifications as defined by Regulations 1829/2003/EU and 1830/2003/EU.

This technique is described in the Plant Breeding Technique guide published in 2015 by the FiBL (https://www.fibl.org).

Label Declaration

Tritordeum is a combination of wheat and barley, and therefore, to facilitate the understanding for end consumers, it is recommended to declare it as such:

Tritordeum malt (WHEAT, BARLEY)
The scientific name is: x Tritordeum martinii A. Pujadas (Poaceae) nothosp. nov

Allergens

The unique allergen present in Tritordeum malt is GLUTEN.

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