



# Oat Beverage Solutions

Our Oat-Standing™ Functional Oat Flour can help you deliver a range of oat beverage solutions.

## Glanbia Ireland – Goodness Grows Here

Glanbia Ireland is an ingredient solutions partner to some of the world's leading companies and brands. At the forefront of ingredient technology, we offer a range of dairy and plant based solutions to match the ever-changing demands of the food and nutrition industry and its consumers. With quality dairy and grains sourced from 5,000 Irish family farms, combined with advanced market research and insights, our unique platform offers fully traceable and sustainably produced natural solutions to help our customers stay ahead of the curve.

## Goodness of Oats

Sourced from Irish family farms, we take great care to guarantee the highest quality oats both conventional and gluten-free. Oats possess various health benefits and contain protein of a higher biological value than many other grains (only rivalled by wheat & rye). Oats are high in dietary fibre which is associated with a number of health benefits such as  $\beta$ -glucan, functional protein, lipid and starch components and phytochemicals present in the oat grain and that is why it is one of the most promising raw materials for preparation of functional plant-based beverages.

### Oats are nutritional and healthy

- ✓ Oats contain on average between 11-13% protein
- ✓ They are high in soluble fibres, especially  $\beta$ -glucan, which helps to reduce and lower cholesterol
- ✓ Gluten Free
- ✓ Naturally low in sugar, salt and saturated fats
- ✓ Oats contains a range of minerals such as calcium, iron, magnesium and zinc
- ✓ Suitable for vegans & vegetarians

## What do Consumers Say

Plant based beverages are enjoying market growth due to increased consumer demand for products with associated health and wellness benefits. Oats are one of the latest of many plant-based materials that have emerged as nutritious dairy alternative source. Boosted by a sustainable and natural positioning that reflects consumer demands, the market now provides tasty treats for consumers who are opting more frequently for planet-friendly choices.



21% of US consumers describe themselves as following a flexitarian diet.



60% of US Consumers claim to be interested in reducing their intake of dairy and animal based foods.



39% of US consumers are actively seeking plant based solutions in beverages.



~90 new products containing oats were launched each week globally (2018).



In CAGR terms, oat launches have been increasing at ~31% p.a. across 2013-2018



36% of US consumers aged 18-24 add non-dairy milk to their coffee or tea.

Sources: Mintel, Innova, Euromonitor

## Let's get technical

### The challenges of creating an oat milk

Oat-based beverage production is still a relatively new area. Among other factors affecting processing complexity, oat beverages:



Are low-acid products, so they require heat treatment similar to milk; but to have long running times, the process configuration has to be adapted for oats due to the difference in composition compared to milk.



Oats are not naturally stable. Careful consideration must be given to how the product will be formulated, processed, packaged, and consumed.



Oats are not easily soluble in water, hence when mixed and heated in water to prepare milk it becomes it becomes thick, sticky and viscous.



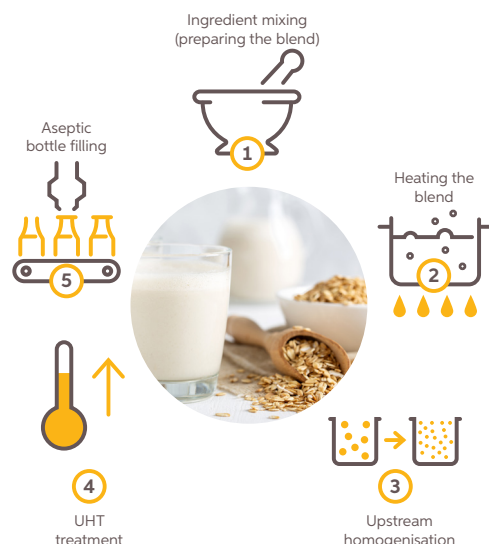
It is hard to create a smooth mouthfeel, and also difficult to improve the sweetness perception.

**Our specialists have the knowledge and practical experience to handle all these scenarios. We have identified the main production challenges, as well as how you can best develop your processing lines for successful products.**

### The Process in Making an Oat Beverage

Oat beverages can be prepared by blending our Oat-Standing™ Functional Oat Flour and other ingredients with water, heat treating the blend, followed by homogenisation, UHT treatment, and aseptic packaging.

- Our Oat-Standing™ Functional Oat Flour is manufactured in a state-of-the-art oat processing facility using specialised technology and produced from a fully traceable secure oat supply chain which is completely managed by our specialised agronomist team.
- It is derived from premium quality milled 100% wholegrain gluten free oats, followed by hydrolysis, heat treatment and drying.
- The flour is white to yellow-brown in colour with a characteristic “oaty” taste and aroma.



# Our Oat-Standing™ Functional Oat Flour

We use traditional methods to produce our high-quality oat products, producing the finest-tasting, most consistently performing oat ingredients on the market today. We go even further, continually monitoring the entire supply chain from field selection to growing, storage, and milling.

Our Oat-Standing™ Functional Oat Flour is manufactured through a unique process and provides consistent viscosity throughout heating and cooling cycles. This unique ingredient is especially useful in beverages, offering valuable functional properties, clean labelling, and the dependable whole grain benefits and flavour you expect from more traditional oat ingredients. It is an ideal ingredient when you're looking to create natural sweetness, add flavour, nutrition, and consistent viscosity to a wide range of end products.

## Our Oat-Standing™ Functional Oat Flour has multiple benefits in beverage applications:

- Heat stable
- Remains fluid and pourable through Ultra-High Temperature processing (UHT) and retort
- Nutritionally rich – performs at inclusion rates up to 15% (available ingredients congeal at inclusion rates as low as 3%)
- Silky, smooth mouth-feel, clean oaty flavour and natural sweetness
- Gluten-free guarantee: <10ppm gluten guaranteed compared to <20ppm FDA guideline

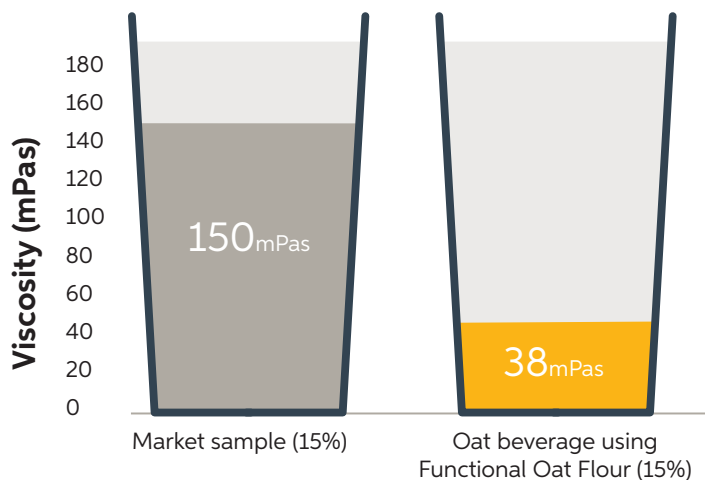


## Functional Benefits

Our oat beverage flour solution performs exceptionally well to deliver a number of functional benefits.

### Mouthfeel

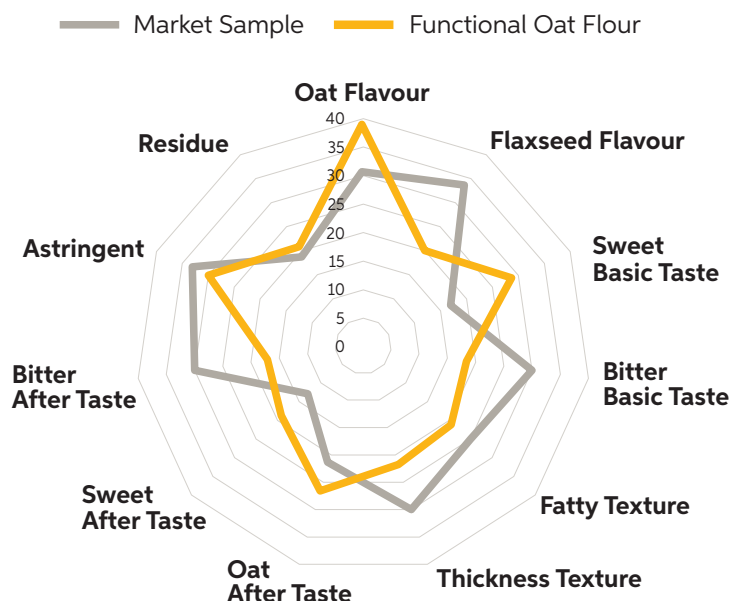
As with all oat beverages, achieving a smooth and pleasant mouthfeel can be a challenge as sedimentation in manufacturing can cause difficulties. Oat-Standing™ Functional Oat Flour\* delivers consistent sweetness and viscosity compared to market samples.



\*without gellan gum

### Sensory Descriptive Analysis

Our Oat-Standing™ Functional Oat Flour beverage has a sweet, oaty flavour and is less bitter in comparison to market samples. It is less thick, hence can be used at a higher inclusion rate with nice sweet and oaty notes.



# Typical Oat Beverage Recipe and Nutritional Facts

Innovative plant bases are adding variety to the category with regard to flavour and nutritional value. Our sample recipe is a real plant-based innovation, which delivers an excellent clean flavour profile and is of high nutritional value.

Our sample recipes which contain our Oat-Standing™ Functional Oat Flour at a 15% inclusion rate are a nutritious beverage which can be produced with or without gellan gum.

They are a source of Calcium and naturally a source of Manganese. It is also naturally a source of fibre. Did you know that only 9% of UK consumers meet the recommended daily intake of Fibre?<sup>1</sup> According to NHANES, US consumers are also not meeting recommended Fibre intakes.<sup>2</sup>

When it comes to protein, it is important to consider both the quality and quantity. Our oat flour has a Protein Digestibility Calculated Amino Acid Score (PDCAAS) of 0.81, this is of higher protein quality compared to other commonly used plant proteins such as rice protein and wheat bran.<sup>3</sup>

## Recipe 1 (with gellan gum)

Ingredient	Recipe (%)
Water	84.06
Oat-Standing™	15.00
Rapeseed Oil	0.57
Calcium carbonate	0.20
Calcium triphosphate	0.10
Salt	0.01
Gellan gum	0.06

## Recipe 2 (without gellan gum)

Ingredient	Recipe (%)
Water	84.12
Oat-Standing™	15.00
Rapeseed Oil	0.57
Calcium carbonate	0.20
Calcium triphosphate	0.10
Salt	0.01
Gellan gum	0.00

Typical Nutritional Information	Per 100ml
Calories (kcal)	66
Fat (g)	1.5
of which saturates (g)	0.3
Carbohydrate	11.5
of which Sugars (g)	0.6
Fibre (g)	0.9
Protein (g)	1.7
Calcium (mg)	130
Manganese (mg)	0.6

### References

1. World Health Organisation
2. Hoy et al. Fiber intake of the U.S. population. What We Eat in America, NHANES 2009-2010.
3. Rutherford, S. M., A. C.Fanning, B. J.Miller, and P. J.Moughan. 2015. Protein digestibility-corrected amino acid scores and digestible indispensable amino acid scores differentially describe protein quality in growing male rats. J. Nutr. 145:372-379

We stay at the forefront of ingredient innovation by investing in our people, our processes and our infrastructure.



### The innovation hub

Our Innovation Hub houses world class facilities enabling us to bring our concepts to life.



### Leading the way in process and technology

Functionalising and developing ingredients whilst always maintaining nutritional integrity.



### Our external ecosystem

Our extensive network of external partners ensures we are agile.



### Developed by our experts

Our team of experts passionately researching the worlds of dairy and plant.



### Providing superior nutrition

At Glanbia Ireland the foundations of nutrition are built on dairy and plant. Our ethos: "Good for You, Good for the Planet".

## Meet consumer demand with our oat beverage solutions

Many consumer trends converge to make this product category extremely popular, including sustainable and healthy foods, flexitarian and lifestyle.

- ✓ **High Quality Oats**
- ✓ **Outstanding multi-sensory and nutritional attributes**
- ✓ **Naturally free from lactose & dairy**
- ✓ **Exceptional taste and mouthfeel**

## Get in Touch

To find out more about our Plant Based Oat Milk, please contact us at Glanbia Ireland.

**Email:** solutions@glanbia.ie

[www.glanbiairelandingredients.com](http://www.glanbiairelandingredients.com)



It is the responsibility of the food business producing products using Oat ingredients to verify that any product claims are compliant with the regulations in the country of sale. Information in this bulletin is believed to be accurate and is offered in good faith for the benefit of the customer. However, we cannot assume any guarantee against patent infringement, liabilities or risks involved from the use of these products, formulas and information. The information and/or opinions contained in this document may be changed at any time without notice.