

Oat Beta-glucan Clean Label Texturizer with Health Claims*

*EFSA & FDA approved



Introduction

The clean label movement, often described as a quest for healthier and more transparent food options, has roots dating back to the 1980s. At that time, consumers began showing concern about E-numbers and the potential health implications of food additives. However, it wasn't until the turn of the millennium that the food industry witnessed a remarkable surge in consumer interest toward products with shorter ingredients lists, featuring familiar and natural components¹. This shift marked a defining moment in the food industry, as consumers' appetite for clean label products continued to grow.



Source: "Clean Label Ingredients Market" by IMARC Group (2023)

This white paper looks into Lantmännen's clean label oat solutions which offer great opportunities for new product developments in the food and drink industry. Special focus will be paid to clean label texturizing for dairy alternatives.

Texturizer

As the food industry responds to the growing consumer demand for cleaner labels and more natural ingredients, it is equally vital to recognise the role of texture on the overall culinary experience. In this context, texture is a key driver of palatability and consumer acceptance, shaping the food experience.

Texture is important for food palatability and safety, and it strongly influences the consumer acceptance for food items. The food industry commonly uses texturizers that can give the required and expected functionalities, while remaining stable during processing and storage.



Modified starches, gums and other hydrocolloids are commonly used to achieve these textural attributes and functionalities. However, many of the traditionally used ingredients are classified with E-numbers or have “unnatural” or “unfamiliar” names for consumers.

PromOat® Oat Beta-glucan

Oat beta-glucans are a fibre found in oats, particularly in the bran. There are different types of beta-glucans in nature, and they all are composed of glucose molecules with different beta linkages.

Oat beta-glucan, in particular, contains mixed β -(1→4) and β -(1→3) bonds. This specific structure gives oat beta-glucan its physical properties; in particular, the ability to bind water and act as a texturizer².

PromOat oat beta-glucan, which is produced from non-GMO, Swedish oats, using a unique, chemical-free, fractionation method, contains 34% oat beta-glucan.



PromOat®

EFSA-approved Health Claims

Oat beta-glucans are known for their numerous health benefits.

It has been scientifically proven that soluble oat beta-glucan fibre actively reduces cholesterol by reducing the reabsorption of bile. Recognised by EFSA³, FDA⁴, and other authorities, a daily intake of 3g is recommended for optimal cholesterol reduction.

In Europe, this can be divided into three servings of 1g each, while in the US, it's four servings with 0.75g each.

In Europe, EFSA also approves oat beta-glucan for reducing post-prandial glycemic response, beneficial for blood sugar control. Products aiming for this effect should contain 4g of oat beta-glucan for every 30g of available carbohydrates per meal⁵.

Furthermore, several studies have indicated the potential of foods and beverages enriched with oat beta-glucan to enhance satiety, the sensation of fullness after eating^{6,7}.

Application

PromOat is a unique soluble fibre that is neutral in colour which allows its application in a wide range of food products, including dairy alternatives, soups, sauces, dressings, bakery items, meat analogues and more. PromOat can be used from enhancing mouthfeel in plant-based beverages and yogurts to optimising texture in baked goods.

Thanks to its water binding properties, it can also be used as an emulsion and foam stabiliser. It can be used on its own or together with other hydrocolloids to create a different variety of textures. PromOat creates a good mouthfeel, a thick texture, and a silky creaminess without grittiness in beverages and yoghurts, complementing other hydrocolloids.



PromOat® Functionality

The technical functionality that PromOat delivers is a result of several unique features that it possesses. Firstly, the high availability of beta-glucan in PromOat provides very strong water-binding properties. PromOat actively thickens and stabilises the water phase in emulsified systems, c enabling it to stabilise emulsions and create a creamy mouthfeel.

In addition, the relatively high concentration of oat beta-glucan allows for low inclusion rates, thereby overcoming the technical and cost challenges encountered by other beta-glucans in the past.

PromOat contains virtually no insoluble fibres, meaning it works just as well in “wet” applications, such as soups, dressings, and ice-cream, as in “dry” applications, such as bread.

Finally, it is a neutral-tasting, creamy-white powder, which integrates easily into a wide range of recipes.

Promoat Oat beta-glucan can be labelled as oat fibre, oat soluble fibre or as part of an oat base without separate declaration.

The combination of its functionality, health benefits, oat image and labelling appeal makes PromOat® an ideal texturizer.



Texturizer in Dairy Alternatives

The tectonic shift taking place in the food and drink industry, as consumers adjust their diets away from animal products and towards plant-based products, is creating unparalleled opportunities for innovation. What was once the domain of vegans and vegetarians only is rapidly becoming a mainstream phenomenon, with many consumers identifying themselves as “flexitarians” – consumers of a flexible diet, which includes both animal- and plant-based products. They are often influenced by health, both of themselves, as individuals, and of the planet, perceiving plant-based foods to be healthier and more sustainable⁸.



For many years, acceptance, and uptake of plant-based foods by consumers was held back by the quality of products available. In particular, manufacturers struggled to recreate the texture of the original products. This was especially true in dairy alternatives, where plant-based drinks, yogurts and cream cheeses lacked the mouthfeel and creamy texture that consumers were seeking.

A Solution for Creamier Plant-based Alternatives

The water binding properties of beta-glucans and the ability to build a long texture is especially useful to mimic the full-fat, organoleptic properties of dairy products but in a plant-based context. Adding small amounts of PromOat can help achieve the creaminess that plant-based drinks are usually lacking, as well as helping to stabilize the fat phase and increase particles suspension. The viscosity increase caused by beta-glucan also helps to stabilize foams, which can be specially interesting in barista drinks.

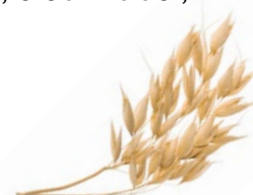
Beta-glucans can also be used in vegan yoghurts and cream cheeses to mimic the creaminess characteristic of their dairy counterparts. Systems of hydrocolloids can be used together with PromOat in order to build different textures and products that are appealing to the end consumer.



Summary

PromOat's unique chemical-free production preserves the beta-glucan in its high-molecular-weight native form, maximizing its health benefits. With a high beta-glucan concentration and no insoluble fibres, it's versatile for inclusion in various products with health claims. It does not only offer health benefits and a clean label but also texturizing effects for creamier plant-based alternatives. Plant-based dairy alternative can benefit of stabilisation of foams, increase particle suspension and fat-mimicking properties, giving NPD teams a new tool to create a, clean label, plant-based and tasty product.

For more information, visit: www.lantmannenbiorefineries.com



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Innovation from field to fork

Lantmännen Biorefineries AB is part of Lantmännen, an agricultural cooperative and Northern Europe's leader in agriculture, machinery, bioenergy and food products.

With research and operations throughout the entire value chain, we take responsibility from field to fork.

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