

OATS AND HEART HEALTH

Tirlán 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 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.





Heart disease is one of the leading causes of death globally. The good news is that 80% of heart disease is preventable simply by changing lifestyle choices.¹ There are a number of risk factors for heart disease including, having high blood pressure, being overweight, and being inactive. Cholesterol is one of the main factors that can be changed to help prevent heart disease.

What is cholesterol?

Cholesterol is a type of fat that is found in blood. At healthy levels, cholesterol helps the body to work properly by making important hormones. When there is too much cholesterol in blood, it can stick to the walls of the arteries which prevents the blood from flowing through and in turn can cause a heart attack.

Once cholesterol has lined the arteries, it is not possible to remove it, but it is possible to prevent it getting any worse.

How can oats lower cholesterol?

Substantial evidence has shown that the consumption of oats can decrease high levels of cholesterol in the blood, and that this decrease is attributable to the soluble fibre called beta-glucan.

Oat beta-glucans mechanism of action and ability to lower cholesterol levels has not been fully determined.

It may depend on the increased viscosity in the small intestine that reduces reabsorption of bile acids, increases the synthesis of bile acids from cholesterol and in turn reduces (LDL) cholesterol levels.²

Bile acids that are not absorbed in the small intestine are excreted in the faeces, resulting in an elevated synthesis of new bile acids from cholesterol in the liver, reducing cholesterol in the blood.³

The cholesterol lowering benefits of oat beta-glucan has been substantiated by an approved claim in the European Union validated by the European Food Safety Authority (EFSA). This claim states that beta-glucan from oats, oat bran, barley, barley-bran or a combination of these can contribute to the maintenance of normal blood cholesterol levels.⁴ (Claims can only be made if the food contains at least 1g of beta glucans from oats, oat bran, barley, barley-bran or mixtures of these sources per portion).

HEART HEALTH

Cardiovascular disease means diseases of the heart and circulatory system. Coronary heart disease (CHD) is one of the most common and serious forms of cardiovascular disease and refers to diseases of the heart muscle and supporting blood vessels.

High blood total cholesterol and low density lipoprotein (LDL) cholesterol levels are associated with increased risk of developing coronary heart disease.⁵ Substantial evidence has shown that the consumption of oats can decrease high plasma cholesterol, which is a major risk factor for heart disease. Oat beta-glucan has been associated with lowering the level of elevated plasma cholesterol and therefore reducing the risk of heart disease.⁵

A 2020 systematic review and meta-analysis of randomised controlled trials with GRADE clinical recommendation concluded that consumption of wholegrains, as opposed to refined grains in adults with or without a risk of developing cardiovascular disease (CVD), could improve LDL-cholesterol, total cholesterol, C-reactive protein, and haemoglobin A1c.⁶

**Consumption
of oats can
decrease
high plasma
cholesterol**



OUR OAT INGREDIENTS

OAT-STANDING™

Oats (Jumbo, Groats, Pinhead, Quick Cook) (g/100g)

9.0g

FIBRE

3.5g

BETA-GLUCAN

OAT-STANDING™

Functional Oat Flour LV (g/100g)

6.4g

FIBRE

4.2g

BETA-GLUCAN

Tirlán has an extensive range of oat flakes and flours that are rich in fibre and beta-glucans.

They can be used in a range of solutions and applications to deliver great-tasting, highly functional and nutritious products.

Sourced from Irish family farms, we take great care to guarantee the highest quality of oats – conventional, organic, and gluten-free. Our oats are an excellent source of nutrition as they are high in soluble fibres, especially beta-glucans, and they naturally contain between 11-13% protein. In addition, they are low in sugar, salt, and saturated fat, and contain a range of minerals such as calcium, iron, magnesium, and zinc.

Oats are one of the most promising raw materials for preparation of functional plant-based food.

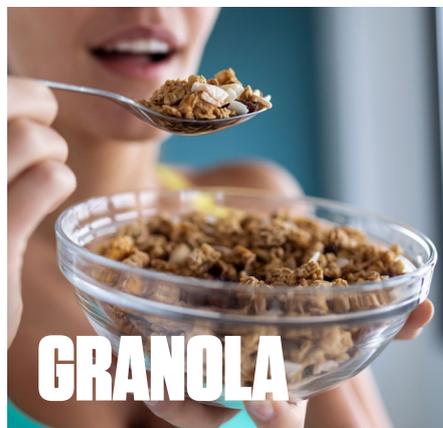
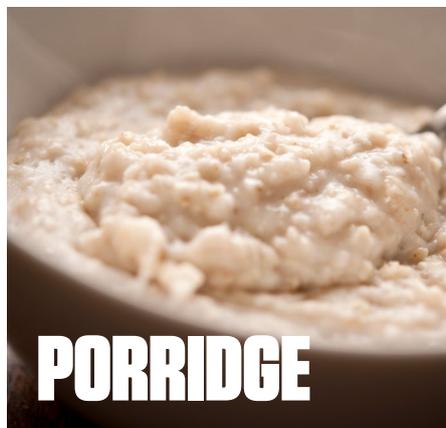
Oat-Standing™ Oat Flakes

Benefits

Our extensive range of oat flakes, include Jumbo, Quick Cook, and Shredded, and can be produced on a bespoke basis to meet your requirements.

Our Oat-Standing™ Oat Flakes are high in fibre, containing 9g/100g, and beta-glucan, containing 3.5g/100g.

Our oats flakes can be used in a range of applications – from breakfast to desserts, in baked and raw treats, delivering excellent functionality.



Oat-Standing™ Functional Oat Flour

Benefits

Our Oat-Standing™ Functional Oat Flour is high in fibre, containing 6.4g/100g, and beta-glucan, containing 4.2g/100g.

The Functional Oat Flour can help manufacturers meet demand for gluten free, natural, and functional oat products.

It is an ideal ingredient when you are looking to create natural sweetness, add flavour, nutrition, and consistent viscosity to a wide range of end products.

DAIRY ALTERNATIVE BEVERAGES



DAIRY ALTERNATIVE CHOCOLATE



DAIRY ALTERNATIVE YOGHURT



PLANT-BASED CHEESE ALTERNATIVES



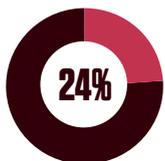
DAIRY ALTERNATIVE ICE CREAM



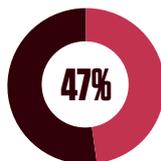
WHAT CONSUMERS WANT

Many consumers are interested in supporting their heart health, and link different aspects of food and diet with maintaining a healthy heart. Heart health is a key global public health concern, which is likely to focus demand on foods, ingredients and diets that address it.

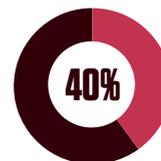
Food and beverages that protect consumers health are thriving, making oats an ideal ingredient to add to your next product launch.



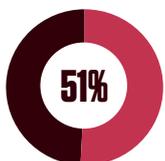
In Spain, 24% of consumers who have consumed functional or fortified food and drink in the last three months do so to maintain a healthy heart.



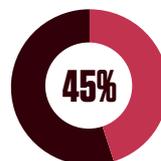
In India, 47% of consumers agree heart health improvement is an appealing benefit to them when choosing food products.



In Germany, 40% of consumers would ideally like their diet to help to maintain a healthy heart.



51% of Italian consumers agree that food and drink products that are high in fibre help to manage blood cholesterol.



45% of UK consumers who buy breakfast cereals are interested in those that support heart health (e.g. cholesterol-lowering).

WHAT MAKES OUR OATS UNIQUE?



Full Traceability

Our products can be fully traced from seed to finished product.



Strict Specification

Each individual tote bag is sampled and analysed for physical, chemical and microbiological parameters to meet strict specification requirements.



Gluten Free

Gluten free oats are available as part of our portfolio. They are certified gluten-free by, the Coeliac Society of Ireland, NSF, and labeled with the Crossed Grain symbol.



Irish Origin

Our oats are grown on contracted Irish family farms. Growers receive a premium to ensure specification is met and to encourage grower loyalty to Tirlán.



State of the Art Milling

Processing occurs in ultra-modern, state of the art oat only mill. The mill is equipped with renowned Buhler technology and is BRC grade AA accredited.



Organic

Organic Oats are available as part of our portfolio. They are certified by the Irish Organic Association and with the European Union organic logo.



Global Certification

- Origin Green certified
- Coeliac Society of Ireland
- BRC Food Certified
- NSF Gluten Free



Long Shelf Life

An 18-month shelf-life is generated by our unique 4.6 log heat treatment.



Environmental Sustainability

Oats grown in Ireland have a low CO² footprint and produce high yields



Consistent Grain Quality

Our oats are held to a very high quality specification (54 kph) to deliver consistent grain quality.



Bespoke Solution Offering

We have the flexibility to manufacture bespoke products to meet your specific requirements, for example, by thickness, density, or weight.



Zero Waste

Any waste from our products is recycled as an animal feed ingredient and any chaff and dust go to composting, resulting in zero finished product wastage.



Oats Only Site

Our oats are assembled in an oats-only site which reduces risk of contamination.



IRELAND'S UNIQUE OAT GROWING ENVIRONMENT



Cleanest air in Europe

Urban outdoor air pollution index



Island Location

On the edge of the Atlantic Ocean with plentiful rain



Trusted Partner

Supporting leading global brands



Irish farming tradition and heritage

Generational family farms



Pure water and rich soil

Boost nutritional value



Temperate maritime climate

Perfect conditions for oat cultivation



Clean label

Natural, Non-GMO & Kosher

OUR R&D FUNCTION



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



References

1. Chiuvè, S.E., McCullough, M.L., Sacks, F.M. and Rimm, E.B., 2006. Healthy lifestyle factors in the primary prevention of coronary heart disease among men: benefits among users and nonusers of lipid-lowering and antihypertensive medications. *Circulation*, 114(2), pp.160-167.
2. Braaten, J.T., Wood, P.J., Scott, F.W., Wolynetz, M.S., Lowe, M.K., Bradley-White, P. and Collins, M.W., 1994. Oat beta-glucan reduces blood cholesterol concentration in hypercholesterolemic subjects. *European journal of clinical nutrition*, 48(7), pp.465-474.
3. Joyce, S.A., Kamil, A., Fleige, L. and Gahan, C.G., 2019. The cholesterol-lowering effect of oats and oat beta glucan: modes of action and potential role of bile acids and the microbiome. *Frontiers in nutrition*, 6, p.171.
4. European Food Safety Authority; 2010; Scientific Opinion on the substantiation of a health claim related to oat beta glucan and lowering blood cholesterol and reduced risk of (coronary) heart disease pursuant to Article 14 of Regulation (EC) No 1924/2006 Available at: <https://www.efsa.europa.eu/en/efsajournal/pub/1885> (Accessed 25th January 2023)
5. Boeck, T., D'Amico, S., Zechner, E., Jaeger, H. and Schoenlechner, R., 2018. Nutritional properties of various oat and naked oat cultivars. *Die Bodenkultur: Journal of Land Management, Food and Environment*, 69(4), pp.215-226.
6. Marshall S, Tetocz P, Duve E, Abbott K, Cassettari T, Blumfield M, Fayet-Moore F (2020) 'The Effect of Replacing Refined Grains with Whole Grains on Cardiovascular Risk Factors: A Systematic Review and Meta-Analysis of Randomized Controlled Trials with GRADE Clinical Recommendation' *Academy of Nutrition and Dietetics*, 120(11)



Get in Touch

To find out more about how Tirlán can support you in developing your solutions, please contact us directly.

Email: info@tirlaningredients.com

www.tirlaningredients.com

 [LinkedIn.com/showcase/tirlan-ingredients](https://www.linkedin.com/showcase/tirlan-ingredients)

The information contained on this bulletin is for B2B customers', suppliers' and distributors' for information purposes only and not the final consumer. It is the responsibility of the food business producing products using our oat solutions 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.