About Quorn mycoprotein

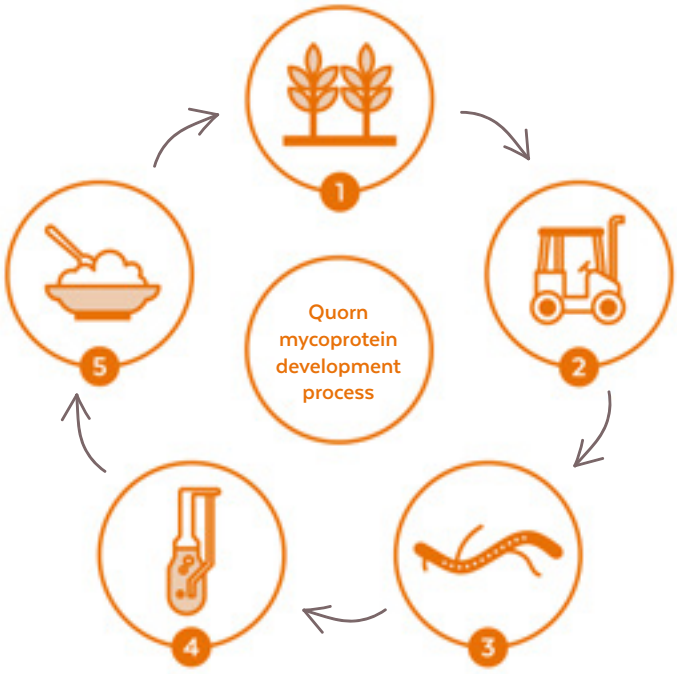
Quorn mycoprotein factsheet for healthcare professionals

What is Quorn mycoprotein?

Quorn mycoprotein is a unique and nutritious protein source that can contribute to a healthy and balanced diet. Quorn mycoprotein is made by fermentation of the naturally occurring fungus *Fusarium venenatum* and replicates the taste and texture of meat - providing us with a great tasting meat alternative, meaning we don't have to miss out on the meals we love.

Quorn mycoprotein is high in fibre and protein, low in fat, contains no cholesterol and is a good source of vitamins and minerals.[1]

With a 90% lower carbon footprint than beef and 70% lower carbon footprint than chicken, Quorn mycoprotein isn't just good for us, it's good for the planet too.[2]



Quorn mycoprotein development process key

1. Raw materials are grown.
2. Ingredients harvested and taken to our site in North East England.
3. Quorn mycoprotein starter culture is ready for fermenting.
4. The fermentation process begins.
5. The ingredients are converted into Quorn products.

We use fermentation, much like bread-makers do, to create the conditions that convert glucose from wheat – which is our carbohydrate source – into protein. These fermenters are 40 metres high and run continuously for 5 weeks at a time.

A continuous feed of nutrients is added until it's ready for harvest and then the mature broth is continuously passed through a carefully controlled heating step. The ribonucleic acids are broken down during the heating and dissolved into the surrounding liquids, where they remain after the centrifugation (separation of solids and liquids). After seasoning, the paste from the separation step is steam-cooked, chilled and frozen and it is this careful combination of technical processes that give Quorn mycoprotein its meat-like texture.

Brief history

1960's

As concerns were growing around potential global food shortages, Dr Spicer and Lord Rank set out to investigate the feasibility of turning starch into protein to help deliver a nutritional and appetising new food in the quantities demanded by an increasing population, without sacrificing the health of the planet.

1967

Following the testing of 3000 micro-organisms taken from soil samples around the globe, a microorganism was identified in a garden in Marlow, Buckinghamshire which allowed us to make our main ingredient, Quorn mycoprotein.

1985

After many years of research and development and hundreds of millions of pounds in investment, we launched our first products with two savoury pies hitting supermarket shelves.

2020

Since then, our Quorn range has grown and is now enjoyed by vegans, veggies and meat-eaters alike in the UK and markets all around the world, including Sweden, USA, Singapore and Australia.

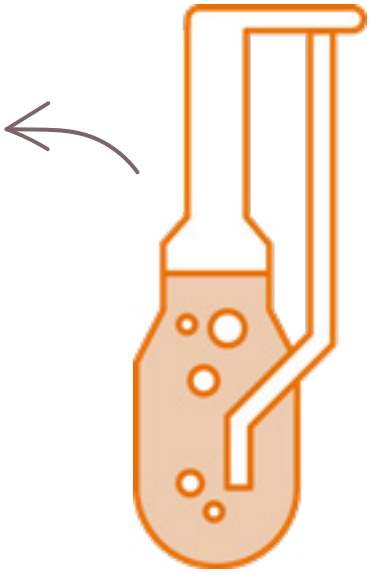
Nutritional profile

Quorn products can play an important role in supporting a healthy and balanced diet and can be a great choice for individuals looking to manage cardiometabolic health conditions, or are simply interested in incorporating healthy, sustainable meat-alternatives into their diet.

Micronutrient profile of Quorn mycoprotein (per 100g)

*source of (>15% in 100g) **high in (>30% in 100g)
***relative to 100g beef

Calcium
Choline***
Chromium
Folate**
Iron
Magnesium
Manganese**
Phosphorus**
Potassium
Riboflavin*
Vitamin B6
Zinc**



Quorn mycoprotein contains all 9 essential amino acids and has a Protein Digestibility-Corrected Amino Acid Score (PDCAA) of 0.99 (compared to beef at 0.92 and pea protein at 0.82). This demonstrates the promising amino acid composition and bioavailability of Quorn mycoprotein as a meat-free protein alternative, making it comparable to 'traditional' protein sources such as meat or fish.

Quorn mycoprotein is an excellent source of fibre at 6g of fibre per 100g. In particular, Quorn mycoprotein includes fibres called beta-glucan and chitin.

How can Quorn mycoprotein help my patients?

Weight management

Quorn mycoprotein has been shown to effectively induce satiety due to its combination of nutrients including protein and fibre. Although the exact relationship is not yet fully understood, there is evidence to suggest that consumption of foods high in fibre may be beneficial for weight management, due to the fact that it takes longer to chew high-fibre foods, and therefore more time is allowed for the signals in the body to produce feelings of satiety.[3]

Healthy ageing

A growing body of work has suggested that protein intakes above current guidelines could assist with healthy ageing[4] and there is some data to suggest that excess leucine may be able to overcome age-related challenges, such as sarcopenia[5]. Therefore, Quorn products may be a beneficial addition to the diets of older individuals who are looking to manage or prevent loss of muscle mass by increasing dietary protein intake.

Cardiometabolic health

Quorn mycoprotein contains no cholesterol which is a favourable nutritional profile for the support of cardiometabolic health. A study published in the BJN described a RCT[6] that found that a macronutrient-matched meal containing Quorn mycoprotein decreased total energy intake during a free eating task, and again 24 hours later, by up to 10% compared to chicken. The Quorn mycoprotein meal also significantly improved insulin sensitivity, and reduced serum insulin concentrations by 8-21%. This is likely to be due to Quorn mycoprotein's unique fibre contribution. Although, more research is warranted on the potential of Quorn mycoprotein in this area (and we are working on it!).

Sustainable nutrition

Quorn mycoprotein is a healthy protein with a low environmental impact due to its very efficient fermentation production process. In fact, we are the first global meat-alternative company to achieve third-party, independent certification of our products carbon footprint figures.

Key figures

Carbon footprint
The carbon footprint of Quorn mycoprotein is **30x** lower than beef and can be at least **7x** lower than chicken.

Water footprint
The water footprint of Quorn mycoprotein is **25x** lower than beef and **5x** lower than chicken.

Land use
The land use requirement of Quorn mycoprotein is **20x** lower than beef and **4x** lower than chicken.

Food safety

Quorn mycoprotein has decades of food safety history and has regulatory approvals from around the world. In fact, Quorn products have been eaten for more than 30 years with over 5 billion Quorn meals now served.

Genetic Modification

Quorn mycoprotein is not made by genetic modification but instead, by fermenting a blend of a natural fungus, glucose and minerals.
All ingredients are purchased with a specification that they are from a non-GM source which can be checked by the Identification Preserved process and by conducting polymerase chain reactions.

Organic

It is not possible to guarantee the organic status of all the ingredients used in Quorn mycoprotein.

Mycotoxins

Under the careful conditions which Quorn mycoprotein is produced, the production of mycotoxins is prevented. However, every production batch is analysed using accredited third-party labs.

Intolerances

It is important to know that Quorn foods can contain common allergens including egg, milk and gluten which are clearly marked on the back of pack labelling. As with all protein foods, there is the potential to cause an adverse reaction, such as an intolerance, in some consumers. Quorn mycoprotein is also high in fibre which, like other fibre-containing foods, may cause flatulence but this soon disappears. An analysis of the frequency of consumer reactions to Quorn mycoprotein found that over a 15-year period, there was one reported illness for every 1.85 million servings of Quorn, with the frequency of true allergy reactions being one for every 24.3 million servings.[7]

Where to find Quorn mycoprotein

Quorn mycoprotein is the unique whole food at the heart of every single Quorn product. There is a huge range of great tasting Quorn® products and ingredients available, all of which can easily be used to recreate your favourite recipes with a nutritious and sustainable twist.

Visit **www.quornnutrition.com** and **www.quorn.com** for more information about Quorn mycoprotein, products and recipes.

References:

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7. Finnigan T et al. Current Developments in Nutrition. 2019;3(6).