# Forum GLUTEN-FREE

JOURNAL FOR HEALTH CARE PROFESSIONALS I EDITION 01/2014

## Dr Schär Institute





**EDITORIAL** 

# The future of the 'gluten-free' world

An international symposium took place on 30 November 2013, marking the occasion of the tenth anniversary of the Dr. Schär Research and Development department in Trieste. Under the title '10 years of research in gluten-free food and future perspectives', prominent speakers from Italy, Germany, the United Kingdom, Spain, Finland and the Netherlands introduced their current gluten research projects, as well as alternative gluten free grains and cereals.

The meeting was both a rare and precious opportunity for people from a diverse group of disciplines to gather and discuss the dietary needs of people with gluten intolerances from different yet complementary points of view: the doctor, the dietitian, the food technologist, and catering and industry representatives. The picture that emerged was both extremely dynamic and characterised by the increased attention paid to patients' quality of life. From the implementation of new technological

processes increasing the number of available gluten-free products, the choice of new ingredients designed to improve the nutritional value of a gluten-free diet, being able to buy a satisfactory assortment of products from mass distribution, to being able to eat a gluten-free, authentic Neapolitan pizza, and so on.

The round table I had the pleasure of moderating focussed on the role of oats in the diet of those with coeliac disease. Over the past few years this cereal has been reintroduced into the gluten-free diet, after thorough clinical testing disproved any toxic potential to the gluten intolerant, except in exceptional cases. It is worth remembering that oats can be a valuable addition to the gluten-free diet, since they are rich in fibre and other nutrients the gluten-free diet can sometimes lack, such as B complex vitamins and beta-glucan, both essential for maintaining healthy levels of cholesterol in the blood. Despite this, several countries in southern Europe, Italy included, have so far shown



little interest in oat-based gluten-free products. This is likely due to distrust from frequent gluten contamination of 'normal' products made with oats, but also because oats are rarely used in traditional diets of these populations. These preconceptions should be overcome today, out of interest for the patients. In fact, with the help of an efficient supply chain, the availability of pure oats with no traces of gluten can be guaranteed in order to greatly expand the gluten-free diet for those with coeliac disease and other gluten-related disorders.



#### PROFESSOR CARLO CATASSI

Professor for pediatrician at the Marche Poltechnic University (Italy). President of the Italian Society for Pediatric Gastroenterology, Hepatology and Nutrition, years 2013-2016. Coordinator of the Dr. Schär Advisory Board



**INTERVIEW** 

## 10 years for the R&D Centre

The tenth anniversary of the Research and Development Centre in Trieste and the scientific symposium held there was a milestone in the history of Dr. Schär. We asked Ulrich Ladurner, founder and president of Dr. Schär, about this important department and his view of the gluten free future.



#### What is particularly important for you as a businessman and to what extent does research and development play a role in the achievement of these objectives?

Dr. Schär is a pioneer in the gluten-free market, so the work in the research and development area has always been of great significance for the company. Our research is aimed at innovation, quality, taste and freshness in gluten-free food products. The fact that we have focussed on research and development from the outset is the reason why we are the market leaders for gluten-free food products today. Innovation and the high quality of our products make it easier for those with coeliac disease to follow a gluten-free diet without having to sacrifice taste. Fifteen years ago this would have been asking too much. In the past few years there have been substantial developments, which have also led to commercial success.

## What significance does having your own R&D department have for you?

There is a difference between research and development. In the research field we must look to the horizon, for the future three or ten years from now. Development itself lasts around one to three years. If we don't know now what we would like to introduce to the market in five or ten years time, we shall lose our leading role

in the gluten-free market. This is why we think ahead. This way we know today what our customers will want tomorrow.

## Why was the R&D department founded in Trieste? What opportunities and possibilities does Trieste have to offer?

Up until ten years ago, the development department was based in Burgstall, Dr. Schär's head office. Here, there was constant conflict between quality assurance and work on new developments, as these sectors both think and work very differently. In 2003, the department was relocated to the AREA Science Park in Trieste. As a highly suitable and dynamic research site, it provides the very best environment for the Dr. Schär Research and Development department. The Dr. Schär R&D centre holds the most cutting-edge equipment and regularly collaborates with leading universities and research centres in Italy and other countries. A good climate prevails and links with other scientific disciplines enable us to concentrate on our research tasks.

## Looking back on the anniversary event, what do you particularly like to remember?

In the past, research into coeliac disease was always viewed as a medical subject area. The tenth anniversary of the R&D department



was therefore of particular concern to me as it provided the opportunity to highlight the other side of the research as well. It was possible to show how complex food products can be and how much research is needed in the various fields, from food and agricultural technology to systems engineering, to be able to produce high-quality, gluten-free food products that are both nutritious as well as appealing to the senses. After all quality is the be all and end all for gluten-free food. Raising public awareness of coeliac disease and other gluten-related disorders is not possible without providing suitable product quality. The special thing about the anniversary celebrations in Trieste for me was to see the professionalism and confidence with which the Dr. Schär staff presented their projects.

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#### Where do you see the gluten-free future and the future of Dr. Schär?

The two main focal points we are looking at in the gluten-free future are eating out and new raw ingredients. On the one hand, eating out still represents a challenge for those with coeliac disease and the current situation for all those affected remains unsatisfactory. At home there are no supply problems, but away from home there is always uncertainty. We see it as our job to change this in the future! The second important point for the gluten-free future relates to new raw ingredients. They provide the opportunity to develop a greater variety of gluten-free food products and hence achieve a wide range of flavours. In the past, gluten-free products were made mainly from starch and contained a high proportion of fat and sugar. In the 1990s we began to develop products based on rice



and maize and so today we have a diverse view of the gluten-free future. In the future we want to make greater use of the wide spectrum of gluten-free cereals, such as millet, buckwheat, quinoa, etc., and produce gluten-free products from these alternative raw ingredients. On this basis, we are certainly very well equipped to offer our customers high-quality, gluten-free products in the future.



#### ABSTRACT OVERVIEWS

# International symposium on the gluten-free future



At the symposium in Trieste current research was presented relating to gluten, alternative grains and pseudocereals. The report that follows summarises these lectures, with full presentations available on the Dr. Schär Institute website via a direct link.

# Overview on the use of pseudocereals and minor cereals in gluten-free products

Pseudocereals and minor cereals represent a promising alternative to frequently used ingredients in gluten-free products. Due to their excellent nutrient profile in high quality protein, fibre, minerals and bioactive compounds, they contribute to a balanced gluten-free diet. During the last ten years, a growing number of studies have investigated their application in the production of nutrient-rich gluten-free products. Good results have been obtained blending cereal

and pseudocereal flours in products such as baked produce, pasta, snacks, beverages and baby-food products. Market availability of these products is increasing, but it is essential to inform consumers of the good properties of these grains. Joint research by food manufacturers and research institutes is necessary to fully capitalise on the use of these ingredients and to study the processing effects for the production of palatable and healthy gluten-free products.



ANA FERRER-MAIRAL University of Zaragoza, Spain

The presentation can be found on the Dr. Schär Institute website.

→ Link to presentation

### Nutritional values of the "new" cereals and pseudo-cereals

This presentation is about the nutritional values of "new" cereals and pseudo cereals starting with a short summary about important aspects of nutrition and nutritional value in general. The importance of several essential substances for the human body will be pointed out. Certain gluten free cereals and pseudocereals, that have become increasingly important for gluten free products, will be introduced. These cereals offer certain advantages, one of them being a high nutritional

value compared to the commonly used maize and rice flours. The amounts of these advantageous substances will be shown for each of the introduced cereals. The cereals and pseudocereals introduced are: buckwheat, quinoa, teff, millet, sorghum and oat. Each of them offers specific nutritional values, thus can enhance the nutritional quality of gluten free products. During the presentation, the composition of each of them will be compared to wheat and sometimes maize and rice.



BIANCA PELZER
Association of
Cereal Research (AGF),
Detmold,
Germany

The presentation can be found on the Dr. Schär Institute website.

→ Link to presentation

# Growing cereals/pseudocereals in Italy and Europe

Pseudocereals are broadleaf species whose seed can be ground into flour and used as cereals. Minor cereals include less-diffused species and major cereals normally used in animal nutrition. Minor cereals and pseudocereals offer opportunities for fully mechanized niche crops, although the downward trend in their diffusion at world level implies a slower progress in crop technique with respect to major cereals. Sorghum is already well established in South European areas and can potentially be used for glu-

ten-free products (pale, tannin-free hybrids). Common millet owns a lower yield potential in exchange for a shorter cycle and a good resilience to adversities (drought). However, millet demands a careful management of the crop, as it can count on few products for weed (and pest) control while its harvest window is quite narrow. The new CAP provides a favourable framework for the cultivation of minor cereals/ pseudocereals as ingredients for specific food preparations as gluten-free products.



LORENZO BARBANTI DipSA, University of Bologna, Bologna, Italy

The presentation can be found on the Dr. Schär Institute website.

→ Link to presentation

# Safety and wholesomeness of oats for coeliac people – analytical aspects

The current EU regulation (EC 41/2009) recognizes oats as gluten-free, although with exceptional reservations and specific requirements for purity. Consequently, the pure oat products of less than the 20 mg/kg gluten level cost 4-6 times more than regular oat products. While safety is ascertained the high price of pure oats does not support the coeliac people to benefit from the supplementary health promoting properties of oats. Oats can contribute to heart health by lowering cholesterol. Oats are also of interest to those who wish to reduce their post-prandial glycaemic responses, such as people in risk of diabetes. For both of these properties,

oats – or the beta-glucan in oats – can carry a health claim as defined by EFSA, thus emphasizing the wholesomeness of oats. For pure oats the analysis for purity has become a critical issue. In particular, contamination with barley is extremely critical because the barley C-hordeins are almost entirely composed of repeats of the octapeptide PQQP-FPQQ that contains the QQPFP pentapeptide sequence used for gluten detection in the current official R5 method. It is obvious that an improvement in the current pure oat regulation will ultimately allow the coeliac people to benefit from the health-promoting effects of oats.



HANNU SALOVAARA
Department of Food and
Environmental Sciences,
University of Helsinki,
Finland

The presentation can be found on the Dr. Schär Institute website.

→ Link to presentation

## Dietary pattern analysis:

## a comparison between matched coeliac and non-coeliac subjects

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The coeliac diet is combines naturally gluten-free (GF) foods and GF substitutes of cereal-based foods. Because derivatives of gluten-rich grains are important sources of nutrients in the general diet, their exclusion from the diet of coeliac patient could potentially have major effects on their nutritional status. Despite an estimated worldwide prevalence of approximately 1% of coeliac disease, the adequacy of coeliac patients' diet is still debated. With the aim at exploring the dietary

habits of coeliac subjects, we are conducting a study, in collaboration with the Center for Prevention and Diagnosis of Celiac Disease at the University of Milan, in which a total of 300 subjects (150 coeliac patients and 150 non-coeliac subjects) will be recruited and their dietary habits will be recorded using a 7-day weighed food record. During the presentation, a preliminary dietary pattern analysis of about 120 subjects will be presented and critically discussed.



NICOLETTA PELLEGRINI
Department of Food Science,
University of Parma,
Parma,
Italy

You will find this presentation on our Website Dr. Schär Institute. It includes results of the study and we will also inform you of upcoming results.

→ Link to presentation

# Controlled farming: the importance of the selection of the suitable variety and supply chain of agricultural raw materials – The millet case study

Controlled farming is very important in food industry, not only to guarantee the availability of all quantities needed for some raw materials but especially to guarantee the high quality standard requested. Dr . Schär already started some years ago with the creation of a supply chain for the two more used gluten free raw materials: rice and corn. Nowadays we have contract farming on millet, sorghum and buckwheat, too. First of all the farmers best equipped and working according high qualified agronomic procedures are selected. Specific varieties/hybrids, selected in previous agronomic projects, are cultivated according to guidelines agreed with the farmers and Dr. Schär. That leads to a full traceability from the seed to the final flour and allows us to keep

under control harvest time and conditions, drying processes, storage and milling of our special flours. The final flour is a high quality and safe raw material for example as far as contaminants are concerned, such as mycotoxins and allergens. In this presentation the recent work of Dr. Schär on the millet supply will be reported. Such as the other contract farmings, our project has started with a research project, in this case with a collaboration with the University of Bologna, with the final aim to select the best varieties in term of agronomic performance and technological properties. After the selection of farmers and a 2-year period of cultivation in experimental fields, we started a bigger cultivation area and collaboration with mills to get our final millet flour.



**EDUARD BERNHART** Dr. Schär R&D Centre, **Italy** 

This author has only provided the abstract.

# Introduction to alternative grains: history and consumption in Europe

Wheat (common or bread wheat, Triticum aestivum) largely dominates the food industry. Currently more than 30% of the packed supermarket food items contain wheat or wheat-derived starch and gluten. The consequences are a decrease of genetic diversity of bread wheat, reduced attention to other wheat and grain species and the products thereof, loss of small-scale processing technologies, and increased wheat and gluten-related conditions. A world-wide negative appreciation of wheat seems growing. Concomitantly, attention is increasing towards alternative grains like quinoa and buckwheat

(both 'pseudo-cereals'), and sorghum, millet, teff and oats (cereals). The presentation deals with the history (including origin, dispersal and use in traditional foods) and the current food applications of these grains, in a comparative way, and within the perspective of growing European interest. It is concluded that these grains have great potential to improve the quality of healthy gluten-free diets, to revive traditional foods produced by traditional technologies, and to be a rich and varied source to challenge the modern food industry towards innovative healthy gluten-free products.



LUUD GILISSEN Plant Research International (PRI), Wageningen, The Netherlands

The presentation can be found on the Dr. Schär Institute website.

→ Link to presentation

# Production of gluten-free sourdough and malt from alternative cereals & pseudo-cereals and their application in gluten-free products

Sourdough and malt are traditionally produced from wheat, rye and barley. Their use is important in numerous recipes of bakery products. This presentation describes the processes of fermentation and germination applied to the seeds to obtain sourdough and malt. The same technologies can also be applied to alternative cereals and pseudo-cereals such as millet, sorghum, buckwheat, quinoa, teff and oats. The properties of the different seeds will specifically characterize the final compounds and define their sensory and rheological profile. Selecting the most interesting cereals, it is possible to produce alternative

sourdoughs and malts to be used for improved quality of gluten-free products, for example, by giving a typical flavour, helping to diversify bread aroma according to regional preferences, maintaining bread softness during shelf-life. Dr. Schär already produces different sourdoughs with specific characteristics of colour (light to dark) and aroma (mild to intense) to offer a large range of bread and satisfy all the tastes of coeliacs, in particular through the choice among fresh breads (Select Fresh White, Pan del forno), whole and seeded loafs (Pain Campagnard, Vital) or traditional recipes (Baguette, Surdegsbröd).



AURORE RANCHON Dr. Schär R&D Centre, Triest, Italy

This author has only provided the abstract.

### Use of oats and wheat starch in the gluten free products

The use of oats and wheat starch is one of the most discussed topics for the safety of coeliac patients. Even if the debate is still not completely finished, recent clinical studies have led to more certainty in this respect. In fact since 2009 the European Commission has included oats in the list of ingredients of gluten free products (EC number 41/2009) and has allowed the use of wheat starch if the gluten content is under 20 ppm. Oats are a very interesting cereal for nutritional and health properties, especially for  $\beta$  glucan content. Dr. Schär have begun to study development solutions to use it and highlight its unique flavour and moisture retention characteristics. Safety is guaranteeing to the coeliac consumer through accurate controls of oat suppliers and of raw material quality in order to avoid cross contamination. Wheat starch increases diversity of the diet of coeliac patients in terms of taste and texture. Dr. Schär has been working with this raw material for a few years. Only wheat starch with less than 20 ppm is allowed in production, possible thanks to close collaboration with mills and an optimized process of wheat starch extraction to gain final satisfying results. As these raw materials are allowed from a legislative point of view, it is important to support the consumer awareness and choice towards these two ingredients, through information and clear labels in order to diversify his diet both at sensory and nutritional level. Clear labels on oats will help the small group of coeliac patients with oats sensitivity in a safe choice. More research on these topics could help countries which still hesitate to use them.



OMBRETTA POLENGHI Dr. Schär R&D Centre, Triest, Italy

This author has only provided the abstract.

## Suitability and Safety Aspects of Cereals and Pseudocereals for Gluten-Free Foods

Beside maize, rice and millet pseudocereals such as buckwheat, amaranth and quinoa can be used for the production of gluten-free foods. Suitable methods are required to check these raw materials for gluten concentrations exceeding 20 mg/kg. Gluten analysis is an analytical challenge because gluten has an extremely complex and heterogeneous composition. ELISA methods are state-of-the art in gluten analysis, however, they are often

unprecise because prolamins are quantitated and the gluten content is calculated on the basis of a fixed prolamin/glutelin ratio of 1. Therefore, new antibodies for both prolamins and glutelins would enable analytical determination of the gluten content instead of calculation. Furthermore, there is a need for new reference materials and independent analytical methods such as LC-MS to confirm ELISA results.



PETER KOEHLER
German Research
Centre for Food Chemistry,
Freising,
Germany

The presentation can be found on the Dr. Schär Institute website.

→ Link to presentation

#### **EXPERT OPINION**

## R&D 2003-2013:

## From research to product development

At the end of 2013, the Dr. Schär Research and Development Department celebrated it's tenth anniversary. Virna Cerne, head of the R&D centre sets out the milestones of the last few years – in particular how the quality of gluten-free products has improved and gives a view on what might be expected in the future in this exciting market.

The task of the Dr. Schär R&D Department is

to develop Dr. Schär gluten free products that

fulfil the requirements of a balanced diet, as

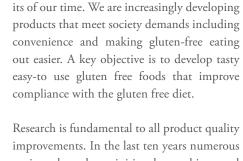
well as to counter the problematic eating hab-



VIRNA CERNE
Head of the Dr. Schär Research
and Development Department
in the Area Science Park,
Trieste, Italy

years

**R&D** Centre



Research is fundamental to all product quality improvements. In the last ten years numerous projects have been initiated to achieve and maintain this improvement in quality, including basic research investigating new raw ingredients, sensor technology, packaging and the development of new product technologies. Research and development must constantly be at the forefront to develop innovative products and improve existing ones.

## Formation and evolution of the R&D department

Since 2003, the R&D department has been located in the Area Science Park in Trieste, Italy, so that staff can concentrate on effective development work in a suitable environment, surrounded by researchers. Prior to this, the R&D department was part of quality assurance. Investment in laboratory equipment and in personnel has been crucial. From an initial three researchers, there are now twelve members of staff in Trieste, with a further eight at other production sites responsible for the continuous improvement and development of gluten-free products. The number of projects managed by the team has increased significantly in the last ten years: from almost ten at the beginning to the current 30 development projects, around eight research projects and five technology projects.

#### **Anniversary symposium**

To give the public an insight into the work of the R&D department, on the occasion of its tenth anniversary, Dr. Schär held an international symposium in Trieste. Whilst most sessions were on the subject of gluten-free or coeliac disease, the focus of this symposium was scientific research into the field of gluten-free products and nutrition. Participants experienced first-hand what goes on behind the scenes of R&D, current projects being worked on and the most successful long-term studies now entering daily production. The agenda also covered alternative cereals grains, such as millet, sorghum, buckwheat, quinoa, teff and oats. All these cereals enhance gluten-free



foods in a natural way and broaden the otherwise very limited menu for the patients. Use of these ingredients in gluten free products improves not only their appeal, but also their nutritional value. Buckwheat and millet have become firmly established ingredients used within the Dr. Schär range.



Various components have contributed to the complete change to the range and quality of gluten-free products in the last ten years:





## NEW RAW INGREDIENTS (e.g. quinoa, buckwheat, millet, sorghum)

- These provide appealing variety and diversity.
- They enhance the product's nutritional profile.

### **CONTROLLED CULTIVATION**

- · As part of research projects and in collaboration with universities, seeds and grains are selected that are best suited to gluten-free products.
- · Growers are specifically selected and the cultivation technique is contractually established.
- Complete traceability is ensured from seed to flour, to guarantee the highest degree of quality and safety.





## SOURDOUGH

- Bread texture and crumb improved.
- Differing visual and flavour characteristics of the bread appeal to different senses.
- Sourdough bread is easy to digest.
- It stays fresh longer.

## **NEW PROCESSES**





- Participation in the 'EU-Freshbake' European research project
- Procedural techniques to improve the freshness of the products during consumption.
- This is a range of pre-baked products that are briefly warmed prior to consumption, e.g. ciabattine and part-baked, deep-frozen products in individual packaging. These are then baked at the point of sale, e.g. Mini Baguette and Baguette.





### Bread and pasta product improvements

#### Bread 2003

recipe based on rice flour and starch

cake-like texture

has the tendency to become hard and dry during shelf-life

different breads vary in shape (roll, loaf), but taste very similar and do not differ much from a sensory perspective.

small bread rolls

problems in standardising product quality

#### **Bread 2013**

use of new grains and cereals

use of sour dough

loose crumb during shelf life, bread does not dry out

large rolls

contract cultivation and standardisation of the raw ingredients to guarantee consistent product quality

#### Pasta 2003

sandy texture

use of emulsifiers

maize and rice flour

#### Pasta 2013

use of new cereals (e.g. millet, sorghum, buckwheat)

neutral taste

no emulsifiers

'Al dente' consistency

awarded 'Sapore dell'Anno' (Taste of the Year)

2013

## Significance of research in the future

Research on continuous product improvement will play a major role in the future for Dr. Schär. Collaboration with universities and other research centres is important for the successful implementation of projects. Attention is placed on the quality of raw ingredients as the basis for sensory appeal and optimal nutrition. The cereals used, controlled cultivation and cultivation conditions, processing and safety assurance in relation to gluten-free status are essential factors for high-quality products. R&D is and remains a driving force which will become more significant in a strongly competitive market. The future challenge will be to maintain the lead through impressive product quality.

## Gluten-free – not just for those with coeliac disease

In the future there may no longer be a difference between products for those with or without coeliac disease. As a result of the changed regulation that moved the gluten-free category from diet products (9/398 EEC, amended by 2009/39) into EU 1169/2011 (REGULA-TION EU NO. 1169/2011 OF THE EU-ROPEAN PARLIAMENT AND OF THE COUNCIL on the provision of information to consumers), gluten-free products are effectively treated in the same way as general foods. Dr. Schär will concentrate on designing a variety of nutritious products which provide an alternative for coeliac and gluten sensitive patients enabling them to follow a balanced, gluten-free diet. It will be the task of the Research and Development Department to develop flavoursome products with consistent quality.



## **News**

#### The app for gluten-free travel and shopping: GlutenfreeRoads

GlutenfreeRoads is now available as a free app to provide valuable assistance for those with coeliac disease or gluten sensitivity when travelling or eating out. The app helps you to find countless gluten-free restaurants and pizzerias in various countries. You can also search worldwide for hotels with a gluten-free menu, as well as find supermarkets and retail outlets with gluten free products. Individual restaurants, hotels and super-

markets can be directly compared and commented on. The GlutenfreeRoads database contains around 40,000 gluten-free establishments that are constantly updated and added to. The GlutenfreeRoads app is completely free and doesn't require any registration or entry of personal data. Find out more information by visiting:

http://www.glutenfreeroads.com/en/app/



#### **New Glutafin Packaging and Word Changes**

Glutafin are committed to making sure that our gluten free foods are not only tasty but they look great too. That's why we've modernised our packaging design and included new tasty recipes where possible. The gluten free products themselves haven't changed, they've simply been updated with a fresh new look. Whilst we've been updating the design of our packaging, we have also taken the opportunity to bring it in line with new guidelines from the ACBS\* and update some of our product names.

#### Removal of "Wheat Free"

New regulations from the ACBS specify that gluten free packaging should only indicate the allergen for which the product is being prescribed (i.e. gluten in the case of coeliac disease). Therefore, although many Glutafin products remain wheat free, we are no longer able to declare this or the absence of any other allergens (e.g. Lactose Free) on our packaging.

#### How can I tell if a product is wheat free?

All Glutafin products are gluten free, but some contain "Codex wheat starch" or 'gluten free wheat starch'. This gluten free ingredient is manufactured to contain less than 20 ppm gluten and provides superior baking qualities and a lighter texture. All Glutafin products that use gluten free wheat starch are labelled with a

"Select" logo. A large majority of coeliacs can tolerate this ingredient, however, those who require a wheat free diet should avoid products with the 'Select' logo stamped on the pack.

As a further indication, products that are wheat free have a cream top and side, whereas products which contain gluten free wheat starch will have an orange top and side.





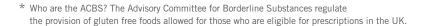
#### Name change

As part of the update, we have removed "wheat free" from many of our product names. Once again, this does not mean that the products are no longer wheat free, the removal of "wheat free" is simply to comply with the new regulations.

#### Each Glutafin product now begins:

Glutafin Gluten Free PRODUCT NAME (wheat free products)

Glutafin Gluten Free Select PRODUCT NAME (products which contain gluten free wheat starch)



## **News**

#### What ingredients do we use in our gluten-free foods?

Dr. Schär uses innovative and richly varied ingredients in its products. The plant world provides a variety of gluten-free cereals. Here are just a couple of examples:

**SORGHUM** is a type of millet that contains calcium, iron, potassium and is rich in B vitamins and fibre.

For example: Glutafin Gluten Free Pasta

**BUCKWHEAT** contains protein and has a high lysine, mineral, vitamin and antioxidant content. For example: Glutafin Gluten Free 4 fibre rolls

**MILLET** is a commonly used grain in Asia and Africa. It provides a good source of protein making it a suitable ingredient for breads and pasta. Millet also provides a balance of needed minerals and fibre.

**LINSEED** is particularly rich in minerals, B vitamins, Omega-3 fatty acids and fibre. For example: Glutafin Gluten Free Select Seeded Loaf, DS Wholesome Seeded Loaf

**QUINOA** is rich in protein, unsaturated fatty acids, iron and calcium.

For example: Glutafin Gluten Free Select Seeded Loaf, DS Wholesome Seeded Loaf, DS wholesome white sliced loaf





#### Gluten-free pasta just like in Italy

Dr. Schär offers a variety of gluten-free pasta through the Glutafin and DS-gluten free ranges. Millet flour is added to provide minerals, fibre and a good source of Vitamin B. The pasta recipe doesn't contain any starch, giving the pasta a solid, typically Italian 'al dente' consistency that doesn't disintegrate

when boiled. In 2013, the pasta was awarded the 'Sapore dell'Anno' (Taste of the Year) prize. This involves the product being subjected to a blind test in an independent laboratory, where it is sampled by 500,000 testers for appearance, smell, taste and product consistency.



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