



EDITORIAL

The evolution of the 'gluten-free' world

To mark the 10th anniversary of the Dr Schar Research and Development department in Trieste, Italy an international symposium was held on 30 November 2013. 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 discussed the use of alternative gluten free grains.

The meeting was both a rare and precious opportunity for people from a diverse group of disciplines to gather and discuss an issue - the dietary needs of people with gluten intolerances - from different yet complementary points of view: the doctor, the nutritionist, 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 which increases the number and varieties of gluten-free products, to the choice of new ingredients designed to improve the nutritional values of a gluten-free diet. Discussions included being able to buy a satisfactory assortment of products from mass distribution, to being able to eat a gluten-free, authentic Neapolitan pizza, and many others. I had the pleasure of moderating the round table focussed on the role of oats in the diet of the celiac patient. Over the past few years this grain has been reintroduced into the gluten-free diet, after thorough clinical testing did not confirm the potential for toxicity 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 fiber and other nutrients commonly missing in the gluten-free diet, such as B complex vitamins and beta-glucans, both essential for maintaining healthy levels of cholesterol in the blood. And yet in several countries in southern Europe, Italy included, there has so far been little

interest in oat-based gluten-free products. Not only because of a somewhat understandable distrust from frequent gluten contaminations from 'normal' products made with oats, but also because this grain is rarely used in the traditional diet of the population in general. Out of concern for these patients overall health, these preconceptions should be overcome today. In fact, with the help of an efficient supply chain, the availability of purified oats with no traces of gluten can be guaranteed in order to greatly expand the celiac diet and the diet of the ever-increasing number of people affected by other forms of gluten intolerance.



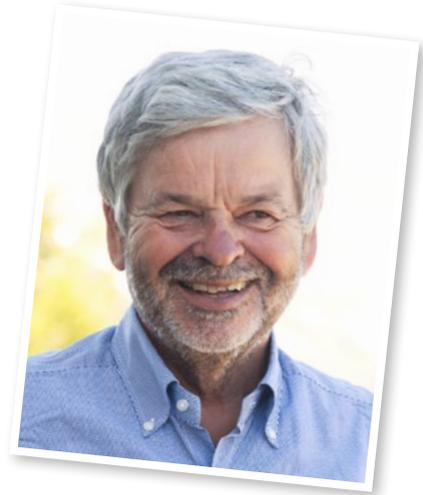
PROFESSOR CARLO CATASSI
Professor for pediatrician at the Marche Politechnic University (Italy). President of the Italian Society for Pediatric Gastroenterology, Hepatology and Nutrition, years 2013-2016. Coordinator of the Dr. Schär Advisory Board

10
SPECIAL-EDITION
years
R&D Centre

INTERVIEW

10 years for the R&D Center

The tenth anniversary of the Research and Development (R&D) Center in Trieste and the scientific symposium organised under its auspices are a prominent milestone in the history of the Dr. Schär company. We asked Ulrich Ladurner, founder and president of Dr. Schär, about this important landmark of the R&D department and his view of the future of gluten-free.



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 celiac 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 the head office of Dr Schär in Burgstall, Italy. 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 center holds the most cutting-edge equipment and regularly collaborates with leading universities and research centers in Italy and other countries. A collaborative climate exists there and links Dr Schär with other scientific disciplines.

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

In the past, research into celiac disease was always viewed as a medical subject area. The tenth anniversary of the R&D department was therefore of particular concern to me. This provided the opportunity to highlight the other side of the research as well. It was possible to show how complex food products

10 years
R&D Centre

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 celiac disease and other gluten-related complaints 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.

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 celiac disease and the current situation is 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 flavors. In the past, gluten-free products were made mainly from starch. They contained a high proportion of fat and sugar. In the 1990s we began to develop products based on rice and corn 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

10 years
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At the symposium in Trieste current research was presented that deals with gluten, alternative cereals and pseudocereals. In the summary below we present all abstracts of our speakers. For all those who could not at the symposium, we provide the complete presentations on our website, these can be accessed via a direct link.

Overview on the use of pseudograins and minor grains in gluten-free products

Pseudograins and minor grains represent a promising alternative to frequently used ingredients in gluten-free products. Due to their excellent nutrient profile in high quality protein, fiber, 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 grain and

pseudograin flours in products such as baked products, 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 capitalize 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” grains and pseudo-grains

This presentation is about the nutritional values of “new” grains and pseudo grains 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 grains and pseudograins, that have become increasingly important for gluten free products, will be introduced. These grains offer certain advantages, one of them being a high nutritional value compared to

the commonly used corn and rice flours. The amounts of these advantageous substances will be shown for each of the introduced grains. The grain and pseudograin introduced are: buckwheat, quinoa, teff, millet, sorghum and oat. Each of these grains offers specific nutritional values, thus can enhance the nutritional quality of gluten free products. During the presentation, the composition of each of the grains will be compared to wheat and sometimes corn 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 grains/pseudograins in Italy and Europe

Pseudograins are broadleaf species whose seed can be ground into flour and used as grains. Minor grains include less-diffused species and major grains normally used in animal nutrition. Minor grains and pseudograins 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 grains. Sorghum is already well established in South European areas and can potentially be

used for gluten-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 favorable framework for the cultivation of minor grains/pseudograins 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 celiac 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 benefit to celiac patients 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 PQQPFPQQ 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 celiac patients 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 celiac and non-ceeliac subjects

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

of celiac 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 celiac patients and 150 non-ceeliac subjects) will be recruited and their dietary habits will be recorded using a 7-day weighed food record. 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

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

→ [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,
Burgstall,
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 to be growing. Concomitantly, attention is increasing towards alternative grains like quinoa and buckwheat

(both 'pseudo-grains'), and sorghum, millet, teff and oats (grains). 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,
Wageningen,
The Netherlands

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

→ [Link to presentation](#)

Production of gluten-free sourdough and gluten-free malt from alternative grains & pseudo-grains 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 gluten-free malt. The same technologies can also be applied to alternative grains and pseudo-grains 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 grains, it is possible to produce alter-

native sourdoughs and gluten-free malts to be used for improved quality of gluten-free products, for example, by giving a typical flavor, 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 color (light to dark) and aroma (mild to intense) to offer a large range of bread and satisfy all the tastes of celiacs, in particular through the choice among fresh breads (Classic White, Deli Style), whole and seeded loafs (Multigrain) or traditional recipes (Baguette, Sub Sandwich Roll).

**AUORE 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 celiac 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 grain for nutritional and health properties, especially for β glucan content. Dr. Schär has begun to study development solutions to use it and highlight its unique flavor and moisture retention characteristics. Safety is guaranteeing to the celiac 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 celiac 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, 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 celiac 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 grains and pseudograins for gluten-free foods

Beside corn, rice and millet pseudograins 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 not

precise because prolamins are quantitated and the gluten content is calculated on the basis of a fixed prolamins/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](#)

OPINION OF AN EXPERT

R&D 2003–2013: From research to product development

At the end of 2013, the Dr. Schär Research and Development Department celebrated its tenth anniversary. Virna Cerne, head of the R&D center describes 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.



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

The task of the Dr. Schär R&D Department is to design the Dr. Schär products so that special dietary needs become a pleasure and fulfil the requirements of a balanced diet. We are increasingly developing products to match new requirements in our society. This includes making gluten-free eating out easier. Research is fundamental to all product quality improvements. Quality and research now go hand in hand. In the last ten years numerous projects have been initiated at various levels of research in order to achieve and maintain this improvement in quality. From beginning with basic research investigating new raw ingredients, to work in relation to sensor technology, to packaging and the development of new product technologies. Research and development must always be at the forefront, as only with such knowledge is it possible to constantly 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, where staff has access to cutting edge equipment as well as being surrounded by other researchers. Prior to this, the R&D department was part of quality assurance. At the beginning, only three researchers were on staff. Even then, there was a great deal of investment in laboratory equipment and in personnel. There are now twelve members of staff in Trieste, with a further eight at other production sites who are responsible for the continuous improvement and further development of gluten-free products. Also, the number of individual projects that the team looks after 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 celebrate the tenth anniversary of the R&D department, Dr. Schär held an international symposium in Trieste, in order to give the public some insight into the work of the R&D department. While most sessions were on the subject of gluten-free or celiac disease, either for doctors, researchers, laboratory technicians or patients, the focus of this symposium was scientific research in the field of gluten-free products and gluten-free nutrition. The participants experienced first-hand what goes on behind the scenes of R&D, what is being worked on right now and what were the most successful long-term studies now entering the



daily production process. Another key objective in this field is to develop tasty foods that make patients lives easier and improve their chances of maintaining their dietary regime – a nice tasting product makes compliance easier. Along with research, the agenda also included topics related to alternative grains and pseudo-grains, such as millet, sorghum, buckwheat, quinoa, teff and oats. All these grains enhance gluten-free foods in a natural way and broaden the otherwise very limited menu for

the patients. Thanks to their natural composition, the use of these ingredients improves not only the taste and texture of the products, but also their nutritional value. In the meantime, buckwheat and millet have become firmly established in the Dr. Schär range.



The milestones of the R&D department

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



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

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

2. CONTROLLED CULTIVATION

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



3. SOURDOUGH

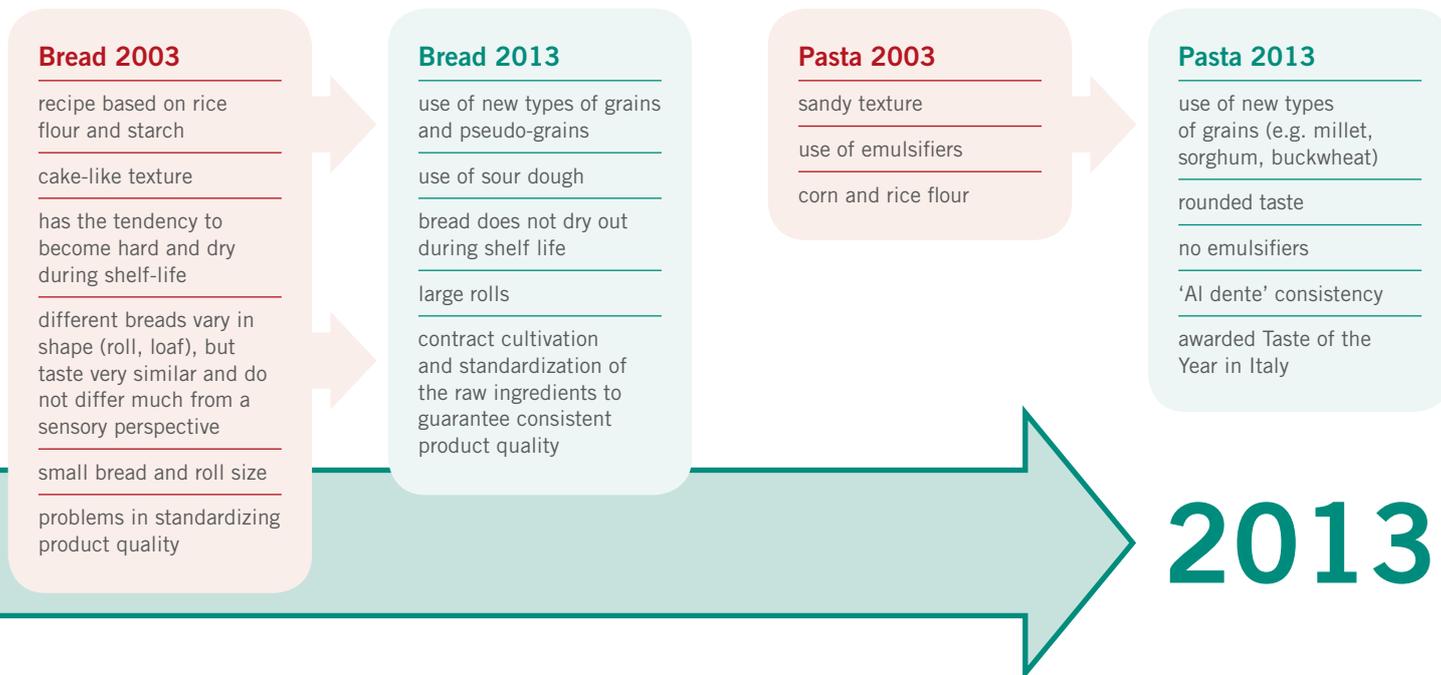
- Bread texture and crumb improved.
- Differing visual and flavour characteristics of the bread appeal to different senses.
- Sourdough bread is easy to digest.
- It stays fresh longer.

4. NEW PROCESSES

- New process techniques devised, along with adapted recipes (ciabatta, pasta, cookies, etc.).



Product improvements using bread and pasta as an example



Significance of research in the future

The research field will also play a major role in the future for the Dr. Schär company, becoming more and more important for continuous product improvement. Collaboration with universities and other research centres represents an important factor for the successful implementation of projects. Then as now, attention is focussed on the quality of raw ingredients used in products, as this is the basis for the sensory appeal and the nutritional profile. The grains used, the controlled cultivation and cultivation conditions, the processing of the grains and safety in relation to gluten-free status are essential factors for high-quality products. R&D is and remains a driving force, and as such 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 celiac disease

Virna Cerne assumes that in the future there will no longer be a difference between products for those with celiac disease and those who do not. 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 (REGULATION EU NO. 1169/2011 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the provision of information to consumers), gluten-free products are effectively treated in the same way as general food. The consequence of this is that the products are no longer considered simply as 'diet products' for the albeit lifelong gluten-free diet and for some consumers are seen as an alternative to the usual wheat products. Nevertheless, Dr. Schär will concentrate on designing products which provide an alternative for celiac and

gluten intolerant patients enabling them to follow a balanced, gluten-free diet. As well as the raw ingredients rice and corn, the cultivation of less well-known grains and pseudo grain types is promoted, so that in the future we can broaden and enhance the product range.

There will of course be a gluten-free product category that, thanks to its fine flavor and high nutritional value, will also be important for the wider general public; allowing them to introduce greater variety into their intake and to reduce their consumption of wheat. It will be the task of the Research and Development Department to develop products with excellent flavor and consistent quality.

News



The app for gluten-free travel and shopping: GlutenfreeRoads

GlutenfreeRoads became available as a free app at the end of 2013. This service provides valuable assistance for patients with celiac disease or gluten intolerance when they are travelling, and makes eating out easier for them. Using the app you can find countless gluten-free restaurants and pizzerias in various countries. You can also search for hotels with a gluten-free menu throughout the world, as well as find supermarkets and other retail outlets with gluten free products quickly and easily. The individual restaurants, hotels

and supermarkets can be directly compared and commented upon. This ensures that the gluten-free establishments are continuously updated using a variety of sources. The GlutenfreeRoads database contains about 40,000 addresses worldwide that are continuously being updated. The GlutenfreeRoads app is completely free and does not require any registration or entry of personal data. You and your patients can find out more information by visiting:

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

Gluten-free pasta just like in Italy

In the Bontà d'Italia product line, Schär offers a variety of pasta types. Millet flour is added in addition to corn flour. Due to nutritional profile it is very good for making pasta. It is rich in mineral content and fiber and is a good source of Vitamin B. Also new to the range is the multi grain pasta. This variety of pasta

contains buckwheat, sorghum flour and linseed flour. In addition to a wholesome taste, these ingredients also have a high fiber content (6.5 g/100 g). The pasta recipes contain only flour (no starch), which gives the pasta a solid, typically Italian 'al dente' consistency. Also it doesn't disintegrate when being boiled.



News

Excellent bread for every day

Bread is a staple food and is eaten daily – for those with celiac disease this is one of the greatest challenges in everyday life. From the very beginning Dr. Schär has concentrated on the development of different types of bread. A variety of different valuable natural ingredients are used in the process. These include buckwheat, millet, quinoa, sunflower seeds and chestnut flour. The master bakers

are always producing new recipes to improve the taste, consistency, moisture content and shelf-life. Currently, Schär offers 13 varieties of bread, from classic sliced bread to ciabatta and even bagels. What's most important is that all the bread is produced without artificial colouring, taste enhancers or preservatives. In addition, special care is given to reduce the amount of salt in the products to reduce the

risk factors of high blood pressure and cardiovascular complaints. Another special feature is the use of natural sour dough. The dough is fermented using lactic acid bacteria and yeast. Carbon dioxide is produced during the process that keeps the dough soft and fluffy. Sour dough bread is also easily digestible and stays fresh for longer. Schär sour dough bread is a new addition to the product range.



What do we put in it?

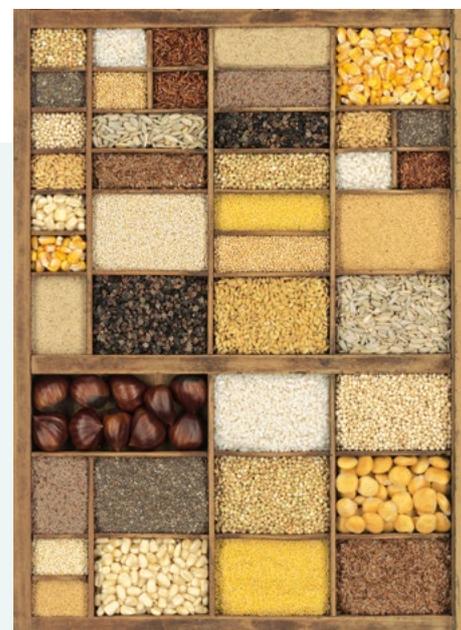
Dr. Schär sets high goals by using innovative and a wide variety of ingredients for its products. There is a large variety of naturally gluten-free grains with numerous positive characteristics. Here are just a couple of examples:

SORGHUM belongs to the sweet grass family and is a type of millet. It contains several minerals, such as calcium, iron, potassium and is rich in B vitamins and fiber. For example in the Schär Pasta

BUCKWHEAT contains protein and has a high lysine, mineral, vitamin and antioxidant content. It's commonly used in Asia, the toasted grain is commonly known as Kasha. We use Buckwheat in our Gluten-free multigrain ciabatta 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 fiber.

QUINOA was the ancient grain of the Mayans and still commonly used in South America. Quinoa provides all of the essential amino acids and therefore is considered a complete protein. It is also high in calcium, iron, zinc, other minerals and fiber. For example in the Schär Frozen Hearty Grain Bread



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