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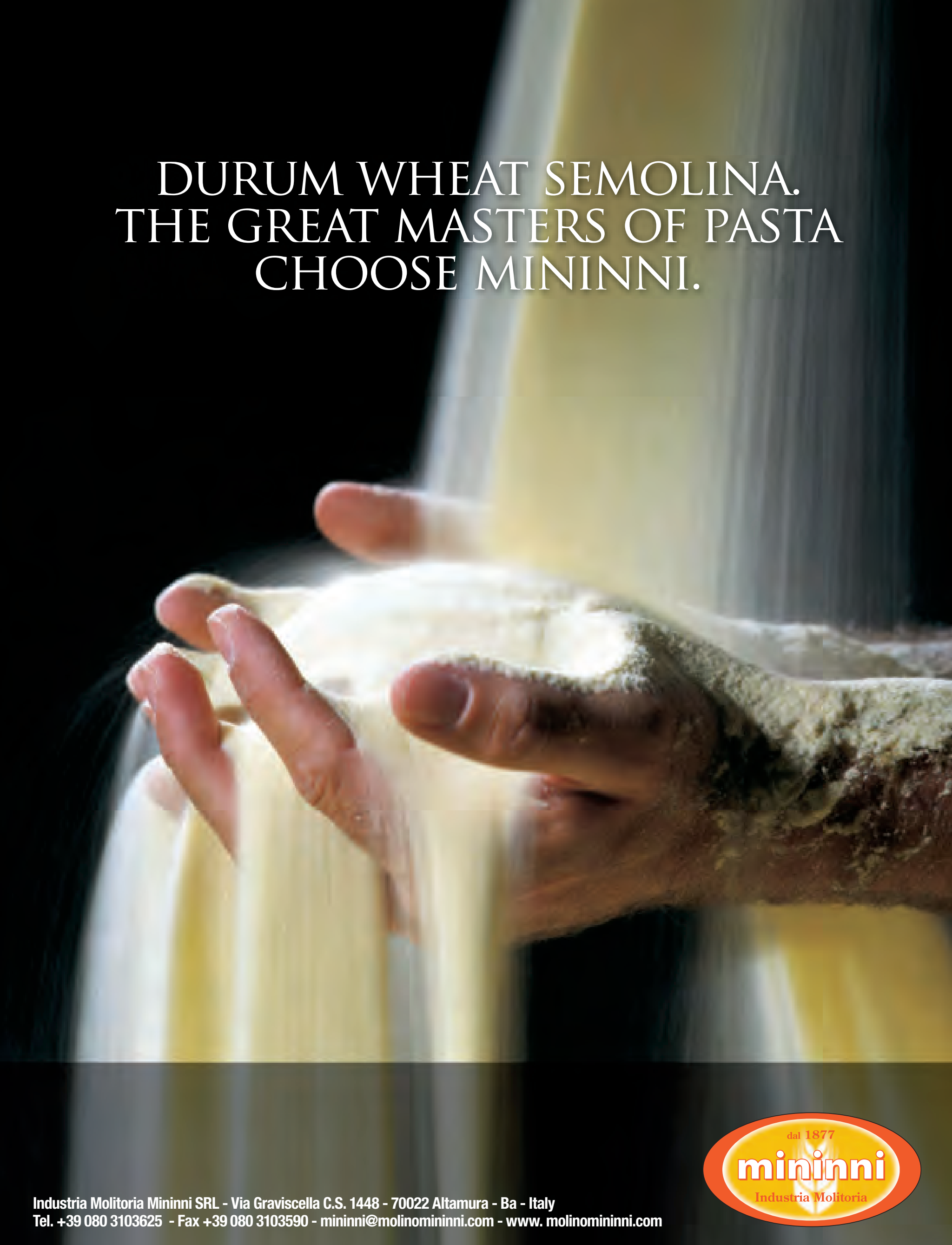

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Proceedings of the Pastaria Festival 2018. Pasta and rice: two sources of complex carbhydrates with different nutritional

Margherita Dall'Asta, Rossella Dodi, Giuseppe Di Pede, Francesca Scazzina
Department of Food and Drug, University of Parma

A summary of Margherita Dall'Asta address to the conference entitled *Pasta: innovative ingredients, health and nutrition*, held as part of Pastaria Festival 2018.

According to the Food and Agriculture Organisation of the United Nations (FAO), cereals are the most important source of nutrition for human beings. The production of cereals in 2018 reached 2611 million tons, 743 million of which were wheat and 514 million rice. Global annual consumption per capita, in the 2017-18 cycle, was estimated at 66.7 kg for wheat and 54.1 kg for rice (FAO, 2018). Both cereals are, therefore, crops of great interest for the global economy. Wheat is particularly relevant, especially for our territory, because it is the raw material used to produce pasta, the emblem of Italy's food and wine culture. From the INRAN-SCAI Italian National Food Consumption Survey of 2009, the consumption of pasta and rice in Italy is estimated at 54 g/day and 16 g/day, respectively (Leclercq et al., 2009). From the nutrition standpoint, their consumption contributes mainly to the intake of complex carbohydrates, and together with other cereals and other cereal-based elements, it constitutes the base of the Mediterranean Diet food pyramid. This dietary model, recognized by UNESCO in 2010 as an Intangible Cultural Heritage of Humanity, based chiefly on the consumption of cereals, legumes and vegetables, has been found to contribute to the prevention of the development of chronic-degenerative diseases (Estruch et al., 2013).

According to Revision IV of LARN (Livelli di Assunzione di Riferimento di Nutrienti ed Energia per la Popolazione Italiana, Reference Nutrient and Caloric Intake Levels for the Italian Population), drafted by SINU (Società di Nutrizione Umana, Italian Society for Human Nutrition) in 2014 (SINU, 2014), in order to maintain a good state of health, 45-60% of the daily energy requirement must be met by consuming carbohydrates, ¾ of which should be complex carbohydrates (e.g. starch) and ¼ simple carbohydrates (e.g. table sugar). Additionally, for the first time, SINU indicates that priority should be given to carbohydrate sources with a low glycemic index, placing the emphasis on the importance of the quality of the carbohydrate-rich foods.

The glycemic index (GI) – described for the first time in 1981 – is a quality parameter attributed to a foodstuff on the basis of its capacity to modulate postprandial glycemic response (Jenkins et al., 1981). On the basis of this

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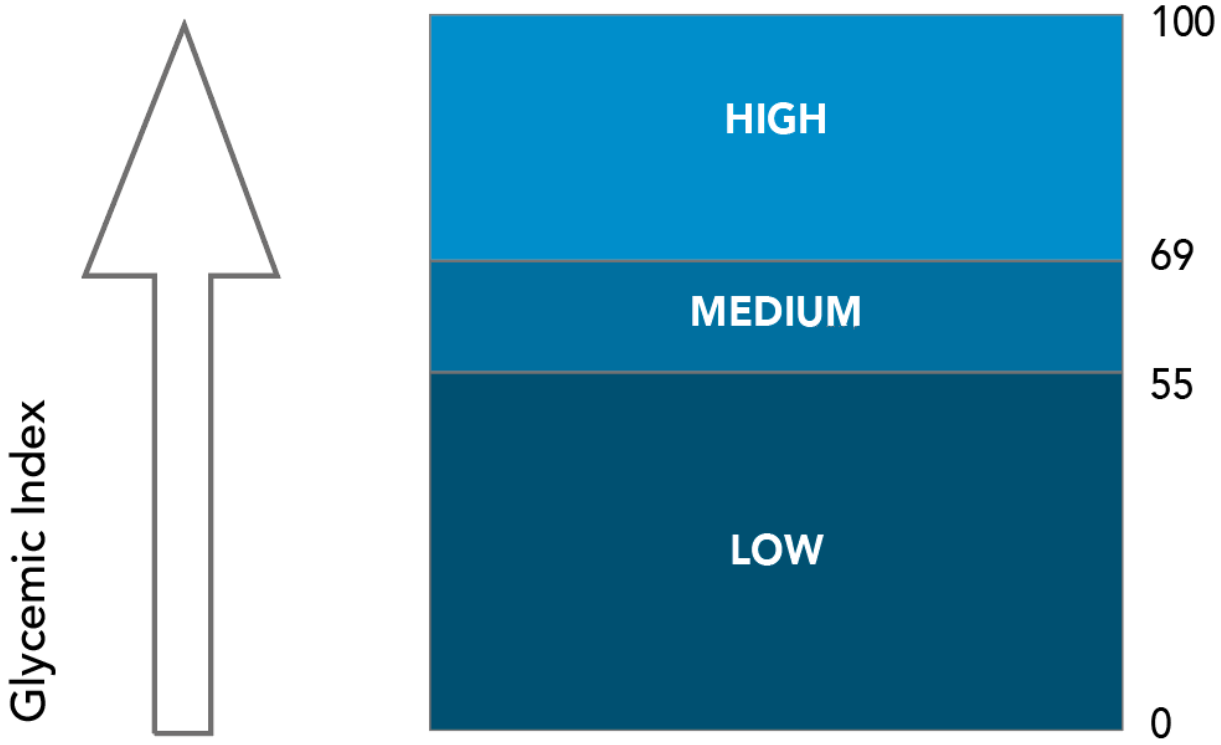
Figure 1 DIAGRAM OF THE CLASSIFICATION OF FOODS ON THE BASIS OF THEIR GLYCEMIC INDEX VALUE



parameter, foods may be classified as having a low, medium or high GI (Figure 1). Although the idea of the glycemic index was developed also to respond to the need to control postprandial glycemic response in diabetic patients, over the years researchers have become increasingly more convinced of the potential of this parameter as a nutrition tool in primary prevention.

Over the years, various scientific studies have analysed the role of this nutritional parameter in the context of the prevention of chronic-degenerative diseases (Augustin et al., 2015). Notwithstanding some contrasting evidence, various scientific studies suggest the importance of developing diets selecting low-GI foods in order to better control the postprandial glycemic response, and hence control or reduce the risk of developing a number of chronic degenerative diseases such as type-2 diabetes, cardiovascular diseases and certain types of tumours (Mente et al., 2009; Burger et al., 2011; Huang et al., 2017; Sieri et al., 2017; Ojo et al., 2018; Zafar et al., 2019). Pasta and rice are two examples of foods that affect the modulation of postprandial glycemia in different ways, so it is therefore widely known that they have different glycemic indices. Pasta is a food that is considered, on average, as having a low GI, while rice is considered as having a medium-to-high GI (www.glicemicindex.com).

The postprandial glycemic response is the result of the combined effect of different factors that characterise the food matrix, some of which are intrinsic to the raw material used, while others are extrinsic be-

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Table 1 **GLYCEMIC INDEX (GI) VALUES OF SOME TYPES OF COOKED PASTA AND RICE**

TYPES OF RICE	GI	TYPES OF PASTA	Gi
Wholemeal rice	66	Spaghetti, dried	33
Round grain rice	65	Spaghetti, wholemeal, dried	35
Parboiled rice	53	Penne, dried	50
Wholemeal parboiled rice	56	Egg tagliatelle, dried	55
Low amylose rice (2%)	88	Filled pasta, fresh	58

Sources: www.glycemicindex.com; Foster-Powell et al., 2002; Ranawana et al., 2009; Scazzina et al., 2016

cause they derive from the processes applied, i.e. the production technology used in the raw material transformation process, the product cooking techniques, the method of preparation and consumption of the food (Holm et al., 1988; Englyst et al., 1999; Englyst & Englyst, 2005).

Among the intrinsic factors that could affect the digestibility of the starch content and modify the postprandial glycemic response there are, for example, the chemical-physical characteristics of the starch particles, including the amylose/amylopectin ratio in the starch itself and their degree of polymerization. Durum wheat, for example, has a higher amylose/amylopectin ratio than rice and this could be one of the reasons why wheat is slower to digest than rice (Åkerberg et al., 1998). The size of the starch particles can also affect the accessibility of the starch. There are, for example, smaller starch particles in rice than in durum wheat and this can contribute to greater bioavailability of the starch, which has a larger surface available to the digestive processes (Tester et al., 2006).

Considering the possible extrinsic factors, the various technologies used in the processing of cereals after harvesting can play an important role in determining their nutritional quality. A technique that has been widespread for years now in the processing of rice is that of ‘parboiling’: after harvesting, the grain undergoes a hydrothermal treatment, after which it is dried and then cooled, leading to the formation of an external layer of retrograded starch, defined as ‘resistant’, since it has a low susceptibility to being hydrolyzed by the intestinal amylases (Balbinoti et al., 2018). Parboiled rice therefore has a lower glycemic index than untreated rice (Kaur et al., 2016).

The pasta-making itself can also be considered an example of a technological proc-

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ess designed to transform a raw material (semolina), considered as having a high GI, into a food with a lower impact on postprandial glycemia. Dried pasta, in actual fact, has a medium-to-low GI determined by its less digestible structure, due to which the hydrolysis of the starch is slowed down thanks to the formation of a gluten network with the power to physically entrap the starch particles, making them more difficult to digest by the enzymes responsible for hydrolysing the starch (Petitot et al., 2009).
However, preparation and cooking techniques could also affect the final bioavailability of the starch: gelatinisation, which takes place during cooking in appropriate humidity and temperature conditions, will increase starch bioavailability, while the cooling phase will tend to reduce it (Wolever et al., 1986a; Wolever et al., 1986b; Englyst, 2000; Delcour et al., 2010).
The GI is undoubtedly an important characteristic to be considered when choosing carbohydrate sources that can bring about a reduction in postprandial glycemic response. In any case, it is helpful to remember that these foods are commonly consumed with other ingredients or foodstuffs added to them, in the more complex dietary context of the meal. Pasta and rice, for example, are normally consumed with added ingredients containing fats (such as tomato sauce and extra virgin oil or Genoa-style pesto) to make the meal more appetizing and nutritionally balanced. Because these condiments/sauces are sources of other nutritional elements, (e.g. proteins, fats or fibre), they can affect the digestibility of the starch and modify the postprandial glycemic response to the food itself (Bell et al., 2015; Meng et al., 2017). As mentioned above, if consumed alone, pasta and rice generate a different glycemic response, which can be maintained unaltered after adding a sauce/condiment containing a moderate quantity of fat. However, an increase in the quantity of fats added to the two foods can cancel out the differences between these two sources of carbohydrates, resulting in similar postprandial glycemic responses. Various studies have, in fact, highlighted the role of fats in influencing postprandial glycemic response through specific physiological mechanisms. Fats bring about a reduction in glycemic response by determining an increase in intestinal viscosity, a deceleration in gastric emptying and the release of certain intestinal hormones that act by boosting glucose-induced insulin secretion, leading, in some cases, to overproduction (Pironi et al., 1993; Moghaddam et al., 2006; Steinert et al., 2017). Of course, in the context of a correct dietary regime, the excessive addition of fats to complex

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carbohydrates in order to reduce postprandial glycemic response is not a winning nutrition strategy, since it could induce an imbalance in energy intake, which could lead, in turn, to a higher risk of obesity and the development of correlated diseases (Schwingshackl & Hoffmann, 2013). So in order to maintain a good state of health, it is important to follow the LARN guidelines (Reference Nutrient and Caloric Intake Levels for the Italian Population) which recommend sources of carbohydrates with a naturally low glycemic index, and fat consumption not exceeding 30% of the total daily energy requirement (for the adult population), paying careful attention, also in this case, not only to quantity but also to quality. .

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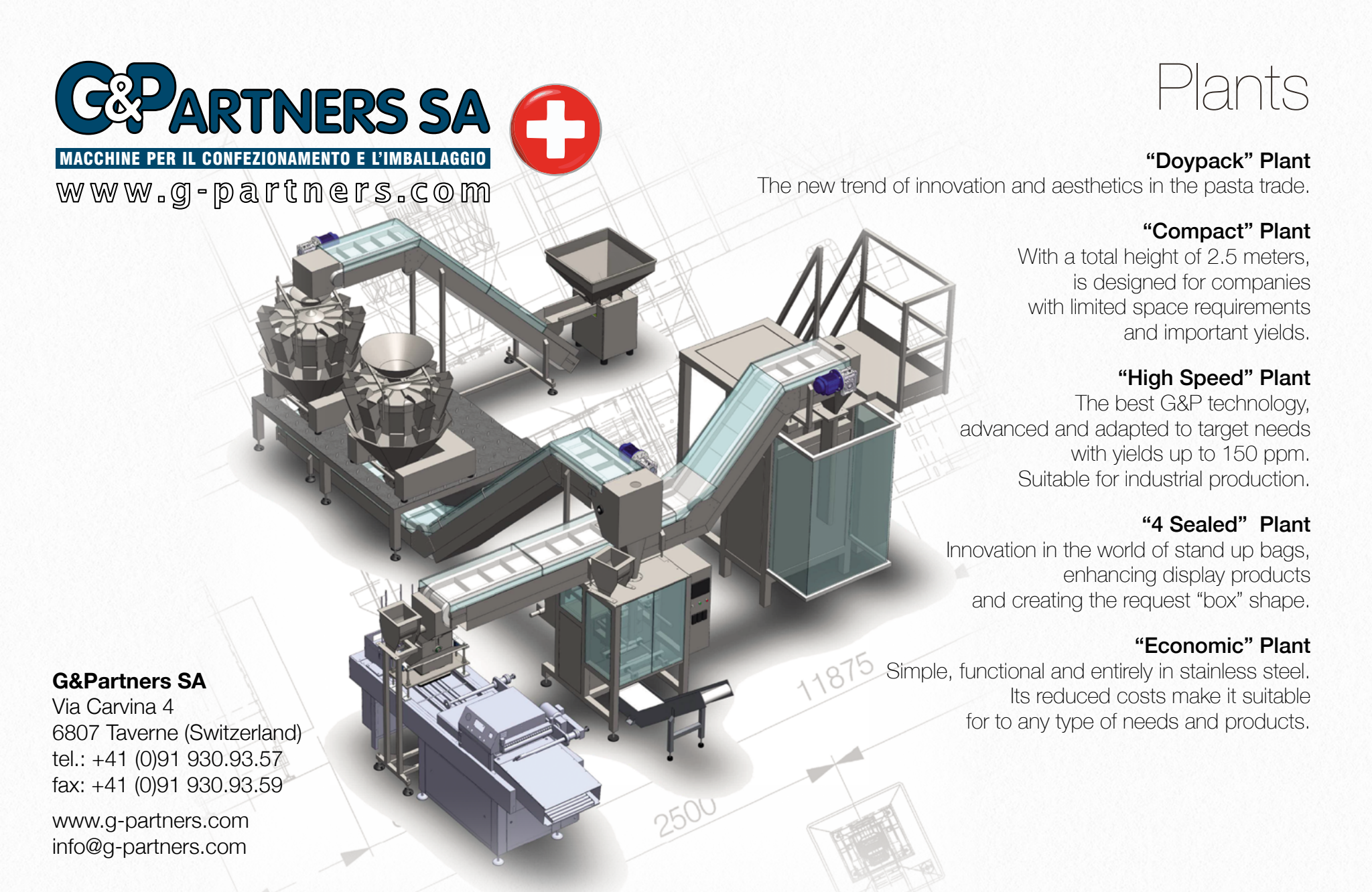

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The National Pasta Association according to Carol Freysinger

Editorial staff

Carol Freysinger, Executive Director of the National Pasta Association, and Bastiaan de Zeeuw, National Pasta Association Chair

The 2019 Annual Meeting of the National Pasta Association, that represents the United States pasta industry, has proved a great success. In these pages we publish the interview that Carol Freysinger, the Association's Executive Director, granted to our publication, that was present at this important gathering.

Large numbers in attendance and a rich and interesting programme marked the recent edition of the Annual Meeting of the National Pasta Association (NPA) held in Naples, Florida, between 10-12 March 2019.
The major groups of north America's pasta industry and leading companies specialising in the supply of machinery, systems and ingredients for production of pasta were present.
Pastaria was also there, for the first time, at the recent meeting of the Association, that was characterised by "perfect organisation and a relaxed, friendly atmosphere – a clear sign of undoubted cohesiveness of the American production sector and the excellent work undertaken by the National Pasta Association, that I really must thank for the invitation to attend", stated Lorenzo Pini, Pastaria's editor-in-chief.
We can find out more about the association by reading the interview published on these pages, that Carol Freysinger, Executive Director of the NPA, granted to us, on the occasion of the recent Annual Meeting.

When was the National Pasta Association founded and what is its mission?

In 1904, the National Association of Macaroni and Noodle Manufacturers of America was founded. Annual dues were $5. This organization evolved into what is known today as the National Pasta Association.
NPA's mission: "We encourage the consumption of pasta by being the center of knowledge and promoting sound public policy to the consumer, the industry and the regulatory bodies because a sustainable pasta industry is vital to healthy diets."

What companies are members?

NPA's 50 member companies include pasta manufacturers (A Zerega's Sons, Inc.; Bessan Pasta 8th Avenue Food & Provisions; Fiori Bruna Pasta; Heartland Harvest; La Moderna; Lilly's Fresh Pasta; Medallion Foods, Inc.; Nuovo Pasta Productions, Ltd.; Pasta Montana; Pasta Shoppe; Philadelphia Macaroni Co.; Prodotti Mediterranei Inc./De Cecco USA; Riviana Foods Inc.; TreeHouse Pri-

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Carl Zuanelli of Nuovo Pasta Productions, who will take on the Presidency of the National Pasta Association, at the end of Bastiaan de Zeeuw's (Riviana Foods) term of office

vate Brands; US Durum Products Ltd.; Vemco Ltd.; Virginia Park Foods), durum millers (ADM; Ardent Mills; Italgrani USA; Miller Milling Co.; Minot Milling; North Dakota Mill; Panhandle Milling), and suppliers of equipment, ingredients and services to the industry (Axor Ocrim S.r.l.; B.C. Williams Bakery Service, Inc.; Bühler, Inc.; Corbion Caravan Ingredients; D. Maldari & Sons; Deb El Food Products, LLC; De Mari Pasta Dies; DEMACO; Fava S.p.a.; Henningsen Foods, Inc.; Landucci, S.r.l.; Michael Foods; Montana Wheat and Barley Committee; Multivac, Inc.; Niccolai Trafile S.p.a.; North Dakota Wheat Commission; Northern Crops Institute; Oskaloosa Food Products; Pavan, S.r.l.; Provisiongard; Repco; Sonstegard Foods Company; Triangle Package Machinery Co.; US Durum Growers Association; Wells Fargo).

What types of pasta are represented by the member pasta factories?

NPA's members make many shapes of pasta, filled and unfilled. The Association represents conventional dry pasta made from semolina as well as whole grain, frozen and fresh pastas, gluten free, and innovative pasta made from lentils, chickpeas and other legumes.

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NPA ANNUAL MEETING 2019 - SCHEDULE OF EVENTS

SUNDAY, MARCH 10

1:00 pm – 2:00 pm
Durum Development Committee Meeting
It's Not Your Father's Durum: New Developments in Durum Wheat Genetics
Dr. Craig F. Morris, Director, ARS Western Wheat Quality Laboratory
U.S. Dept. of Agriculture
1:00 pm – 5:00 pm
Registration
2:00 pm – 4:30 pm
Board of Directors Meeting (Board Members Only)
5:30 pm – 6:00 pm
First-Time Attendee Reception (Invitation Only)
6:00 pm – 9:00 pm
Welcome Reception & Dinner

MONDAY, MARCH 11

7:30 am – 12:00 pm
Registration
7:15 am – 8:00 am
Continental Breakfast
8:00 am – 10:30 am
General Session
8:00 am – 8:30 am
Welcome & State of the Industry Report
Bastiaan de Zeeuw, NPA Chair
8:30 am – 9:00 am
NPA Technical Affairs Committee (TAC) Report
Alexis Freier-Johnson, TAC Chair
9:00 am – 9:45 am
Plant-Based Protein: Opportunities for Pasta Innovation and Market Growth
Janice Rueda, Director, Research and Business Development
ADM Nutrition
9:45 am – 10:30 am
Tracking Trends That Matter
Todd Hale, Retail Insights Thought Leader
Principal, Todd Hale, LLC
10:30 am – 10:45 am
NPA Manufacturing & Milling Members Meeting
10:30 am – 10:45 am
Networking Break
10:45 am – 11:45 am
Legislative & Regulatory Update: Public Policy 2019: New Congress, New Priorities
Gary Kushner, Partner, Hogan Lovells US LLP
NPA Legal Counsel
11:15 am – 11:45 am
Pasta Fits: A Consumer and Health Professional Outreach Program Benefiting the Pasta Industry
Alexandra Smith-Ozerkis, Senior Account Supervisor
Kellen Communications
12:00 pm – 2:00 pm
Technical Affairs Committee Meeting
1:00 pm – 5:00 pm
Golf Tournament
5:15 pm – 6:00 pm
19th Hole Event

TUESDAY, MARCH 12

7:30 am – 12:00 pm
Registration Desk Open
7:30 am – 9:30 am
Breakfast & Executive One-on-Ones
10:00 am – 12:00 pm
General Session
10:00 am – 10:45 am
The New Normal of Natural Climate: What to Expect in 2019's Durum Growing Regions
James Garriss, Editor
The Browning World Climate Bulletin
10:45 am – 11:15 am
U.S. Durum Outlook
Jim Peterson, Policy & Marketing Director
North Dakota Wheat Commission
11:15 am – 12:00 pm
Food Allergies - What's on the Horizon
Joseph Baumert, Co-Director
Food Allergy Research and Resource Program (FARRP)
University of Nebraska
12:00 pm – 1:00 pm
Lunch
1:15 pm – 5:15 pm
Bocce Tournament
6:30 pm – 7:30 pm
Reception
7:30 pm – 9:30 pm
Dinner

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What activities and services does the association undertake?

NPA voices industry support for government initiatives benefitting the pasta industry, and its suppliers and consumers.

NPA consistently works to align the industry with all regulatory requirements including those in the Food Safety Modernization Act.

The Association's staff maintains relationships with US regulatory, legislative and international trade authorities to stay abreast of, and influence, regulatory and legislative developments impacting the industry.

Moreover:

- NPA's Annual Meeting takes place each spring, when a diverse membership of manufacturers, millers and suppliers gathers with academics, government officials and key industry figures to discuss industry trends and challenges.
- NPA's Technical Affairs Committee works to ensure food safety in the fresh, frozen and dry pasta industries and instills confidence on the part of the consumer, through research, studies and educational programs within the pasta industry and food industry at large. The Committee also works to ensure members are in compliance with the regulations emerging from the Food Safety Modernization Act.
- NPA's relationships with other grain based organizations, including the North American Millers Association, National Association of Wheat Growers, the American Bakers Association and other groups, foster unity on issues of mutual importance.
- NPA Legal Counsel is an expert on food industry regulatory matters. Counsel keeps members informed on regulatory matters and represents the industry on a wide variety of issues.

How is the market doing?

At the end of February, 2019, according to IRI retail scanner data (MULO), the pasta market is flat in dollars and down 0.5% in volume, or essentially flat. These results are quite good considering that the pasta category is being attacked on a number of fronts, and that the category has suffered declines for a number of years prior to this. The pasta category has been negatively affected by the latest trendy diets such as the Keto diet and the Paleo diet, both of which continue to garner consumer interest. This has led to the growth of a group of consumers, mainly younger in age, who are "carbo-phobes", avoiding carbohydrates, including pasta, at all costs.

I.P.O.

International Pasta Organisation

INTERNATIONAL PASTA ORGANISATION (IPO)
Fondata a Barcellona il 25 ottobre 2005
Formalmente costituita a Roma in occasione
del World Pasta Day 2006 (25 ottobre 2006)

MISSION

L' IPO è un'organizzazione no-profit che si propone di:

- Educare ed informare i consumatori, i media, gli operatori nel settore alimentare e della nutrizione in merito alle proprietà della pasta, evidenziandone i pregi dal punto di vista nutrizionale, gastronomico ed economico.
- Promuovere il consumo e la cultura della pasta a livello internazionale.

WWW.INTERNATIONALPASTA.ORG

ATTIVITÀ

- Organizza e promuove eventi di comunicazione a favore della pasta, come la Giornata Mondiale della Pasta ed il Congresso Mondiale della Pasta.

WORLD PASTA DAY
25 October

- Raccoglie e diffonde a livello internazionale informazioni nutrizionali, dati statistici e documentazione riguardanti la pasta.
- Con il supporto di uno Scientific Advisory Committee, attualmente formato da 25 esperti provenienti da 17 paesi, porta avanti iniziative di educazione alimentare, attraverso la pubblicazione di materiale informativo, l'organizzazione e la partecipazione a conferenze e seminari, curando inoltre rapporti con i media.

MEMBRI

Attualmente aderiscono all'International Pasta Organisation 25 membri (tra i quali due Federazioni europee, UNAFPA e SEMOULIERS) in rappresentanza di 18 Paesi (Argentina, Belgio, Brasile, Canada, Cile, Colombia, Costa Rica, Francia, Guatemala, Iran, Italia, Messico, Portogallo, Spagna, Turchia, Stati Uniti, Uruguay, Venezuela).

IPO Segreteria Generale c/o
AIDEPI
(Associazione delle Industrie
del Dolce e della Pasta Italiane)

AIDEPI

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ipo@internationalpasta.org - www.internationalpasta.org

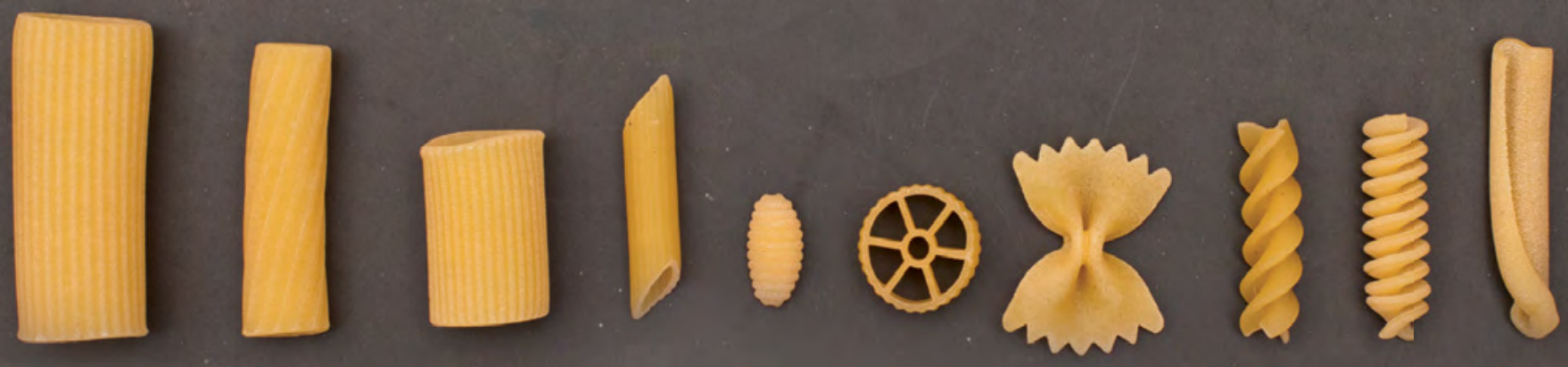
In the US, low carbohydrate diets and "fear of carbohydrates" are certainly not as popular as they once were but they are still something that concerns the industry.
The second area negatively affecting traditional pasta consumption is the growth of "Pasta Pretenders", that use ingredients that contain no wheat. Examples include Konjac Noodles, Veggie Spirals, Veggie Zoodles, Carrot Noodles, Kelp Noodles, Chickpea Pasta, Butternut Noodles, Kohlrabi Linguine, Spiralized Potato Noodles to mention but a few.
We want people to know carbohydrates, like pasta, are essential for good health and an excellent source of energy for the body – energy we need to perform our very best both physically and mentally.

Finally, what are the forthcoming challenges in which the NPA will be involved?

Biggest challenge: Dispelling the myth that "pasta makes you fat". Pasta is a fat-free, low sodium food and with only 200 calories in one cup of cooked pasta, can easily fit into a healthy diet. Furthermore, pasta is the perfect vehicle for adding more healthy foods to your diet like vegetables (cauliflower, broccoli and zucchini), legumes and beans or lean meat, chicken or fish. Research looking at pasta in the diet shows that consuming pasta is associated with healthier diets overall and higher intakes of total vegetables, especially red vegetables.
Through an ongoing research program and social-media based campaign, NPA continues to convey messaging about the value of pasta out to health professionals and consumers. We are also collaborating with other parts of the US grain industry value chain to address the issue of glyphosate residue in pasta from both the regulatory and the scientific perspective. NPA continues to address, with US food regulatory authorities, the mislabeling of foods that purport to be "noodles", such as spiral-cut vegetables, but which do not comply with the US Standard of Identity for noodles. This misbranding not only negatively affects pasta consumption, but it also is a form of consumer deception at the expense of the noodle manufacturers.

Many shapes to tell it.

Only one association to represent it.



11
ADHERING COUNTRIES

11.025
EMPLOYEES

5.147.403
TONS OF PASTA PRODUCED

2.553.168
TONS OF EXPORTED PRODUCT

OVER 35%
OF THE WORLDWIDE PASTA PRODUCTION

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UN.A.F.P.A.

Union des Associations de Fabricants de Pâtes Alimentaires de l'U.E
Union of Organizations of Manufactures of Pasta Products of the E.U.

FOR FURTHER IN FORMATION:

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3

Innovative technologies for quality control

The cutting-edge inspection solutions to perform leak detection and gas analysis in MAP food products.

The inspection solutions developed by FT System - Food Inspection are designed to provide innovative technologies to the food industry in order to guarantee quality and safety of the final product.
The range of 4.0 solutions includes both in-line applications, such as the LDS700-IoT leak detector and the Safety Food gas concentration analyzer, as well as laboratory solutions, such as the EVO P and EVO Trace gas concentration analyzers.
All these innovative inspection systems have one important aspect in common: the laser spectroscopy technology.
Thanks to an innovative application of this technology, FT System has developed inspection systems able to perform non-destructive gas analysis and leak detection on 100% of production.
This technology can provide multiple advantages: measurement of the gas concentration inside the package without the need to pierce and then dispose it, inspection of the proper sealing in the entire welding area at full line speed, non-destructive monitoring on 100% of production, optimization of the production process and identification of packaging anomalies.
Among several applications, the LDS 700-IoT inspection system is certainly the one that attracts the most attention. Designed to provide the food industry with an “in-line” inspection system capable of detecting micro-holes at full speed on 100% of production, it is characterized by the high reliability of its measurements.
The speed of measurement and its high sensitivity allow the gas leaks detection from containers packed in MAP.
The measurement is performed directly in line, on output products from the packaging machine, with the packages moving on the conveyor belt, compatibly with the existing line speeds.
The system is able to perform the in-line leak detection thanks to a soft pressure applied to the packages by extremely soft rollers that generate, in the presence of holes, the exchange of gas with the outside. The gas detection sensors with spectroscopic techniques are located near the packet in transit. The presence of CO_2 inside the package allows leak detection without the need to use a specific tracer gas.

LEAK DETECTION
ON **FRESH PASTA** PACKED IN **MAP**

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☑ **MICRO-HOLES DETECTION** ON 100% OF THE PRODUCTION

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An innovative engineering solution also makes it possible to identify the area of the packaging where defects are detected, giving feedback to the customer in the event of systematic defects and locating which steps of the packaging process should be optimized through targeted maintenance.
In order to improve inspection performances, the system is designed to perform the calibration of the environmental CO_2 level during the non-work phase, so as to guarantee the accuracy of the detection of CO_2 leaks even when environmental conditions change.
Thanks to a simple and intuitive interface, accessible through a 15” touchscreen, the LDS700-IoT is an extremely easy-to-use machine. The customer is able to perform set up and format changes in just a few steps, and can easily access all the production statistics and data useful for improving product quality and packaging line efficiency.
Finally, the compact design of the LDS700-IoT facilitates installation in existing lines, even with limited space.

PASTARIA FESTIVAL

Sharing know-how on pasta manufacturing

27 SEPTEMBER 2019

SAVE THE DATE

PARMA

4

Foodnova, the network for the new food needs

Press release
Exmedia

At Rimini Business Space, trends in food products of the future have an international showcase.

Exmedia, a part of IEG (Italian Exhibition Group), is the organizer of Foodnova, the network dedicated to new food needs that will debut at Rimini Business Space November 16-19, 2019.
Foodnova will host four events: the well-known Gluten Free Expo and Lactose Free Expo and the new entries, Expo Veg and Ethnic Food Expo.
In recent years, the eating habits of consumers have been changing and with them the market, and Foodnova has been created to satisfy these requests and present all that is available to the market in a single hub.
Gluten Free Expo, over the years, has become known as the only international fair dedicated to the gluten-free market and products. It represents a high-level event for national and international brands, as well as an important training and information opportunity for this sector. According to IRI data, in the last four years, the volume of gluten-free product sales has grown by 15.5% and restaurants offering gluten-free dishes have increased by 58%.
Lactose Free Expo is the fair dedicated to dairy-free and lactose-free products. It is a meeting point for companies engaged in an ever-growing sector that involves an increasingly greater number of consumers, considering that in Italy it is estimated that 50% of consumers are lactose intolerant, while in Central Europe the incidence is around 30%.
Expo Veg will be the fair where the best food products suitable for vegetarian and vegan consumers are launched to share wellbeing, sensations, choices and lifestyles. According to the IRI European Shopper Survey, 11% of all food and beverage products launched on international markets are vegetarian and about 53,000 restaurants in Italy offer a special menu.
Ethnic Food Expo will be the culinary showcase linked to the identity, traditions and cultures of countries and peoples to reflect the needs of an increasingly international and heterogeneous market, such as halal and kosher cuisines.
In a multi-ethnic and global market context, new opportunities are opening up for companies that aim not only to export, but also to offer the quality of their services and products to national and international customers, also in response to tourism.
According to Nielsen data, 52% of Italians eat ethnic food regularly and 42% of Italians who eat out have eaten at least once in an ethnic restaurant. It is also estimated that the Italian halal food market is currently worth around 5 billion euros and it will increase not only thanks to the national population, but also as a result of tourism.
There are currently 500 Italian companies certified by the World Halal Authority

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which operate mainly in the meat sector. According to UCEI (Union of Italian Jewish Communities), the kosher market has an average annual growth rate of 12%. In countries such as the United States, Israel and North East Europe, the rates of growth are increasing. In Italy, especially in recent years, the market is growing.

Within Foodnova, the four fairs will maintain a distinct identity but will share the desire to satisfy these new food requirements. It represents an important project which, on the one hand, supports professionals, especially in the Ho.Re.Ca. sector, looking for products to meet new customer requests within a unified network while, at the same time, receive training and information about these expanding markets. On the other hand, it allows companies to present new products and launch the latest market trends in a single cross-platform.

Gluten Free Expo and Lactose Free Expo will continue through Tuesday, November 20, at Rimini Business Space, while the first Foodnova will be held from November 16-19, 2019.

For more information: www.foodnova.eu

www.foodnova.eu

GLUTEN FREE / LACTOSE FREE / VEGETARIAN / VEGAN / ETHNIC

FoodNova

THE NETWORK FOR THE NEW FOOD NEEDS

GLUTEN FREE EXPO

Expo Veg

LACTOSE FREE EXPO

Ethnic Food Expo

16/19 November 2019
Rimini Expo Center

organizzato da:

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ITALIAN EXHIBITION GROUP
Providing the future

in collaborazione con:

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5

Proceedings of the Pastaria Festival 2018. Evaluation of the technological quality of fresh pasta

Carola Cappa, Mara Lucisano, Cristina Alamprese
Department of Food, Environmental and Nutritional Sciences (DeFENS) University of Milan

We publish Carola Cappa's address at the *Fresh pasta: quality, safety and the markets* conference, that was part of Pastaria Festival 2018.

Quality is a very wide and complex concept that embraces safety and hygienic quality (considered prerequisites for quality), nutritional quality, technological quality and sensory quality. Technological quality is undoubtedly the least familiar to the consumer; it includes both the quality requirements of the raw materials and the series of objective indicators that can be correlated with the sensory judgement of the consumer, parameters which are, therefore, useful for evaluating the characteristics of the finished product, particularly with regard to its cooked quality.

This paper illustrates the approaches most widely employed for evaluating the technological quality of fresh pasta both before (raw pasta), during and after the cooking process. Figure 1 shows a summary overview of the main phenomena that take place at a molecular and macroscopic level during the process of production and cooking of the pasta, together with a list of the technological quality indicators usually measured. It is important to remember that the characteristics of pasta during cooking must be assessed in standard cooking conditions, ensuring that the pasta/water proportions (usually 1:10) and the quantity of salt (which is often not added) are always kept the same.

Figure 1 MAIN PHENOMENA THAT TAKE PLACE DURING THE PASTA PRODUCTION AND COOKING PROCESSES, WITH RESPECTIVE TECHNOLOGICAL QUALITY INDICATORS

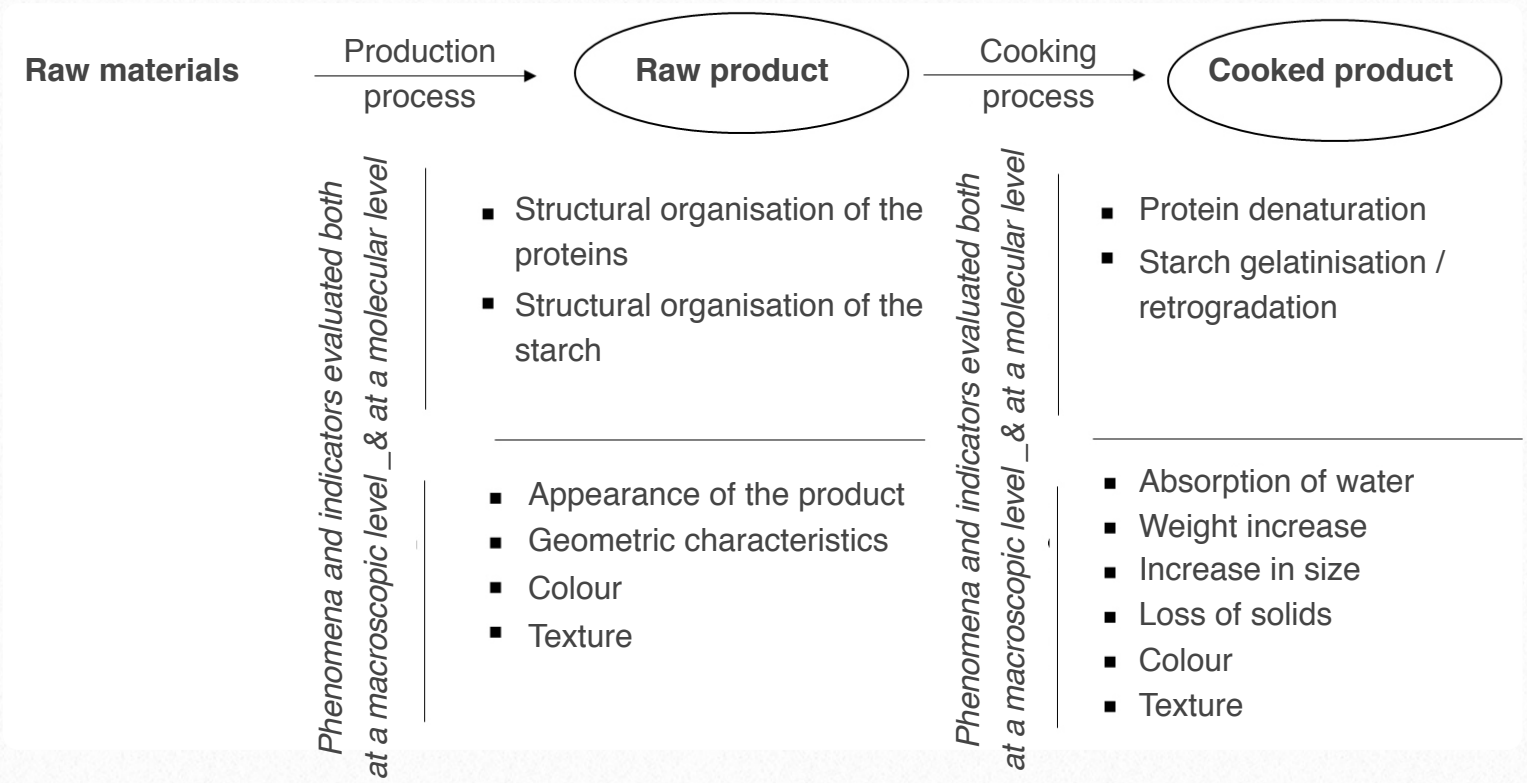

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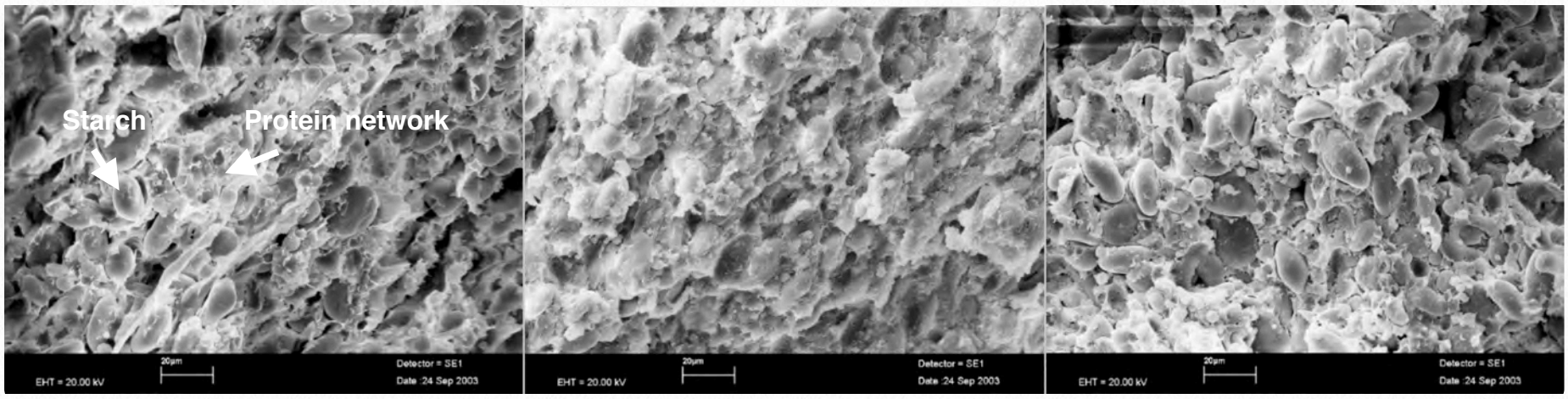
Figure 2 ELECTRONIC MICROSCOPE (SEM; 500X) IMAGES OF DOUGH FOR FRESH EGG PASTA, DURING KNEADING (A), ROLLING (B) AND PASTEURISING (C)



With regard to the raw product, the technological quality assessment mainly focuses on the structural organisation of the proteins and starch. The techniques most widely applied are the quantification of protein solubility in various solvents, the determination of the accessibility of thiol residues, and the evaluation of the organisation of the protein network and the phenomena affecting the starch granules, using a scanning electron microscope (SEM). Figure 2 contains some images showing the structuring of the dough during the kneading, rolling and pasteurising of fresh egg pasta (Muselli, 2003). Observing the images under the electronic microscope, it is possible to see the progressive structuring of the dough: the alignment of the starch granules and the formation of the gluten network (Figure 2-a), the compaction of the protein matrix that traps the starch granules (Figure 2-b) and the partial swelling of the starch granules inside the protein matrix caused by the pasteurisation process (Figure 2-c).

With regard to the structural organisation of the proteins, we refer to a study conducted by Alamprese, Iametti, Rossi, & Bergonzi (2005) to monitor the effect of the pasteurisation process on the structuration of pasta sheets for lasagna. In particular, the structural organisation of the proteins was studied by measuring solubility in different solvents, followed by electrophoretic measuring of the various protein fractions. In this paper, the authors compared non-pasteurised pasta (NP) with pasta subjected to steam pasteurisation (P, single pasteurisation) and subsequently pasteurised in a fan-assisted oven after packaging (DP, double pasteurisation). It was demonstrated that single pasteurisation does not change the level of structuration compared to non-pasteurised pasta. In actual fact, the protein concentration extracted in three different solvents, indicative of the dif-

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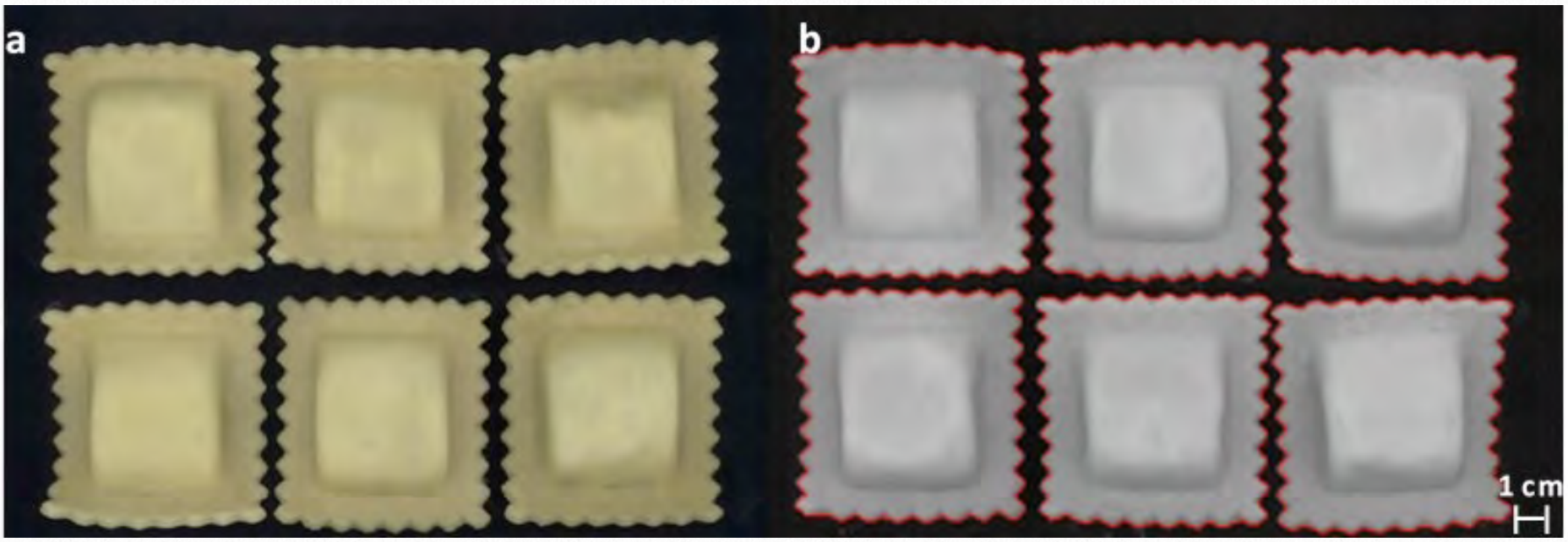
Figure 3 **EVALUATION OF THE GEOMETRIC CHARACTERISTICS OF THE PASTA THROUGH IMAGE ANALYSIS TECHNIQUES: (A) REAL IMAGE, (B) PROCESSING OF IMAGE THROUGH DEDICATED SOFTWARE**



ferent bonds established between the protein molecules, was comparable for samples NP and P. In contrast, the double thermal treatment produced a clear structuration of the pasta, causing the formation of disulfide bridges between the proteins of the flour and the egg, as demonstrated by the 50% increase in protein solubility in the solvent containing a reducing agent.

Other approaches used at a macroscopic level to assess the technological quality of fresh pasta, both before and after cooking, include the evaluation of appearance (absence of visible defects, such as breakages), geometric characteristics (uniformity of size) and the colour of the product.

These evaluations can be objectified using image analysis techniques and colorimetric techniques. By way of example, Figure 3 (Rizza, 2017) shows the image acquired in standard conditions of six raw agnolotti (a) and the respective image processed using dedicated software (b). It may be seen that the samples do not present defects in shape and that they have uniform geometric characteristics (2320 mm^2, area; 60 mm, width; 57 mm, length; coefficient of variation <5%). These measurements can be carried out in order to evaluate the effect of a change in formulation (e.g. weakening of the dough due to the adding of ingredients rich in fibre that can lead to the appearance of defects in shape, particularly in short pasta shapes) or process changes (e.g. different shaping system, adjustment of calibration rollers, etc.).

Similar determinations can be made in order to assess the behaviour of the product during cooking, measuring the increase in size due to the absorption of water and the

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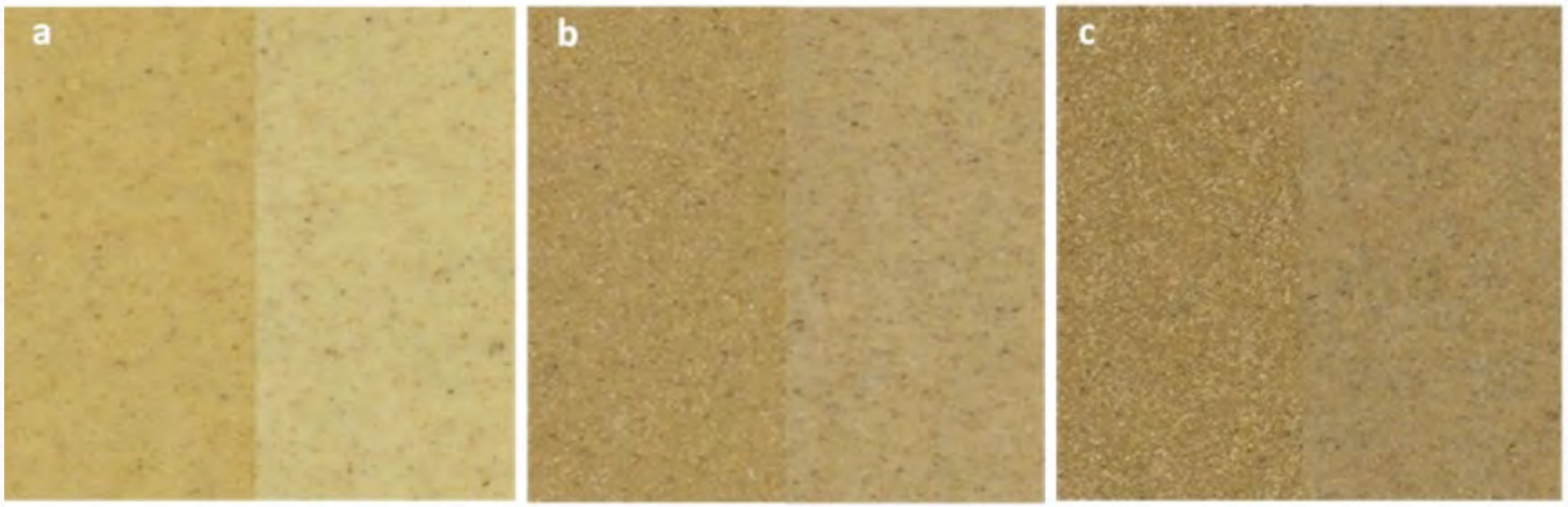
Figure 4 **EXAMPLES OF SOME SHEETS BEFORE (LEFT) AND AFTER (RIGHT) COOKING, OBTAINED BY ADDING 6% OF POWDERED EGG WHITE AND GROWING CONCENTRATIONS OF BREWERS' SPENT GRAINS: (A) 3%, (B) 14% AND (C) 25%**



structural modifications. For example, in the study of Cappa & Alamprese (2017), concerning the promotion of the use of brewers' spent grains for the production of fibre-enriched pasta, the increase in size was evaluated after cooking pasta sheets for lasagna containing different amounts of fibre (grains, T) and powdered egg whites (A). The data obtained made it possible to highlight and quantify the effect of the formulation changes on the surface increase of the pasta: the reference sample (without added fibre and powdered egg white) displayed the greater increase in size (37%), while the smaller increase in size (17%) was displayed by the sample with 25% of brewers' spent grains and 6% of powdered egg white, confirming the structuring effect of egg white which limits the swelling of the starch granules in the pasta. The authors also evaluated the effect of the different formulation and of the cooking process on the colour characteristics of the product, using a tristimulus colorimeter (scale CIE L*a*b*). As expected and visible, observing Figure 4 (Alamprese & Cappa, 2015), both on the raw product and on the cooked one, the brightness (L*) and the yellow component (b*) decrease as the quantity of the brewers' spent grains increases, as indicated by the browning of the pasta sheet. Conversely, the different concentration of powdered egg white in the dough had no significant effect on the colour of the pasta. The cooking process brought about in 67% of the samples a 3-8% increase in brightness and a reduction of over 7% in the other indicators (a* and b*); these changes in colour can be attributed to the absorption of water by the pasta and to a partial leaching of the pigments, mainly deriving from

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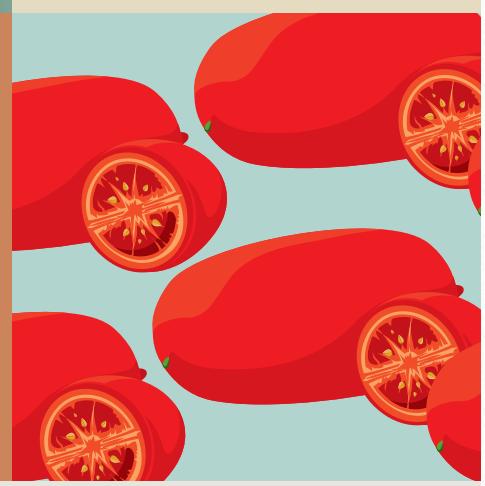

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Table 1 **WEIGHT INCREASE AND LOSS OF SOLIDS IN THE COOKING WATER OF GLUTEN-FREE GNOCCHI OBTAINED USING DIFFERENT DOUGH MOISTURE CONTENTS AND PROCESS TEMPERATURES**

Sample	Moisture of the dough (g/100 g)	Process temperature (°C)	Weight increase (%)	Loss of solids (g/100 g dp)
GF1	53	93	3.4	2.3
GF2	53	85	4.7	2.7
GF3	65	85	4.7	5.0

dp, dry product

the brewers' spent grains and the egg yolk.

Other quality indicators commonly measured when evaluating the behaviour during cooking of fresh pasta are the increase in weight and the residue left in the cooking water; changes in formulation and process can considerably affect these indicators. In general, the loss in cooking of a good quality product is limited even in cases of evident increases in weight, as reported in the study of Cappa, Franchi, Bogo, & Lucisano (2017) which carried out evaluations on the effect of adding dehydrated corn-, rice- and potato-flour, on the moisture content of the dough and on the effect of the process temperature on behaviour during the cooking of gluten-free gnocchi. The composition of the mixture and the water content proved to be decisive factors in successfully producing a good quality product; in particular the raw samples with a moisture content of 53 g/100 g, compared to those with a moisture content of 65 g/100 g, presented a more limited loss during cooking (2.3 vs. 5.0 g/100g of dry product). In contrast, process temperature (85 or 93°C) proved not to have a significant effect on product loss during cooking, but affected the increase in weight (Table 1).

In conclusion, the quality indicators most commonly evaluated, and which take into account all the phenomena that take place, both at a molecular and at a macroscopic level during the production and cooking of pasta, are those relating to the mechanical properties (texture) of the product. These evaluations require the use of a dynamometer with the capacity to record the force necessary to pull, break, compress or extrude the product (raw or after cooking). With regard to the cooked product, these determinations are generally correlated with the sensory evaluations of the pasta (strength, texture, elasticity and stickiness) and can be carried out also at

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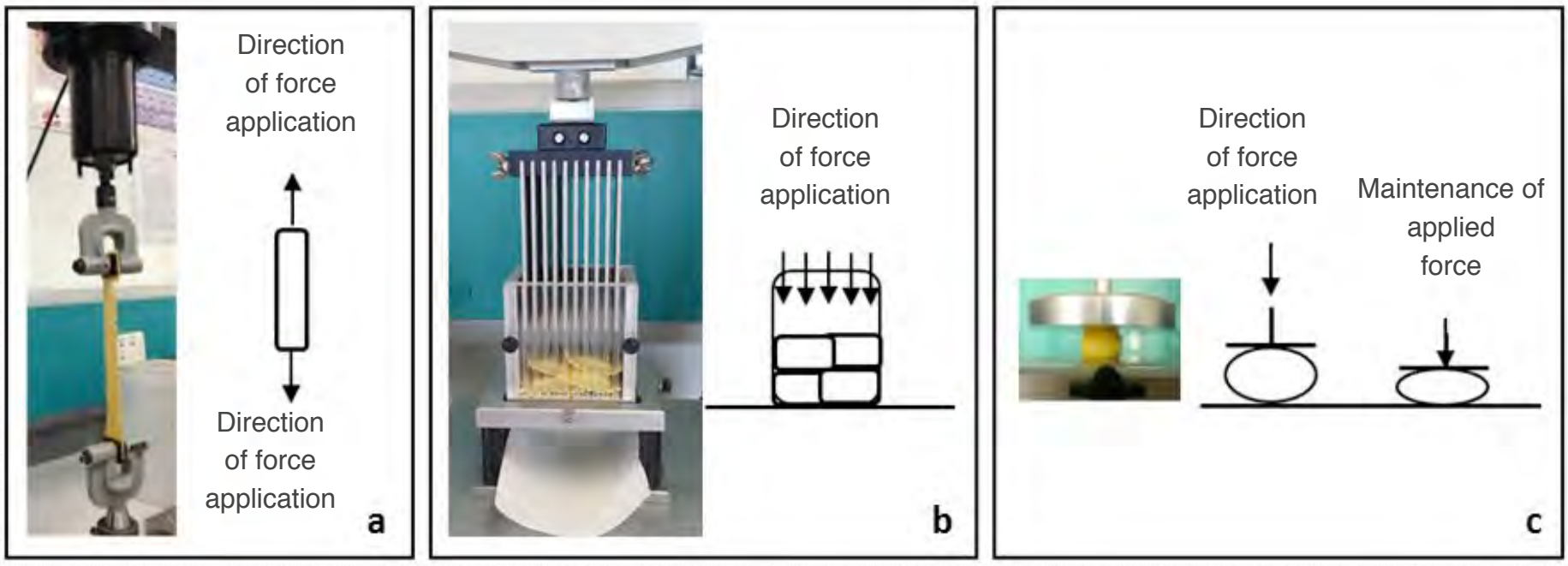
Figure 5 EXAMPLES OF THE MOST COMMONLY USED TESTS FOR THE EVALUATION OF THE MECHANICAL PROPERTIES OF FRESH PASTA: (A) TRACTION TEST, (B) COMPRESSION AND EXTRUSION TEST, (C) SINGLE COMPRESSION TEST WITH MAINTENANCE OF APPLIED FORCE



different cooking times in order to establish both the optimal cooking time and the extent to which the pasta retains its firmness at different overcooking times. Depending on the pasta shape and on the indicators to be measured, various different tests can be applied. Among the most common is undoubtedly the traction test (Figure 5-a) and the compression and extrusion test with Kramer's cell (Figure 5-b) which simulates what happens during the chewing of the product: the cell is, in fact, fitted with a series of blades (teeth) which compress the pasta, and it is generally used for short pasta. Another test that should be mentioned is the single compression test with maintenance of applied force (Figure 5-c), through which the viscoelastic properties of the product can be determined.

An example of the evaluation of mechanical properties through the traction test on pasta sheets containing different percentages of brewers' spent grain (T) and powdered egg white (A) is shown in Figure 6 (Cappa & Alamprese, 2017). It can be seen that the presence of fibre reduces the extensibility (deformation prior to breakage) of the pasta sheets both raw and cooked, while the cooking phase promotes greater structuration of the product thanks to the thermal coagulation of the protein component. In fact, the force required to reach the cooked sample's deformation prior to breakage is decidedly higher than that required to break the raw pasta sheet. As expected, the presence of egg white gives the product a much stronger texture; in fact the samples with the higher concentra-

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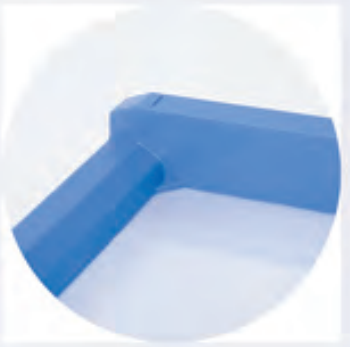

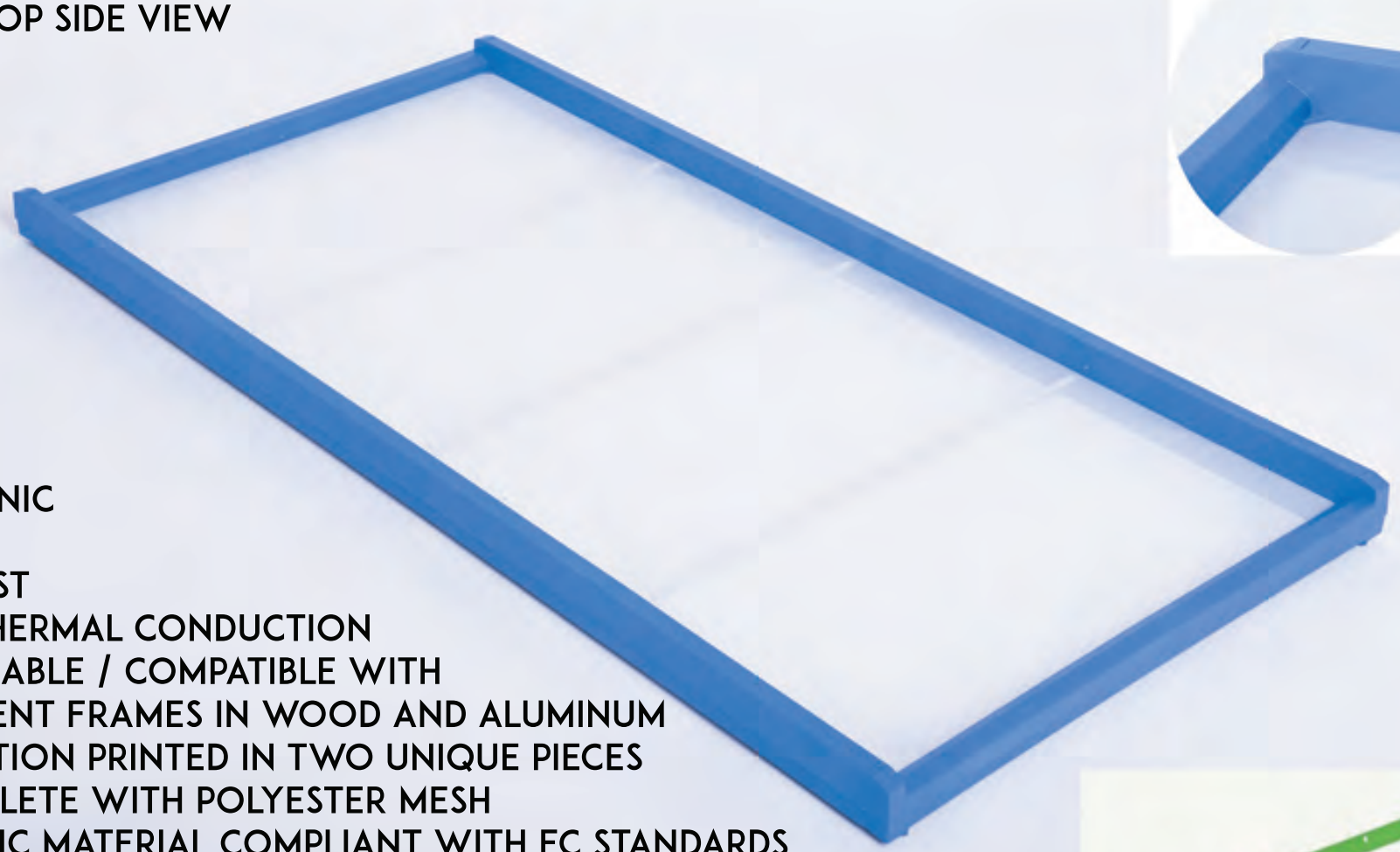

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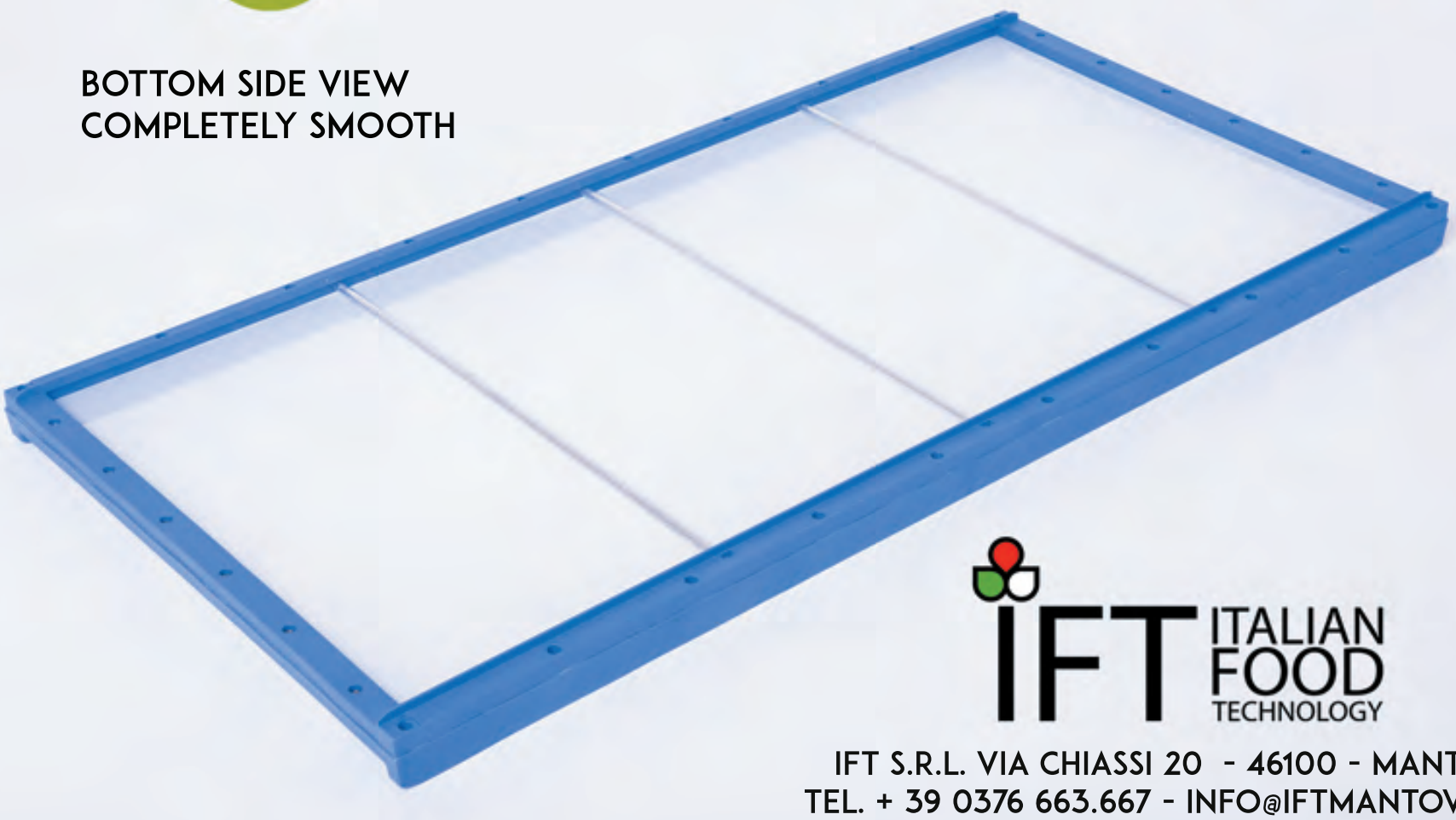

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Figure 6 MECHANICAL PROPERTIES OF PASTA SHEETS OBTAINED BY ADDING DIFFERENT CONCENTRATIONS OF BREWERS' SPENT GRAINS (T) AND POWDERED EGG WHITES (A) COMPARED TO THE REFERENCE SAMPLE (STD) WITHOUT ADDITIONS

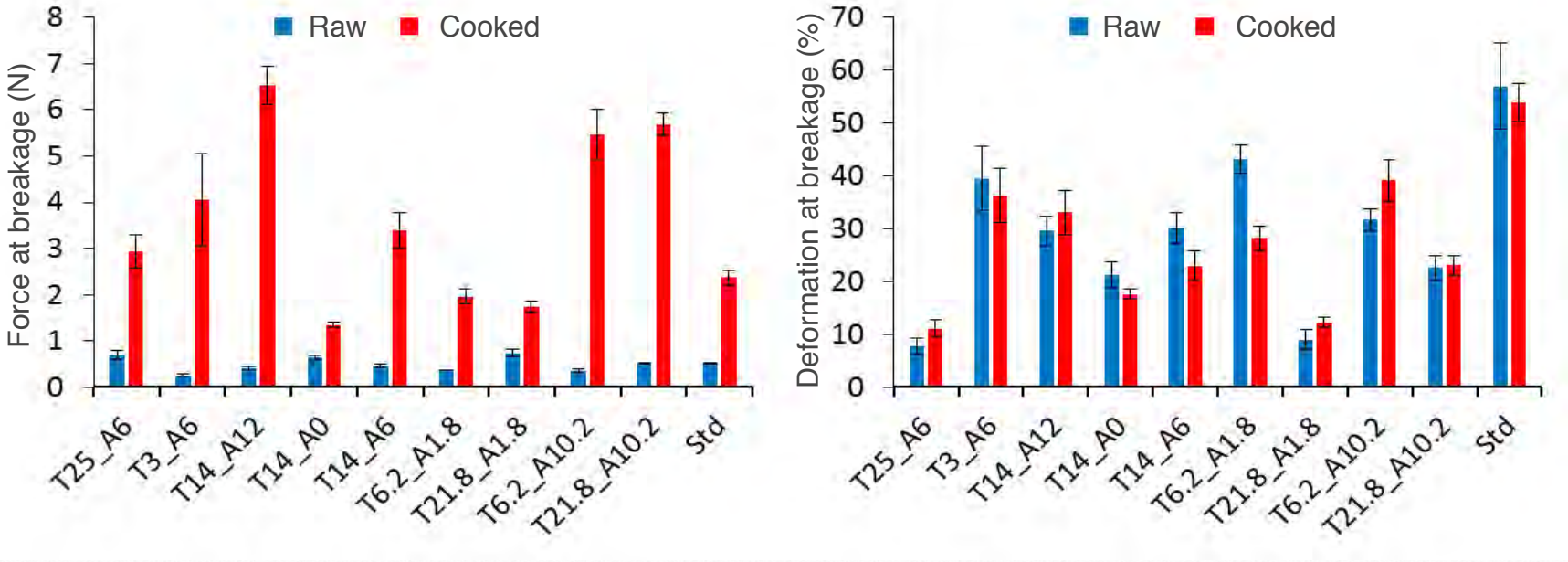
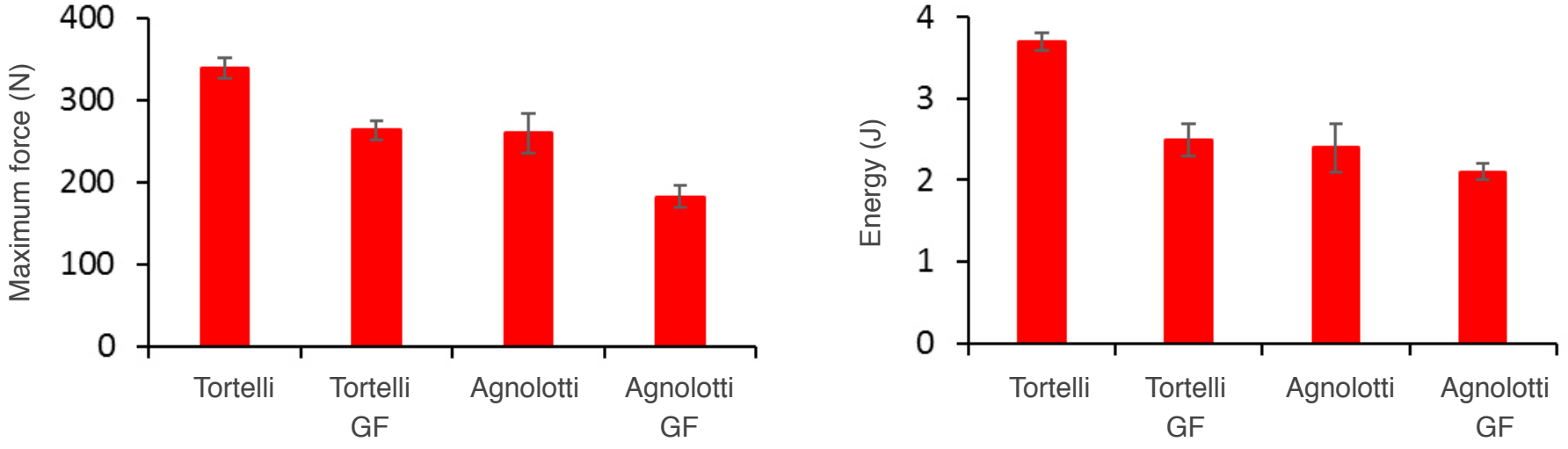


Figure 7 MECHANICAL PROPERTIES OF TRADITIONAL AND GLUTEN-FREE (GF) FRESH FILLED PASTA



tion of egg white require a greater force to reach deformation prior to breakage.
Still using the traction test, the study conducted by Alamprese, Casiraghi & Rossi (2008) also evaluated the effect on the mechanical properties of pasta sheets for lasagna of different intensities of pasteurisation treatment, both before and after cooking.

Thanks to this test, the authors demonstrated that the higher the temperatures of the pasteurisation treatment and the longer it lasts, the stronger (higher force at breakage) and less extensible (lower deformation prior to breakage) the pasta becomes.

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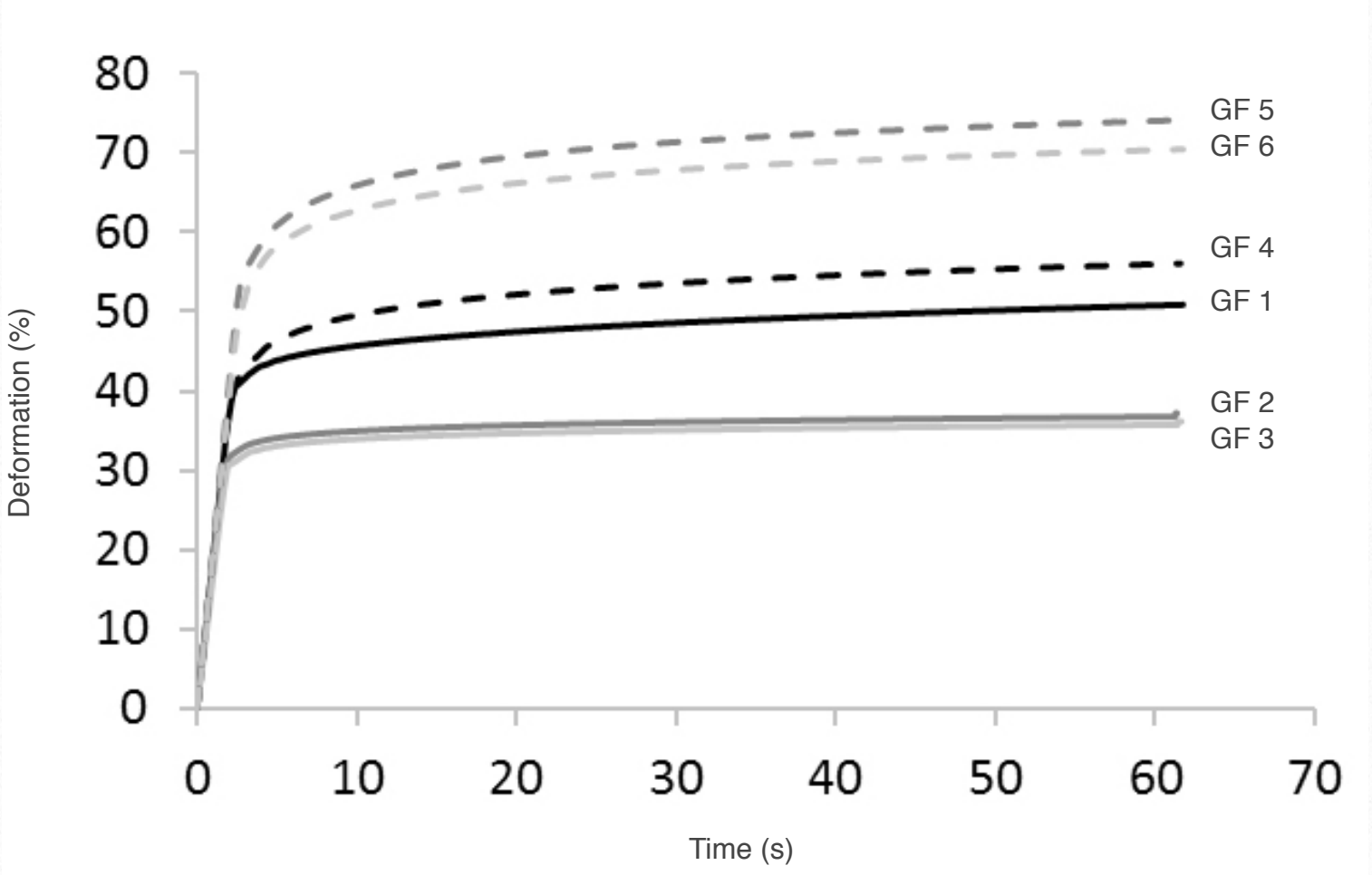
Figure 8 **MECHANICAL PROPERTIES OF GLUTEN-FREE (GF) GNOCCHI**



An example of the evaluation of the mechanical properties of fresh filled pasta using the compression and extrusion test with Kramer's cell is shown in Figure 7 (Rizza, 2017). The graphs show that the gluten-free products present lower maximum strength and energy values than the traditional samples, confirming that pasta containing gluten better maintains its firmness in cooking.

Lastly, Figure 8 (Cappa et al., 2017) shows an example of the evaluation of the mechanical properties of gluten-free gnocchi using the single compression test with maintenance of applied force. The use of this test makes it possible to evaluate both the stiffness of the material (slope of the basic stress-deformation curve prior to reaching the preset force) and its viscoelastic behaviour, measured on the basis of the deformation of the sample while force is being maintained for 60 seconds. From the curves shown in Figure 8, it may be seen that some samples appear well-structured, only showing a slight deformation (30%) during the compression phase and limited increases in deformation while force is being maintained. In contrast, other samples, which appear poorly structured, present higher deformations (> 60%) both in the first phase of the test and in the part that follows. The samples that scored highest in the sensory evaluation were characterised by intermediate behaviours (initial and

final deformation equal to 45 and 50%, respectively).

Therefore, from the cases studies presented here, the methods most commonly applied to determine the technological quality of fresh pasta are able to evaluate both the structuration of the dough and the characteristics of the raw pasta as well as the behaviour of the product during cooking.

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6

The Cavallini tortellini making machine is now also available in a bench top version for small production facilities and restaurants

With the launch, onto the market, of the bench top model, the Cavallini tortellini making machine is now also available for small fresh pasta production facilities and restaurants. Keeping the traditional shape (like hand made) the smaller sizes are the strong points of the new version of the renowned Cavallini tortellini making machine, that is so highly appreciated by operators.

It is called TB80, with the T stands for Tortellini and B for bench.
It is the latest creation from Moreno Cavallini who, since 1983, has been designing extraordinarily innovative shaping machines (and it is he who was responsible for the first tortellini making machine capable of producing the first 2-gram tortellini with overlapping edges closed at the front, as

per the recipe registered on 7 December 1974 by the Confraternita del Tortellino [Brotherhood of Tortellino] and the Accademia Italiana della Cucina [the Academy of Italian Cuisine] at the Chamber of Commerce in Bologna).
The new model has been specifically designed for small pasta factories

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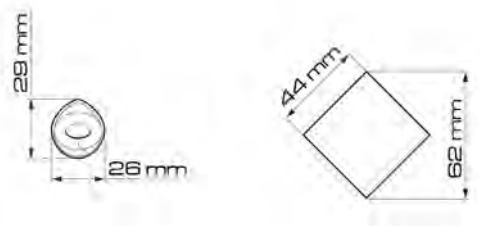
Table 1 2 GRAMS TORTELLINO

Slice size	35x35 mm (smooth*)
Weight of tortellino	from 1.8 g to 2.2 g
Number of stamps	1 diagonal (patented system)
Pieces per stroke	1
Hourly production	Up to 6 kg

*serrated also possible on request

Table 2 4 GRAMS TORTELLINO

Slice size	44x44 mm (smooth*)
Weight of tortellino	from 3.5 g to 4.0 g
Number of stamps	1 diagonal (patented system)
Pieces per stroke	1
Hourly production	Up to 12 kg



*serrated also possible on request

and restaurants and is capable of producing tortellini weighing from 1.8-2.2 g to 3.5-4.0 g, with an 80mm sheet width.
Its smaller sizes (700x800x800h mm) and reduced weight (70 kg), mean it can be easily positioned on a work bench.
All of the machine's movements are produced by electrical motors, capable of shaping 60 tortellini a minute.
The TB80 also retains the construction characteristics and operating principles of the larger versions:
the sheet is horizontal and rotated 45 degrees with respect to the shaping line;
the thickness of the sheet and quantity of filling are adjustable.
The tortellini making machine is capable of working whilst keeping the sheet scraps to a minimum (7% on average).
All of the components that come into contact with the product are made of stainless steel, with plastic approved and certified tefloning and materials
The other Cavallini shaping machines are capable of producing the tortellino ferrarese (3.5 g), the cappelletto romagnolo (6 g), and the tortellone (in differing weights: 15 g, 25-35 g and 40 g).

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7

Pastaria Festival: here is the Steering Committee for the 2019 edition

Editorial staff

We would like to introduce the members of the Steering Committee for Pastaria Festival 2019, the not-to-be missed event of the supply chain sector of the pasta production industry, taking place in Parma on 27 September. Committee members include illustrious university professors and experts from well-known pasta factories.

Once again it will the be task of the Steering Committee, that is already hard at work, to determine the programme for the next edition of Pastaria Festival, scheduled to take place in Parma, on 27 September, 2019. This is where the sector's key players (associations, research institutes, universities, professional bodies, companies and experts) will gather to share their knowledge and skills on the activity of pasta production, in a free day of meetings, workshops, conferences, presentations and laboratories.

The Steering Committee is made up of a Scientific Committee, in the strictest sense of the term, the members of which will be titled university professors, and an Advisory Committee, consisting of prominent individuals from well-known Italian pasta factories that differ in type, production and size.

The Scientific Committee will be responsible for presenting the state-of-the-art in research, studies and academic publications on pasta (dried, fresh, pasta-based ready meals, etc.), and to investigate, from a supply chain perspective, (from the field to the table), using a multidisciplinary approach, with particular reference to the issues that will be jointly identified with the representatives of pasta factories that make up the Advisory Committee.

The Steering Committee is coordinated by Lorenzo Pini, editor-in-chief of Pastaria.

The Scientific Committee

The Pastaria Festival 2019 Scientific Committee members are:

- Cristina Alamprese, Professor of T*echnology of refrigerated applications*, *Micro and macro-structure of foods*, *Technologies and use of fatty substances in the food industry* (University of Milan); Scientific Director of the Library of Agriculture of the University of Milan.
- Marco Dalla Rosa, Professor of *Food technology and the principles of packaging* and *Product formulas and innovation* (University of Bologna); member of the executive committee of EFFOST and of the board of arbitrators of SISTAL and ISEKI_FOOD Association
- Daniele Del Rio, Director of the School for Advanced Studies on Food and Nutrition at the University of Parma
- Gabriella Pasini, Professor of *Food sciences and technology* (University of Padua)
- Luciano Piergiovanni, Professor of T*echnology of conditioning and elements of logistics*, *Sustainability of food product production and distribution systems*, *Quality and safety of biotechnological foods* (University of Milan); President of the Italian Scientific Group for Food Packaging (GSICA)

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- Guia Pirotti, SDA Professor of *Strategy & Food Management* (SDA Bocconi School of Management) and Professor of *Business Strategy* (Bocconi University)
- Emanuele Marconi, Professor of *Science and technology of cereals* (University of Molise); President of the Italian Association of Cereal Science and Technology (AISTEC)
- Francesca Scazzina, Professor of *Assessment of the nutritional quality of food and nutrition and health* (University of Parma); Senior Collaborator for The Need for Nutrition Education/Innovation Programme (NNEdPro), Cambridge Foundation, Cambridge.

Advisory Committee

The Pastaria Festival 2019 Advisory Committee members are:

- Federica Calcagno
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  (Fontaneto)
- Roberto Ciati
  Scientific & Government Relations Vice President and Global Communications & External Relation
  (Barilla)
- Nicola De Battisti
  Head of Quality
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- Antonella Sica
  Food Technologist, responsible for Quality Control
  (La Molisana)
- Stefano Zardetto
  Research and Development and Quality Assurance Manager
  (Gruppo Voltan).

The Pastaria Festival

Pastaria Festival's - Sharing know-how on pasta manufacturing is a free, one-day event for supply chain operators. There will be conferences, workshops, laboratories, courses, presentations, lessons and more on the activity of pasta production. Pastaria Festival is an event organised in collaboration with the associations APPAFRE, APPF, IPO and Unione Italiana Food.

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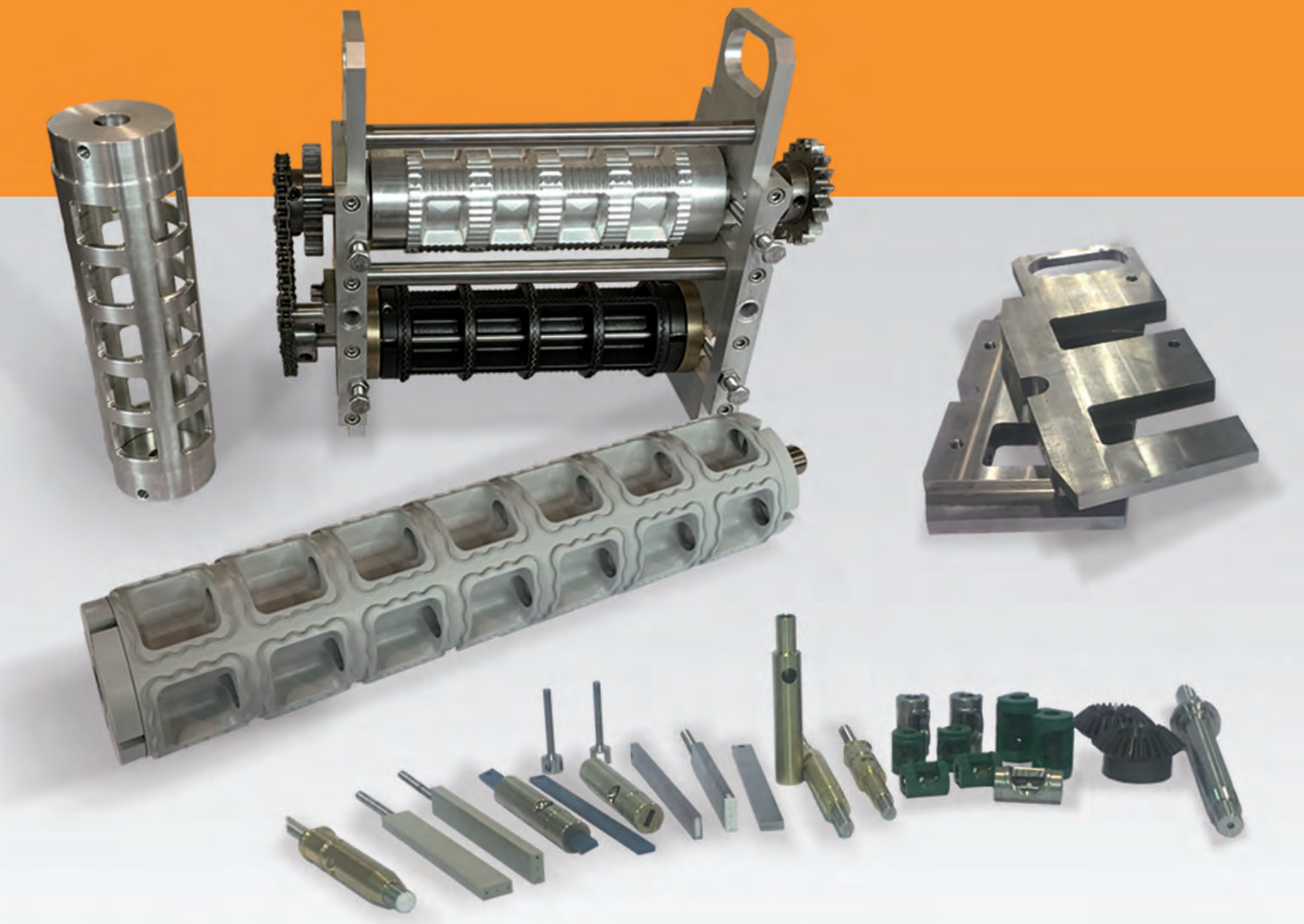

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Commodity price observatory 2/2019

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Pastaria

Pastaria’s four-monthly feature on the prices of the main raw materials used by pasta manufacturers.

The potential effect of a tariff shock on the developments of trade worldwide remains the most troubling factor for analysts and operators, due to its capacity to affect performance and prices on international commodity markets. It should be noted, however, that the risk of increased tension among traders is not the only cause of anxiety. Added to it is the recent increase in the cost per barrel of crude oil, another source of increasing uncertainty and worry because of the possible inflationary repercussions on the cost of non-food raw materials as well as of food commodities.

Let’s proceed in an orderly manner, however, and attempt to zoom in on a few basic elements that will help us to understand the current situation on the markets. First of all, we should note that while the price of oil is at this point steadily above the threshold of 70 dollars per barrel (the reference is to Brent Crude, the European benchmark, extracted from the North Sea) this is more for geopolitical reasons that for any economic imbalance between supply and demand. The Opec plus agreements, which received the blessing even of producing countries outside the cartel, have introduced major cuts in production at a time when the offering of crude on the market was already scarce due to the Venezuelan crisis, but also to the armed conflict in Libya and the end of the exemptions to the ban on Iranian oil imposed by the U.S., which has effectively closed all of Teheran's outlets for its oil.

It is a situation that in the sector of food commodities, with particular reference to “energy-intensive” crops like grains and oil plants, could trigger an inflationary process, although for the moment, the prices of corn, soy and wheat exhibit negative annual trends that vary only depending on the commodities considered.

Based on forecasts of the next harvests worldwide in the sector of the staples, the view appears less alarming, as we can probably expect an increase in grain production for the 2019/2020 season, with soy output steady at the same record levels as the past season. This, in spite of predictions of a decrease by 23 million tons of final stocks (as reported by the International Grains Council) due to the composite effect of an increase in wheat stocks and a significant drop in stocks of corn.

We also have to consider, as mentioned above, the possible impact of higher agricultural production costs associated with an increase in the cost of energy and its repercussions on prices in the entire supply chain of fertilizers and chemical products more in general, insofar as these are directly related to oil prices. In addition, higher oil costs would increase the economic incentive to produce biofuels starting

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PRICES AND TRENDS OF CERTAIN FOOD RAW MATERIALS (MARCH 2019)				
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	217.75	-4.3%	13.4%	▲
Fine durum wheat from central Italy	Price (€/ton)	Monthly variation	Annual variation	Forecast
	222.5	-0.7%	1.3%	▼
00 type common wheat flour	Price (€/ton)	Monthly variation	Annual variation	Forecast
	420	-1.2%	-16%	▲
Semolina above min. leg. req.	Price (€/ton)	Monthly variation	Annual variation	Forecast
	427.5	0%	1.9%	▼
Eggs M	Price (€/100 pcs)	Monthly variation	Annual variation	Forecast
	9.8	2.1%	-14.8%	▼
Pork hams for Prosciutto 12 kg and over	Price (€/kg)	Monthly variation	Annual variation	Forecast
	3.14	-0.9%	-17.2%	=
Beef – veal meat half-carcass, prime quality	Price (€/kg)	Monthly variation	Annual variation	Forecast
	4.9	-0.2%	-2.4%	=
Raw milk	Price (€/100 kg)	Monthly variation	Annual variation	Forecast
	41.19	-3.1%	40.1%	=
Churned butter	Price (€/kg)	Monthly variation	Annual variation	Forecast
	2.07	-7.2%	-26.9%	▲
Grana Padano aged for 9 months or more	Price (€/kg)	Monthly variation	Annual variation	Forecast
	7.95	0%	30.3%	=
Extra virgin olive oil	Price (€/kg)	Monthly variation	Annual variation	Forecast
	5.5	0%	32.5%	=

Source: Centro Studi Economici Pastaria elaboration based on various data sources. Grain, flours and semolina: Granaria, Bologna; Eggs: CCIAA, Forlì; Pork and beef: Commodity Exchange, Modena; Milk: CCIAA, Lodi; Butter and Grana Padano: Commodity Market, Milan; Olive oil: CCIAA, Bari.

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Pastorizzatore con zona di asciugatura
Pasteurizer with drying area

Quadro elettrico generale
General electric panel

Carico prodotto
Product inlet

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= ISO 9001 =

TECHNOLOGY PERFORMANCE RELIABILITY

PRICE MONITORING				
FAO Food Price Index	Price (2002-2004=100)	Monthly variation	Annual variation	Forecast
	167	0,1%	-3.6%	▲
Soft Red Winter FOB US Gulf port	Price (USD/ton)	Monthly variation	Annual variation	Forecast
	198.29	-8.7%	-0.3%	▲
Mais, U.S. No. 2 Yellow FOB US Gulf port	Price (USD/ton)	Monthly variation	Annual variation	Forecast
	165.03	-2.6%	-4.1%	=

IMF Food Price Index, Soft Red Winter, Mais: March 2019

from soy and corn, increasing their non-food uses and generating possible situations of deficit in the food offering.
On the wheat circuit, as regards durum wheat, for example, we have to consider the rising cost trend associated with a widespread loss of crop area in North America, mainly in favour of other grain crops. The disinvestments, on the order 20-30%, of which there is evidence in Europe as well, though to a much lesser degree, would seem to indicate a rising trend in costs over the coming months, and we are, in fact, already seeing the first signs of this on the Italian markets.
Relative to the other sectors, the current prices of staples and the prospects of good international demand provide a favourable setting for dairy commodities, also considering the decrease in the offering from the Oceania area.
Developments in the pork sector are more uncertain, due to the health emergency connected with the spread of African swine fever, especially in China. The consensus of analysts leans, however, toward a strengthening of the prices, with advantages mainly for European exporters.
Finally, we should at least briefly touch on the situation relative to olive oils, where prices are moving, at this time, in two different directions. In Italy, the sharp drop in production, affected by the freezes and by the xylella emergency, has pushed prices to exceptionally high levels, at a point where negotiation is merely nominal in the absence of real exchanges. On the contrary, the Spanish price lists have abruptly changed course after confirmation from Madrid of a major increase in production. It is a trend that has also affected oils produced in Greece and Tunisia, in a market largely overstocked, despite strong international demand.

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The seventh edition of Tuttofood, the agrifood trade fair is just about to open its doors

Press release
Tuttofood

Tuttofood continues to grow: more than 2,900 brands from 43 countries will be present at the 2019 edition, taking place in Milan Rho, from 6 to 9 May.

There are just a few days left before the start of Tuttofood, the event dedicated to the agrifood system, that takes place at Fieramilano from 6 to 9 May. It is an international hub capable of promoting the very best that Italian know-how has to offer, with top buyers from all over the world, and encouraging trade with the Italian market - thanks also to the synergies with the events that will be taking place at the same time: Fruit Innovation, Seeds&Chips and Milano Food City.

More than 2,900 brands will be present at this year's event, and the 43 countries taking part will be headed up by Spain, United Kingdom, France, Germany, Portugal, Greece, Thailand, USA, Peru, Mexico, India, Turkey and China. Also on the increase is the number of international groups present, which will include Bord Bìa (Ireland) Xunta de Galicia (Spain), Inovcluster (Portugal) and Almond Board of California (USA). Italy, with its uniqueness and the very best of Made in Italy, is also well represented at Tuttofood. There is a significant presence of groups from the Italian Regions such as Abruzzo, Calabria, Campania, Lombardy, Lazio, Liguria, The Marches, Molise, Apulia and Sicily and the territories of Pisa, Arezzo, Avellino, Benevento and Catania, as well as the Distretto della Pesca (Fishing District) (Sicily), the Distretto della Valtellina (Valtellina District), the Piacenza Alimentare Consortium and Tradizione Italiana.

Fiera Milano’s investment in incoming buyers, both Italian and international, is equally significant, thanks also to the support of the ITA/ICE Agency in many key sectors. Buyers from over 100 countries will be attending in large numbers, as well as from all the European countries and most prominently from the United States, Canada, China and the Middle East. Boosted, in particular, by the numbers of those representing the Food Service world, Italian and international large retail chains and e-commerce, augmented by delicatessens and

For information

www.tuttofood.it

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shops of excellence. Among the top buyers are Atalanta Corporation, Auchan, Carrefour, Coop, Costco Wholesale, Delhaize, Eataly, Edeka, Marr, Radisson Hotels, SevenEleven and Walmart. Buyers and exhibitors can count on a preset agenda of targeted meetings thanks to MyMatching, the proprietary business matching platform of Fiera Milano, that in 2017 that meant it was possible to organise over 30,000 thousand appointments.

The focus on buyers is also confirmed by the agreements entered into by Tuttofood with important foreign associations such as Restaurant Canada, the country's major HoReCa organisation, and Specialty Food Association, the sector's most important body in the USA.

As a confirmation of the event's increasingly more international orientation, the United States Ministry of Agriculture recently granted official recognition to Tuttofood, as the first and only agrifood event in Italy. This official standing is only granted to trade fairs capable of guaranteeing an effective contribution to trade with the United States.

Tuttofood 2019 is consolidating the results of previous editions and is evolving, constantly extending its product range in response to the needs emerging from the markets. In particular:

- Tuttowine will be the new space dedicated to wine, in partnership with UIV-Unione Italiana Vini (Italian Wine Association);
- Tuttodigital will be the new area dedicated to technological innovations, as a contribution to the sector's growth and the traceability of the supply chain;
- There will be a focus on the delicatessen and gastronomy sectors at Tuttodeli, and on multiproducts (truffles, preserves, oil, rice, etc.) with Tuttogrocery and Tuttobakery;

- there are record numbers of participants at Tuttooil (oil), at Tuttosweet (confectionery) and at Tuttopasta (fresh and dry).
- the newcomers, Tuttofrozen, Tuttoseafood and Tuttodrink, are sections dedicated to frozen foods, fish products and eating out;
- product innovation for Tuttodairy and Tuttomeat, the two historical pavilions dedicated to dairy products, meats and cured meats and to everything fresh in general;
- a great deal of attention has been placed on the health sector with the Tuttogreen and Tuttohealth areas.

Quality and content for the events: there is great anticipation about the Academies that are dedicated to the development of new business models and professional growth. The new additions for 2019 are: Evolution Plaza, the digital transformation village, where it is possible to analyse how 4.0 technologies can support the sector's growth and where companies, experts and the academic world can experiment and communicate. With this in mind, Netcomm, an Italian electronic commerce consortium, will be offering, within this area, the eCommerce Food Lab, a cycle of 5 workshops on key topics in relation to digital commerce Great anticipation, also, for the two days dedicated to the blockchain applied to the agrifood sector with successful best practices. Retail Plaza, dedicated to cutting-edge distribution, and the new formats of large scale distribution, returns in its revamped version. Thanks to the co-location with Fruit Innovation, Tuttofood will also be the setting for the first International Nut Forum, an opportunity to examine healthy food worldwide more closely.

Experimentation and entertainment in the Academies dedicated to showcooking, where exhibitors' products are prepared by great chefs, in collaboration with the APCI (Professional Association of Italian Cooks). Rounding off the programme will be conferences, events, demonstrations and competitions that will take place within the Tuttofood's exhibition circuit. Not to be missed is the new format organised by Fiera Milano Media, in which it will be possible to explore the connections between food, science, medicine and technology in years to come.

Tuttofood will be a partner of Milano Food City from 3 to 9 May 2019, the quality-food week that will take place simultaneously, with its own programme of events.

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Sixth APPF Workshop: here's the programme

Editorial staff

The professional training days, organised by the Italian Association of Fresh Pasta and Gnocchi Producers (APPF), continue. The next event will be in San Martino Buon Albergo (VR), on 16 May 2019.

The sixth Association of Fresh Pasta and Gnocchi Producers (APPF) workshop is scheduled to take place on 16 May 2019, in rooms at the Hotel Catullo, in San Martino Buon Albergo, in the province of Verona.
The programme for the event, in which the Pastaria editorial team will also be taking part, is as follows.

Programme

3:00 pm Giovanni Rana, President of the APPF
Welcoming remarks.
3:10 pm Justo Bonetto, secretary of APPF
Aims and successes of the APPF Workshops.
3:20 pm Silvia Gonzaga (Logos Avvocati Associati)
Origins of the primary ingredient according to Regulation 775/2018: state of the art.
3:45 pm Maurizio Morandini (Coligroup)
Storage and sustainability: new packaging for fresh pasta.
4:10 pm Nadia Bernardi (Tecnessenze)
Tecnessenze: flavourings - between tradition and innovation.
4:35 pm Riccardo Sartirana (Cerealbroker)
The evolution of flour: trends, innovations and market responses.
5:00 pm Paola Salvador (Eurovo)
Egg products - traceability and updates: the new production chains.
5:30 pm *Question time on the topics covered and any corporate issues.*
The conclusion of the workshop will be followed by the usual aperitif, offered by the association to all participants.

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