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ACCADEMIA ITALIANA DELLA CUCINA

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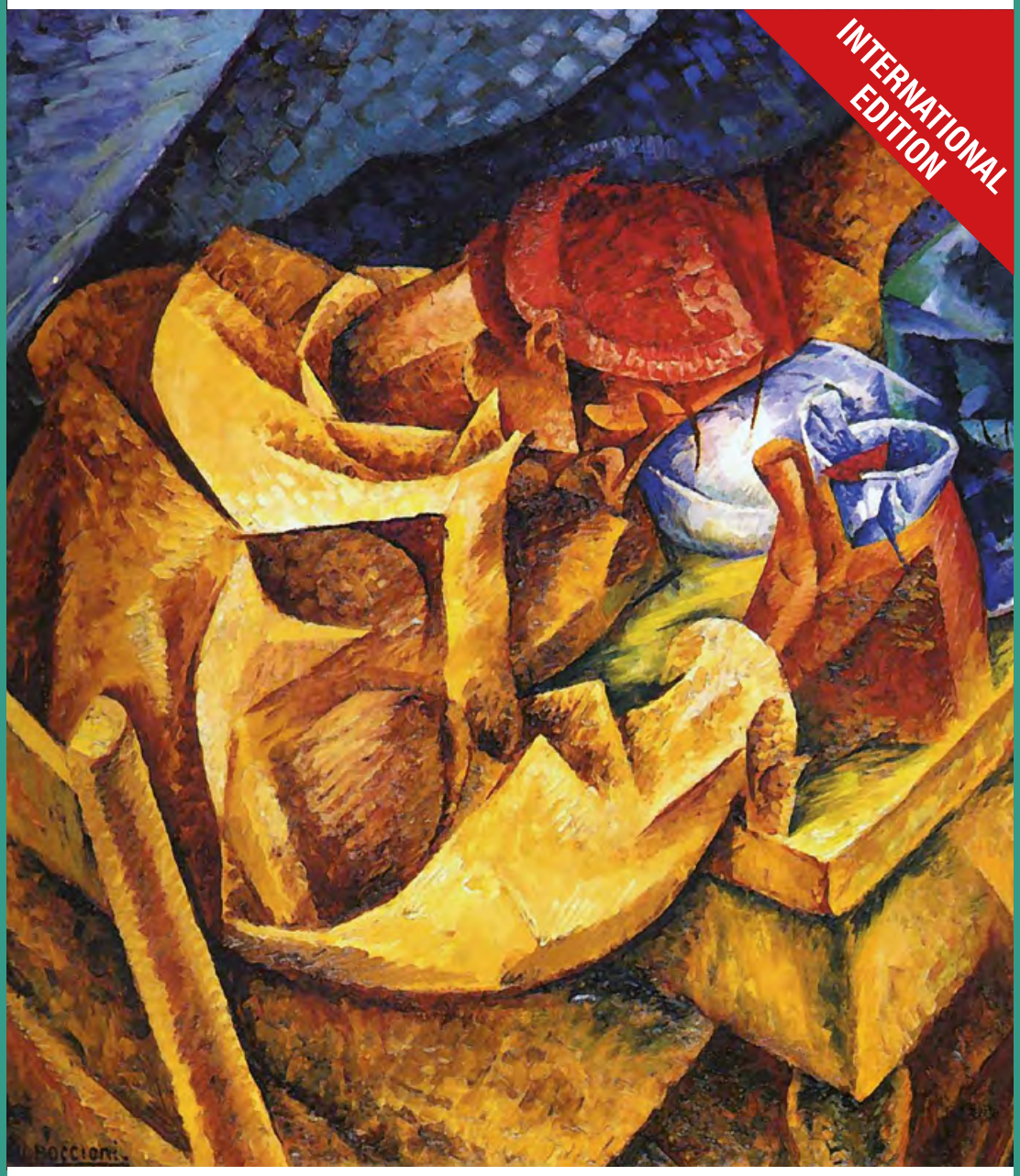

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On the cover: *graphic elaboration of* The Drinker *(1914) by Umberto Boccioni, Jucker Collection, Milan*

Focus of the President

Traditions • History

Cuisine • Products • Food Technology

Jamie Oliver's empire collapses

by Paolo Petroni
President of the Academy

A symptom of disaffection with restaurant chains.

It's not inconsequential news. **The sudden closure, in one fell swoop, of 23 restaurants in Jamie Oliver's British chain**, plunged into administration while 1000 employees are sent home, could appear of little relevance to Italy and its cuisine in general. Jamie Oliver, now 44, was already world-famous at barely 20. Hailing from an obscure village in Essex, **he was the first cook to become a television star**. Out of thin air, he had created a chain of 25 restaurants and a food retail empire; he published a popular monthly cooking magazine (*Jamie* magazine); he wrote recipe books and presented an acclaimed television programme with cooking courses. At his peak, he had over 3000 employees and a revenue of approximately 260 million Euros.

In 2008, he launched the chain Jamie's Italian intending to change the restaurant business in Britain

The topic is particularly interesting to us because in 2008, he launched the chain **Jamie's Italian** intending to change the restaurant business in Britain through high-quality ingredients, replacing fish and chips with Mediterranean cuisine and olive oil. He had, therefore, laudably taken cues from Italian cuisine - or **maybe pseudo-Italian, but nevertheless complimentary to our country**. However, evidently something went wrong. In the background, a structural crisis which struck the British restaurant business (including the forerunner, Carluccio's), perhaps Brexit-fuelled economic worries, perhaps rent increases, ingredient costs and competition from other chains. The fact of the matter is that times have changed: **the chain offering Italian food**, often unremarkable and by no means cheap, **now**

faces stiff competition from the many Italian restaurants in London, from *trattorie* to *pizzerie*, from solid to prize-winning. A choice, that is, which didn't exist a decade ago.

The concept of a chain guaranteed by its name is no longer popular

It is, above all, the concept of a chain guaranteed by its name which is no longer popular. Oliver had his own restaurants, while **today franchises are often successful**. With widely varying fees, depending on the brand's importance (ranging from 20 thousand to 200 thousand Euros), one can open restaurants bearing the franchisor's name. One must adhere to very stringent guidelines regarding furnishings, personnel attire, dishes offered, and usually also ingredients purchased; one then pays royalties to the brand's owners. Sometimes it works and sometimes not. It works with fast food, but not with high-quality restaurants. **The system inherently flattens overall food quality**, encouraging standardisation, which is the opposite of what we seek in restaurants that we frequent not only for fuel but also for pleasure and exciting exploration of new foods. Since we even look askance at the numerous restaurants opened by the latest celebrity chef, a character often only loosely grounded in reality, how much more must we be suspicious of restaurant chains, mere middling eateries.

Misleadingly named foods

by Gigi Padovani
Journalist, food writer

The 'obscure pedigrees' of many culinary preparations often obfuscate the etymology of specialities, including famous ones.

Italian cuisine is truly rich in 'sins of the tongue' (as a book edited by Professor **Massimo Arcangeli** is aptly entitled). Indeed, many dishes can be categorised as 'misleadingly named', as **Pellegrino Artusi** pointed out in his cookbook *La scienza in cucina e l'arte di mangiar bene* (*Science in the Kitchen and the Art of Eating Well*). Introducing recipe n. 627 for plum pudding, the culinary scholar from Forlimpopoli explains: "This English term should indicate a pudding made of plums, of which however it is entirely bereft". He adds, discussing recipe n. 628 for plum cake: "This is a sweet in the same misleadingly named category as the preceding recipe".

The 'obscure pedigrees' and the myths with which cuisine is often rife obfuscate the etymology of many specialities, including famous ones. Examples abound: **aubergine parmigiana** which is not from Parma as its name suggests; the abysmal 'spaghetti bolognese'; the so-called 'Russian salad' - even spaghetti, standard-bearers of Italian cuisine, did not arise on our peninsula but were brought by the Arabs to Catania in the 12th century. **Rivers of ink have been spilt about aubergine parmigiana**. Having established that this recipe is not from Parma but from Sicily or Campania (the latter is hypothesised by **Marco Guarnaschelli Gotti in his *Great Illustrated Encyclo-***

***paedia of Gastronomy*), there are various linguistic theories concerning its name.**

There are various linguistic theories concerning the name of aubergine parmigiana

The first hypothesis - favoured by **Marino Marini** in his well-researched work *La gola* (*The Palate*) - posits an origin in the word *parmiciana*, which, in a 19th-century Sicilian-Italian dictionary (Mortillaro), indicates 'a type of window shutter': a blind with wooden slats positioned as in a ladder, which is how the aubergines are layered. Others, however, trace a different linguistic trajectory, noting that the recipe's precise original name is *parmigiana di melanzane* ('*parmigiana* of aubergines') rather than *melanzane alla parmigiana* ('Parma-style aubergines'). This would refer to the Latin word *parma*, meaning 'shield', reflecting the shape of the serving dish. If instead we would rely on Artusi, we must recall that his treatise does not speak of *parmigiana* or *parmiciana*, but rather of *tortino di petonciani* (recipe n. 403), 'aubergine flan', using an archaic name for aubergines. All clear? No, because years earlier, in his *Cucina teorico-pratica* (*Theoretical and Practical Cuisine*) published in 1837, **Ippolito Cavalcanti**, Duke of Buonvicino, had included recipes for 'parmigiana dishes' defined by having layered ingredients: *cocozzoli* (*zucchine*) and *carcioffi* (artichokes).

Instead, it seems established that ***genovese* (literally 'from Genoa'), a traditional Neapolitan meat and onion sauce** used over *mezzani* (medium-sized macaroni), was never prepared in the Ligurian capital. Are we sure? In truth, some aver that this dish resulted from the expertise of a Genoese cook at the Bourbon court of Naples, or from the lore transmitted by sailors alighting from Genoese warships. There is, in fact, a traditional sauce in Genoa consisting mainly of onions and a large single piece of meat, known as *o tucc*. Undoubtedly, no Neapolitan will 'swallow' the notion that this is a Ligurian sauce.

The ink has likewise flowed abundantly over ***spaghetti alla bolognese*** ('Bologna-style spaghetti'). On 14 December 2018, the Academy's Bologna Delegation deposited the recipe for 'Bologna-style tuna spaghetti' with a notary: a markedly different recipe from that prevalent around the world. Then in 1982 the Bologna Academicians deposited another recipe, for 'classic and genuine Bolognese *ragù*', containing minced beef, *pancetta*, tomato purée and minced vegetable *soffritto* (mirepoix), finished with cream. So? If we follow Guarnaschelli Gotti's *Encyclopaedia*, we can establish that the term 'alla *bolognese*' (for *tagliatelle*, *lasagne*, mixed fry-up, mixed boiled meats, *tortellini*) indicates a recipe deriving generally from the Emilia region. The latest observations are from the historian **Giancarlo Roversi**, who maintains that '*vermicelli al ragù*' (*vermicelli* - similar but not identical to *spaghetti* - with meat sauce) existed in Bologna.

'Russian salad' probably has French origins

Visiting Moscow one may encounter an 'Olivier salad'; in Hungary, a 'French salad'; and in Berlin, an 'Italian salad'. In 19th-century Piedmont, a recipe for *insalata rusa*, meaning 'red salad', was established: it contained beets and carrots dressed with cream. It spread throughout Italy towards the end of that century because Artusi provided a version of this recipe 'from my kitchen', with various vegetables (including beets) and mayonnaise, when he published his culinary classic in 1891. Describing recipe n. 454, he remarks that "the so-called **Russian salad**" (as it subsequently became known in Italy) is "now in vogue during luncheons". It probably had French origins and was particularly fashionable during the Belle Époque **in elegant Parisian restaurants, frequented by Russian aristocrats**.

Yet more astounding is the alleged genesis of three very famous desserts with contested origins at odds with the names they have borne for centuries.

In Naples, the highest compliment is "*tu si 'nu babà*" (you are a *babà*), referring to the dessert, firmly integrated into Neapolitan tradition, which is to be enjoyed 'on the go', writes **Renato De Falco**, and 'on a whim'. This typical dessert of leavened sponge cake saturated with rum probably arrived in Naples in the mid-19th century. The mystery remains: **where did the babà originate** and whence came its name? The most creditable hypothesis attributes it to a Parisian bakery near Les Halles, the French capital's oldest: Stohrer, founded in 1730. In that shop one may still enjoy a cylindrical babà, rather than the Neapolitan version shaped like a chef's hat. In the early 18th century, the baker **Nicolas Stohrer** apprenticed at a castle in Alsace which also hosted the exiled Polish king **Stanisław Leszczyński**. It is unclear whether the king - a true gourmet - or the baker invented the dessert. There are two hypotheses regarding its name's origin: the Pol-

ish *babka*, or 'granny', due to its shape reminiscent of a full skirt; or the character Ali Baba from the *1001 Nights*, which Stanisław, a noted bookworm, was reading when he first tasted this new delight, christening it accordingly, this being shortened later to babà.

How did babà reach Naples? And why do Italians name their own trifle 'English soup'?

Legends? And above all, how did babà reach Naples? Probably thanks to early 19th-century culinary Francophilia, spearheaded by **Maria Carolina of Austria**, queen consort of **Ferdinand IV** of Naples: the new Parisian sweet was immediately recreated by the palace bakers, in both 'rounded crown' and miniature 'outdoor dining' variants.

Even more complex is **the history of trifle, known as 'English soup' (*zuppa inglese*)**, the ancestor of all Italian *dolci al cucchiaio* ('spoon sweets' - desserts to be eaten with a spoon). It was clearly an Italian invention, whose origin is disputed between the regions of Emilia-Romagna, Tuscany and Campania.

Its earliest known recipe is in the *Manuale del cuoco e del pasticcere di raffinato gusto moderno* (*Manual for Cooks and Bakers with Refined Modern Tastes*) by **Vincenzo Agnoletti**, which calls it '*Marangoni gelati, detti ancora Zuppe Inglesi*' ('Frozen *marangoni*, also known as English Soups'). With a similar recipe and identical name it appears in the book *Il cuoco sapiente* (*The Wise Cook*) from 1871. Pellegrino Artusi then definitively codified it in his recipe n. 675 for *zuppa inglese*, prepared with 18 *savoiardi* (ladyfingers), half soaked in *Alkermes* and half in *Rosolio* (both sweet liqueurs). It is the Alkermes, created by the monks of the Santa Maria Novella Apothecary, which supports the Tuscan origin theory, since a thriving Anglophone community lived in Florence in the 19th century.

'English soup' may indeed have some link to England. According to one theory **positing its origin in Ferrara**, at the Este court, in the 16th century, the recipe was introduced by a diplomat of the Este realm, impressed by an English dessert known as 'trifle'. This appears in a text from 1569 entitled *The Good Huswife's Iewell* (*The Good Housewife's Jewel*). A more recent, monumental compendium of regional Italian cooking, published by **Anna Gosetti della Salda** in the 1970s, mentions both Tuscany and Emilia as the dessert's possible origins.

Finally, we must note that **sponge cake**, known as *pan di Spagna* ('Spanish bread'), is Italian, specifically Genoese. According to tradition, in the mid-18th century the Genoese cook **Giovan Battista Cabona**, travelling in Spain with Marquis **Domenico Pallavicini**, the Genoese ambassador, first presented this light, fluffy dessert at a royal banquet in Madrid. The French christened it *pâte génoise*, honouring its inventor's presumed origin.

Nevertheless, many culinary historians doubt that this name refers to the Ligurian capital: indeed, in 1750 the term *génoise* indicated an almond-filled lemon cake.

The closest recipe to what is now called '*génoise*' appears in the treatise *Il confetturiere piemontese* (*The Piedmontese Confectioner*) from 1791, describing a 'Spanish bread' named 'St Genevieve's bread'. This would imply an entirely different origin: could these be the *petits pains de Sainte Geneviève* ('St Genevieve's little rolls') cited by the Duke of Luynes in 1747? Some sources, therefore, characterise this preparation as a homage to the French saint rather than the Italian city.

Gigi Padovani

Futurism in the kitchen

by Nicola Barbera
Milano Duomo Academician

The banquet becomes theatre, art, action, exciting sensory experience

Fortunato Depero, The Drinker, *1923, private collection*

The father of **Futurism** was **Filippo Tommaso Marinetti**, who published the first **Futurist Manifesto** against academic culture in Paris on 20 February 1909 in *Le Figaro*.
The movement promulgated a new aesthetic and a new conception of life, both rooted in dynamism and inspired - this was at the beginning of the last century - by the 'machine civilisation'. Futurism embraced various fields: from literature to visual arts, from costume to music and, eventually (1930), even cuisine, obviously opposing its traditional incarnation, dismissed as 'retrograde'. In literature it anticipated Dadaism, performing '**automatic writing**' known as '*le parole in libertà*' ('words set free'; **Palazzeschi**, **Govoni**, **Soffici**).
Soffici, with **Prezzolini**, founded the Florentine cultural magazine *La Voce* (*The Voice*, 1908), to which the anti-conformist futurist magazine *Lacerba* (1913) assumed a contrary stance: '*qui non si canta al modo delle rane*' ('one does not sing here as frogs do'), cited from the incomplete anti-Dantesque encyclopaedic poem *L'Acerba* by **Francesco Stabili** (1269-1327), known as Cecco d'Ascoli, a poet, physician and astrologer/astronomer tried for heresy and burnt at the stake in Florence.
Futurism entered **culinary art** (which Marinetti more elegantly defined '*cucinaria*' rather than the standard '*culinaria*') approximately 20 years after the Manifesto's publication, when Marinetti and **Fillìa** (co-signatory of the *Manifesto dell'Aeropittura* or *Aeropainting Manifesto*) published ***La Cucina Futurista*** (*Futurist Cooking*, **1930**), wherein the banquet becomes theatre, art, action, exciting sensory surprise.

The diner is a protagonist, an actor and not a spectator

The diner is a protagonist, an actor and not a spectator; diners indeed must participate with all five senses, using neither fork nor knife, to experience new sensations. A prime example of this interpreta-

Umberto Boccioni, Under the Pergola, *Civico Museo d'Arte Contemporanea, Milan*

tion is the description of the **New Year's Eve Dinner**, where, as the diners are eating turkey, traditionally prepared, a living turkey suddenly erupts into the room, flapping around on the table and thrashing in alarm among the plates and guests: the futurists intended this as representing a sort of 'resurrection of ingested food'!
Marinetti himself wrote: "The distinction between the five senses is arbitrary; we can discover other, new senses and sensations... a visual sense is born on the fingertips... vision, hearing, smell, touch and taste are modifications of just one, supremely active sense: touch, partitioned in various ways and localised in different points". And again: "futurist cuisine will free us from the old obsession with volume and weight; pasta, that absurd Italian gastronomic religion which renders us ugly, sluggish and pessimistic, will be abolished; better to replace it with the more 'patriotic' rice!".

Brief cooking, raw fish and meat, unusual aromas, unprecedented combinations

In essence, Marinetti wanted to emphasise "the importance of nutrition in the creative, fertilising and aggressive capacities of races". Hence our 'race's' fare must be radically modified by fortifying and spiritualising it with new foods, **with intelligence and imagination replacing quantity and bland repetition**.
One can say, therefore, that Marinetti intuited and anticipated French *nouvelle cuisine* and 'innovative cooking', championing brief cooking times, raw fish and meat, unusual aromas, unprecedented combinations, and presentation of every dish as visual art, as well as flavour contrasts: sweet-salty, sweet-spicy, sweet-sour.
The recipes of futurist cuisine must reflect the speed of machines and especially aircraft. Hence their names: *Decollapalato* ('Palate Takeoff'), *Timballo d'Avviamento* ('Ignition Timbale'), *Atterraggio e Ammaraggio digestivo* ('Digestive Landing and Splashdown'), *Dolceplastico* ('Sweet-Sculpture'), *Alfabeto alimentare* ('Alimentary Alphabet'), *Carneplastico* ('MeatSculpture') and, to finish, the sweet named *Per-alzarsi* ('Getter-Upper'): *Sorbetto esilarante* ('Exhilarating Sorbet').
In terms of implementation, the first restaurants promulgating the Futurist good news were, early on, the Santopalato ('Sainted Palate') in Turin and the Penna d'oca ('Goose Feather') in Milan, where particular attention was lavished on ornamentation (**harmony**) and the originality of the dishes' flavours and colours (**imagination**).
Another aim of futurist cuisine was to prepare diners for the forthcoming '**dynamic and sculptural foods**', and probably also, thanks to emerging uses of radio waves, to 'nutritional waves'!
Skimming the *Manifesto of Futurist Cooking*, one can even find ideas revisited by today's **molecular cuisine**. Throughout their evolution, humans advanced from raw to cooked food (using various techniques from grilling to microwaving). Molecular cuisine investigates the processes which molecules undergo in food, analysing the physical and chemical principles underlying cooking and other preparation techniques (a mayonnaise is in fact an emulsion; an aspic is a gel; roasting is a technical modification of meat proteins), and thus we embark on a new mode of cooking by analysis, deconstructing and reconstructing constituent elements.
When cooked, molecules undergo **two types of transformation: chemical** (transformation from one type of molecule to another, as occurs in broth) and **physical** (the same molecules being rearranged in different structures or 'alimentary architectures' resulting from collaboration between cooks, physicists and chemists). Just as cooking may be performed without flame or smoke, so ice creams can instantaneously be created using **liquid nitrogen** (at -196°C), obtaining perfect creaminess and a distinctive taste.
A final observation: today's growing **ecological awareness** must entail, even in the kitchen, the correct use of daily necessities, avoiding waste throughout the food chain.
In conclusion, on the one hand we have inexorable 'progress', with its inventiveness and originality; on the other stands the risk of the manipulation, mass production and monoculture of industrial foods. Consequently, while acknowledging Futurism's culinary merits, only judicious 'reassessment' of our country's bountiful traditional food heritage, that is, improving digestibility and quality of foods by, inter alia, lightening condiments, is the high road of gastronomic progress in culinary culture.
I shall end with a quip by the eminent French chef **Paul Bocuse** about *nouvelle cuisine*: "split a pea four ways and multiply the bill by six".

Nicola Barbera

What's cooking in the…
dishwasher?

by Anita Rubera
Syracuse Academician

A culinary technique 'outside the box', with vast potential: vapour produced by the washing cycle can also cook food.

This is no typo, but a new trend, increasingly **popular in the USA in recent years, which made landfall in Italy some time ago**. Armed with various ovens - using microwaves, forced air, electricity or gas - why should we entrust our food to an appliance which has nothing to do with cooking?
In choosing this topic I was inspired by reading **Lisa Casali**'s *Cucinare in lavastoviglie* (***Dishwasher Cooking***, published by Gribaudo). As the author's introduction exhorts: "However strange this idea may seem to you, strive to overcome your initial prejudice". This cooking technique, positioned firmly 'outside the box', is easy and offers many advantages, including increased energy saving and environmental sustainability. Dishwashers are found in most homes; using them fully loaded can consume less water and energy than hand-washing. This is truly a useful contraption in the kitchen, offering many possibilities: the steam released by the washing cycle can also be used for cooking. **Dishwasher cooking benefits the environment, our health and our pocketbooks**, as it requires no additional energy and preserves ingredients' nutritional value.
According to *Altroconsumo* magazine, which tested almost 30 dishwasher models, we use approximately 60 litres of water if we hand-wash dishes under running water; 20 by hand using a basin or plugging the sink; and 16, on average, using the eco-friendly setting on a class A dishwasher. For meaningful waste reduction it is crucial to use the dishwasher fully loaded, favouring low-temperature cycles and plant-based, completely biodegradable detergents.

Why and how to cook with dishwashers

Why cook using dishwashers? Because the vapour which they produce while operating is similar to that used in steam cooking. Cooking temperatures are chosen based on the dish-washing programme: **eco-friendly wash** = low-temperature cooking (50°-55°); **normal wash** = medium temperature (60°-65°); **high-intensity wash** = medium-high temperature cooking (70°-75°). Dishwashers allow low-temperature cooking without specialised equipment.

How to cook with dishwashers? To avoid food making contact with detergent and washing water, **waterproof packing in sealed glass containers or vacuum cooking pouches is crucial**. In terms of glassware, jam jars or similar containers are adequate.
Vacuum-packing machines exist in two variants. Restaurants use the internal extraction chamber type, the bulkier, more professional and more expensive option which, however, ensures the best performance in removing air. Better suited for domestic use, being smaller and more affordable, is the bar-type machine with external extraction.
To avoid nullifying the ecological benefits of dishwasher cooking, **it is important that glassware and vacuum packs be re-used** after thorough washing and air drying.

Don't cook rice or pulses in dishwashers, as they require higher temperatures

What can be cooked in dishwashers? Best results at low temperatures are obtained with **meat, fish, molluscs, crustaceans, eggs, fruit, and some vegetables**. Try employing the dishwasher for all the low-temperature cooking stages of a recipe.
Advice for dishwasher cooking. Some vegetables, including courgettes and carrots, need high temperatures to cook; it is therefore advisable to cook them entirely by dishwasher only when using the normal or intense washing programmes. Alternatively, they can be pre-cooked using the eco-friendly setting, and then briefly sautéed in a pan or wok (for example, when making a vegetable curry).
Dishwasher cooking cannot replace traditional cuisine entirely, but only its low-temperature cooking phases. Hence, for instance, avoid it for preparing rice or pulses, which require longer and higher-temperature cooking.
Dishwasher cooking allows us to use less water, energy and cooking fat than traditional cooking techniques would have otherwise mostly required. One practically incurs no additional cost and ecological impact if using steam which would have been produced anyway through the dishwasher cycle. Obviously these benefits are lost if we run the dishwasher specifically for cooking. Lisa Casali suggests: "Imagine the following scene: though exhausted, you have dinner guests; you prepare one of the menus offered in my book and set the dishwasher. Now you have two hours all to yourself while the dinner cooks by itself, producing no heat or smells. **You need not oversee the cooking, but merely await the end of the wash cycle**. Wouldn't that be a dream? Yet this is just how dishwasher cooking works".

Anita Rubera

TIPS FOR LIGHT AND DELICIOUS MEALS A RECIPE FOR EACH WASH PROGRAMME

Rapid wash (30 minutes) - ***This programme, perfect for lightly soiled ware, is also the most suitable for small or filleted fish. Excellent results will also be obtained for tuna steaks (using little tunny or albacore), which will be well-cooked on the outside and very tender inside.***

Eco-friendly wash - ***The programme for everyday dishwashing and cooking. It performs best with lightly soiled ware and is ideal for cooking meats, which remain tender and succulent through long, low-temperature cooking.***

Normal wash - ***It is called 'automatic' or 'basic' wash in some dishwasher models: it usually employs temperatures between 60°C and 65°C and adapts to the number of dishes to wash in more advanced models. It is an all-purpose wash which can be used for many culinary preparations and suits both meat and fish.***

High-intensity wash - ***This tackles the most stubborn dirt, and can also be used for the largest variety of recipes, especially with white meats: lamb, pork, chicken or turkey.***

Parmigiano Reggiano and Grana Padano

by Flavio Dusio
Novara Academician

Two distinct stars of the table.

These two products from our culinary heritage have uncertain origins. Cistercian monks acquired particular cheese-making skills and applied them in their monasteries, producing a cheese called *caseus vetus* ('old cheese') in special boilers.

The name 'grana' derives from the cheese's distinctive graininess

The general public, unfamiliar with Latin, gave it another name, derived from its distinctively compact, grainy texture: hence it is known as '*grana* cheese' or simply '*grana*'. We find references to *grana* subtypes under varying names: *lodesano* or *lodigiano* ('from Lodi), considered the oldest; and *milanese*, *parmigiano*, *piacentino* and *mantovano* (from, respectively, Milan, Parma, Piacenza and Mantova). The Italian word for cheese, *formaggio*, seems to derive from the Greek *formos*, the wicker basket which gave the curds their shape. Its chronology is uncertain; the earliest known cheese reference is a Sumerian bas-relief dating from the 3rd millennium BC, depicting priests processing milk. A widespread legend narrates how an Arab merchant crossed the desert bearing various foodstuffs including milk, stored in a dried sheep stomach. During the journey, shaking, temperature and enzymes from the stomach's lining caused the milk to curdle, with delicious results. And so, curds were born.

Rennet is extracted from the abomasum of lactating ruminants: bovines, ovines and caprines. Liquid rennet, saturated with salt, consists of 95% chymosin, particularly suitable for producing hard cheeses, such as, indeed, *grana* or parmesan.

How do parmesan and *grana* differ?

Parmesan protocol requires milk from cows exclusively fed green forage, field hay and dried fodder; alongside these, ***grana* also allows** silage, meaning high-moisture fodder made from the entire plant, minced, fermented and stored in silos.

For *grana*, this dietary regime necessitates **the addition of lysozyme**, a strongly bactericidal protein found in egg white but also human tears and saliva. Why is this required for *grana*, not parmesan? Milk destined for *grana padano* ('*grana* from the Po river valley') derives from cows fed silage, especially maize: this permits **reliably high product quality with limited costs**. However, silage con-

Photo by Gloria Novi

tains bacteria: some species of *Clostridium* (*sporogenes*, *butyricum*) and *Propionibacter*, coliforms, and heterofermentative lactic acid bacteria. Spores and bacteria can enter stables and milk, though the natural separation of milk fat would considerably reduce bacterial burden. **Lysozyme prevents the germination of spores which would release butyric acid and gas**. The first would cause offensive tastes and smells, and the second would produce irregular bubbles and swellings, rupturing the cheeses. Lysozyme can guarantee product safety. *Trentingrana* (produced in the province of Trento) is the only variant without lysozyme, because its protocol includes no silage to feed the animals from whose milk it is made. In other cases, 20-25 grammes of lysozyme are added for every 1000 litres of treated milk. Instead, cows producing milk for *parmigiano reggiano* ('parmesan from Reggio Emilia') are fed only forage, of which at least half must be hay and 75% must be sourced in the cheese's place of origin and processing. This explains why *grana padano* labelling includes the phrase 'with added lysozyme E 1105' while parmesan labels only enumerate milk, rennet and salt.

Grana comes from two milkings; parmesan from evening milk only

Another difference lies in curd preparation. PDO-certified *grana padano* is produced from raw cow's milk deriving from two milkings (evening and morning), partially skimmed through natural fat separation. From stable to processing plant, this milk must undergo no heat treatment, whether physical or mechanical, which alters its natural raw milk status.

Parmigiano reggiano comes from evening milk, which rests in broad vats until morning, its cream, destined for butter production, rising to the surface. Skimmed evening milk (1.5% fat) is mixed with full-fat (3%) milk, obtaining partially skimmed (2.4%) milk, poured into boilers with calf rennet. Parmesan is therefore slightly fattier than *grana*.

PDO certification requires differing ageing times: nine months for *grana*, twelve for parmesan; there are also more aged versions of 24 and 36 months respectively. ***Grana padano* is produced by a consortium of only 130 associates**, distributed in 33 provinces within five regions: Lombardy, Veneto, Emilia, Trentino, Piedmont. ***Parmigiano reggiano* has a far smaller territory**, within the provinces of Parma, Reggio, Modena and Bologna (to the left of the Reno river) and Mantova on the right side of the Po river. Historically, *grana padano* was characterised by its three seasonal variants: *vernengo*, produced from December to March; *di testa* (literally 'of the head'), from April to June (considered the best); and *tardivo* ('late') or *terzolo* ('third'), produced from October to November. This distinction has almost vanished, because the cows' feed remains practically identical throughout the year.

One kilogramme of *grana* requires approximately 15 litres of milk, and considering that whole cheeses can weigh between 24 and 40 kilogrammes, each requires 360 to 600 litres of milk. Wheels of *parmigiano reggiano*, weighing approximately 40 kilogrammes, each require around 550 litres of milk.

Both cheeses are excellent protein sources in a meal, accompanied by vegetables, and provide branched-chain amino acids (leucine, isoleucine, valine), useful for strenuous muscular activity during sports. Served with white rice in vegetable broth, without added fats, they are also helpful against intestinal troubles, such as diarrhoea, viral or otherwise.

Let us conclude this overview by describing lysozyme not as a pernicious chemical additive, but as what it really is, biologically. It is an enzymatic protein consisting of 129 amino acids, found in many bodily secretions (saliva, semen, tears, nasal mucus, human milk etc). It was discovered by Alexander Fleming in 1922, and its name derives from the Greek *lysis* ('loosening') and *zymi* ('ferment'). This protein can hydrolyse (dissolve) the peptidoglycans of cell walls, making bacteria literally explode. Such is its natural antibacterial function that newborns fed artificially without lysozyme have a threefold risk of diarrhoea compared with babies fed human milk, which contains lysozyme.

What, then, is the problem? Lysozyme is extracted from hens' eggs. To obtain a litre, approximately 2000 eggs are needed, and 1 kg of cheese needs the lysozyme of 3-4 eggs. Because contamination by the protein albumin cannot be altogether excluded, the possibility of developing egg protein allergies, though remote, is theoretically present and would preclude consumption of *grana*. Once children test negative for such allergies, they can safely consume *grana*.

Flavio Dusio