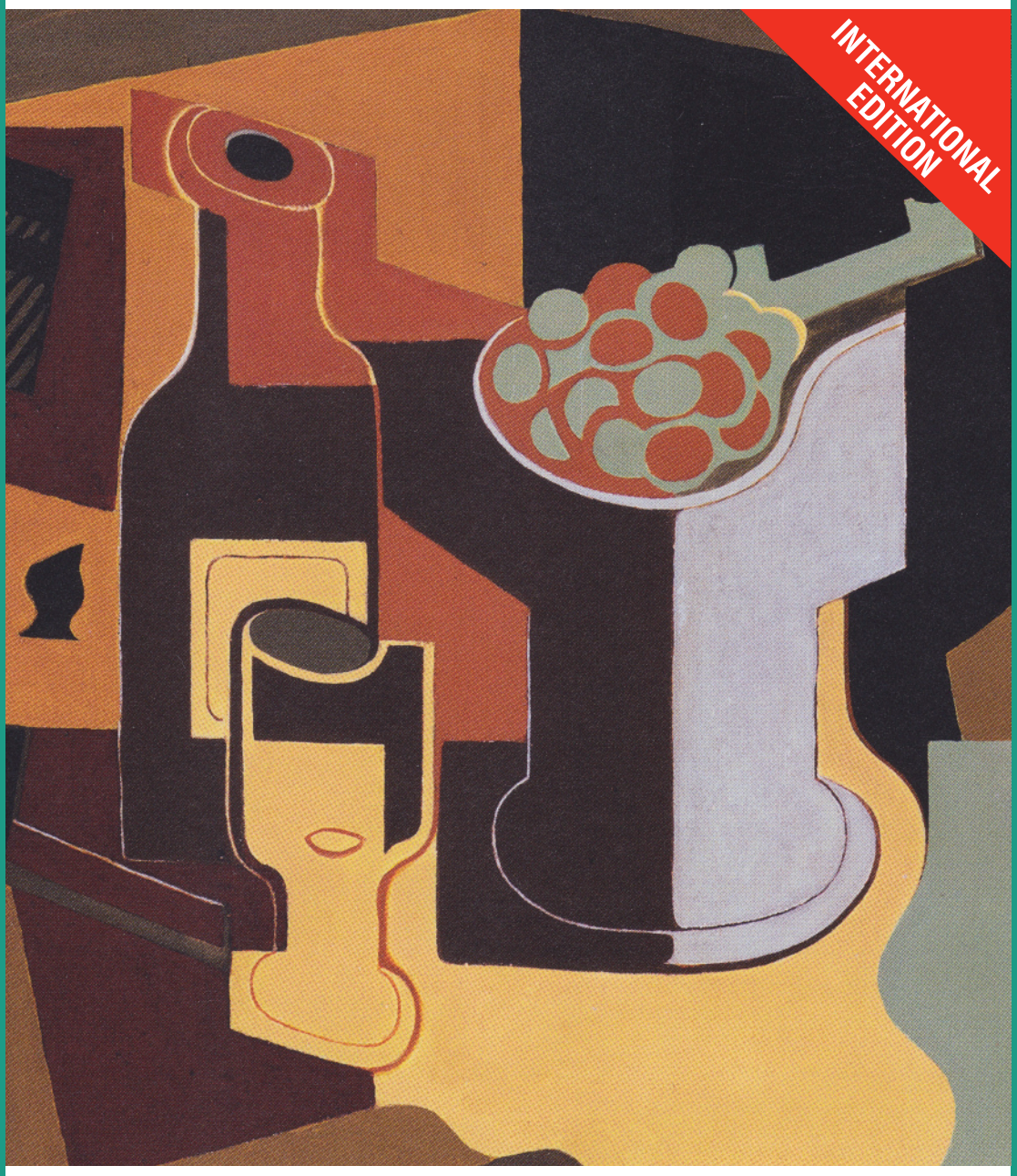
CIVILTÀ DELLA TAVOLA

ACCADEMIA ITALIANA DELLA CUCINA

INTERNATIONAL EDITION



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L'ACCADEMIA ITALIANA DELLA CUCINA
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DINO VILLANI, EDOARDO VISCONTI DI MODRONE,
WHIT MASSIMO ALBERINI AND VINCENZO BUONASSISI.

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EDITOR IN CHIEF
PAOLO PETRONI

COPY EDITOR
SILVIA DE LORENZO

LAYOUT
SIMONA MONGIU

TRANSLATOR
ANTONIA FRASER FUJINAGA

THIS ISSUE INCLUDES ARTICLES BY
Gianni Di Giacomo,
Giuseppe Fioritoni,
Marco Manzini,
Paolo Petroni.

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PUBLISHER
ACCADEMIA ITALIANA DELLA CUCINA
VIA NAPO TORRIANI 31 - 20124 MILANO
TEL. 02 66987018 - FAX 02 66987008
presidente@accademia1953.it
segreteria@accademia1953.it
redazione@accademia1953.it
www.accademia1953.it

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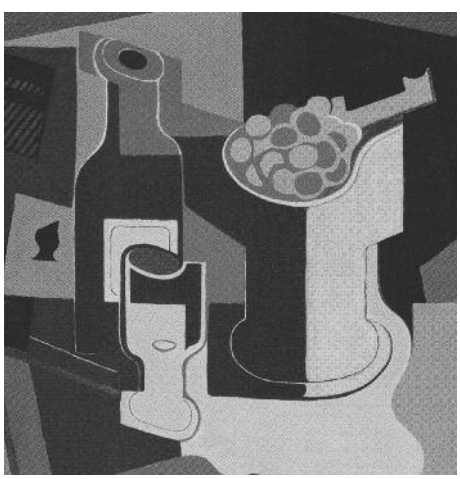


On the cover: Graphic elaboration of *Bottle and Fruit Dish* (1920) by Juan Gris, Kunstmuseum Winterthur, Switzerland.

An Academy with a big heart

Donations gathered will soon be distributed: a signal for the future to a stricken population.

BY PAOLO PETRONI
President of the Academy

The first earthquake on the 24th of August 2016 was immediately named 'the Amatrice earthquake', even though other, far less famous townships (Accumoli and Arquata del Tronto) were severely affected. The town of Amatrice was indeed known throughout the world as the birthplace of the famous *Amatriciana pasta* recipe. Solidarity flared up immediately among celebrity and run-of-the-mill chefs alike, as well as the many restaurateurs who donated to the Municipality of Amatrice a portion of all revenue gained from consumers ordering *Amatriciana*. The tremors were horrifying, but some structures had remained standing, such as the building housing the Amatrice Hotel Institute, which, though damaged, seemed salvageable. With less haste but more substance, the Academy decided on a more decisive and focused effort, associating its support with its Ecumenical Dinner last October. Sadly, the second major tremor of the 30th of October, felt as far as Venice, where the Academic Advisory Council was in session, delivered the coup de grâce to the towns initially struck, and extended the horror to the areas of Norcia and Macerata. Towns were reduced to rubble and their prospects of reconstruction are still uncertain, other than their high likelihood of dragging on for years. Accompanied by the Delegates of the stricken areas, we visited those regions to verify the list of names suggested as recipients of our aid. Twenty deserving names were selected among restaurants, small producers and breeders. Our fundraising exceeded our most optimistic expectations and our Academy's big heart was able to amass the sum of 91,943 Euros, to which we will add the 10,000 Euros from the Orio Vergani Prize, destined to the Amatrice Hotel Institute, now transferred to Rieti where it will remain for goodness knows how long. Let us have no illusions: after the quakes of last October and in January of this year, who knows if any restaurants, and if so, how many, will ever be able to reopen in Amatrice and the other towns affected by the disaster? With the funds gathered by the *Corriere della Sera* newspaper and the *TGLa7* news, a beautiful 'Food Village' will be built and populated with restaurants and shops, as designed by the architect Stefano Boeri. But 20% of the equipment will have to be financed by the retailers themselves (or so it seems, though the three Regions appear to have different policies regarding this), and therefore our support will be crucial for some of them. Our donations will particularly favour certain cattle and sheep breeders who have been unbelievably and shamefully abandoned with no shelter for their animals, who are dying in their thousands in the snow, unable to drink the frozen water or find any food. Our assistance, however small in comparison with the enormity of the disaster, will surely attain the goal of providing at least some of them with concrete and psychological aid. Unless exceptionally dire circumstances intervene, by February the Academy will deliver all the funds to its recipients in Amatrice, where they will gather in a marquee made available by the local Municipality. What we found on the 11th of January was a climate of despondency but considerable dignity and resolution to start anew. The seemingly endless succession of tremors during the past few days, combined with snow and a sense of abandonment, have dramatically heightened the urgency of the situation, such that the delivery of the resources gathered can in no wise be delayed.

A Delegation from the Academy, led by the President, meets some of the donation recipients in a container.

Marinades

Protecting health when cooking on the grill.

BY GIANNI DI GIACOMO
Chieti Academician

Marination is a technique which often precedes or substitutes heat-based cooking. The term derives from 'acqua marina' (meaning 'sea water') and 'marination' originally meant 'immersion in sea water', referring to brine. Brines are solutions of sea salt (sodium chloride) and saltpetre (potassium nitrate), supplemented by aromatic herbs and spices, intended to preserve food. Other terms for marinades include 'in saor', 'in carpione', 'scapece', 'scabeccio' and 'cheviche'.

Marinades are liquids containing aromatic elements, acidifiers or oils, in which meat, fish or vegetables are immersed. This is done for various reasons. Firstly it can prevent hardening or loss of flavour potentially caused by subsequent cooking methods. Additionally, some foods, including certain cuts of meat, are initially very tough or dry, and marination can help to tenderise them or render them more digestible. Others, finally, can initially have unpleasant or overly strong flavours, such as some types of game, and marinades can reduce gaminess and improve flavour. A marinade generally consists of four ingredient categories. *Acidifiers*: vinegar, lemon, wine, beer etc. Acidifiers denature proteins, tenderising ingredients and rendering them more permeable to other flavours. *Oils*: generally only extra-virgin olive oil is used. Oil causes moisture retention, reducing the risk of drying during cooking. *Seasonings*: spices, herbs, and other substances which add flavour. *Sauces*: for example, soya, barbecue or Worcestershire sauce, which, according to their properties, may also replace other ingredients. Indeed, a sauce can add flavour, tenderise meat and retain moisture.

Marinades can be *raw* or *cooked*. A *cooked marinade* will often be retained throughout the cooking process, becoming an indispensable ingredient not only in preparation but during the entire preparation of the dish. *Raw marination*, instead, 'cooks' without heat: the process lasts longer and is used chiefly for fish. The acid of the marinade 'cooks' the fish by acting on its albumin: the flesh becomes paler, more compact and more strongly flavoured. The times involved vary according to the food to be marinated, but the main difference depends on the type of marinade: if cooked, a brief time suffices, from half an hour to a few hours; if raw, as long as 24 to 36 hours may be necessary. Broadly, for cooked marinades, marination time should be about 4 to 6 hours for bovine or ovine flesh (beef, mutton, goat etc), between 2 and 4 hours for pork or fowl, 1 to 2 hours for fish, and half an hour to an hour for vegetables. Game is a different story: its marination times can vary from several hours to several days. It is therefore necessary to know, when purchasing meat, whether it is wild or farmed.

If using the marinade as a gravy, one must remember that this can only be done for lengthy cooking at high temperature - in the oven or on the grill, therefore. If the marinated ingredients are to be merely sautéed, it is best that the marinade be removed beforehand.

The classic recipe for a cooked marinade for a kilogramme of meat is as follows: wash and coarsely chop carrots, onions and parsley and brown them in half a glass of extra-virgin olive oil with bay leaves and marjoram. Add a litre of dry wine, salt and pepper. Allow to

simmer for five minutes and then transfer to a container, cover and allow to cool. Once cooled, pour it over the meat and allow to rest for the required amount of time (depending on the type of meat). Then cook according to one's recipe.

For fish, such as 'pesce in carpione' (sweet and sour marinated fish), boil white vinegar for approximately ten minutes with several chopped cloves of garlic and rosemary. Pour the resulting liquid, still piping hot, over the fish after it has been fried, and allow it to rest. For 'scapece alla vastese' (scapece - the Italian cousin of escabeche - Vasto style), boil the vinegar, add saffron, allow to cool and pour over the fish.

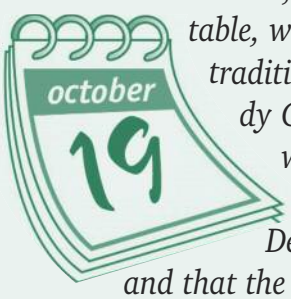
A raw marinade for meat calls for two carrots, two celery stalks, a large onion, and parsley leaves to be finely chopped and combined with three cloves, five peppercorns, two bay leaves, a moderate amount of salt, 6 juniper berries, and three quarters of a litre of excellent dry wine. The resulting mixture must be poured over the meat.

For fish, the ingredients are: lemon juice, wine vinegar, fruit vinegar, oil, salt, seasonings (pepper, coriander), chilli pepper, onion, and garlic. Fish traditionally used for pickling, such as anchovies and squid, must be marinated for at least an hour before being served. Prepare an emulsion with three tablespoons of extra-virgin olive oil, very finely chopped parsley, and a tablespoon of white wine vinegar or lemon juice and sea salt. Shellfish such as mussels, clams and cockles must, instead, be seasoned at the last moment, with extra-virgin olive oil, lemon juice and black pepper. Salmon carpaccio must be marinated with thyme, two tablespoons of extra-virgin olive oil, a tablespoon of lime juice, and salt flakes. Tuna carpaccio can be marinated with two tablespoons of extra-virgin olive oil, one tablespoon of grapefruit juice, white pepper and black salt. Swordfish carpaccio must be marinated with pink pepper, wild fennel, smoked salt, two tablespoons of extra-virgin olive oil and one tablespoon of tangerine juice. For steak tartare, there is a marinade which brings out its flavour: this is a sauce made of freshly grated ginger, two tablespoons of extra-virgin olive oil, one tablespoon of orange juice, black salt, sesame and thyme. Whisk all these together and pour over the tartare half an hour before serving.

Crucially, marination also helps to neutralise the negative health effects of grilling. The risks inherent in this cooking method are twofold: firstly, when red meat as well as pork, fowl or fish are cooked at high temperatures, their proteins are converted into heterocyclic amines (HCAs), which are correlated with several types of tumours. Secondly, polycyclic aromatic hydrocarbons (PAHs) are found in the smoke formed when the fat and juices of meat drip on to the heat source. That smoke may adhere to the surface of the meat and contaminate it, rendering it potentially carcinogenic. Research has confirmed that the formation of such substances in meat prepared in this manner can be reliably minimised through a marinade consisting of extra-virgin olive oil, lemon juice, and antioxidant-rich and preferably fresh seasonings such as chilli pepper, sage, basil, mint, garlic, tarragon, origano, thyme and rosemary, the latter items being indispensable, as they are considered the most potent anti-carcinogenic agents on this list.

GIANNI DI GIACOMO

ECUMENICAL DINNER 2016



The ecumenical dinner, which gathers all Academicians in Italy and abroad around the same virtual table, will occur on the 19th of October at 8:30 PM, and its theme will be "cheese in traditional regional cuisine". This theme was chosen by the "Franco Marenghi" Study Centre and approved by the President's Council to celebrate an ingredient which is abundant and varied in Italy, and which stars or has a supporting role in numerous traditional regional recipes as well as innovative dishes. The Delegates will make sure that the menu pays homage to the starring ingredient and that the dinner is accompanied by an appropriate cultural presentation to illustrate this important subject.

Nutrition and DNA

How food influences our genes.

BY GIUSEPPE FIORITONI
Pescara Delegate

The theme of nutrition and health has great current relevance, fuelling scientific debate and receiving considerable attention from health authorities and the press.

Nutrition-linked diseases are a serious threat to public health, and in Italy, as in Europe overall, countermeasures are in place, within and beyond the purview of health agencies.

By vocation, Academicians have always been stewards of good food and cuisine, but to improve their food culture they should, in my opinion, also further investigate the link between food and health.

As early as 1862, the German philosopher Ludwig Feuerbach maintained, in his *The Mystery of Sacrifice, or Man is What He Eats*, that our physical, spiritual and mental health derives from the quality of the nutrients that we absorb, from their hidden virtues and from their inherent properties. Such assertions, once based on empirical observation, also have years of medical corroboration to support them, scientifically demonstrating the link between food and illness. The newly emerging disciplines in the field of nutrition, such as epigenetics, nutraceutics, nutrigenetics and nutrigenomics, investigate the interaction and effects of nutrients and phytochemical compounds on the structure and functional activities of DNA as well as the role of food and calories on longevity and the future possibility of a personalised diet based on one's genetic parameters.

In developed countries, humans have a life expectancy greater than 80 years, and over their lifetimes they may ingest up to 30 or 40 tonnes of food and several kilogrammes of food additives, pesticides, antibiotics, toxic substances and food contaminants. This is a huge amount of substances and nutrients, whose effects on our health are far more complex and far-reaching than was imagined even in the recent past. Food is more than just energy, calories, taste and pleasure. What we ingest produces information, triggering molecular signals which reach our cells and can modify and subvert their normal functions.

Nutrients undertake a dialogue with our genetic material consisting of thousands of genes, which are short segments of DNA containing information regulating cell function. On the one hand, genes influence the way in which our organism absorbs nutrients, while on the other, nutrients can modify gene expression and function.

Epigenetics is the study of the exogenous factors which determine stable, but reversible, changes in gene expression without altering the original DNA sequence. In addition to environmental pollution, genetic factors, and lifestyle, nutrients can be responsible for DNA damage or affect genes by activating or silencing them, with effects on our health.

Nutraceutics (a neologism combining 'nutrition' and 'pharmaceutics') investigates the possible health benefits of food.

Nutraceutical substances, also termed 'functional nutrients/foods', 'nutraingredients' or 'pharmaconutrients', are fresh or processed substances in our daily diet which are rich in natural active ingredients and have curative or beneficial health properties, and are able to improve well-being, quality of life or physical or psychological performance or to reduce the risk of disease (European Food Information Council - EUFIC).

The term 'functional foods' arose in Japan in the 1980s to describe nutrients chosen specifically to improve health or

combat illness to reduce medical costs for an ageing population with an increased life expectancy. In 1991, the Japanese Ministry of Health, Labour and Welfare identified a category of substances termed FOSHU (Foods for Specified Health Use) and established criteria for their commercialisation. Functional foods are those which contain minerals, vitamins, fatty acids, fibre, or plant-derived active ingredients, and are classified as:

- **Probiotics:** live bacteria (e.g. Lactobacilli, Bifidobacteria) contained in yoghurt;
- **Prebiotics:** indigestible short-chain carbohydrates (inulin, lactulose, lactilol) found in fruit and vegetables, which stimulate the growth of useful bacteria already present in the gut.
- **Vitamins A, C, D, E, and K and B-group vitamins:** molecules which we require in limited quantities, cannot produce, and obtain through food. They have several biochemical properties and can regulate metabolism and cell growth.
- **Vegetable extracts:** carotenoids, polyphenols and anthocyanins, which are antioxidants contained in fruits and vegetables, and anticarcinogens found in plants (cabbage, Savoy cabbage, broccoli, Brussels sprouts, watercress, turnip, cauliflower, garlic, soya) called glucosinolates. Dietary phytochemicals such as sulphoraphane (broccoli), resveratrol (red grapes), quercetin (apples, tea, celery, capers, berries), and luteolin (fennel, celery, sage, carrots, peppers, dandelion) are also studied for their antioxidant, anti-inflammatory and antitumoral properties and their ability to modulate gene expression and function. Furthermore, curcumin (from turmeric), essential oils and gingerol (from ginger) possess potent antioxidant, anti-inflammatory, antibacterial and anticarcinogenic properties and may also combat Alzheimer's disease.
- Lastly, there are **omega-3s and minerals** (including zinc, selenium, magnesium, copper and calcium).

Nutrigenetics studies the genetic differences (polymorphisms) which cause different reactions to the same nutrients in different individuals, as well as the reasons for food sensitivities and reduced capacity to metabolise any given ingredient.

Molecular biology studies indicate that having one variant of a single nucleotide (defined as SNP: Single Nucleotide Polymorphism) can cause a predisposition to diabetes and some forms of cancer, and can elevate the risk of thrombosis and heart disease.

Some genes can cause variations in athletic performance following muscle damage wrought by free radicals produced by exercise. In such cases, consumption before and after exercise of foods naturally rich in vitamins A, C and E and selenium, such as blueberry or pomegranate juice, citrus fruits, almonds, or sunflower seeds, could be useful for reducing muscular damage.

Nutrigenomics studies food's effects on DNA. Molecules released when digesting a nutrient may reach a cell's nucleus and modify genes over time. A dormant gene may thereby be activated, or an active one silenced, shutting off its protein production.

According to José Ordovás, director of the Nutrition and Genomics Laboratory of Tufts University in Boston, within a decade we might be able to use a small saliva sample to identify an individual's ideal combination of nutrients for optimal health and disease prevention: menus personalised according to DNA.

There has been interesting research about the correlation between nutrition and longevity. Some genes appear to influence longevity, while others - gerontogens - appear to accelerate ageing. Professor Pierluigi Pelicci of the European Oncology Institute in Milan has demonstrated that caloric restriction deactivates the gene p66shc in mice, extending their lifespan by 30%.

It is plausible that humans too can increase their lifespan, perhaps to 120-130 years, by silencing those genes. Nutrition can silence genes which cause ageing and stimulate those which promote longevity.

In the not too distant future, knowledge of genetics applied to nutrition may allow specialists in the field to personalise food charts to prevent illnesses or facilitate therapies for complex metabolic, neurodegenerative, cardiovascular and neoplastic diseases.

A more health-aware approach to daily food habits can only be beneficial, but it should not hinder our pleasure in enjoying dishes prepared according to our best culinary traditions whenever we have the chance.

GIUSEPPE FIORITONI

THE ACADEMY SILVER PLATE

*An elegant silver plated dish engraved with the Academy logo. This symbolic object may be presented to restaurants that display exceptional service, cuisine and hospitality. Delegates may contact the Milan Headquarters (**segreteria@accademia1953.it**) for more information and orders.*

Two prestigious products

The latest characteristics, regulations and production data on Parma ham and Parmigiano Reggiano, among the most counterfeited foods in the world.

By Marco Manzini
Atlanta Delegate

In 2015, UNESCO granted Parma the title of Creative City of Gastronomy. The surrounding territory consists of small and fragmented but complementary parcels of agricultural land, and this translates into considerable biodiversity, which then facilitates and sustains the production of two of Italy's most important products among the 283 PDO ('Protected Designation of Origin, or DOP in Italian) foodstuffs: Parmigiano Reggiano (parmesan from the Reggio Emilia area) and Parma ham.

These are widely renowned products, but it may be worth repeating that Parma ham is a cured and aged pork leg. To acquire that name, rather than being merely designated as 'ham', and to earn the Parma Ham Consortium's five-pointed crown emblem, the ham must satisfy the criteria established by the Consortium itself: it must be obtained from animals raised in Italy and belonging only to the Large White, Landrace or Duroc breeds, at least nine months old, fed a special diet of cereals, grains and milk whey derived from the production of Parmigiano Reggiano. The ham must undergo a long and specific ageing process (consisting of ten stages from cutting to branding) in a geographically defined area of the Parma hills; it must be aged for a minimum of 12 months beginning from the date of salting, and in some cases, up to 3 years. It must also be entirely natural: the regulations categorically forbid any addition of preservatives or other additives such as colouring agents, nitrites and nitrates. The only ingredients must therefore be: Italian pork leg, natural sea or rock salt (Halite), air and time! Following the curing process, one Parma ham will weigh approximately 9 kg (less if deboned). Prices for consumers may vary between 200 and 400 Euros apiece. After being properly prepared, it is cut by hand or with a mechanical ham slicer, and served in thin slices.

Parmigiano Reggiano is a hard cheese, suitable for grating, derived from cow's milk. It has an excellent international reputation both from the culinary and the nutritional standpoints: it is telling that all international space programmes mandate its presence in the astronauts' diet. To be termed 'Parmigiano Reggiano' and bear the seal of the Parmigiano Reggiano Consortium, the cheese must be made exclusively of natural milk (without additives) obtained from cows born (though this regulation is not yet in force) and raised in the five provinces around Reggio Emilia, of which four are in Emilia Romagna (including those of Parma and Reggio Emilia) and one is in Lombardy (Mantova). They must have been fed only with natural forage (silage and commercial fodder are forbidden). The cheese's ingredients must be only fresh milk (drawn from only

two milkings, in the morning and evening), salt, and natural rennet. The journey between the stable and the dairy must not last more than two hours (and no more than twenty hours must elapse between milking and initiation of cheese production), without the milk being chilled at any temperature below 18 degrees Celsius before the cheesemaking process begins.

Following an ageing period of 12 to 30 months, a 'wheel' of Parmigiano Reggiano will weigh approximately 40 kg. Prices for consumers are around 20 to 25 Euros per kilogramme, and it is noteworthy that production and price are both growing, respectively, by 6.2% and 2.8% a year.

What do Parma ham and Parmigiano Reggiano have in common? They are associated with the same territory (Parma and environs); they have the same 'minimum age' (a year); they were granted PDO recognition in 1996; regulation adherence by the respective Consortia is monitored and guaranteed through quality control and branding; and they are free of preservatives and additives other than natural salt throughout processing.

For both, it would be best to speak of two contiguous and communicating 'worlds', namely: the capital-intensive sphere (agricultural businesses and livestock farms, processing plants and curing facilities) and the financial aspect (investing today, but beginning to sell only a year later). They are labour intensive, requiring sometimes very specialised workers in some of their production stages; and they are economically and logistically interdependent, for instance through the use of whey obtained from Parmigiano Reggiano production as an essential ingredient in the diet of the hogs used for Parma ham, to whose flesh it imparts the characteristic 'hazelnut aroma' then found in the Parma ham itself. They are both vitally important to the economy of the entire area, and cause the creation and maintenance of many jobs.

To provide some notion of the economic weight of these two 'worlds', one need

only recall that, for Parma ham, 4,200 breeding facilities convey over 8 million hogs each year to 120 abattoirs, which in turn supply 148 curing plants in the province of Parma. These produce about 9 million branded hams a year, for a total value of approximately 800 million Euros (corresponding to an approximate sales value of 1,700 million Euros). It is estimated that 3,000 jobs (in a province of 450,000 inhabitants) are generated by this activity. 32% of the product is exported: about 580,000 of these hams go to the United States each year. Interestingly, almost 1.5 million of these hams are sold packaged into smaller 'pre-sliced' servings. This format is popular in the USA, the nation which imports the greatest quantities of Parma ham.

As for Parmigiano Reggiano, this cheese accounts for 135,000 out of the 435,000 tonnes of total Italian yearly cheese production, taking second place after its cousin, Grana Padano, which accounts for 185,000 tonnes. Third place goes to gorgonzola with 'only' 53 tonnes.

Production of Parmigiano Reggiano 'involves' 245,000 cows in 3,272 breeding facilities and absorbs 15% of Italian milk production - 550 litres of milk are necessary for producing one 40-kg 'wheel' of cheese - and the milk is conveyed to 353 cheesemaking facilities, which in turn produce 3.3 million cheeses a year (1.1 million in the province of Parma alone) against 4.8 'wheels' of Grana Padano.

Export of Parmigiano Reggiano, whole or grated, amounts to 46,900 tonnes, or 35% of total production. The value of the total product (from the cheesemaking facility to sale) exceeds 980 million Euros, which translate into 2.2 million Euros at the final sale point.

Sadly, these two industries suffer greatly from the free circulation of all the various *parmesan, parmesano, reggianito, parmigian* etc all over the world, including those counterfeit versions which don't even bother to 'retouch' the original name and unhesitatingly use Italian symbols and images, such as the Colosseum or the red, white and green of the Italian flag, to fool consumers.

Marco Manzini