“Every man eats, but just few of them can distinguish flavours.”

Confucius

Gratify our five senses is what
makes the difference between
the human being and the animal,
since flavouring foods has
always been important for men.
Flavour industry is an applied science:
it interprets the old curiosity of men
towards the world around.

www.scoprigliaromi.it

FLAVOURS: A CEREBRAL ISSUE

Every time we eat, lots of sensations explode, stimulated by chemical reactions in our noses and in our mouths. Both smell and taste elaborate the first stimulus that will move around, synapse by synapse, through a complex system of neurotransmitters, in order to reach the brain that will decode the signals and finally give our body the perception and the feeling of a particular aroma.

WHAT ARE FLAVOURS?

Beyond official definitions codified by law and different regulations, we can say that “flavours” are single molecules or mixture of substances capable to give a certain smell and taste to food, whether it is simple or elaborated, in any physical form (solid, liquid, etc.)

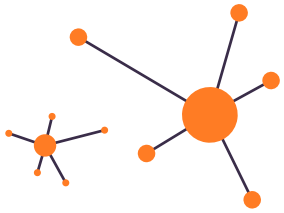
In the officially agreed physiological definition made by experts, our body can distinguish four “pure tastes”: sweet, bitter, salted, acid. Recently, in addiction to these four pure tastes, another one has been added: it is called "umami" and reminds the taste of meat products. Then, there are other tastes that we could define as “optional”, like spicy, astringent, cooling, metallic.

A food is recognized by taste receptors (epithelial cells that perceive the five basic tastes and that are located on the upper part of the tongue and in other places of mucosa of the oral cavity, of the pharynx, of the larynx and esophagus) and through smell. Smell receptors are real neurons located in the olfactory epithelium, which is a specialized portion of the mucosa of each nasal cavity. The olfactory receptors haven’t particular specificities: each receptor can codify several molecules, according to their nature. Depending on how the molecule is made, it will stimulate a certain amount of receptors that will send signals to brain, associating them to a specific smell. The trigeminal perceptions are very important too: these mechanical, thermal and pain sensations are added to taste and smell stimuli.

The sensorial stimuli are filtrated and continuously enriched by our mind, that mix them to our memories, previously experienced events, feelings of comfort and pleasure or discomfort and disgust. Finally, our mind triggers reactions that develop on a continuum, made of attraction and repulsion. In this process, that is bidirectional and stratified, flavours play a fundamental role.

NATURAL OR SYNTHETIC? A BASIC MISUNDERSTANDING

Flavour is one of the proper features of food, and it changes because of the raw material, the specific technology, the cooking style and the conservation that are used during the production process . When someone eats a banana, his brain mixes the different aromatic molecules present in this fruit in order to recognize the banana flavour, with the help of the typical mouthfeel. The aromatic substances often are added to "other" food, giving them a different aromatic taste. According to the definition of European Union, flavourings are "products not intended to be consumed as such, which are added to food in order to impart or modify odor and/or taste, not to be used in their original form, that are added to the foods in order to give or modify taste or smell".



FLAVOURS AND MOLECULES

Necessity is the mother of invention and curiosity is the main talent of a good researcher. So, in order to answer to the simple question "Why this natural product has this particular taste?", in the past many analysis were performed and deep chemical knowledges were developed. Starting from single substances, scientists started to reproduce more and more complex flavours, copying what exists in nature. For example mint, anise or cinnamon derive their characteristic taste from one and only chemical molecule, while other products like fruits, have much more elaborated flavours. Raw materials from vegetables are mostly used to produce natural flavours, while other flavours are often reproduced in laboratories, mixing different molecules creating different "bouquet". The production system is quite complicated, but it consists mainly by blending 60, 70 or even 100 substances (single molecule types), mixed in the formula in different amounts.

Even today natural substances are usually considered as healthy, safe and better than the synthetic one. But we have to consider that if it is almost always true that Nature is benign, sometimes on the contrary it is perversely maleficent. We can take as examples the natural toxicity of curare, or some variety of mushrooms, or athropa belladonna, aconitus napellus, nux vomica, or even the fully natural poisons produced by animals (for instance, the venom produced by scorpions and vipers). Even botulinum, listeria, coli are one-hundred-percent natural, but certainly we cannot consider them better and safer than synthetic products.
Today, every aspect of foods and feeds is deeply analyzed, measured and evaluated through a severe and efficient authorization system, performed by independent authorities, recognized by international communities that care about prevention and safety of our health. Also flavours are regulated in the same way. The dichotomy between natural and synthetic seems to be finally overtaken: both are safe and must be used in the same way, according to the necessity and the type of food where they will be used.

FLAVOURS

Flavouring is an integral part of human feeding.
Human being during the whole history developed with flavour their own taste, individually and as a community.

1.000.000 YEARS AGO

COOKING

Cooking is the beginning of flavouring processes.

EAT AND FEED ARE NOT THE SAME THING

The history of flavours begins when human being realized that it was possible to improve the characteristic of the components of natural flavours using more or less complex systems. This was a milestone moment that underlined the difference between eat and feed and marked the evolution of our species, making the difference between humans and animals. In fact, the humans need to feed in order to survive and to make work the complex "machine" called human body.

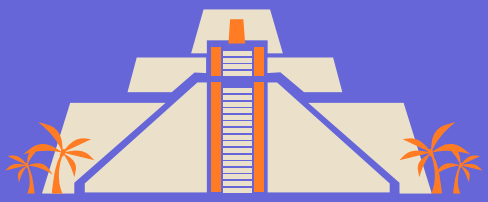
WHAT HAPPENS WHEN WE EAT

The act of eating refers to a broader and articulated concept: "to eat" means also going over the pure physiological aspects and includes in the same concept the complex and variable union of emotions, sensations and pleasures that every person feels when eats different foods in different situations.

3.000 B.C.

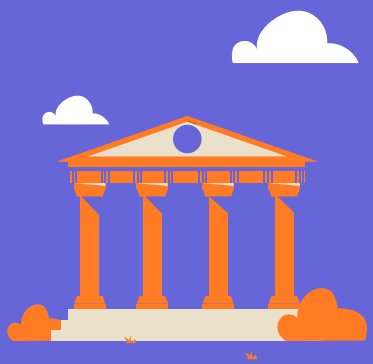
THE USE OF SPICES

The first information we have about use of spices goes back to the time when Assyrian civilization was developing on the banks of the river Tigris.



SPICES, ORIENTAL WONDERS

Babylonians used to harvest aromatic herbs in their gardens and put them together with spices to produce sweets or to flavour wines, oils and other products also used as medicaments at the time. The products coming from the East like pepper, ginger, capsicum, cardamom, cinnamon, cloves, nutmeg and star anise, belonged to an elitist category used to improve and characterize foods.



VIII CENTURY B. C.

THE FOOD OF THE GODS

Ambrosia, according the old Greeks, enclosed all the tastes and for this reason it was reserved only to the Gods.

I CENTURY A.D

NATURALIS HISTORIA

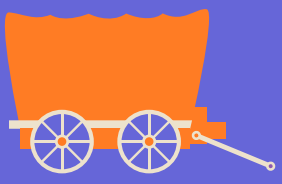
Pliny the Elder lists a large number of spices and flavours that were used alone or blended to give flavour to foods.

XIII – XVII CENTURIES

PHARMACIES

The first pharmacies started to prepare and to catalogue in a systematic way the properties and the physiological effects of remedies, medicines, and balms made by oils and aromatics herbs, listing them in specific pharmacopoeias.

XIII – XVII CENTURY



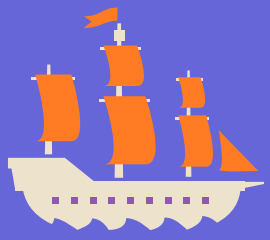
MERCHANTS

English, Dutch, Portuguese and Venetian merchants, following the pathway opened by Marco Polo, brought spices from the East. .

1492

TO THE INDIES

When Cristoforo Colombo discovered America, he was looking for a shorter way to go to India, where aromatic herbs, spices and flavours came from.

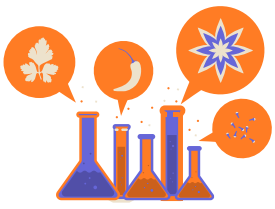


SECONDA HALF OF XIX CENTURY

THE FLAVOUR INDUSTRY

Scientists began to realize the wonderful possibilities of flavouring food with flavouring compounds made by chemical synthesis: here started the modern industry of flavours.

THE BEGINNING OF FLAVOUR INDUSTRY



About 160 years ago, there were mainly small pioneer companies specialized in gathering and commercializing spices, vanilla beans, officinal herbs, aromatic essences and essential oils made by distillation processes, aromatic chemical substances isolated and extracted from botanical products. Gradually, thanks to successful sales, those companies implemented production on larger scale.

FIRST YEARS OF XX CENTURY

THE FINAL LUNCH

At the beginning of XX century, the powerful German chemical industry became a technological leader in flavour production. A solution of esters (organic compounds with peculiar properties), created to be used as fruit flavour, was showed during an important exposition in London and after a few time it began to be distributed to American market.

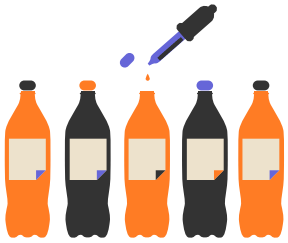
TODAY

ENDLESS POSSIBILITIES

Today industry give consumer the possibility to taste a potentially endless range of tastes: flavours, in fact, are present in almost all the products that every day are on our tables.

WHY FLAVOURING FOODSTUFF?

In several industrial products could happen that, when food is heated or cooked, some aromatic substances responsible for the product's flavour, are lost by evaporation. This modification of the aromatic profile caused the partial loss of original taste, that can be reintegrated with a flavour.



A UNIQUE NOTE

Starting from several basic ingredients, the flavour industry is able to give the essential oils, the oleoresins and the aromatic preparations that are used in various branches of the food industry. If, for instance, we consider a soft drink, we know that it is made mainly by water, sugar and an acid and that it gets its peculiar taste from the addition of a specific characterizing flavour. The difference between a cola drink, a tonic water, a chinotto or an orange drink (all made by water, sugar and acids) is specifically made by that peculiar and unique note.

REALIZZATO DA

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