



WATER CODEX

PHOTOGRAPHER: CRAIG DILLON

Source of Life

Water and coffee are a perfect match.
But like wine, not all water is of the same quality.
Italy's leading food expert Claudia Moriondo brings clarity to the quality of water.



We do not know exactly how water came to be on the earth, nor do we know everything about its structure and all of the things it is capable of doing, but we do know that the presence of water allows life on earth and in this respect it is quite unique. Water probably appeared on the earth as a result of the explosion of four billion supernova stars in the Milky Way. The water molecule would have formed some millennia later when the temperature had cooled sufficiently to allow the combination of hydrogen and oxygen.

Water is an exceptional substance with truly unique properties. One, among so many singularities of water, is that its molecular weight is low (molecular weight 18) and it behaves differently to similar compounds since it freezes at 0°C instead of -100°C; and instead of boiling at -16°C, it boils at 100°C. This anomalous behaviour, which is due to the unique chemical structure of water, allows for the development of life that is only possible if water is in a liquid state at a temperature between 0°C and 100°C. This particular characteristic enables us to live on our "blue" planet. In fact, 71% of the globe is covered by water. Yet while there are 1.4 billion cubic metres of water on our planet, only 9,000 to 12,000 cubic kilometres are fresh water that can be used for irrigation or as drinking water. Water is essential because no life form – especially human beings – can exist without it. It is an irreplaceable, life-sustaining commodity that is needed daily in adequate amounts. Human babies and adults are made up of approximately 70% and 60% water, respectively. In adult skin, dehydration causes wrinkling, while children's skin remains soft and smooth. The degree of tissue hydration varies, depending on the type of tissue. The brain, for example, is 80% water. The amount of water in the different tissues needs to remain within certain parameters – any fluctuation beyond these parameters can have serious consequences. The human body loses two-and-a-half litres of fluid every day and cannot survive for more than three or four days without drinking. Humans need to consume two to three litres of water daily; in hot climates up to six litres.

We can obtain approximately one litre of the water we need to survive from solids. The remainder must come from the liquids we drink. Water is the only drink that truly quenches a person's thirst, for studies have shown that alcoholic drinks and beverages that contain caffeine and sugar certainly do not have powerful thirst-quenching properties. For each glass of wine or cup of coffee, one should drink at least one glass of water.



Sanpellegrino, a leading company in the bottled water market (and certainly one that is at the forefront in terms of its stature, charm and relevance to the product) has felt that it is time to speak up in order to ensure that all those who enjoy and benefit from its product are aware of its importance and appreciate its characteristics. Sanpellegrino therefore decided to create a task force consisting of Dr Clément Vachon, Communication Manager of Sanpellegrino, Giuseppe Vaccarini of the International Association of Sommeliers (ASI), the geologist and Sanpellegrino Water Resources Manager Dr. Carlo C. Galli, Davide Besana (Besanopoli design studio) and food and beverage expert Dr. Claudia Moriondo. The task force is responsible for identifying and studying fundamental themes that apply to water as a drink – mineral water in particular – and how it relates to the other items on the consumer’s table. The task force committed itself from the outset to publish a “Water Codex” every year – a publication that will ensure that as many people as possible are aware of these studies.

The first Water Codex was published in 2005 and the basic themes were compiled to counter certain widespread opinions: that good drinking water should be odourless and tasteless, that it is of absolutely no importance how and which water

is consumed, and that water does not have any effect on organoleptic sensations – an assumption that was tested by comparing water to other drinks, wine in particular. Our work is based on the assumption that sources of mineral water are found in very particular geological contexts often associated with genuine natural phenomena (such as thermal springs) and are also enriched with natural gases; and that water itself has a characteristic mineral composition that differs according to the bedrock. In order to appreciate these characteristics, both sensory analysis and laboratory analysis must be conducted, and it must be ensured that the two studies are complementary. Due to its complexity, this article will not address the intricacies of laboratory analysis, but focus rather on the task force’s work regarding sensory analysis. When it comes to water, sensory analysis is still in its infancy.

In sensory analysis, the glass from which the water is drunk assumes fundamental importance. In fact, to analyse still water and sparkling water effectively we need to use differently shaped glasses. Both glasses should be round and of glass material, should not have a stem and the lip of the glass should be fine. The glasses should differ in terms of their size and, in particular, in terms of the width of the rim.

It is common to use carbon dioxide in the decaffeination process. Nespresso, however, uses the purest water to relieve coffee of its caffeine. This is all-natural and guarantees maximum quality.

for the organoleptic analysis of still water – Acqua Panna, in particular – a wide-rimmed glass is used to allow the nostrils to come closer to the water to detect the fine and subtle aromas, and also to make it possible to drink the water in large gulps to prolong the pleasant sensation that this provides. For sparkling water – S.Pellegrino, in particular – the glass should ideally have a narrow rim. This not only holds back the bubbling created by the natural carbonation but also makes it necessary to tilt the head back – a position in which one drinks small quantities at a time. This controls the flow of the liquid onto the taste buds and directs it towards the most sensitive area of the tongue that perceives sensations of acidity in particular, which generate a feeling of freshness. This type of glass also serves to concentrate the drink’s aroma, which complements and balances wines with high alcohol and tannin content and a strong bouquet. But sensory analysis is not limited to the shape of the glass. To carry out an organoleptic analysis, it is also necessary to study and classify sensorial stimuli, signals and information detected by the taste buds, and to work with a coded tasting technique. A tasting checklist itemized essential water characteristics: freshness, effervescence, transparency, aromas, acidity, sapidness, structure, lightness, softness, balance and the aftertaste in the mouth. In terms of the tasting procedure, the glasses were rinsed with the water to be tasted. This was then followed by a visual, olfactory and tasting analysis.

The task force also carried out a further study, concentrating on the possibility of identifying some simple, yet effective rules that ensure that the water and wine on the table complement one another, given that the wine and water alternate in the mouth, thereby creating sensations that succeed one another and overlap. Ideally, these sensations should not obstruct or neutralise one another.

In addition to this, the task force sees the need to work out precise axioms that resolve the “problem” that water, on the one hand, has organoleptic characteristics that vary according to type but remain constant over time; while wine, on the other hand, has olfactory and gustatory components that vary

considerably and continuously. Light, still water with subtle aromas and a soft flavour – water like Acqua Panna, which is delicate, fine and very well balanced, sapid and delectable with a lovely aftertaste – harmonises perfectly with fresh and fruity white wines that have been aged in wood, young, fresh and light rosé wines, sweet, aromatic, light and fragrant sparkling wines, traditional-method sparkling wines and vintage champagnes with refined fragrances and aromas and an elegant flavour, and, finally, with red wines that are deliberately savoured and drunk alone rather than during a meal.

Sparkling waters like S.Pellegrino with a bouquet reminiscent of snow-clad rock and earth which is perfectly balanced with carbon dioxide to provide acidity, body, palatableness and aftertaste, go perfectly with structured rosé wines with a high-alcohol content, young red wines with intense and herbaceous aromas, light fruity reds, medium-bodied red wines with secondary aromas, and full-bodied and vintage red wines high in tannins with a broad and complex bouquet that are round and smooth and end in a long aftertaste. In the case of young wines, fortified wines, sparkling wines made using the charmat method, and non-vintage champagnes, it is more difficult to recommend a water that will be perfectly complementary since these wines are quite eclectic and, if consumed during a meal, will combine well with different types of water.

It is important to remember that water should be the first drink offered and served at the table, and that all other drinks and foods revolve around it. Given this, we cannot stop at the basic studies outlined in Water Codex I, but must continue to study and analyse other possible combinations. Hence the task force has not been dissolved, but is actively working to produce a new Codex that will elaborate on previous topics and identify properties that make it possible to combine water with numerous other drinks in a way that does justice to both.

