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MINERAL WATERS: genesis, exploitation, protection and valorisation

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- Faculty of Science, Charles University, Prague, Czech Republic
- T. G. Masaryk Water Research Institute (VUV), Prague, Czech Republic

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COMPANY PROFILE

Karlovské minerální vody, a.s. (KVM) is the largest producer of mineral and spring water in the Czech Republic. The company was founded in 1973 by Heinrich Mettoni, a native of Karlovy Vary with Italian roots. However, it acquired its present-day form only in the 1990s thanks to considerable investments of its new owners – the Pasquale family from Italy.

At present, the KMV Group fills and bottles mineral and spring water under the Mettoni, Magnesia, Aquila, Poběžovicka and Dobra voda brands, and exports them to 20 countries worldwide. It also distributes Yo, Granini, Schweppes, and Dr Pepper trademark products. The company extensively participates in the cultural, sports, and social life in the Czech Republic. In addition, it supports projects aimed at environmental protection and ecological issues.

KMV is committed to creating world-renowned brands with a distinctive image that contribute to increasing the quality and culture of beverage consumption in the Czech Republic and beyond. The professional approach of the company and its employees to product quality has been recognized by numerous awards, as well as by the fact that Mettoni became the official water during the Czech Presidency of the EU Council.

PRODUCT PORTFOLIO

176 kinds of beverages

Unique mineral water rich in natural magnesium with a low sodium content.

Natural, slightly mineralized water with the lightest minerals.

Yo drinks with a high fruit content and lack of preservatives bring a one-of-a-kind enjoyment from fruit.

Soft drinks with the bitter taste of quinine ideal alone or for mixed drinks during the day or in the evening.

Mineral water from the virgin nature around Karlovy Vary with a well-balanced mineral content.

Spring water from the pristine natural countryside around Karlovy Vary.

Natural carbonic mineral water with a distinct carbonic flavor and beneficial effects for the human body.

Granini juices guaranteed the best experience that fruit can offer. Moreover, they are free of preservatives.

A unique mixture of 23 flavors with a mismatched taste.

SOCIAL RESPONSIBILITY

As we are aware of the importance of environmental protection, we support the development of approaches and technologies that lead to the best results in this field. What is our approach?

100% RECYCLABILITY

All the PET bottles that we produce can be reused for further processing, including the bottle cap and the labels.

REDUCED PET VOLUME

When designing a new bottle, we consider not only its practicality and design but also its friendliness to the environment. That is why we have been continuously reducing the volume of plastics necessary for the production of our bottles.

WE STRIVE TO IMPROVE

We continuously reduce our impact on the environment. Over the past decade, for example, we have reduced our environmental impact by 20 percent in the case of Mettoni mineral water. We are able to do so thanks to innovations, savings, more effective energy use or transport by rail.

WE SET THE STANDARD

Karlovské minerální vody, a.s. became one of the founding members of EKOKOM, markedly participating in the system of waste sorting and recycling in communities.

WE PROTECT OUR SOURCES

Drawing water from the depths of nature bring along with it the obligation to protect the surroundings of the source and the mineral water itself. Our mineral water sources are self-guarded as a primary protection zone and are continuously monitored.
Danone waters are present in 22 countries
25 Bn L in 2013

We help as many people as possible
to adopt a healthier hydration

1890
Established

BORJOMI

Gets rid of the unnecessary
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Federation University, Victoria
Australia

In Central Victoria (Australia) carbonated mineral waters occur in fissure flow systems developed in consolidated Lower Palaeozoic rocks. The carbonated water type is one of several groundwater water types developed or that evolves in these rocks. Carbonated species appear to be associated with very low flux deep flow systems.

A model for the evolution of carbonated mineral waters is illustrated as an extension or adjunct of the evolution of high bicarbonate groundwater in extensive aquifer systems.

An explanation for the formation of the similar water type the sodium bicarbonate water facies in extensive aquifer systems involves a dynamic of cation exchange, clay mineral reaction and carbonate solution. The model suggested for the carbonated variant incorporates the role of natural acids that modulates of the pH in the flow system. Then as the mineral water ascends, mixes, evolves or discharges to the surface a change in pressure and in pH occurs. Bicarbonate, being a part of a diprotic acid dissociation continuum combined with the requirement for the maintenance of electro neutrality of the solution results in expulsion of carbon dioxide.

Typically the carbonated mineral water possesses a relatively low chloride concentration, a high iron concentration and is mildly acidic. Chemical differentiation between the deep low flow mineral water and the shallow groundwater can be marked, but evolution down the fissured flow systems may produce a convergence in water characteristics.

At mineral springs the nature of the ascending mineral water is often masked by near surface processes such as reflux, mixing and dilution by fresh water. These features have been identified during drilling. Delineation of fissure flow systems is based on the duopoly of water chemistry and rock mass structure, confirmed by deep hard rock gold mining activities.

Abstract number 74 - Drinking regime and mineral deficits – a myth or a serious problem?

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Distribution of body fluids
Total body water is the sum of the volumes in the individual body compartments, which in the stable condition of the patient possess an overall constant composition.
Disorder in sodium metabolism
An increase in sodium intake and its retention in the organism (increased storage of Na) does not result in hypernatremia and hyperosmolality provided there is free access to liquids.