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**NATURAL CURATIVE WATERS OF SLOVAKIA IN SPA**

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**ABSTRACT**

*Slovakia is one of the countries which is rich in amount of cold and thermal natural curative waters. These waters belong under the special waters by the Slovak Water Act. They are used mostly for the healing processes in spas and they are also filled into consumer's packages in the natural mineral waters bottling factory. The article talks about the places where natural curative waters of Slovakia appear; also it talks about the valid legislation for the processes from its approval to its usage. The natural mineral waters filled for the consumers, distributed by the commercial market, come under the Ministry of Economy of the Slovak Republic regulation too, but these waters must be accredited by the European standards.*

*The Ministry of Health of the Slovak Republic defines the protective zones for providing the water protection. They are undergoing the revision in every location where the natural curative sources and natural mineral waters are used in connection with the nowadays valid legislative rules.*

**Key words:** Natural mineral water, utilization of natural curative sources, balneology

**INTRODUCTION**

Treatment on the base of water is known a long time ago. The first knowledge is kept from ancient Greece. Perhaps the greatest development of balneology was reached in Roman Empire. The spas were built very luxury because the main part of social life was held there. The fall of Roman Empire leaded to decline of balneology in Europe for a long time.

At the beginning of 16<sup>th</sup> century starts the renaissance of spas. In the locations of mineral waters the old spas are renewed and the new ones are erected in the whole Europe. In Slovakia the spa Piestany and Trencianske Teplice were originated at that time. Since the half of 16<sup>th</sup> century the drinking cures and curative muds started to be applied. At this time other spa in our area were originated – Bojnice,

Turcianske Teplice, Bardejov, Herlany and others.

For the cognition of spas the first legal steps of the state are important for us, as the provision of Maria Theresa from the year 1763 about the inventory of spa and mineral water in Austro-Hungarian Empire. The inventory contains the description of 128 locations of mineral waters in Slovakia. At the end of 18<sup>th</sup> century flourished the spas Trencianske Teplice, Piestany, Turcianske Teplice, Sliac, Bardejovske Kupele, Rajecke Teplice, Vysne Ruzbachy and others. [1]

**1. EUROPEAN BALNEOLOGY**

In Europe are at present about 1800 spa locations with thousands of balneo clinics, hotels and pensions oriented mainly on spa guests. Generally we can talk about 3 regions.

In the first one are the countries which are not rich in natural curative waters as Sweden, Norway, Finland, Denmark, Holland, Great Britain and Ireland. They are under the influence of American short-time stays in relaxing centres. The client takes the bath with additives, various oriental curative processes, massages, meditations and training to body building. The cures in the whole region of Central and South Europe are oriented to utilisation of thermal mineral waters and climate cures where there is a long-lasting tradition of their using. In spa there is the continuous medicine background, the rapid development of the new product is registered, so called thalassotherapy that use the curative effects of sea water, seaside climate, sea mud and sea algae. In France is this branch of balneotherapy more popular than classic balneotherapy.

Among the balneal leaders are Germany, Italy, but the Czech and Slovak Republics as well if we take the classic balneotherapy into account. The special status has Iceland that owns the biggest amount of the thermal springs, so it has presumptions to be the balneal leader. The biggest concentration of the spas with traditionally highly-developed balneology is in Germany where about 250 balneal enterprises and clinics are in operation. In Austria there are about 200 spas, in Czech Republic about 70 spas, following by Poland, Hungary and Slovakia. The coastal states as Estonia, Latvia, Lithuania and Poland combine the traditional balneotherapy with centres of thalassotherapy. [3]

The common European programmes for balneal stays are originated on trans-boundary health care. European Association of Spas elaborated catalogue of criteria for the standards of quality for balneal products. The Spas must be first of all approved in its county and to have the concluded contracts with insurance companies. The advantage is to own the quality certificate Europespa-med. The Slovak spas have more positives – they own the superior curative waters and qualitative health care, gradually they improve their visual appearance and their offers for free time activities.

## **2. NATURAL CURATIVE RESOURCES AND NATURAL MINERAL WATERS**

According to the Law No. 364/2004 Z.z. – Water Act, in § 3 section 4 ground waters are preferably intended for drinking water supply.

Then in section 5 are determined waters, which are approved as natural curative resources and as natural resources of mineral table waters, according to special provision, later only „special waters“, to which is this law applied only if it is expressly stated.

In Slovakia, there are about 1,500 natural mineral resources in evidence. In total, the Ministry of Health now monitors 156 objects. 105 from them are approved as natural curative or natural mineral resource. Besides that there are monitored other 53 resources which are not approved.

Mineral water is ground water with authentic origin accumulated in natural environment, springing on surface from one or more natural or artificial ascent ways. This water differs from other ground water especially [6]

- a) with its origin,
- b) content of trace elements,
- c) content and character of total dissolved solid substances exceeding  $1\ 000\ mg.l^{-1}$  or content of dissolved gases exceeding  $1\ 000\ mg.l^{-1}$  of carbon dioxide or at least  $1\ mg.l^{-1}$  hydrosulphide, or
- d) minimal temperature in spring  $20\ ^\circ C$ .

The Law of the Slovak National Council No. 538/2005 Z. z. on natural curative waters, natural curative spas, balneal sites and natural mineral waters, and on change and amendment of some laws, so called balneal law is the first valid separate legislative rule for Slovak curative spa. It came to force on January 1, 2006, some of its parts on March 1, 2006. The part of the law is 6 generally binding rule of law. According to the Slovak Constitution, natural curative sources and natural mineral waters as a part of ground waters are owned by state. They are neither part nor accessories of land. The law states conditions, under which natural curative water and natural mineral water after exploitation from natural curative resource or natural mineral resource becomes the property of a physical or legal person. In order to secure supervising over keeping rules stated in this law, and according

provisions the Ministry of Health of the Slovak Republic established Inspectorate of Spas and Springs (IKO). The State Balneal Commission (ŠKK) is according to the law No. 538/2005 Z. z. established at the Ministry of Health of SR. It deals with natural mineral waters, natural curative waters, natural curative spas and climate conditions suitable for curing and it is a management body, which decides on the first level.

The Inspectorate of Spas and Springs was found at the Ministry of Health on 1.1.1958 in Prague with scope for the whole Czechoslovak Republic. Since 1967 it is a part of Ministry of Health in Bratislava. In its 40 year history the Inspectorate solved many tasks of legislation, organizational, check and other nature. The Inspectorate participated in preparation of laws, provisions, directives, statements and other rules connected with its field of activity.

Approval of natural curative waters and recognition of natural mineral waters is defined in balneal act in § 5 - 9. The mineral water can be **approved as natural curative water**, if during at least *five years* there were proven its curative effects in balneal practice and it fulfills requirements stated by generally binding rule of law, issued by the Ministry of Health. Curative effects can be considered as proven also if such effects were verified in long term balneal practice when water with similar physical and chemical properties was used. The procedure of approving of natural curative water and natural mineral water concerns not only waters from Slovak resource but also waters imported to Slovakia as an EU member from third countries. The law states conditions according to which it is possible to recognize mineral water as natural mineral water.

As the **Natural mineral water** can be **declared** only the water from resource which was at least *three years* monitored, and during this period it was proven the stability of all decisive indicators, its nutrition properties were not changed, and it fulfills requirements stated by generally binding rule of law, issued by the Ministry of Health. If the resource user cannot due to technical reasons use the natural mineral water from resource to which it was issued the approval to use, and he/she applies for approval of natural mineral water with the same

chemical composition from new resource from the same hydrogeological aquifer, the condition in previous sentence is considered as fulfilled.

## USE OF NATURAL CURATIVE RESOURCES AND NATURAL MINERAL RESOURCES

It is possible to approve use of natural curative resource and natural mineral resource only if the water from resource was already approved. The resource can be used only after the decision on approval was issued, and after receiving the certificate.

Natural curative resources should be *preferably used for curing* and can be used only in the scope of approval. Requirements on obtaining, processing, filling, marking and putting on a market of natural mineral waters in consumer packing are settled by the law No. 152/1995 Z. z. on food in sounding of later rules.

Use of natural curing resources and natural mineral waters is checked by monitoring system which set and defined in § 2 section 14 of the law. At present, 39 localities in Slovakia are monitored, and 36 of them use local information system (LIS) IKO, which secures transfer of data to Central Monitoring System (CIS) IKO.

For the benefit of protection of natural curative resources and natural mineral resources the law states the duty to determine **protection zones**. Protection zones are determined on 2 levels according to expertise and professional background data elaborated by competent person. Borders of protection zones, procedure of treatment, kinds of forbidden activities, scope of protection measures, and way of their change and cancellation state generally binding rule of law. Regulation also states requirements of proposal of determination of protection zones.

Natural mineral water is microbiologically clean ground water springing on surface from one or more natural or artificial ascending ways, which fulfills qualitative requirements according to special regulation and was approved according to balneal law as suitable for use as nutritive and for production of packed natural mineral waters. It differs from common drinking water by characteristic

original content of minerals, trace elements or their parts, as well as physiological effect and its original state. Natural mineral waters in consumer package are equipped with

description of all properties determined by certified laboratory. Present filling plants of natural mineral waters in Slovakia are listed in the Table 1.

Table 1 List of natural mineral waters approved by the Ministry of Health SR

Commercial name	Name of the spring	Locality of exploitation
Budiš	B-5	Budiš
	B-6	
Fatra	BJ-2	Martin - Záturec
Maštinská Ave	HM-1	Maštinec
	ST-1	
Ľubovnianka	LZ-6 (Veronika)	Nová Ľubovňa
Gemerka	HVŠ-1	Tornáč
Maxia	ŠB-12	
Baldovská	BV-1	Baldovce
	B-4A	
Odyseus	S-1(Cifrovaný)	Lipovce
Salvator	S-2 (Salvator)	Lipovce
Slatina	BB-2	Slatina
Ľerínska minerálka	ĽAM-1	Ľačín
Mitická	MP-1	Trenčianske Mitice
Kláštorná	KM-1	Kláštor pod Znievom
Matúšov prameň	CC-1	Lúka

### 3. BALNEOLOGY IN SLOVAKIA

Balneal law introduced division of health facilities that provide balneal care to „**natural curative spas**“ (PLK) and „**balneal medical institution**“ (KL). The law introduced new system of approving operation of these health facilities. The Table 2 presents list of indications, for which it is possible to organize balneal cure paid from public resources. The Table 3 shows actual state of operation of natural curative spas and balneal medical

institutions according to valid approvals for operation. [8]

All mentioned balneal institutions are entitled to include in their offer the term „curative“, since they have approved resource of natural curative water. On the other hand, none of aquapark in Slovakia has not approved source of water, which is used in pools.

The structure of clients in spas changed considerably. Only 40 % of clients are sent by Slovak health insurance companies. About 40 % of clients are foreigners, the rest are home self-payers.

Table 2: Indicatory list for balneal care [8]

Indications of patients after 18 year age		Indications of patients under 18 year age	
I.	Oncological deseases	XXI.	Oncological deseases
II.	Deseases of circulation system	XXII.	Deseases of circulation system
III.	Deseases of digestive organs	XXIII.	Deseases of digestive organs
IV.	Deseases of metabolism and endocrine glands	XXIV.	Deseases of metabolism and endocrine glands
V.	Non-tuberculosis deseases of respiratory organs	XXV.	Non-tuberculosis deseases of respiratory organs
VI.	Nerve deseases	XXVI.	Nerve deseases
VII.	Deseases of locomotive organs	XXVII.	Deseases of locomotive organs
VIII.	Deseases of kidneys and urinary tract	XXVIII.	Deseases of kidneys and urinary tract
	Mental deseases	XXIX.	Gynaecological deseases

IX.	Skin deseases	XXX.	Skin deseases
X.	Gynaecological deseases		
XI.	Occupational deseases		
XII.			

Tab. 3: State-of-art operation of natural curative spas and balneal medical institutions

□.	type	Operator: indications (according to law No. 661/2007 Z.z., appendix 6)
1.	PLK	Bardejovské Kúpele a.s.: I., II., III., IV., V., VIII., XII., XXI., XXII., XXIII., XXIV., XXV., XXIX.
2.	KL	MV SR Družba, Bardejovské Kúpele: I., II., III., IV., V., VIII., XII.
3.	PLK	Kúpele Bojnice a.s.: VI., VII.
4.	PLK	Kúpele Brusno a.s.: II., III., IV., XII.
5.	PLK	Prírodné jódové kúpele Dúbravka, a.s.: II., IV., VI., VII., XII., XXVI., XXVII., XXVIII.
6.	PLK	Kúpele Dudince a.s.: II., VI., VII., XII., XXVII.
7.	KL	Slovthermae, Kúpele Diamant Dudince, š.p: II., VI., VII., XII.
8.	PLK	Wellness Kováčová, s.r.o.: III., IV. (AKS), VI., VII., VIII., XI.(AKS), XXVI. (AKS), XXVII.
9.	KL	Špecializovaný liečebný ústav Marína, š.p., Kováčová: I., VI., VII., XXI., XXVI., XXVII.
10.	PLK	Liptovské liečebné kúpele a.s. Lúčky: I., VI., II., XI., XII.
11.	PLK	Kúpele Nimnica a.s.: I., II., III., IV., V., VI, (okrem 5,6), VII., XI., XII. (okrem 2)
12.	PLK	Slovenské liečebné kúpele Piešťany a.s.: VI., VII., XII., XXVI., XXVII.
13.	KL	Vojenské zdravotnícke zariadenia, a.s., Piešťany: VI., VII., XXII.
14.	PLK	Slovenské liečebné kúpele Rajecké Teplice a.s.: VI., VII., XII.
15.	PLK	Kúpele Sliač a.s.: I., II., XI.
16.	PLK	Liečebné termálne kúpele a.s., Sklené Teplice: VI., VII., XII.
17.	PLK	Slovenské liečebné kúpele Piešťany a.s. – Smrdáky: VII., X., XII., XXX.
18.	PLK	Slovenské liečebné kúpele a.s., Trenčianske Teplice: VI., VII., X., XII.
19.	KL	KLÚ MV SR ARCO, Trenčianske Teplice: VI., VII.
20.	PLK	Slovenské liečebné kúpele Turčianske Teplice, a.s.: I., III., VI., VII., VIII., XI., XII., XXI., XXIII., XXVI., XXVII., XXVIII., XXIX.
21.	PLK	Kúpele Vyšné Ružbachy a.s.: I., II., III., IV., VIII., IX., XI., XII.
22.	PLK	Kúpele Lučivná, a.s.: XXV.
23.	KL	KRÚ MV SR BYSTRÁ, Liptovský Ján: I., IV., V., XI., XII.
24.	PLK	Kúpele Štós, a.s.: I., IV., V., IX., XI., XII., XXI., XXIV., XXV.
25.	PLK	Kúpele Štrbské Pleso, a.s.: V:
26.	PLK	Kúpele Horný Smokovec s.r.o.: XXV.
27.	PLK	Kúpele Nový Smokovec, a.s.: IV., V., IX., XII.
28.	KL	Sanatórium Dr. Guhra n. o., Tatranská Polianka: IV., V.
29.	KL	TATRASAN, s.r.o., Nový Smokovec: V.
30.	PLK	Vojenské zdravotnícke zariadenia, a.s., Tatranské Matliare: I., IV., V., XI., XII.
31.	KL	Sanatórium Tatranská Kotlina n. o.: V.

**Legend:**

PLK = Natural curative spas (more than one health facility)

KL = Balneal medical institution (independent health care institution)

AKS = Ambulant balneal care [8]

**CONCLUSION**

The European Union prepares a prospective plan of balneology, which should be worked out by particular member states in their own programs. Qualified estimations say, that every

second European in 2050 will suffer from depressions, 12% will have diabetes, the progress of oncology diseases will not stop, cardiovascular diseases will remain widespread as well as locomotive organ problems.

However, those problems can appear in 40-years old people under condition of present living style and lack of movement. Spas in future will be mostly oriented to prevention not only for common diagnoses, but stays in spa will be oriented to programs against drugs, alcohol and smoking.

Slovak balneology is a part of our health system like in most of European countries, and it is comparable with countries with the most developed balneology. Just high quality health service attracts foreign guests to Slovak spas. We should keep and improve this image and quality of Slovak balneology.

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Zákon č. 538/2005 Z.z. o prírodných  
liečivých vodách, prírodných liečebných  
kúpeľoch, kúpeľných miestach  
a prírodných minerálnych vodách  
a doplnení niektorých zákonov.

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zákona Slovenskej národnej rady č.  
372/1990 Zb. o priestupkoch v znení  
neskorších predpisov (vodný zákon)

Vyhláška MZ SR č. 100/2006 Z.z., ktorou sa  
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liečivú vodu a prírodnú minerálnu vodu,  
podrobnosti o balneologickom posudku,  
rozdelenie, rozsah sledovania a obsah  
analýz prírodných liečivých vôd a  
prírodných minerálnych vôd a ich  
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ké a personálne vybavenie prírodných  
liečebných kúpeľov a kúpeľných  
liečební a ustanovujú indikácie podľa  
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