

Quality of peloids from village Baranda and their use in balneotherapy

Andrea Rajšić

Faculty of Mining and Geology, University of Belgrade, Serbia (akiasns@yahoo.com)

Peloids are geological formations which are made of inorganic and/or organic matter and they are used in balneotherapy (Jovanović *et al.*, 1994). Features of peloids which determine their use value in balneotherapy are absorption, plasticity, viscosity. These three characteristics directly depend on the grain size of the peloids. The dimensions of the most common grains in high quality muds are less than 0.25 mm. Chemical elements that enter into the composition of mud are generally elements, which form rocks. Mechanism of their act in balneotherapy is not enough examined, but it is known that their absorption depends on the pH value. Many spas in Serbia use peloids in medical treatments (Kanjiža, Soko-banja, Gamzigrad Spa). Mud, which we studied, was not analysed before, but residents use it in treatment of rheumatism. This study was conducted with the aim of analyzing balenological features of peloids from the territory of Baranda. Task of the study was to determine chemical and mechanical characteristics.

Baranda is a village in north-eastern Serbia, about 4 km from the municipality of Opovo. It is bordered by the municipalities of Zrenjanin to the north, Kovačica to the east, Pančevo to the south and by the area of Belgrade to the west. Peloids were sampled on two localities; Slatina and Siget (Fig. 1).

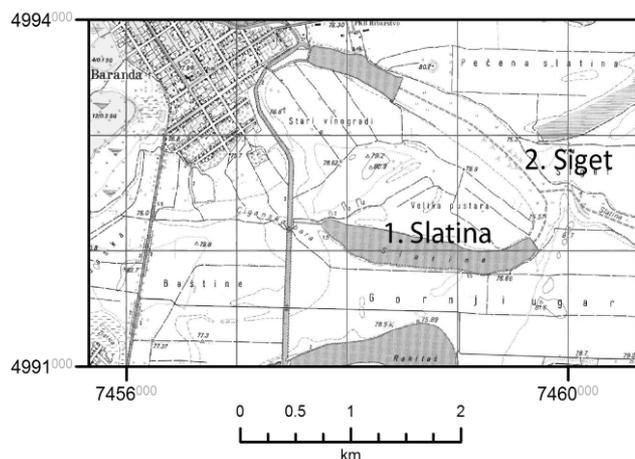


Fig. 1.: Sites of sampling, according to topographic map sheet Zrenjanin 379-4-4, 1:25000

With methods of pH-metry, granulometry, X-ray powder diffraction and atomic absorption spectrophotometry, physical and chemical characteristics of the peloids were determined.

The analysed samples are mildly alkaline, like majority of the peloids from spas in Serbia (Jović *et al.*, 2001). Alkalinity can have positive effect on skin, but it improves precipitation of heavy metals. Indeed, concentrations of heavy metals are less than the average concentration in muds from other sites in Serbia. The presence of Si, Al, Zr, Ca, K, Mn, Ti, Rb and Fe was determined with qualitative analysis. These elements are more or less present in all other peloids from territory of Serbia that Jović studied. But plasticity, which is of crucial importance for balneological value of peloids, is based on its granulometric features. Results of granulometric analysis showed that mud from sites Siget and Slatina are silty sand and sand (Fig. 2.). The grain size of the sand is ranging from 0.05 to 2 mm, which indicates that they are not suitable for use in balneotherapy without prior mechanical treatment, which we could use to homogenize the mud and reduce the grain size.

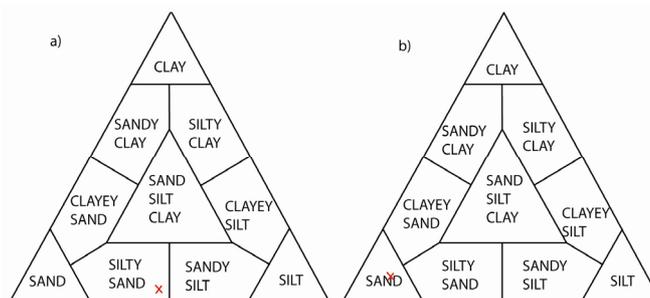


Fig. 2.: Shepard's diagrams; a) Siget, b) Slatina

Despite the relatively positive chemical characteristics, granulometry composition of the peloids from Slatina and Siget prevents their use in balneotherapy without prior treatment.

Jovanović, T., Janjić, M., Popović, G., Conić, S. (1994): Balneoclimatology, Faculty of mining and geology: Belgrade (on Serbian)

Jović, V., Đurić, S., Grujić, G. (2001): Zbornik Matice srpske za prirodne nauke, 100: 105-114.