**A STUDY ON THE THERMAL WATER FACILITIES THAT RECEIVED OPERATING PERMIT FROM THE MINISTRY OF HEALTH IN SİVAS, TURKEY**

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**ABSTRACT**

Thermal waters are one of the most valuable natural resources of the countries. The healing power of water and especially the use of thermal waters for health and recreation purposes have become very important in the World. In recent years, thermal waters have been one of the important driving forces in the socioeconomic development of the region. In this regard, the number of places to which Turkey is a high potential of thermal waters in different regions is very high. Turkey, in terms of number and content of thermal water resources are among the first 5 countries around the World. Thermal waters have been an attraction factor for cities. In this context, health tourism contributes greatly to the country and urban economy. Especially in the economic development of rural areas and small districts, the locomotive effect of thermal tourism is very important. Sivas province when evaluated in the context of thermal waters with health tourism has a significant potential in Turkey and World. This study focuses on the thermal water facilities in Sivas province, which have been granted operating permission by the Ministry of Health. According to this, a total of 3 thermal water facilities have been determined in Sivas province. Although there are 14 thermal water resources in Sivas province, only 3 of these have received operating permission from the Health Ministry. Necessary studies should be carried out in the other 11 thermal water resources and the operation permit should be obtained from the Ministry of Health. Thus, more contribution can be made to the development of Turkey and Sivas province.

**Keywords**:Thermal Water, Health, Tourism, Sivas, Turkey.

**INTRODUCTION**

Thermal waters emerge from various depths of the earth and reach the surface. The water that rises to the surface touches underground rocks and soils and carries different elements with it. The contents of thermal waters are determined by the geological structure of the regions they pass through. Thermal waters are one of the most valuable natural resources of the countries. Thermal waters are widely used for heating and tourism purposes (Camgöz et al. 2010). Health is one of the most important focal points of tourism. The first activity that comes to mind when health tourism is mentioned is thermal waters. There are many thermal water resources with different temperatures, flow rates and mineral ratios in Turkey. The estimated total number of thermal springs in Turkey is more than 1300. These characteristics as regards Turkey ranks first in Europe. It is among the top five countries in the World (Lund and Freeston, 2001; Akkuş et al. 2005; Özşahin and Kaymaz, 2013). Health tourism is developing in the World and Turkey. The richness of thermal water resources in Turkey are important for the development of health tourism. The people involved in health tourism are not only those whose health is impaired. It takes place in health tourism for people who want to maintain their health and increase their health. In recent years, the demand for centers where thermal waters and holiday needs can be combined within the scope of health tourism has increased in the World and Turkey (Bülbül, 2015). Sivas is one of the oldest and most important settlements in Anatolia. Sivas province is located in the Upper Kızılırmak section of the Central Anatolia Region. Most of the province’s territory is located in Yukarı Kızılırmak basin and some of it is located in Yeşilırmak and Euphrates basins. With a surface area of about 28 thousand square kilometers of Sivas, it is the second largest province in terms of Turkey’s territory. In this study, the distribution and utilization potentials of the thermal water facilities that have been granted permission by the Ministry of Health have been investigated in Sivas province.

**MATERIALS AND METHOD**

There are many thermal water resources in Turkey. Distribution of thermal water resources in Turkey poses difference between both regions and provinces. According to the regions distribution of the thermal water resources in Turkey are given in Table 1. Turkey’s second richest region in terms of thermal water resources is Central Anatolia Region (91). Provinces such as Ankara (16), Eskişehir (16) and Sivas (14) in the Central Anatolia region have great potential in terms of thermal resources (Özşahin and Kaymaz, 2013).

Table 1. According to the regions distribution of the thermal water resources in Turkey.

|  |  |  |
| --- | --- | --- |
| **N** | **Region Name** | **Number of Thermal Water Resources**  |
| 1 | Aegean | 123 |
| 2 | Central Anatolia | 91 |
| 3 | Eastern Anatolia | 64 |
| 4 | Marmara | 53 |
| 5 | Black Sea | 45 |
| 6 | Mediterranean | 24 |
| 7 | Southeastern Anatolia | 10 |
|  | **Total** | **410** |

 ***\*****Reference:**Özşahin and Kaymaz (2013).*

 Sivas is geographically located at the intersection of Central Anatolia, Eastern Anatolia and Black Sea regions. Sivas has a total of 17 districts. Sivas is a province in the Central Anatolia Region of Turkey. It is an important province of history and culture. The province of Sivas is rich in surface and ground waters. The thermal waters of Sivas have significant potential in terms of health tourism. Sivas has a very harsh continental climate. The winters are very cold. There is plenty of snowfall in the winter. Summers are hot and dry. Spring and autumn are rainy. The main materials used in this study consist of previously published scientific publications, data of the Turkey Ministry of Health and Turkey Social Security Institution on the subject. This informations were organized, analyzed and synthesized within the scope of the aim of the study.

**RESULTS AND DISCUSSION**

According to 2021 data, there are 3 thermal water facilities in Sivas, which have obtained the operating permit from the Republic of Turkey Ministry of Health. The list of operating permited thermal facilities in Sivas from the Ministry of Health are are presented in Table 2. General health insured and dependents, spa treatment and the way, daily and companion expenses of this treatment in Turkey are paid within the scope of the provisions of the Health Implementation Notification. For spa treatments, a medical board report must be issued by the healthcare councils, including at least one physician of physical medicine and rehabilitation or a specialist in medical ecology and hydro-climatology. The health report should include information on diagnosis, recommended treatment, sessions and number of days. Persons deemed necessary for spa treatment may apply to the spa facilities, which are authorized by the Ministry of Health. The bath fee, travel, daily and companion expenses of those who are treated in the spas, which are not allowed by the Ministry of Health, are not covered. The travel, daily and companion expenses are covered on the basis of the medical board report issued for treatment. If the treatment cannot be started within 6 months from the date of issue of the medical board report, the medical board report should be issued again. It is required to apply to the spa facility within 5 working days, including the day the health board report is issued. In case the application is not made to the spa facility within this period, it is not necessary to re-issue the medical board report in order to be able to pay the travel expenses and daily, and the health service provider must issue and submit the Patient Referral Form in the Health Implementation Notification within 6 months of this report. Until the contract is concluded with the spa facilities granted by the Ministry of Health, the expenses of the spa treatments will be covered by the patient and one for each day based on the invoice and health report related to the treatment. paid. If it is stated in the report / referral form that medical support is medically necessary and it is documented that the companion remains the companion, the travel expenses and daily expenses of the companion are covered by the Authority. Road expenses are paid at the usual vehicle cost. Daily dispatches are paid on the basis of the multiplication of the 100 indicative figures within the province and 200 indicative figures between the provinces and the coefficient applied to the civil servants’ salaries. Accordingly, the treatment costs of people who spa treatment with the doctor’s recommendation are valid in the facilities where the Ministy of Health has given an operating permit.

Table 2. List of operating permited thermal facilities from the ministry of health in Sivas.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **N** | **Date and License Number** | **Facility Name** | **Village** | **District**  |
| 1 | 26.09.2003/9 | Kangal Fish Thermal Facility | Kavak | Kangal |
| 2 | 12.10.2005/61 | SCÜ Physical Theraphy and Rehabilitation Center | Kalın | Yıldızeli |
| 3 | 08.05.2006/74 | Cold Spa Thermal Facility | Beypınarı | Central |

One of the most important health tourism centers in Turkey and the World is Kangal Fish Thermal Facility (Figure 1). It is about 90 km to Sivas city center and 12 km to Kangal district. The Kangal Fish Thermal Facility has been granted a spa operation permit with the number of 9th and dated 26.09.2003 by the Ministry of Health (Table 2). The temperature of the water is between 34-37 centigrade degrees. The flow rate of the water is approximately 215 liters per second. General characteristics of thermal water are clean, clear and odorless. Spa water contains plenty of ions such as calcium, magnesium, selenium and bicarbonate. Spa water is useful in skin diseases, rheumatism, nervous system, gynecological diseases, kidney stones, orthopedic and traumatological sequelae. Kangal Fish Spa Resort is the only natural treatment center in the World where psoriasis is treated. Skin diseases such as irritated skin wounds, eczema, pimples and even psoriasis, which are known to be impossible to treat in medicine, are cured by *Cyprinion* *macrostamus* (Kangal Fish) and *Garra* ru*f*a (Kangal Fish) species belonging to the Cyprinidae family and their traces are lost (Timur et al. 1983; Özçelik and Akyol, 2011; Dirican, 2019). Without teeth, the Kangal Fish tear off the shells that are softened by selenium water and heal the skin. Despite the high temperature of the water Kangal Fish live in this spa. Due to the shortage of natural nutrients in thermal water, the Kangal Fish attack human skin and eat the scam of psoriatic lesions. Continuous cleaning of the psoriatic scams increases the effectiveness of ultraviolet rays. Other therapeutic factors are selenium, magnesium, bicarbonate content of the thermal water and whirlpool effect of pools (Karaca et al. 2005). The spa has a total capacity of 270 beds. Serves throughout the year. The spa has 6 pools, one of which is semi-olympic. It is operated by the private sector with a modern system. Kangal Fish Thermal Facility is preferred by both domestic and foreign people in terms of health tourism.

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Figure 1. Thermal facilities authorized by the ministry of health in Sivas.

Sivas Cumhuriyet University (SCÜ) Physical Therapy and Rehabilitation Center is located in Hot Spa, which is approximately 30 km away from Sivas city center (Figure 1). It is very close to Sivas-Ankara highway. Sivas Cumhuriyet University Physical Therapy and Rehabilitation Center has been granted a spa operation permit with the number of 61st and dated 12.10.2005 by the Ministry of Health (Table 2). The temperature of the water is between 35 and 45 centigrade degrees. The flow rate of thermal water obtained from 3 wells is approximately 50-200 liters per second. Thermal water is fluoride-containing calcium, magnesium-sodium, sulphate, hydrocarbonate and carbonate chloride water. Spa water is useful in the treatment of rheumatism, nervous system, respiratory tract, digestive system, metabolic disorders, blood circulation, muscle pains, gynecological diseases, kidney and urinary tract (Gezer, 2012; Pürlü, 2013). Sivas Cumhuriyet University Physical Therapy and Rehabilitation Center has 5 floors and a capacity of 100 beds. The center has an exercise room, x-ray room, 2 polyclinics and 10 treatment rooms. According to the situation of the patients who apply to this center, doctors apply spa treatment in 3 week cures. Sivas Cumhuriyet University Physical Therapy and Rehabilitation Center is open all year round. It serves mostly local people health tourism.

Another important thermal tourism center of Sivas is the Cold Spa Thermal Facility (Figure 1). Sivas city center is approximately 20 kilometers away. Cold Spa Thermal Facility has been granted a spa operation permit with the number of 74th and dated 08.05.2006 by the Ministry of Health (Table 2). The area where the spa is located has an interesting topography and vegetation. Therefore, it is mostly used as a promenade. The temperature of the water is 28-30 centigrade degrees. The flow rate of the water is 10-20 liters per second. General characteristics of thermal water are clear, clean, colorless and odorless. It is good for stomach, intestine and gall bladder diseases when drinking spring water. It is also useful in the treatment of rheumatism and nerve diseases. It operates in summer term and is operated by Sivas Municipality. There are 2 pools, one of which is historic, 10 thermal baths and 12 apartments. The large historic pool building was built in 1904. The thermal water from the bottom of this historical pool to the surface as a source (Gezer, 2012; Pürlü, 2013). Cold Spa is preferred by the local people in terms of health tourism.

Although there are 14 thermal water resources in Sivas province, only 3 of these have received operating permission from the Health Ministry. One of the thermal water facilities that have been granted operation license from the Ministry of Health in Sivas is operated by the private sector. The other two facilities are operated by the government sector. Necessary studies should be carried out in the other 11 thermal water resources and the operation permit should be obtained from the Ministry of Health. Thus, more contribution can be made to the development of Sivas.

**CONCLUSION**

Physical and chemical properties of thermal water resources generally vary depending on local formations in Sivas. Health tourism has been developing rapidly in recent years and contributing to the countries economically. Sivas is a lucky province in terms of health tourism facilities. Because the only facility in the World where psoriasis is naturally treated Kangal Fish Thermal Spa is located in the province of Sivas. In addition, Sivas Cumhuriyet University Physical Therapy and Rehabilitation Center and Cold Spa Thermal Facility are located in Sivas. The interest for the thermal water facilities should be increased. As a result of this study, more activities should be carried out for domestic and international promotion of the thermal water facilities, which are granted operation license by the Ministry of Health in Sivas. In addition, it is recommended to conduct more marketing studies at both national and international levels. Thus, Sivas province will provide a significant contribution to Turkey’s economy.

**REFERENCES**

Akkuş, İ., Akıllı, H., Ceyhan, S., Dilemre, A. & Tekin, Z. (2005). Turkey geothermal resources inventory. General Directorate of Mineral Research and Exploration, Ankara Inventory Series: 201, p. 849.

Bülbül, F. (2015). Development of health tourism in Turkey. Beykent University, Institute of Social Sciences, Department of Business Administration, Master Thesis, p. 81.

Camgöz, B., Saç, M.M., Bolca, M., Özen, F., Oruç, Ö.E. & Demirel, N. (2010). Investigation of radioactive and chemical contents of thermal waters; İzmir, Seferihisar region representative. Ekoloji, 19(76), 78-87.

Dirican, S. (2019). A study about effects and potential of Kangal fish on health tourism in Sivas, Turkey. MAS 10th International European Conference on Mathematics, Engineering, Natural and Medical Sciences, December 14-15, 2019, İzmir, Turkey, Proceeding Book, 97-102.

Gezer, M.M. (2012). Socio-economic and culturel structures in Sivas. Afyon Kocatepe University, Institute of Social Sciences, Department of History, Master Thesis, p. 210.

Karaca, Ş., Kulaç, M., Özel, H. & Kavuncu, V. (2005). Balneo-photo-therapy in dermatology. Medical Journal of Kocatepe, 6, 7-15.

Lund, W.J. & Freeston, H. D. (2001). World-wide direct uses of geothermal energy 2000. Geothermics, 30, 29-68.

Özçelik, S. & Akyol, M. (2011). Kangal hot spring with fish (Kangal fishy health spa) & psoriasis treatment. Press Thermal Climatic, 148, 141-147.

Özşahin, E. & Kaymaz, Ç.K. (2013). A geographic evaluation of thermal water resources of Turkey. Journal of Social Sciences, 50, 25-38.

Pürlü, K. (2013). Culture and tourism development strategy plan in Sivas. Culture and Tourism Directorate of Sivas Governor, p. 49.

Timur, M., Çolak, A. & Marufi, M. (1983). A study on the systematic identification of the balıklı thermal spring (Sivas) fish and the curative effects of the fish on dermal diseases. Journal of Ankara University Faculty of Veterinary Medicine, 30(2), 276-282.