

Darhad Valley's Dietary Mineral Source

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Salt has been a versatile commodity for human usage since the beginning of and conceivably prior to human civilization. It has been used for preservation of food and human bodies, as a building material, soap, an ingredient in food items and played a part in superstitions and folklore (Kurlansky, 2002, and Gilmore, 1955). Salt is also a crucial dietary nutrient aiding in physiological functions. Throughout history, indigenous cultures all over the world have been reported using some form of salt source. Much of this salt was and still is collected from surface crust formed within Earth's mineral deposits.

Mongolian nomadic herders are not unlike other cultures in collecting and utilizing similar salt sources currently and throughout their civilization. Traditional medicine practices within Mongolia utilize *vuldog*, the Latin term of the Tibetan word representing the trona mineral, as an ingredient in twenty-six different medications (Baairgai and Boldsaikhan, 1990). This mineral is collected from the dried beds of saline lakes around the countryside. The salty substance collected by the Darhad nomadic herders is referred to as *hujir* and translates to the Mongolian meaning, "salty plant." *Hujir* is collected from certain salt deposit/salt pans throughout Mongolia and in the Darhad Valley, consumed in traditional medicines and used as an ingredient in the popular daily milk tea, *suuti tsai* (Darhad people, 2007).

The nomadic herders of the Darhad collect *hujir* primarily from Tohi, a saline lake located in the northeastern part of the valley. The area is popular for harvesting human and animal *hujir*, depending on the purity of the salt crust formed (Darhad People, 2007). Tohi is a very important resource due to its abundance of salt source for the nomadic herder's human and livestock needs. During the Soviet Union's domination of Mongolia, the eastern portion of Tohi's saline lake and mineral crusted lakeshores were protected by a fence and paid guard (Darhad People, 2007). During the 1990's funding depleted for protection of this area and it was no longer protected from animal impact and human overuse. Since this time, the residents of the valley have noted a decrease in spatial extent of Tohi and its *hujir* quality (Darhad People, 2007).

Due to this impact, the residents of the valley are concerned with the decreasing size and the chemical composition of the *hujir* they collect and consume. They are also curious of the health relationship in consuming *hujir*. The goal of this project is to address these concerns and to document the physical and chemical aspects of the Tohi area, as well as other salt sources within the valley as an important resource for the people of the Darhad Valley and the entire Hovsgol Aimag.

This summer, soil, salt and water samples were collected from the Tohi saline lake and salt crust area. Samples were also collected from family *hujir* supplies, representative of the Tohi area and the *hujir* being consumed. These samples will be analyzed this fall for their chemical content and mineral composition through chemical analysis techniques. This information will be of great importance to the people of the Darhad Valley for the health relationship and determining Tohi's salt crust formation process.

The area was also fully mapped with a Trimble Geo XT GPS receiver and a valley-wide GIS database of salt deposition areas will be created this fall. This database will include

the locations, spatial extent, chemical composition, usages, animal and human impacts to the area and any other pertinent information on these areas utilized by the Darhad residents. This database will serve as baseline data for the spatial change of the Tohi area overtime. After secondary mapping of the area, it will also help to determine if protecting fences planned to be built this fall are truly protecting the area from animal and human impact or if other protection measures should be taken.

The final goal will be to link hujir consumption rates of the Darhad Valley residents to the average chemical compositions of the samples analyzed and determine the amounts of each element being consumed. After this information is calculated, resulting health benefits and disadvantages will be perceived and public health educational materials designed to deliver the information back to the people of the Darhad Valley.

The resulting data from this project will answer the concerns of the Darhad Valley residents by helping them understand the salt deposit's formation process and more importantly what is being ingested when consuming this ancient dietary supplement. Knowing the formation process will also identify the best measures to sustainably harvest the salt substance and protect the area for future human use.

References:

Baairgai, Ch and B. Boldsaikhan. 1990. Khujir. Mongolian traditional medicine (135): 238.

Darhad People. 2007. personal communication. June-July, 2007.

Gilmore, Harlan W. 1955. Cultural Diffusion Via Salt. American Anthropologist, New Series 57(5): 1011-1015.

Kozlovskaya, M. 2002. Common Salt in Human Diet: Historical Aspects. Archaeology 9(4): 138-144.