

平成25年度 環境科学院 修士論文内容の要旨

## Investigation and assessment on the safety and health of drinking water in the urban areas of China based on the questionnaire analysis between Japan and China

(日本と中国のアンケート解析に基づく中国都市部の飲用水の安全と健康に関する調査研究)

北海道大学大学院 環境科学院

環境起学専攻 国際環境保全コース

Guo Min (郭 敏)

**[Introduction]** As China's economy has developed rapidly, water pollution which directly affects the safety and health of drinking water is one of the most prominent environmental issues in China. Now people in urban areas of China have mainly obtained drinking water from tap water, tank water (tank water is a kind of drinking water product, which is made with municipal water or groundwater by modern industrial technologies and filled into the designated tank by filling production line) and bottled water. However, these three kinds of drinking water might not be always safe and healthy in some cities because of serious water pollution and scarcity, lack of adequate treatment process, problems during the production and transportation process and aging of water supply system. Therefore, how to obtain safe and healthy water is a big issue in China. Thereby, through investigating and comparing people's attitudes to drinking water between Japan and China, this study aims to clarify the critical points of the drinking water in China and give some suggestions and recommendations to the government on how to guarantee the drinking water safety. Moreover, what should be cared on producing drinking water for the enterprises is discussed.

**[Methods]** Firstly, through some papers and books, and the field visit to the Sapporo Waterworks Bureau and Moiwa Water Treatment Plant, the relevant information on the situation of water sources, water treatment process and water supply system in China and Japan were collected. Secondly, people's attitudes survey for drinking water was investigated by questionnaires. Through the investigation by visiting 12 cities of China and using internet, 1104 questionnaires were collected from China, and 531 questionnaires from Japan. Besides, 100 questionnaires were answered by international students of China.

**[Results and discussion]** In China, 47% of the quality of surface water sources and 50% of the quality of groundwater sources cannot meet the standard of drinking water sources. Meanwhile, 98% of the water treatment process in China is conventional process, which includes four steps as coagulation, sedimentation, filtration and disinfection. This process is not enough to treat the water from unqualified water sources. Thereby, even the boiled tap water is not safe and healthy in some cities of China. Through questionnaires, it is found that only 2.1% of Chinese people directly drink tap water in their daily life, while 55.7% of the Japanese people drink tap water directly. Moreover, 64.1% of the Chinese people don't satisfy the tap water quality, while 27.1% of the Japanese people don't satisfy it. In addition, 73.8% of the people who don't drink tap water in China choose to drink tank water and 10.6% of them choose to drink bottled water. In Japan, during the people who don't drink tap water, 41.1% of them choose to drink bottled water and 39.7% of them choose to drink bottle tea. Therefore, there is a large difference in the attitude about the drinking water between Japanese people and Chinese people. Japan's tap water quality is very high and most of Japanese people drink it directly, some people pursue higher drinking water quality and choose to drink bottled water or bottled tea. In China, the tap water quality is not good in some cities and lots of people don't satisfy it, but there are still many people drink boiled tap water. Consequently, compared with Japan, there is a large gap about the safety and health of drinking water in China. Besides some measures should be taken to assure the quality of tap water by the government, public people should understand the situation of their drinking water and think about how to choose the safe and healthy drinking water.