

# Study of Some Heavy Metals Contamination in Two *Tinospora* (ဆင်တုံးမနွယ်) Species

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## Abstract

Medicinal plants are the most important source of life saving drugs for the majority of the world population. World Health Organization (WHO) estimates that more than 80% of people in developing countries depend on traditional medicine for their primary health needs. Heavy metals are metallic elements with high atomic number and poisonous to living organisms. Plants may absorb heavy metals from soil, water or air. The purpose of present study was to determine the heavy metals contamination in *Tinospora cordifolia* (ဆင်တုံးမနွယ်ပြောင်ချော) and *Tinospora crispa* (ဆင်တုံးမနွယ်ဆူးပေါက်) which are reputed for treatment of anti diabetic, anti-inflammatory, antiarthritic, antispasmodic and antiallergenic. The atomic absorption spectrophotometer (AAS) was used for determination of heavy metals (Cd, Cr, Cu, Fe, Pb and Zn) in two *Tinospora* species and their surrounding soils from Mandalay, Pyin Oo Lwin and Shwe Bo. These two *Tinospora* species and all soils contained metals, which were within permissible limits except Fe content. The plants contained higher amount of Fe ranged between 22.22 to 57.32 ppm. However, this study was comparable to the study reported by Khin Phyu Phyu *et al.* (Jan, 2014), 'Fe' ranged between 76.78-356.05 ppm, and Jabeen *et al.* (2010), the range of 'Fe' in selective medicinal herbs of Egypt in the study carried out was between 261 to 1239 ppm, respectively. These findings obtained from the present study can provide scientific data which will be helpful for herbal medicine users, local practitioners and pharmaceutical industries using these two *Tinospora* species for different types of ailments. In conclusion, monitoring such medicinal plants for heavy metals is applicable for references and supreme importance in protecting the public from adverse and hazardous effects of heavy metals.