For the first time the atmospheric deposition of trace elements was studied over the entire territory the province of Iğdır (Turkey). For this study we have used the nine different sampling sites. Twenty-six moss and seven soil samples were collected from near the Iğdır-Nahhichevan international highway in Turkey. Samples of the indigenous mosses and soils were collected in during 2010. In these samples, a total of seventeen elements (Na, Mg, Al, Si, P, S, K, Cu, Ti, Fe, Cu, Zn, Sr, Cr, Mn, Rb and Pb) were determined by using energy-dispersive X-ray fluorescence (EDXRF) spectrometry to estimate the geographic distribution of the atmospheric trace element deposition.

**Keywords:** Atmospheric deposition, Trace elements, Mosses, EDXRF, Iğdır, Turkey