

Heavy metal concentrations of the top soils and vegetations from the serpentinite and adjacent area in Andong, Kyungpook

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The research has been made for heavy metal concentrations of the top soils and their vegetations (*Miscanthus sinensis*:MS and *Artemisia vulgaris*:AV) from the serpentinite(SP), gneiss(GN), sandstone(SS), black shale(BS), and red shale(RS) in Andong, Kyungpook. The heavy metal elements such as Zn, Ni, Cr, Co, Sc, Fe, Au, As, Sb, W, and Mo were analyzed in ACTLABS, Canada.

In SP soils, Ni(1328ppm), Cr(220ppm), Co(92ppm), and Fe(5.11%) concentrations were higher than any other soils(91-14ppm, 179-25ppm, 24-9ppm, 3.33-2.28%, respectively). Especially Ni concentrations of the SP soils were much higher 95 to 15 times than the SS and GN soils, respectively. Whereas Zn(63ppm), Sb(14ppm) and W(20ppm) concentrations in the BS soils were slightly higher than those(54ppm, 11ppm, below detection limit, respectively) in the SP soils. But no differences were found in the Sc, Au, As, and Mo concentrations among the five soils.

In the average concentrations of AV, only Ni(195ppm) of the SP soils were much higher than those of the other soils(14-3.5ppm) and the BS and RS were higher in most of elements(Zn, Au, As, Sb, W, Mo). In the average concentrations of MS, most elements(Zn, Ni, Co, Fe, Sb, W, As) were the highest in the SP soils. Also, Ni(255ppm) of the SP soils were much higher than those of the other soils(7-2.5ppm).

Comparing between the top soils and vegetations, heavy metal concentrations by the absorption in MS were similar to those of the top soil relative to AV.

지역별, 임분별 산림토양내 탄소량 추정

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산림토양내 탄소저장량이 임분, 지역별 어떠한 차이가 있는지를 전국을 대상으로 한 420개의 토양단면 자료를 이용하여 조사한 결과, 참나무류임분이 95 tonC/ha 으로 가장 높은 값을 보이고 있으며, 리기다소나무임분이 52 tonC/ha 으로 가장 낮게 나타났다. 지역별 단위면적당 탄소저장량은 강원도 지방이 84 tonC/ha 으로 가장 높았고 경기, 전라, 경상도 지방은 중간 정도였으며, 충청남도 지방이 41 tonC/ha 으로 가장 낮았다. 우리나라 산림토양내 평균 탄소저장량은 67 tonC/ha정도로 나타났다.