B513 Effects of Physicochemical Characteristics of Initial Litters of Emergent Macrophytes on Decomposition rate

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The specific roles played in the decomposition of emergent macrophyte litters by their initial chemical compositions and morphological properties were determined. The comparison of regressions fitted to the various functions showed that the mass loss of sixteen different litters with incubation time best fitted a asymptotic decay function. The litters of emergent macrophytes were therefore composed of two compartments, the labile component and the refractory component. The mass loss was influenced by the relative compositions of labile and refractory compartments and the decay rate of labile one. The labile compartments of litters were related to the surface area/mass ratio, lignin content and water solubility of the litters. The decay rate of labile compartments was positively correlated with the water-soluble component of litters and negatively correlated with carbon content. The biomass of epiphytic bacteria after the two-month incubation was strongly correlated with phosphorus concentration of the initial litters. However litter mass loss was not related to bacterial biomass.

B514 Effects of urban environment on soil acidification and soil buffer capacity

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Seoul metropolitan area was divided by four concentric circles with a diameter interval of 5 km. Soil samples were collected at the vegetated areas in each section and analyzed for soil pH and soil buffer capacity. Soil pH ranged 3.96-5.08 for A horizon and 4.10-5.25 for B horizon. Soil pH's of 0-5 km, 5-10 km, and 10-15 km section was not significantly different. The outmost section (15-20 km) had average soil acidity greater than those of the interior sections. The soil buffer capacity of 0-5 km and 5-10 km sections was less than 2.6 eq. $H^+/m^2/4cm$. The soil buffer capacity of 10-15 km and 15-20 km sections showed some variations with about 2 times greater capacity on average. Providing that air pollution moves from the center of city toward all direction, urban soil seemed to be acidified following similar pattern. Low soil pH and soil buffer capacity lowered at the interior areas of Seoul indicates that soil conditions are at a critical condition and vulnerable to the addition of acidic deposition from the air.