

Comparison of enzyme activities and environmental factors
between the forest soil of two species in the
same family, Quercoideae

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Physico-chemical environmental factors and enzyme activities were compared between the forest soil of two species vegetation in the same family, *Quercoideae*. Two species are *Quercus mongolica* and *Quercus dentata*. Soil pH were ranged 6.2–6.6 in a forest soil of both species. Moisture content and total organic matter were 1.4 and 1.3 times higher in the surface soil of *Q. mongolica* forest than the other, respectively. In soil depth, cellulase activity at the surface soil was higher 4.71 times and 2.10 times higher than 25cm depth soil of *Q. mongolica* and *Q. dentata* forest, to each other. Between the surface soil of two vegetational forest, cellulase activity of *Q. mongolica* forest was 1.69 times than the other. Cellulase activity was correlated with the reducing sugar ($R^2=0.623$). Protease activity was 1.4 times higher in surface soil of *Q. mongolica* than the other, otherwise 10 fold higher in 25cm depth lower soil of *Q. dentata* forest. Phosphatase activities were similar in 25 cm lower soil between the two vegetational forest. But, phosphatase including ACPase, NEPase, ALPase

showed higher activities in surface soil of *Q. mongolica* forest compared to *Q. dentata* forest. Among the 3 kind of pH dependent phosphatases, ACPase showed close relationship with protease($R^2=0.659$).