

B556 **A Study on the Community Structure of Deciduous Broad-Leaved Forest Ecotone in Surak Valley, Mt. Daedun**

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The vegetation of the secondary forest ecotone, which valley and foot slope being crossed, was composed of 43 species, for example *Zalkova serrata*, *Acer mono*, *Quercus mongolica*, *Quercus variabilis*, *Prunus sargentii*, *Lindera obtusiloba*, *Sasa borealis* and etc. And the layer was well developed, but specific dominance species did not appeared. So it might be said that the investigated area is doing succession at the present time. Species diversity appeared high values. Therefore the ecotone area is reflecting species composition by environmental factors. On the other hand, at the each layer level, the upper layer was lower and interspecific encounter is being increased. Also it may be concluded that the stability of community does not appeared, due to very strong, intraspecific competition and weakness of interspecific encounter. Through analyzing dynamics of the community with using data, height distribution and D.B.H. class distribution range, that was founded that *Zalkova serrata*, *Acer mono*, *Cornus controversa* and *Cornus kousa* were rapidly growing, well adapting and mixed growing together with *Quercus variabilis*, *Quercus mongolica* in the valley area.

B557 **Carbon Budget in *Quercus mongolica* Forest of Mt. Songni National Park**
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The CO₂ source and sink in *Quercus mongolica* forest of Mt. Songni National Park were measured and attempted to quantify the carbon balance in forest ecosystem under natural conditions. The net primary productivity(NPP) of *Q. mongolica* was 12.75 ton/ha and the organic carbon was allocated to stem, root, branch and leaf in order. Much portion of organic carbon falling to the forest floor was occupied by leaves (69.4%), and the annual litter production (leaves, branch, bark and etc.) was 5.16 ton/ha.

Annual CO₂ sink was estimated as 20.78 ton/ha. The amount of organic carbon produced by *Q. mongolica* forest was estimated as 1.67 ton/ha/yr. and 6.13 ton/ha/yr of CO₂ was released into the atmosphere.

Soil respiration was correlated with the soil temperature ($R^2=0.94$), and the amount of soil respiration was 6.81ton/ha/yr, indicating the similar value that of the leave's annual organic carbon.

The CO₂ absorbed by *Q. mongolica* forest was 20.78 ton/ha/yr and the one released by soil respiration was 6.13 ton/ha/yr. The difference was much as 14.65 ton/ha/yr.

Accordingly, it suggests that *Q. mongolica* forest acted on as a positive factor to the atmospheric environment.