

B505**Comparisons of Soil Respiration between the Pitch Pine Forest and the Oak Forest**

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Soil respiration of pitch pine forest and oak forest was measured during one year from September 1996 to August 1997 at Kongju, Chungnam Province. Respiration measurement was carried out using CI-301SR Soil Respiration Chamber. Soil respiration in oak forest was consistently higher than that in pitch pine forest during the experimental period. Respiration rate were highest during August in both stands (17.88 CO₂ μM/m².s in oak stand and 7.02 CO₂ μM/m².s in pitch pine forest). The annual CO₂ flux in oak stand and pitch pine stand was 79.4t/ha.yr and 32.3t/ha.yr, respectively.

B506**Comparison of Growth Response among Gap-bordering Trees and Saplings in Forest Gaps in Mt. Jumbong**

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This study was carried out to investigate the growth response of trees in old gaps in Mt. Jumbong, Kangwon Province. Crown shapes of gap-bordering trees were mapped and growth rate, bifurcation ratio, branch angle and leaf area of gap-bordering canopy trees and saplings of selected dominant species were measured in April to August, 1997. The average crown asymmetry of canopy trees, which is the ratio of crown area into the gap to total crown area, of all species was 0.697 (±0.23), and crown plasticity, which is the ratio of total crown area to maximum circle area within the crown, was 1.658 (±0.38). The lateral growth rate and bifurcation ratio of branches facing gap (gap branches) was greater than those facing non-gap (non-gap branches) and the branch angle of gap branches was smaller than non-gap branches. Bifurcation ratio was somewhat different among species. Bifurcation ratio for saplings growing in non-gaps (non-gap sapling) were lower than those growing in gaps (gap sapling). Gap saplings were characterized by higher height growth of leader branches than non-gap saplings. For all species, growth rate was higher in gaps than non-gaps. However, there was no noticeable difference in growth rate. Growth rate was significantly correlated with the bifurcation ratio and branch angle.