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Preliminary Analyses of Spatiotemporal Characteristics
of Nutrients on Forest Soils of Mt. Jumbong

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Soil physical and chemical properties were examined for to characterize in landscape positions. Soils were taken from the south- and north-facing slopes of Mt. Jumbong in November 30, 1994 and April 30, 1995. Soil temperature, water content, organic matter, pH, available N, available P, and exchangeable cation contents (K, Ca, Mg) were measured and correlation analysis between each factors was conducted. Water content was negatively correlated with NO_4^+-N and available P. Soil pH ranged from 5.1 to 5.9, without spatial variance. Soil pH was significantly correlated with the exchangeable contents and soil organic matter. The quantity of NH_4-N was lower in the north-facing than south-facing slope, negatively correlated to soil moisture. The content of NO_3^--N was higher during spring than autumn, which indicates that the decomposition of litter contributed to nitrification by active microorganisms during spring. Available-P showed no significant difference between the slopes, but the content of spring exceeded that of autumn. Available-P was positively correlated with organic matter, which suggests that soil organic matter is an important source of P. The levels of K and Mg were were considerable different between spring and winter.

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Litter Redistribution and Decomposition Related to Slope
Direction and Dwarf Bamboo on Forest Floor of Mt. Jumbong

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Litter plays an important role in linking components of forest ecosystems. It mediates nutrient cycles and energy flows through detritus food chain and characterizes the functions and structures of forest ecosystem. For a better understanding of a forest ecosystem, annual production and energy content, spatial redistribution pattern, and decomposition rate of leaf litter have been investigated at a local area of Mt. Jumbong since September 1994. Litter production determined with 16 litter traps was $354.5 \pm 111.5 \text{ g/m}^2/\text{yr}$. The energy contents of litter of *Quercus mongolica* and *Kalopanax pictus* were estimated approximately 4.4 Kcal/g and 4.8 Kcal/g, respectively. As colored papers were placed in the north facing and south facing slopes with and without dwarf bamboo in November and December, 1994, and their positions were identified in May, 1995, it was found that the bamboo contributed to retention of litter. Amounts of litter accumulated in April 1995 also were lowered in the north-facing slope, and the south-facing slope with and without bamboo in the order. Decay rate of litter determined with litter bags followed the order of litter amount accumulated, higher in north- than south-facing slope, especially with understory vegetation. It seems that soil moisture was a major factor affecting decomposition rate in the floor. The decomposition rate of leaf litter of *Quercus mongolica* was lower than that of *Kalopanax pictus*.