

The environmental condition of small subalpine coniferous forest on Mt. Aomatsubayama, northern Japan

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The coniferous forest (largely composed of *Abies mariesii*) is presently the typical vegetation of the subalpine zone in Japan. However, around Mt. Aomatsubayama, Kitakami Mountains in northern Japan, the expected predominance of *A. mariesii* is not extensively observed, and the predominant vegetation is instead the dwarf bamboo (*Sasa kurilensis*) grasslands and broad leaf forests. It's called Pseudo-Alpine zone. However it is unknown why the area under coniferous forest is small in this region. The clarification of the reason why small *A. mariesii* forest formed will make a major contribution to the understanding of Pseudo-Alpine zone. The purpose of this study is to clarify the environmental condition of small *A. mariesii* forests in Mt. Aomatsubayama from the perspectives of distribution of vegetation; geomorphic characteristics; soil conditions.

In this site, there are few mixed forest of *A. mariesii* and other plants. Therefore the boundary of *A. mariesii* forest is sharply defined. Most of the *A. mariesii* forests distributed in a gentle slope on the summits (about Alt. 1300-1360 m). The dominance vegetations are *S. kurilensis* grasslands, *Fagus crenata* and *Betula ermanii* broad leaf forests. The soil profiles in these vegetations resembled each other regarding the existence of humic soil layer before To-Cu tephra layer (6ka: Machida and Arai, 1992). The soil in the *A. mariesii* forest area had higher moisture content than that in other vegetation area.

As these results, it's considered that *A. mariesii* forest is distributed in a gentle slope on the summits and high soil water area. This means Pseudo-Alpine zone is formed by the localized-distribution of *A. mariesii* forest on high soil water area.

Keywords: Coniferous forest, *Abies mariesii*, Location environment, Landform, Soil condition