

Formation process of small stands of *Abies mariesii* forest in pseudo-alpine zone on Mt. Akita-komagatake, 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. Akita-komagatake, 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. According to pollen analysis, this vegetation is assumed to be attributed to unsatisfactory expansion of *A. mariesii* forest.

Here we clarify the formation process of small stand of the *A. mariesii* forest by its size structure and process of regeneration.

The surveyed area is located in the northern Mt. Akita-komagatake. We classified the vegetation and measured DBH (diameter at breast height) and created frequency histograms of size structure on each vegetation.

The both histograms of *A. mariesii* thick and thin forest display gradual decreasing on the small classes on the X axis (DBH). The maximum classes of DBH are the class of 20-30 cm on the both histograms. The decreasing is considered to be brought about by two reasons: the second generation of *A. mariesii* on 20-30 cm DBH class is not enough equipped to propagate, and there is less numbers of first generation. These results are indicated that the small stands of *A. mariesii* forest rapidly formed by second generations.

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