Clues to Reconstruction of Sequence of Eruptions in the Early Stage of the Asama-Maekake Volcano

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The Asama-Maekake volcano has been active for about 10,000 years. Little information, such as the distribution and stratigraphy of the eruptive products including pyroclastic fall deposits, pyroclastic flow deposits, and lava flows, is available for eruptions predating the 12th century owing to the lack of outcrops, especially in the proximal area. However, many pyroclastic fall deposits have been recognized in the distal area, mainly in the southeast direction, in previous studies, indicating that large-scale eruptions occurred repeatedly in the history of the volcano. In this study, the distribution of a pyroclastic fall deposit called Miyota pumice (referred to as As-My hereafter), which is distributed south of the summit crater, was mapped. The C14 ages of the samples of black humus soil that is covered with As-My, were dated to ca. 6400 cal.YBP. These ages are almost the same as that of the pyroclastic fall deposit As-UB distributed on the northern flank. The As-UB contains many fall units and is associated with a small-scale pyroclastic flow deposit in the proximal area. Bulk-rock chemical compositions of the pumice grains from As-My and As-UB were plotted in similar area to those for As-E on a SiO_2-MgO variation diagram. These data suggest that the As-My, As-UB, and As-E are products from eruptions that occurred around 6000 years ago or a single eruption. Although the stratigraphic relation among these deposits distributed in different directions is difficult to determine, the fragmental information described above is expected to be helpful for reconstructing the sequence of eruptions in the early stage of this volcano.

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