

Radiocarbon dating and tephrochronology of the Higashi-Chokai volcanic body, Chokai volcano, northeastern Japan

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Chokai volcano (2,237 m asl; 39.1°N, 140.05°E), located on the Japan Sea side of northeastern Japan, is an andesitic volcano that started its activity in the Middle Pleistocene. The volcanic body of the Chokai is divided into two volcanic bodies. Of these, the Nishi-Chokai volcanic body estimated to be formed during 160-90 ka due to multiple K-Ar dating. On the other hand, almost no studies have revealed the development history of the Higashi-Chokai volcanic body.

The authors found the buried peat layers and wood fossils from the base of the Shichikosan lava, which forms most of the Higashi-Chokai volcano, and measured their radiocarbon ages. As a result, the ages of 14795-13635 cal BP and 11970-11345 cal BP were obtained. It is considered that these ages directly indicate the eruption age of the Shichikosan lava. In addition, the peaty soil layers distributed on the volcanic slope formed by the Shichikosan lava were dated by radiocarbon dating and tephrochronology to discuss the initiation ages of the peaty soil. The peaty soil layers on the slope were estimated to be started approximately at 6300 cal BP. This age indicates the timing when the vegetation became able to settle on the volcanic slope, that is, the time when the formation of the volcanic body was completed and the slope was stabilized.

Keywords: Radiocarbon dating, tephrochronology, Chokai volcano, alpine soil