

SVC062-04

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Post caldera eruption history of Miyakejima Volcano ? Entombment process of Hatchodaira Caldera in Miyake Volcano-

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Collapse caldera is a common volcanic structure in basaltic volcanoes. However, the entombment process of the caldera is poorly understood. To make an effective forecasting of the volcanic activity, we have to understanding the variations of the eruption activities during the caldera-filling stage based on the eruption history of the post-caldera period of many volcanoes.

The cross section of Hatchodaira Caldera, forming age at ca. 2.5 ka, is exposed on the wall of the A.D. 2000 caldera on Miyakejima volcano. The cross section of Hatchodaira Caldera is divided into 7 units; pyroclastic cone (130 m thick), many thick lava flows (200 m thick), single lava flow (5-10 m thick), scoria fall deposit (40 m thick), lava flows (30 m thick) and scoria fall deposit, in ascending order. The caldera was filled mainly by the lava flow which makes a lava lake. On the other hand, many large-scale fissure eruptions, such as Kazahaya Scoria at 1.4 ka (ca. the 6th century, radiocarbon ages calibrated to calendar years) occurred outside of caldera during the caldera-fill stage of Hatchodaira Caldera.

The production rate during the caldera-fill stage of Hatchodaira Caldera is estimated at least 0.4³/ky. This value is larger than the production rate 0.2³/ky for the last 1100 years after the caldera-fill stage.

Keywords: caldera, post caldera, basaltic volcano, eruption history, Miyakejima Volcano, Kazahaya Scoria