

Coldness Conservation Experiments using Hay as Heat Insulator

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An experiment for snow preservation using hay as insulation material was carried out at campus of Kitami institute of Technology, Hokkaido. On 10th March in 2008, the experiment was started. Piled up snow was covered by hay as heat insulator. The 2.2m-thickness snow was covered with hay rolls (1.3m height and 1.5m diameter) and the 1m thickness snow was covered with 50cm and 30cm thickness hay layers, which are scattered from hay rolls. The 1-m thickness bare surface snow was also made to compare with others.

While the bare surface snow without hay layer melted all in 32days from 10 th March to 11 th April, the 2.2m-thickness snow covered with hay rolls lasted in 163days until 20 th August. The 1m-thickness snow covered with 50cm thickness hay layer lasted in 157days until 14 th August.

In spite of 1 m-thickness, the snow with 50cm thickness hay layer lasted as long as the 2.2m-thickness snow covered with hay rolls, because the inside of hay rolls was heated by biological activities of anaerobic bacteria and the inner temperature of rolls became 65C at most.

Hence, the 50cm-thickness hay was the most effective as heat insulator for snow preservation.

Adding to it, experiments for frozen soil conservation were done at Kitami and Rikubetsu, Hokkaido. In the experiments, the 50cm-thickness hay layer was also the most effective insulator.

