

[P2] Farming System

Thu. Sep 9, 2021 12:15 PM - 2:00 PM Room 2 (Poster) (Farming System)

12:15 PM - 1:00 PM

[P2-07]Decomposition of Hairy Vetch Mulch under Snow and Its Effect on Nitrogen Dynamics in Soil

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Hairy vetch, a leguminous cover crop, is known to have a high nitrogen content and a strong weed suppression ability by covering and allelochemicals, Hairy vetch is generally used after cultivation of the main crop. However, in a cool area with a long snowfall period, such as Hokkaido, there is a problem that the growth period of hairy vetch was limited by snow cover. In this study, we examined the decomposition of hairy vetch under snow and the effect on soil nitrogen dynamics by them. A field examination and mineralization test were conducted. In the field test, hairy vetch was sown in August. Soil samples were collected and measured nitrogen contents every month from November to April. In the culture test, the amount of nitrogen from hairy vetch was measured under the temperature conditions of 2°C and 25°C. In the field test, total inorganic nitrogen in the hairy vetch plot was increased from February, and in March rapidly before snowmelt. Further, the portion of ammonia nitrogen in the hairy vetch plot was higher than other cover crop plots. In the culture condition, the maximum value of total inorganic nitrogen was exhibited the 7th day after culturing at 25°C, and 56th day after culturing at 2°C. The amount of ammonium nitrogen was decreased after 7 DAC at 25°C, while the concentration of nitrate-nitrogen was low during culturing period at 2°C. It is considered that the high level of ammonia nitrogen derived from hairy vetch works effectively as a nitrogen resource in spring and a weed-suppressing substance just before snow melting.