

## Nitrogen isotopic measurement of NO<sub>x</sub> gas with the filter-pack method

MURATA, Eriko<sup>1\*</sup> ; Koba, Keisuke<sup>1</sup> ; WATANABE, Mirai<sup>2</sup> ; NISHINA, Kazuya<sup>2</sup> ; KOHZU, Ayato<sup>2</sup> ;  
TAKENAKA, Chisato<sup>3</sup>

<sup>1</sup>Tokyo University of Agriculture and Technology, <sup>2</sup>NIES, <sup>3</sup>Nagoya University

Estimation of the nitrogen loss as N<sub>2</sub> and NO<sub>x</sub> from ecosystem is quite important to close the nitrogen budget. However, due to the high spatio-temporal variations of the nitrogen dynamics in soils does not allow us to investigate the production/consumption processes of these gaseous forms of nitrogen. Although natural abundance of stable isotope is considered to be able to use for the investigation of the N dynamics with respect to gaseous nitrogen losses, nitrogen isotopic measurement of NO<sub>x</sub> is quite difficult due to its high reactivity. Here we present our preliminary work on the nitrogen isotopic measurement of NO<sub>x</sub> gas with the filter-pack method (Watanabe et al. 2006) together with the denitrification method (Sigman et al. 2001). NO gas produced from NaNO<sub>2</sub> with known nitrogen isotopic ratio via several chemical treatments, then the trapped NO as NO<sub>2</sub><sup>-</sup> and NO<sub>3</sub><sup>-</sup> ions were converted to N<sub>2</sub>O with denitrifier, then nitrogen isotopic signature was measured by GC-IRMS. We found that the filter-pack method can be applied for the nitrogen isotopic measurement. We applied this method to measure nitrogen isotopic signature of atmospheric NO<sub>x</sub> and present these data in the poster.