

## 저질토에서 무기질소의 전환

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From May 1992 to March 1993, nitrate transformation was investigated at two stations in nitrite added(3mM) lacustrine sediment(lake Soyang, Korea)by using a combination of inorganic nitrogen( $\text{NH}_4^+$ ) and gas( $\text{N}_2\text{O}$ ) analysis.

The ranges of denitrification potential and ammonia production were 8.0 to 187.5 and 10.7 to 294.5  $\text{nM gdw}^{-1}\text{day}^{-1}$ , respectively. The percentage of non-respiratory denitrification to denitrification potential was 27.5 to 41.6 at station 1 and 2.8 to 92.5 at station 2. Non-respiratory denitrification was significant. Much of ammonia produced was assimilated by bacterial populations. The quantity of assimilated ammonia was 4.3 to 46.7 at station 1 and 4.4 to 206.6  $\text{nM gdw}^{-1}\text{day}^{-1}$  at station 2, respectively. Though temperature at station 2 was lower than station 1, the activity for nitrate transformation at station 2 was lower than station 1. In station 1, the ratio of  $\text{N}_2$  production : ammonia production was correlated positively with organic carbon ( $r=0.799$ ,  $P<0.05$ ).  $\text{N}_2\text{O}$  production was correlated positively with temperature ( $r=0.779$ ,  $P<0.05$ ), ammonia assimilation ( $r=0.868$ ,  $P<0.05$ ) and ammonia production ( $r=0.778$ ,  $P<0.05$ ).