

GENERAL INFORMATION

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MATERIALS & METHODS

study area	
time period	
goal	Comparison of the N turnover in a pristine and a more polluted forest
set-up	pristine forest (Chili, 0-10 cm soil) vs. polluted forest (Belgium, F H layer, 0-5 cm soil) ¹⁵ N isotope dilution experiment: gross and net mineralisation and nitrification (incubation for 7 days)
data collection	
remarks	

RESULTS

The two forests showed clear differences in N turnover.

In the Aelmoeseneie forest, the net mineralisation rates were much smaller than the gross N mineralisation rates, mainly for the F and H layer. High gross mineralisation rates indicate a substantial NH_4^+ immobilisation capacity. The net and gross nitrification rates were similar, which indicates that immobilization of NO_3^- was unlikely. Net mineralisation and net nitrification were similar, which indicates that NH_4^+ and NO_3^- were equally available.

In the Chilean forest, net mineralisation and net nitrification rates were lower than the respective gross rates. Because the net nitrification rates are much lower than the net mineralisation rates, plants will prefer NH_4^+ uptake. Because gross nitrification is larger than net nitrification, microbial or abiotic NO_3^- immobilization is likely to occur.

NO_3^- leaching has been observed in the Aelmoeseneie forest, but was negligible in the Chilean forest (field campaigns).