



Biogenic emissions of NO and N₂O from grass and clover monocultures in Switzerland

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As part of COST 852 action (Quality legume-based forage systems for contrasting environments), continuous and simultaneous monitoring of biogenic emissions of NO and N₂O has been performed at an experimental grassland site in Switzerland (Ruemlang/Zurich) during the 2004 vegetation period. For the flux measurements, we selected two monoculture plots of grass (*Lolium perenne* L.) and clover (*Trifolium repens* L.), respectively. These plots have been fertilized at two different levels (50 and 450 kg N ha⁻¹ a⁻¹, respectively) and have been cut five times during the vegetation period. NO (NO₂, O₃, CO₂, H₂O) fluxes were measured with an automated dynamic chamber system (total of 5 chambers; 1 per plot + 1 blank). Measured NO fluxes have been corrected for fast gas phase reactions (NO/NO₂/O₃) and wall losses. An automated static chamber system (total of 4 chambers; 1 per plot) was used for the measurement of N₂O (CO₂, H₂O) fluxes. Flux measurements were accompanied by simultaneous measurements of soil moisture, soil temperature (total of 9 soil moisture and 14 soil temperature sensors), and meteorological parameters (barometric pressure, air temperature profile, relative humidity, wind speed, wind direction, rain, global radiation, net radiation, PAR, JNO₂, soil heat flux). We will present quality checked fluxes of NO and N₂O, which will be discussed with respect to the given regimes of soil temperature, soil moisture, and fertilizer level. The influence of plant species, cutting, and season will also be considered.