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Elevated CO_2 influences metal homeostasis and actinorhizal symbiosis in early successional alder shrubs

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The increasing atmospheric CO_2 concentration could stimulate terrestrial ecosystem growth and create an important carbon sink that could slow down climate change due to anthropogenic activities. The extent of this enhanced growth will strongly depend upon the availability of nitrogen (N) to plant. In alder, the predominant N_2 fixing tree in boreal forest, the ability to establish actinorhizal symbiosis will thus be a key. How high CO_2 concentration and exogenous N impact actinorhizal symbiosis remains is poorly known. In this study on *Alnus rugosa*, the author evaluated the effect of CO_2 and exogenous N availability on (i) the efficiency and development of the actinorhizal symbiosis and (ii) on the homeostasis of essential nutrients for N2 fixation such as phosphorus and molybdenum. The author reported that *Frankia* sp. infection (i) is the primary factor controlling nutrient homeostasis in plant and (ii) is critically to alder response to elevated CO_2.

Biography

Nina Pourhassan got her MSc degree in Analytical Sciences from Université de Strasbourg (UDS) in France (2011). She did her Master internship in laboratory of Dynamic and Molecular Structure by Mass Spectrometry. Her main project was implementation of the coupling of CIEF/ESITOF-MS and CIEF/MALDITOF-MS, application to the separation and characterization of intact proteins. Currently, she is a PhD student at Univeristé de Sherbrooke (UdeS) Canada in Chemistry. She is working in laboratory of Biogeochemistry Terrestrial. Her research is focused on metals acquisition within symbiotic associations via metallophore.

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