

Publication**Inorganic Nitrogen Uptake and Transport in Beneficial Plant Root-Microbe Interactions****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 3396271**Author(s)** Courty, Pierre Emmanuel; Smith, Penelope; Koegel, Sally; Redecker, Dirk; Wipf, Daniel**Author(s) at UniBasel** [Courty, Pierre-Emmanuel](#) ; [Koegel, Sally](#) ;**Year** 2015**Title** Inorganic Nitrogen Uptake and Transport in Beneficial Plant Root-Microbe Interactions**Journal** Critical Reviews in Plant Sciences**Volume** 34**Number** 1-3**Pages / Article-Number** 4-16**Keywords** arbuscular mycorrhiza, transport, ectomycorrhiza, inorganic nitrogen, legume rhizobia symbiosis

Arbuscular mycorrhiza (AM), ectomycorrhiza (ECM) and nitrogen (N) fixation through rhizobia symbioses (RS) play a critical role for plant nutrient use efficiency in natural ecosystems, usually characterized by nutrient limitation, especially regarding nitrogen and phosphate. Substantial evidence has accumulated about how the rational use of microsymbionts' properties should significantly contribute to decreasing fertilizer and pesticide use in agriculture and forestry. Understanding the mechanisms underlying high N use efficiency by mycorrhizal/rhizobial plants and carbon allocation in a context of mutualistic biotrophic interactions is critical for managing both croplands and forests while taking care of the ecosystem services rendered by microbial symbionts. Availability, uptake and exchange of nutrients in biotrophic interactions drive plant growth and modulate biomass allocation, and these parameters are central to plant yield, a major outcome in the context of high biomass production. To unravel the symbiotic N "transportome" blueprint from various host plant combinations, it is critical to facilitate the first steps favoring the manipulation of crops toward greater nitrogen use efficiency and mycorrhizal or rhizobial ability. The present review addresses current knowledge on inorganic N transport in mycorrhizal/rhizobial symbiosis.

Publisher Taylor & Francis**ISSN/ISBN** 0735-2689 ; 1549-7836**edoc-URL** <http://edoc.unibas.ch/41543/>**Full Text on edoc** No;**Digital Object Identifier DOI** 10.1080/07352689.2014.897897**ISI-Number** 000343605200003**Document type (ISI)** Review