



# **Study of litter contribution to nitrogen nutrition of trees-temporal dynamics followed by isotopic marking**

Jade Salleles

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## STUDY OF LITTER CONTRIBUTION TO NITROGEN NUTRITION OF TREES – TEMPORAL DYNAMICS FOLLOWED BY ISOTOPIC MARKING

JADE SALLELES

*This paper is the English abstract of: « Étude de la contribution des litières à la nutrition azotée des arbres: Dynamique temporelle suivie par marquage isotopique » – Revue forestière française, 4-2014. <http://documents.irevues.inist.fr/handle/2042/4752>.*

### ABSTRACT

A multiple site and tree age set of in situ  $^{15}\text{N}$  labelled litter experiments were carried out in ten European beech forests to determine what becomes of litter N in the long term. The amount of litter-derived  $^{15}\text{N}$  in the leaves of the labelled trees increased in the first years after the labelled litter was deposited at their foot, and then decreased. These dynamics reflect preferential mineralization of N from fresh litter compared to bulk soil N in the beginning, and then stabilization of litter-derived N in the humus and the mineral soil. Litter  $^{15}\text{N}$  uptake occurs earlier and over a longer period of time in mull sites compared to moder sites. This is in line with the slower activity of decomposers in the moder organic horizons and with the effects of earthworms (aggregation, vertical distribution) in mull sites.

Jade SALLELES

INRA Centre de Nancy-Lorraine  
UR Biogéochimie des écosystèmes forestiers  
F-54280 CHAMPENOUX  
([jade.salleles@nancy.inra.fr](mailto:jade.salleles@nancy.inra.fr))