



Pyrogenic carbon decomposition mixed to different litters : a controlled conditions study

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In a recent study, Wardle et al. (2008) showed that the presence of pyrogenic carbon modified litter decomposition dynamics in soil, for boreal conditions. Pyrogenic carbon corresponds to the organic residues left after the incomplete combustion of vegetal biomass. It presents specific properties in term of biological, physical and chemical stability and might play a major role in biogeochemical cycles of soils.

The decomposition of a mixture of different organic substrates could be very different from the mathematical average of the same substrates decaying alone. Positive interactions (for example mineral N released from one substrate available for the other one) or negative interactions (for example release of molecules with a biocide effect like polyphenols) have been observed.

In an incubation study, we followed decomposition of pyrogenic carbon and of the corresponding original wood (*Picea abies*) mixed (1:1) to different organic substrates (leaves) with different content of nitrogen and polyphenols.

We observed a positive effect of substrates rich in nitrogen on the mixture decomposition and no significant effect with the other substrates. The specific contribution of the char and the wood to the mixture decomposition will be also shown. If confirmed, this mixture interaction would have to be considered in C ecosystem mass balance.