Leaf Litter Nitrogen (N), Soil N Availability and Decomposition Dynamics in Two Puerto Rican Forests. (S07-erickson074830-Poster)

Authors:

- H.E.Erickson* - *Universidad Metropolitana*
- J.E.Compton - *USEPA, Western Ecology Laboratory*

Abstract:

Soil nitrogen (N) availability and litter N may have contrasting effects on decomposition. In particular, soil N availability has been shown to increase, decrease or have little effect on mass loss, while litter N often correlates positively with decay rates, especially in the early stages of decay. We conducted a litter transplant experiment with two types of mixed species litters, high N (1.8%) and low N (1.1%), in two tropical forests of contrasting soil N availability. Both litters had similar and high lignin concentrations (mean = 26.6%). Neither litter N nor soil N availability affected decay rates (average mass loss ~ 45%), suggesting lignin control of early phase mass loss. In contrast, both types of litter retained proportionally more N at the high N site, while the high N litter retained proportionally more N than the low N litter at either site. Thus soil N availability and litter N appear to modify N release in these high lignin materials. We explore additional linkages between carbon and N during the decomposition process by examining changes in delta13C and delta15N in the two leaf litters.

Corresponding Author Information:

Heather Erickson
Universidad Metropolitana
Carr. 176, km 0.3
San Juan, PR 00928

phone: 787-766-1717 x6246
e-mail: um_herickson@suagm.edu

Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 2:00-4:00 pm
Poster Board Number: 1611

Keywords:

litter decomposition, nitrogen dynamics, tropical forests, stable isotopes