Wood Litter, Soil Macrofauna and Nutrients - a Field Experiment on Mulch-based Fire-free Cropping Systems in Central Amazonia. (S03-martius092842-Poster)

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Abstract:

Slash-and-burn combined with shifting cultivation is commonly used in Amazonia to clear land for agriculture. Due to very high element losses during burning, this form of agriculture is not sustainable even with fertilization. Fields are often abandoned after 1-2 yr to allow regeneration of the soil during the fallow period. Fire-free land preparation is a viable alternative. Mechanically cutting and chopping the secondary vegetation produces a mulch layer of wood chips, preserves organic matter and nutrients, and improves crop production. The role of soil fauna, especially whether wood feeding termites are beneficial in the decomposition and nutrient release or act as crop pests, has never been studied. We report on a field experiment near Manaus, Brazil, to investigate the role of the soil macrofauna, with a special focus on termites and ants, in areas of clear-cut and mulched secondary forest, testing 3 treatments: traditional slash and burn as control; slash/no burn, with the logs arranged in files, leaving the litter layer intact; slash and mulch, creating a several cm thick mulch layer of chopped wood. First results are presented.

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