Soil and Litter Quality Influences on Decomposition in Red Oak and Sugar Maple Leaf Mixtures. (S03-gartner171726-Poster)

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Abstract:

Decomposition dynamics of Acer saccharum (sugar maple) and Quercus rubra (red oak) were examined at two sites with calcareous soil (average pH = 6.7 - 7.1) and two sites with acidic soil (average pH = 4.2 - 4.5) in northwestern Connecticut. Litterbags made of fiberglass screen contained sugar maple leaves only, red oak leaves only, or both sugar maple and red oak leaves. In mixed-species bags, equal proportions of each species were used. All litterbags were separated into two components (top and bottom leaf layers) by an additional layer of screen. Leaves from all sites were deployed in situ and as well as at all other sites. As expected, sugar maple had the fastest decay and oak the slowest decay at all sites. Decomposition patterns across sites correlated well with soil temperature and moisture. Differences were observed in decay rates of leaves in the top layer and leaves in the bottom layer of litterbags containing a single species, with the top layer of leaves (less contact with the soil) decaying faster. With the exception of the warmest, wettest, most calcareous site, differences in decay between layers were greatest for leaves decaying in situ.

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