



KEYLINK: An integrative soil model including soil fauna

Gaby Deckmyn, Omar Flores, and Andrea Schnepf

University of Antwerpen, Biology, Belgium (gaby.deckmyn@uantwerpen.be)

In the KEYLINK model we integrate new knowledge on soil structure and its importance for SOM stabilisation and hydrology, with the existing concepts on SOM pools, and elements from the soil faunal food-web models. We provide a selection of equations that can be integrated in most ecosystem models and show how the model outputs change in function of soil texture, t and precipitation. We show how these added equations can improve the functioning of the model in describing known phenomena. For this we simulate test-cases: changing the input quality to shift from a more bacterial dominated to a more fungal dominated system, changing the N content switching from an AM to an EM dominated system, excluding predators, excluding earthworms and thereby influencing soil hydrology and C content and partitioning.