

M24: Getting a grip on soil bioturbation rates

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Tilling is widely used to improve soil structure and enhance yields. However, due to the drawbacks of tillage, e.g. inducement of soil erosion, reduction of the carbon sequestration potential, there is increased attention for natural processes mixing the upper soil layer – bioturbation by roots, tree fall and burrowing animals. Quantifying bioturbation rates is notoriously difficult, hampering assessment of bioturbation as nature based solution for improving soil quality and achieving land-degradation neutrality. In this masterclass, we will introduce novel luminescence-based methods for determining soil mixing rates. Activities of the workshop will include an introduction lecture, excursion to luminescence dating lab, and discussion on feasibility to use bioturbation in soil management.

