



Nest building activity and bioturbation of the ant *Lasius niger* (L.).

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The ants are called ecosystem engineers as they represent a significant group of bioturbation organisms in the soil. The ants can relocate considerable amount of soil material during their nest building activity. We can then record different soil properties inside and outside of the ant nest and thus ants contribute on mediating soil fertility. The ants are group of social insects with complex behavioural patterns which are self-organized.

If we want to know which factors are determining these patterns in the nest building activity, we must study the construction process of the nest itself.

Here, we are presenting the results of the nest building experiment with the ant *Lasius niger* (L.) in artificial formicaria with various combinations of materials. We found a negative effect of the fine material on building the underground structures. The width of the one-way tunnels was positively correlated with the maximum spread of the ant antennae. There was proportionally more excavated volume represented by chambers than by tunnels. The volume of excavated space decreased with the depth of the formicaria. We discuss here the relocation of the material in both vertical directions in our experiment. The ants excavated 56,17 cm³ of the space on the average, which represents 17,38 % of the total volume of the material in the formicaria. Finally, the volume of the excavated space correlated positively with the maximal reached depth of the formicaria as well as with the life span of the ant colony.