



## **Comparison of Nutrient Bioavailability in Fish Compost and in Alternative Composts**

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Low-quality fish, unwanted by-catch and fish residues are produced by fishing and fish processing industries. This waste stream has to be treated to avoid eutrophication of waters or odor and health issues in harbors. In-situ composting could allow stabilization of fish residues and production of nutrient-rich natural fertilizers. Three fish compost piles were produced with different composition and pre-treatment technology. The main objective of the current study was to assess nutrient bioavailability in three fish composts compared to alternative composts.

Pot trial was carried out with fish composts and composts from sewage sludge, yard waste and horse manure. All composts were produced similarly in open compost piles in at least 10 cubic meters scale in 2018. Compost piles were monitored and composts were regularly mixed for better gas exchange and for homogeneity.

To prepare substrates, two different types of soil were used, brown lessive and pseudopodzolic soil. Nutrient content of 2 soils and 6 composts were measured separately. The growth substrates were composed in different soil and compost ratios, taking into account their nitrogen content.

Pot experiment was conducted in one week with Garden cress (*Lepidium sativum*) and two weeks with bean (*Phaseolus vulgaris*). To provide controlled environment, the trial was held in a growth chamber. After the experiment the biomass and nutrient composition of plant green mass and roots were determined.

To assess different phosphorus (P) forms, including bioavailable P, sequential extraction method of Psenner et al. (1988) was applied on soil and on compost materials.

**Keywords:** Pot trial, fish waste, sewage, manure, yard waste