Adubater: Biofertilizer Derived from Aquatic Weeds

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Aquatic weeds are classified as an economic, ecological and health problem due to their invasive behavior on aquatic ecosystems. In this work, the vegetal biomass of Eichhornia crassipes, P. stratiotes, Salvinia molesta from Laguna Campamento San Pedro Balancán, Tabasco, Mexico was proceeded through an aerobic composting of 77 days with the objective of evaluating its potential as a raw material in the elaboration of an biofertilizer with the minimum quality requirements of a substrate (fertility and heavy metals), able to promote the germination and growth of vegetables in clay soils. The physicochemical characterization and the analysis of arsenic, cadmium and lead of the substrate obtained was carried out. The efficiency of the substrate in clay soils was inspected through a germination test with habanero pepper (Capsicum chinense) and a growth test of lentil seedlings (Lens esculenta). The results of the physicochemical characterization according to NOM-021-SEMARNAT-2000 suggest that Adubater has adequate levels of fertility (high content of organic matter and nutrients). The concentration of arsenic, cadmium and lead detected in the substrate did not exceed the maximum permissible limits established by the international standard EPA-503 and EPA-2006 with values of 2.12, 0.010 and 5.5 mg / kg respectively. On the other hand, statistically the use of Adubater at 50% improved to 63.33% the percentage of germination of Capsicum chinense; while the use of the 75% substrate allowed obtaining more vigorous seedlings in the aerial part and root.

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