

Co-Composting of Poultry Manure with Different Organic Amendments

Authors : M. E. Silva, I. Brás

Abstract : To study the influence of different organic amendments on the quality of poultry manure compost, three pilot composting trials were carried out with different mixes: poultry manure/carcasse meal/ashes/grape pomace (Pile 1), poultry manure/ cellulosic sludge (Pile 2) and poultry manure (Pile 3). For all piles, wood chips were applied as bulking agent. The process was monitored, over time, by evaluating standard physical and chemical parameters, such as, pH, electric conductivity, moisture, organic matter and ash content, total carbon and total nitrogen content, carbon/nitrogen ratio (C/N) and content in mineral elements. Piles 1 and 2 reached a thermophilic phase, however having different trends. Pile 1 reached this phase earlier than Pile 2. For both, the pH showed a slight alkaline character and the electric conductivity was lower than 2 mS/cm. Also, the initial C/N value was 22 and reached values lower than 15 at the end of composting process. The total N content of the Pile 1 increased slightly during composting, in contrast with the others piles. At the end of composting process, the phosphorus content ranged between 54 and 236 mg/kg dry matter, for Pile 2 and 3, respectively. Generally, the Piles 1 and 3 exhibited similar heavy metals content. This study showed that organic amendments can be used as carbon source, given that the final composts presented parameters within the range of those recommended in the 2nd Draft of EU regulation proposal (DG Env.A.2 2001) for compost quality.

Keywords : co-composting, compost quality, organic ammendment, poultry manure

Conference Title : ICEWM 2016 : International Conference on Environment and Waste Management

Conference Location : Barcelona, Spain

Conference Dates : August 11-12, 2016