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عنوان مقاله:

Evaluation of microbial activity, N-NH۳ and CO۲ losses in poultry litter treated with basalt rock powder

محل انتشار:

مجله بین المللی بازیافت مواد آلی در کشاورزی, دوره 12, شماره 1 (سال: 1402)

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خلاصه مقاله:

Purpose Poultry litter (PL) and basalt rock powder (BRP) are raw materials highly produced in some Brazilian regions. The association of these products can generate greater added value for the agribusiness chain and be a sustainable source of fertilizer.Method The experiment consisted of an incubation trial over time for chemical characterization of the materials. The treatments used were the mixtures ۱۰, ۲۰, ۳۰, ۴۰, and ۵۰ g of BRP per ۱۰۰ g of PL, as well as the pure PL and BRP controls. During the incubation period, the atmospheric releases of CO۲ (۴۰ days) and N-NH۳ (۴۳ days) were determined. At the end of the process, the chemical quantification of the essential elements in all treatments was performed.Results In our study, we observed that adding ۳۰% of BRP to the PL promoted less volatilization and a faster stabilization of the N-NH۳ release, associated with a greater release of CO۲ into the atmosphere. The extractable P and K contents decreased starting with treatment T۳۰. The T۱۰ treatment showed the highest total nutrient contents, although it showed no statistical difference for some nutrients when compared with PL.Conclusion The use of up to ۳۰% of BRP in PL can be an economic and advantageous alternative for sustainable .agricultural fertilization

کلمات کلیدی:

Ammonium, Organic Fertilizer, Sustainability, BRP, composting

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