Evaluation of Liquid and Solid Bio-Fertilizer as Energy Disposals from Biomass Degraded by Bio-Digestion in the Production of Horticultural Bedding Plants at the Department of Agricultural Sciences – Cordoba - Argentina

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Abstract

The use of bio-digesters is a clear example of Socially Appropriate Technology, generating biogas at domestic or commercial scale plus liquid and solid bio-fertilizer. Bio-digestion is a natural process that corresponds to the anaerobic cycle of carbon, actioned and combined with different groups of bacteria in total absence of oxygen, using organic materials to feed and reproduce. In this digestion it is possible to identify two type of products as fertilizers: the liquid bio fertilizer called "boil" (effluent) and the solid bio fertilizer called "biosol" (digested mud). This bio-factors promote the growth of vegetables and can be apply both to the foliage as to the seed through imbibition. The main purpose of this paper is to evaluate the behavior of liquid and solid bio-fertilizer, coming from the biomass of solid urban disposals (SUD) on the germination and growth of horticultural bedding seeds.

Five experiments for the biol were proposed, T1: 100% Water, T2, 75% Water and 25% Biol, T3: 50% Water and 50% Biol, T4: 25% Water and 75% Biol and T5: 100% biol. For the biosol, the experiments were T1: 100% Water, T2, 75% Water and 25% Biosol, T3: 50% Water and 50% Biosol, T4: 25% Water and 75% Biosol and T5: 100% Biolsol.

Even though both bio-fertilizers energetically promote higher growth of bedding seeds and higher percentages of germination, the doses used are different depending whether it is liquid or solid. The solid urban disposals provide a residual biomass with an important biological potential to improve degraded soils and horticultural or bio-intensive production.

Keywords: *bio-fertilizer, bio-digestion, germination, bedding seed growth, bio-production.*