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Fungal pellets of *Anthracophyllum discolor* with different formulations to improve biological activities in a biomixture under atrazine application

S. Elgueta[1,2], G. Cofre[1], R. Mella-Herrera[1], G. Tortella[1], C. Santos[2], N. Lima[2], M.C. Diez[3]

[1]Centre of Environmental Biotechnology, BIOREN, Universidad de La Frontera, Chile; [2]IBB/Centre of Biological Engineering, University of Minho, Braga, Portugal; [3]Chemical Engineering Department, Universidad de La Frontera, Chile

White-rot fungi are well known as pesticides degarder due to their ligninolytic enzymes and can be used for bioaugmentation to improve the biodegradation of organic contaminants in the soil. One of the barriers to successful implementation of fungal bioaugmentation is the development of inexpensive and high quality fungal pellets. Furthermore, the effect of fungal pellets on biological activities and microbial communities in biomixture is scarcely known. Biologically active soils (biobeds) are made with a biomixture of lignocellulosic supports, peat and soil to offer an alternative method for pesticide wastes treatment, spraying tank remnants and washates. They are simple to operate and cost effective on-farm systems in which the efficiency is based on their increase capacity to retain and microbially degrade pesticides. Therefore, the aim of this study is evaluate the effect of different formulations of fungal pellets in a biomixture contaminated with the atrazine pesticide. The fungal pellets of *Anthracophyllum discolor* were formulated with 3 different supports, based on lignocellulosic, oligosaccharides and salt (F1, F2, F3) materials. The biomixture was prepared by mixing an allophonic top soil (Andisol), commercial peat, wheat and barley straw in a volumetric proportion of 1:1:1:1 and was inoculated with the three differents formulated fungal pellets of *Anthracophyllum discolor* (10% w/w). The biomixture was contaminated with 60 mg Kg^{-1} of atrazine. After 30 days of incubation at 20 ºC, the total ligninolytic enzyme activity, fluorescein diacetate activity (FDA) and respiratory activity were studied. The concentration of atrazine was measured by HPLC. The biodegradation of atrazine was 99% for F1 and 95% for F2 and F3 supports, being slightly higher (5%) than the control (biomixture non-inoculated with fungal pellets). At 30th day the FDA activity was similar for all supports; the respiration (8866 ± 201.33 mg CO_2 g^{-1}) and total ligninolytic enzyme activity (0.78± 0.1 U kg^{-1}) were higher for support F1 when compared with F2 (8393±204.2 mg CO_2 g^{-1}; 0.54± 0.1 U kg^{-1}) and F3 (8371±190.1 mg CO_2 g^{-1}; 0.48± 0.1 U kg^{-1}). In conclusion, the formulation F1 promotes better performance as support for fungal pellets to be used on biomixtures contaminated with atrazine pesticide.