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PRELIMINARY ECOTOXICOLOGICAL EVALUATION OF ERYTHROSIN B AND ITS PHOTOCATALYTIC DEGRADATION PRODUCTS

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Abstract

The class of xanthene dyes has a complex chemical structure, which showed to be toxic for mixed culture of microorganisms (i.e. anaerobic granular sludge). Because of the unwanted effects of Erythrosin B (Ery B) on environmental components and some food confirmed previously, the dye was chosen in this study to evaluate its ecotoxicity. Also, the Ery B photocatalytic degradation products were assessed in terms of their ecotoxicity.
Three-days of seed germination and root growth tests were conducted using a dicotyledonous plant that is the garden cress (*Lepidium sativum* L.), in the presence of different dye concentration and its photodegradation products. Dye affected mostly the roots of the plant. According to toxic effects on root growth, toxicity of the dye indicated a 72h exposition average Effective Concentration EC_{50} value corresponding to 25 mgL^{-1} Ery B.
The presence of the Ery B photocatalytic degradation products in the aqueous solution leads to a higher efficiency on *Lepidium sativum* L. germination, favoring the stem length growth.

Key words: dye degradation, *Lepidium sativum* L., toxicity test

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