

**TITLE:** Biodegradation by microbial consortium of bentazone and carbofuran in water

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## **ABSTRACT**

The growing demand for the use of agrochemicals in agricultural crops has been corroborated for the contamination of several environments. Some microorganisms are able to degrade these compounds, reducing their toxicity, in this context, biodegradation becomes one of the best alternatives to minimize the environmental impacts of pesticides. In this study the potential of autochthonous microorganisms for biodegradation of Furadan® and Basagran® pesticides was tested. Water samples were collected at two points of irrigated rice near rivers in the city of Joinville-SC and stored in Duran flasks. An aliquot of 100 µL of these samples was inoculated into solid LB medium and incubated at 30 ° C for 48h. The biodegradation samples are performed with three concentrations of the compounds studied (100 µL, 250 µL and 500 µL), with a negative control (only with pesticide) and a positive control (only with microorganisms), carried out in Erlenmeyer flasks, containing LB liquid with and without glucose addition (3 g/L) incubated at 30°C and 150 rpm. The consumption tests of the pesticides tested will be by High Performance Liquid Chromatography (HPLC) and glucose consumption will be monitored by the DNS technique. The preliminary results with Furadan® had few or none interference on the growth of microorganisms at all concentrations tested, indicating a potential for the biodegradation of this compound. For Basagran®, there was an initial reduction in microbial growth as soon as the compound was added to the culture media, mainly in the highest concentration, but it was reversed and the microbial population had already been reestablished within 24 hours. After the biodegradation processes, acute ecotoxicity tests will be carried out using the organism *Daphnia magna*.

**Keywords:**, microorganisms, biodegradation, rice culture.