

## DEGRADATION OF ATRAZINE BY FILAMENTOUS FUNGI

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Atrazine is one of the most widely used herbicide in the world, and is considered to be relatively recalcitrant in subsurface saturated and insaturated zones. Once a soil has been contaminated with s-triazine herbicides, the major pathways of dissipation include the biodegradation. Microorganisms have a finite capacity to recycle synthetic organic molecules, and the classical approach to the demonstration of biodegradability has been the enrichment culture method, with the test substrate serving as substrate.

Two types of soil (natural forest and a soil with previous history of application of atrazine) were supplemented with atrazine ( $70,350$  and  $700 \mu\text{g/ml}^{-1}$ ) and incubated at  $28^\circ\text{C}$  for 21 days. A total of 33 fungi were isolated in culture medium containing atrazine. These strains were grown in liquid medium supplemented with atrazine in order to evaluate the capacity of degradation. These strains belonging to the genus *Penicillium*, *Eupenicillium*, *Dematiacium* and *Trichoderma* grew faster, producing greater amount of biomass using atrazine as substrate. The quantitative determination of the residues was carried out by GC after the extraction and purification of the samples with ethyl acetate. All fungal strains degraded atrazine. *P. crustacium* degraded more than 90% of atrazine and it grows in high concentration (3.000 ppm) of the herbicide. Also, one fungal strain produced high activity of intracellular and extracellular enzymes when atrazine was added.