

ABSTRACT

THE IDENTIFICATION AND CHARACTERIZATION OF PROPARGYL BROMIDE DEGRADERS

Environmental concerns over the ozone-depleting nature of methyl bromide, a powerful soil fumigant, have led to a worldwide effort to discontinue its use. The impending phase-out of methyl bromide necessitates the development of a replacement fumigant. Propargyl bromide is a promising alternative to methyl bromide, and initial studies indicate it is very effective against soil-dwelling pests. However, all pesticides pose potential environmental harm, and minimizing this risk is essential. This study focuses on the characterization of microorganisms able to use propargyl bromide as a sole carbon source. This raises the possibility that these organisms can be used to degrade residual propargyl bromide in the soil, a process known as bioremediation. These microorganisms were isolated from propargyl bromide treated soils, and initial studies showed enhanced degradation of propargyl bromide by the organisms. Identification techniques revealed that all degrader species isolated belong to the Phylum Proteobacteria.

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