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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

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United States Patent

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David J. Kappas

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(12) **United States Patent**
Hrsak et al.

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(54) **MIXED BACTERIAL CULTURE FOR**
ATRAZINE DEGRADATION

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C02F 3/00 (2006.01)

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(58) **Field of Classification Search** 210/611,
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See application file for complete search history.

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(57) **ABSTRACT**

The present invention provides a mixed bacterial culture, designated as the culture Atz Mix 1, which degrades atrazine at various temperatures (10° C. to 30° C.) in a wide range of atrazine concentrations (several ppb to ten thousand ppm), without formation of toxic metabolites. Atz Mix 1 is a stable mixed culture and includes catabolic genes *trzN*, *atzB*, *atzC* coding the enzymes for the degradation of atrazine to cyanuric acid, and the gene *trzD* coding the enzymes for subsequent opening of s-triazine ring. The invention further includes a microbiological method of degrading atrazine and other s-triazine compounds for remediation of atrazine-contaminated soils, even those rich in nitrogen, as well as for accelerating the process of atrazine mineralization in waste waters containing high concentrations of s-triazine compounds.

16 Claims, 5 Drawing Sheets

