



**ICEEM/02 – ENVIRONMENTAL ENGINEERING
SECTION**

”Solid Waste Treatment”

**PRODUCTION OF TARTRIC ACID
FROM WINE YEAST VIA REACTIVE EXTRACTION**

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Abstract

The researches presented in this study include the optimization of the basic technological operations, while producing the tartaric acid and the elaboration of a new procedure to obtain it from the wine yeast.

Two basic technological operations were studied: the dissolution of the tartaric compounds from the secondary wine products and the reactive extraction of the tartaric acid from a watery milieu. Further on, the above-mentioned procedures were changed and improved using mathematical tools. Based on the experimental results, two empiric mathematical models were elaborated for the dissolution of the tartaric compounds from the wine wastes and extraction of the tartaric acid from a watery milieu, which offered the possibility to improve the performance of these procedures and to establish the optimal conditions in order to accomplish the listed procedures.

The process of extraction of the tartaric acid was performed using a system from the group of the secondary amines (Amberlite LA-2), that are soluble in the organic solvents (butyl acetate), that offered us a new way of separation of the tartaric acid. The laws of the mechanism of the process of extraction have been studied both on a model and real system. A new method of crystallization of the tartaric acid made from an azeotropic mixture formed at the introduction into the watery solution of the O-xyleinum, an organic solvent in which the tartaric acid is practically unsolvable was proposed. When the extraction of the water from the system is made, the tartaric acid starts to crystallize. As a consequence, the technological scheme of obtaining the acid from the wine yeast and the economical account in order to establish the cost price of 1kg of tartaric acid acquired via the classic technique and the method of reactive extraction with a change of ions.

Keywords: secondary wine products, tartaric acid, Amberlite LA-2, the modelling of the process, reactive extraction

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