

**OPTIMIZATION OF PARAMETERS FOR MAXIMUM EXTRACTION OF SUGAR,
BY USING PECTINASE AND CELLULASE FROM KABKAB DATE
FRUIT USING RESPONSE SURFACE METHODOLOGY**

ASHWINIGANGURDE¹, HEEBA S² & S. ELIZABETHAMUDHINI STEPHEN³

^{1,2}Department of Food Processing and Engineering, Karunya Institute of Technology and Sciences,
Coimbatore, Tamil Nadu, India

³Associate Professor in Mathematics, Karunya University, Coimbatore, Tamil Nadu, India

ABSTRACT

There are about 400 varieties of dates known in Iran, but only few of them are commercially important. The present study focuses on enzymatic extraction of sugar from Kabkab Date Fruit. Enzymes are integral part of extraction and highly suitable for optimizing processes. Pectinases and cellulases are known enzymes, for facilitating juice extraction from different fruits. These enzymes were used in the present study, for evaluating their effectiveness in sugar extraction process from date fruits. Comparison of combination of both enzymes Pectinex® Smash XXL and Cellubrix® L, with untreated date fruit, at temperature range of 40-62°C showed that, the amount of extracted sugar were effected by enzymatic treatment. This study applied the Response Surface Methodology, to determine optimum extraction condition to produce a high yield of sugar. The highest yield of sugar was obtained at pH 7.5 and temperature 62 °C.

KEYWORDS: Pectinase, Cellulase, Sugar Extraction & Enzyme Treatment