

## Enzymatic Esterification of Sardine Oil Processed in Morocco

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**Abstract :** The global objective of this study is to upgrade the sardine oil processed in Morocco by using enzymatic solutions. The specific objective of this part of study is to optimize the various parameters involved in enzymatic deacidification of fish oil processed in Morocco: pressure, ratio of oil/novozymes 435, ratio of oil/glycerol, temperature. The best deacidification yields were obtained with: -A temperature of 70 °C; -A ratio -Oil/Glycerol: 2% (% P); -A ratio -Oil/Novozyme 435: 1% (% P); -A pressure: 15 to 25 mbar. On the other hand, the study of the effect of initial oil acidity showed that whatever the acidity of the oil studied (very acidic, or low acidic), the final yields are high. Acidity does not reduce the reaction efficiency. From an industrial point of view, this represents a competitive advantage to consider. This eco-friendly enzymatic solution may allow Moroccan fish oil producers to achieve acid number values that meet the standard.

**Keywords :** sardine oil, enzymatic esterification, desacidification, acid number

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