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## A COMPREHENSIVE BIBLIOMETRIC OVERVIEW ON THE TOXICITY OF TEXTILE DYES: 2010-2024

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### Abstract

There is a growing awareness in the literature of the potential hazards of dyestuffs in wastewater, particularly their toxicity and carcinogenic effects on aquatic life. This has led to an increasing focus on the need for alternative treatment methods in response to these concerns. This study, therefore, aims to conduct a bibliometric analysis utilizing the Scopus database, focusing on the keywords "toxicity", "dye", and "textile" to identify research trends, track research hotspots, and determine future research directions from 2010 to April 30, 2024. Bibliometric indicators and visual representation maps were used to analyse the retrieved data quantitatively and qualitatively. The results indicated that most studies were conducted using laboratory-prepared wastewater with a rate of 75%. It was also found that research on the acute toxicity of textile wastewater is mainly carried out with real wastewater. The leading journals for research in this area were found to be "Chemosphere", "Environmental Science and Pollution Research" and "Journal of Hazardous Materials" with the countries of India and Brazil ranked first and second in the number of articles published. In addition, current regulations and procedures for wastewater treatment were examined, and several potential future study opportunities for researchers were suggested. The findings show that bibliometric analysis is a practical approach to measure research hotspots and trends both qualitatively and statistically.

*Key words:* acute toxicity, bibliometric analysis, chronic toxicity, textile dye, VOSViewer

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