Environmental Engineering and Management Journal

November 2022, Vol. 21, No. 11, 1761-1771 http://www.eemj.icpm.tuiasi.ro/; http://www.eemj.eu http://doi.org/10.30638/eemj.2022.157



"Gheorghe Asachi" Technical University of Iasi, Romania



## ENVIRONMENTAL RELEVANCE OF PHOSPHORUS LEGACY IN SOIL: A 78-YEAR RETROSPECTIVE BIBLIOMETRIC ANALYSIS OF SOIL PHOSPHORUS SORPTION

## Giulliana Karine Gabriel Cunha, Karina Patrícia Vieira da Cunha\*

Federal University of Rio Grande do Norte, Department of Civil and Environmental Engineering, Technology Center, Natal, RN, Brazil, Postal code: 59078900

## Abstract

Phosphorus (P) sorption in soil has been widely discussed, with a focus on agricultural soils. However, the problem generated by phosphorus saturation in soils goes beyond this. Excessive input of this element into water accelerates the process of eutrophication, threatening water security. Identifying patterns and gaps in scientific research on phosphorus sorption in soils can show direction and ensure advances on the subject. A bibliometric analysis in the Web of Science - Science Citation Index was performed in conjunction with cluster analysis to map global trends. A total of 20,662 articles from 1945-2023 were analyzed. China and USA led the number of publications. China's collaboration in Environmental Sciences was the most significant. Environmental Science and Environmental Engineering were the most popular subject categories. The Environmental Sciences category became expressive from 2005 onwards. Our study showed a broad historical legacy of agricultural sciences, focusing on improving the efficiency of phosphate fertilization. More recent studies are beginning to look at the interest of environmental sciences, where the focus is on the management of water resources. There is a long way to go in applying the multidisciplinary knowledge generated about phosphorus sorption in soil to solve problems that threaten water security.

Key words: adsorption phosphorus, fertilizer, phosphate, research trends

Received: April, 2022; Revised final: September, 2022; Accepted: October, 2022; Published in final edited form: November, 2022

<sup>\*</sup> Author to whom all correspondence should be addressed: e-mail: cunhakpv@yahoo.com.br