A Bibliometric Analysis: Research Progress Arabica Coffee Postharvest in 2021-2023 from ScienceDirect

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ABSTRACT

Research in the field of coffee has been very much. Post-harvest processing techniques for coffee are very important and affect the quality and taste of coffee. This study aims to look at research trends related to post-harvest coffee. This study obtained the database from ScienceDirect and performed a bibliometric analysis. Research data was taken starting from 2021 to 2023. Based on the results of a biblometric analysis, from 2021-2023 there have been 161 studies related to post-harvest coffee arabica from science direct. From this study, it was found that research trends related to post-harvest coffee were still minimal from 2021 to 2023 so it needed to be developed further. In this study, it was also found that the most coffee-related journal publication titles were food chemistry. Meanwhile, the authors who have published the most coffee-related studies are Schawan, Rosane Freitas with a total of 7 journals.

Keywords: Bibliometric analysis, ScienceDirect, Post-harvest coffee

INTRODUCTION

Coffee is one of the most popular drinks in the world, daily consumption of coffee is estimated at around 2 billion cups of coffee at the world level (Li et al., 2021). Coffea arabica is the most widely produced type of coffee in the world, around 60-63%, and has a superior taste compared to other types of coffee (da Silva et al., 2021; Minh et al., 2023). The postharvest processing of coffee is one way that affected the taste of the coffee produced (Caporaso et al., 2022; Kim et al., 2022). Postharvest is a key step to obtaining a high-quality final product (Cortés-Macías et al., 2022). To find out the progress of research on postharvest coffee processes to date and identify future research directions, it is necessary to carry out a bibliometric analysis. This paper will provide a systematic analysis and information on the current status of coffee research and development trends in this area to help scholars in capturing the latest advances and identify future research direction.

The term bibliometrics was first coined by Alan Pritchard in 1969 to refer to the application of mathematics and statistical methods to the analysis of scientific publications. Even before the term was introduced, Cole and Eales (1917) and Wilson and Fred (1935) conducted quantitative analyses of published information in the scientific literature (Yafetto, 2022). Bibliometric analysis is a powerful tool to explore and analyze the scientific data in published articles and reveal the progress and emerging areas of a specific field (Jiang et al., 2023). This bibliometric analysis uses scientific data that has been published in ScienceDirect. ScienceDirect is a full-text database offering journal articles and book chapters from more than 4770 journals and 34225 books.

This database uses a federated search mechanism, which is a single search portal to search and retrieve results from several electronic resources at once. Meta-searching or broadcast searching are other terms commonly used for this search mechanism. ScienceDirect uses natural language searching similar to a Google search. It does not have a controlled vocabulary like PubMed's Medical Subject Headings (MeSH). The advanced search feature allows searching by author, title, volume, issue, and page, similar to PubMed's

Single Citation Matcher.

METHODOLOGY

Data Sources

In this study, we selected records taken from ScienceDirect as the data source. The selected research data use keywords, namely postharvest Arabica coffee. The data taken in this bibliometric analysis starts from 2021 to 2023. The type of data taken is only in the form of research articles. Data is taken in RIS form and processed using VosViewer.

Bibliometric analysis

VOSviewer is a software tool for constructing and analyzing bibliometric networks from the scientific literature. VOSviewer creates networks based on co-authorship, co-citation, bibliographic coupling, or term co-occurrence, and visualizes them using the VOS algo rhythm that optimizes the correspondence between network distances and item similarities (Jiang et al., 2023). It also calculates various indicators to assess the centrality, business, novelty, and diversity of each cluster (Wang & Wang, 2022). The tools offer users flexibility in adjusting the parameters of network analysis and visualization.

This bibliometric study uses VOSviewer (version 1.6.19.0) to visualize and analyze the final data taken from ScienceDirect. This research consists of three parts: an analysis of postharvest coffee publication trends, an analysis of journal publications, analysis of the number of journals published from 2021 to 2023. The bibliometric analysis chart depicts the relationship between two or more items with a link strength value indicating the level of relationship between items (Zhang et al., 2018).

RESULT AND DISCUSSION

Analysis of postharvest coffee publication trends in 2021-2023

Based on the results of the bibliometric analysis in Figure 1. it can be seen that research related to coffee starting in 2021 to 2023 has been carried out a lot, including those related to roasting, volatile components, fermentation processes, and post-harvest processing processes. Recent coffee research (2023) was carried out which is marked in yellow in Figure 1. namely acrylamide compounds in coffee, volatile components in coffee, coffee geography, and amino acid content to coffee taste tests. As for coffee research on the post-harvest process, it will be mostly carried out in 2022 and still in small quantities, this is indicated by the small size of the circles in Figure 1. Thus, from this bibliometric analysis, topics related to post-harvest processes in coffee still need to be further developed to get up-to-date information related to the post-harvest process of coffee.

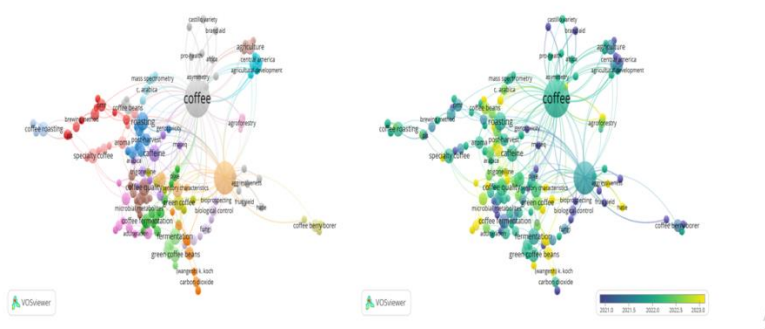Figure 1. Postharvest coffee publication trends in 2021-2023

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Analysis of journal publications and the number of journals published from 2021 to 2023

Based on Figure 2. the results of the bibliometric analysis show that 25 types of journal publications make articles related to coffee. From the results of the analysis, it was found that food chemistry published the most journals, namely 21 journals that had been published starting in 2021 to 2023. Then followed by the publication of LWT journals with as many as 8 published journals. Meanwhile, the type of journal that has the least publication related to coffee in 2021 to 2023 is the Energy Conversion and Management journal.
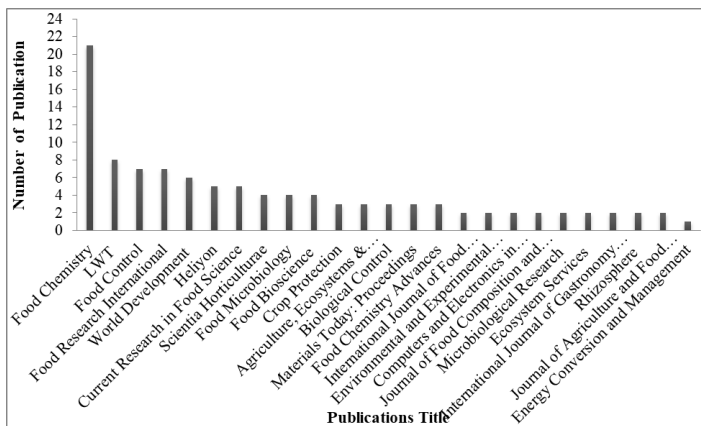
Figure 2. Number of journal publications in 2021-2023

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Based on Figure 3. From the results of this bibliometric analysis, it was found that in 2021 as many as 49 journals in the field of coffee have been published. In 2022, 64 coffee-related journals will be published and in 2023, 36 coffee-related journals will be published. From this data, it can be seen that the highest year that published a journal in the field of coffee was 2023.

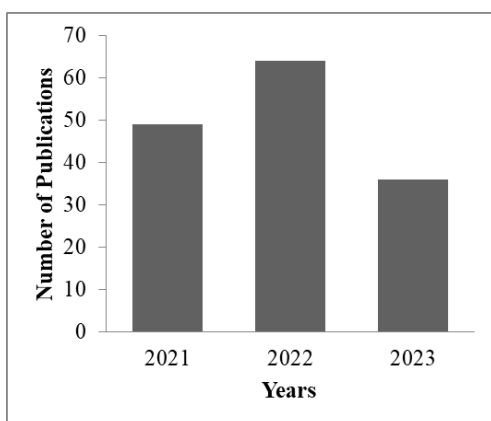Figure 3. Number of journals published from 2021-2023

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Analysis of top authors' productivity level in 2021-2023

Based on Figure 4. it is found that the highest level of author productivity in publishing journals in the field of coffee is Schawan, Rosane Freitas; Batista, nadia nara; Pereira, Lucas Louzada; Dias, Disney Ribeiro; Guarconigerio Carvalho; Martinez, Silvia Juliana; Murthy, Pushpa S.; Prakash, Inderjit and Donis-Gonzales, Irwin R. however, of these authors who have published the most journals in the field of coffee from 2021 to 2023, namely Schawan, Rosane Freitas with a total of 7 journals.

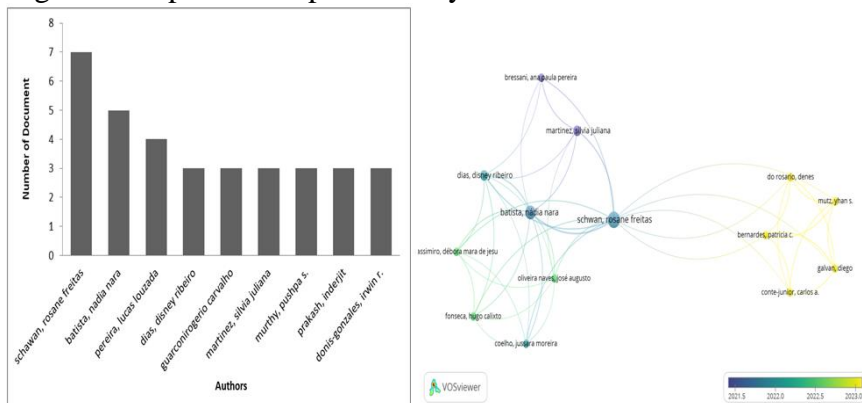Figure 4. Top Authors' productivity level in 2021-2023

Figure 4. Top Authors' productivity level in 2021-2023

CONCLUSION

In this paper, we present the use of data from ScienceDirect for bibliometric analysis. This study aims to find out the trend of post-harvest research on coffee from 2021 to 2023. From the results of the study, it was found that, for post-harvest research on coffee, there is still minimal evidence of the Vos Viewer visualization form, so further research is needed to complete information related to post-harvest coffee. In this study, it was also found that the title of the journal published a lot of articles related to coffee as food chemistry. Meanwhile, the authors who published the most coffee-related articles were Schawan, Rosane Freitas.

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