

Bibliometric On Date Palm (*Phoenix Dactylifera.L*) In Journal Article From 2017 Until 2021

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Abstract

The date palm is the major output, and several processing methods, including drying, may be used to make it and give advantages to human. The quantity of journal articles about dates

has increased every year. In 2006, a bibliometric analysis of date palms was completed. In order to complete the prior bibliometric study, this research was conducted, and it gathered significant journal articles from 2017 to 2021. Finding the demographic review and research area on Date Palm in journal papers for future research objectives was the main goal of the study. The results of earlier studies on research linked to date palms are examined in this study using bibliometric analysis. A total of 154 journal articles were gathered and examined based on a number of criteria, including language, informational reliability, publication year, subject coverage, and journal publishing. The study's findings revealed that English research articles predominated over Malay ones. The best website to find scientific studies about dates is sciencedirect.com. While 2020 collected 42 journal articles (27% of the total), that year. This study has conducted a number of studies on the application of date palms in a variety of industries, including science, technology, agriculture, nutrition and medicine.

Keywords: Bibliometric Analysis, Date Palm, Journal Articles Analysis, Phoenix Dactylifera.L, Scoping Review.

INTRODUCTION

Studies based on publication can be used to evaluate the output of research across a range of fields. In addition, by creating research on publishing, researchers can decide which study is most important. This study will evaluate date palm based on articles by field or discipline research from 2017 to 2021. Numerous valuable items for humans are produced by date palms. The primary product is the date palm, which may be eaten both fresh and dry as well as processed in various ways. The use of date palms in science, technology, cosmetics, or medicine has indeed always been subject of numerous studies by researchers.

Any research that is created and used as scholarly materials in an article published in any profession must have a reliable scientific reference. Researchers will assess and conduct further research on this article as they explore deeper into the subject of dates. This is due to the fact that going through the screening and expert review processes to ensure that the content is published not only complies with the requirements for publishing scholarly materials or journals, but also guarantees that the data is published.

Many different questions in the sciences and humanities can be answered using this method of research, both statistically and qualitatively. For instance, bibliometrics can be used to analyse the content of literature. As a result, these publications will help society obtain access to knowledge based on a compilation of journal articles about date palms throughout a five-year period. (Phoenix Dactylifera L).

PROBLEM STATEMENT

Dates have a long history of being prized for both their nutritional value and their unique phytomedicinal properties, which can be used to treat a wide range of ailments. Researchers in the fields of nutrition, medicine, aesthetics, or even health have published articles. Date fruits are high in alkaloids, protein, carbohydrate, fatty acids (linoleic, lauric, palmitic, and stearic acid), carotenoids, vitamins, polyphenolic compounds, flavonoids, and tannins in addition to several minerals like potassium, calcium, magnesium, and phosphorus. (Qadir, Shakeel, Ali, & Faiyazuddin, 2020).

It has been the subject of numerous bibliometric research to examine the features of various literary collections. This method can be used to spot trends in publishing, knowledge expansion across numerous domains, and research tendencies. The various definitions of the term "bibliometrics" that have been used in the literature are examined and rated. By

examining citations that demonstrate the flow of documentary material across many domains, we can gain a better understanding of the production and exchange of knowledge in the scientific realm. Therefore, the primary themes, areas of interest, and potential future developments of a body of literature can be identified by a demographic analysis of that body of literature. (Anwar, 2006).

The date palm, however, was the subject of the 2006 bibliometric analysis's concluding conclusion. The literature review of those studies revealed that starting in 1971, research on *Phoenix dactylifera* L grew quickly, peaked in 1989, and then stabilised (Anwar, 2006). This assertion demonstrated the ten-year-old study of date palm bibliometrics. Therefore, this article tends to determine the demographics review of the journal articles on the Date Palm from 2017 until 2021, and identify the research areas on Date Palm in journal articles from that period of time.

LITERATURE REVIEW

Among studies that have emphasised the date palm (*Phoenix Dactylifera* L). Qadir et al., (2020) stated that date palm is a source of alkaloids, protein, carbohydrates, fatty acids (linoleic, lauric, palmitic, and stearic acid), carotenoids, vitamins, polyphenolic compounds, flavonoids, and tannins, as well as various nutrients like potassium, calcium, magnesium, and phosphorus. They have a larger impact on human health since they include a variety of phytochemicals.

In Adeosun et al. (2016), date palm seed is high in flavonoids, a category of polyphenolic anti-oxidants that are presumably responsible for the substantial free radical scavenging properties. This study aimed to examine the phytochemical, mineral, and antioxidant profiles of the date palm seed based on documented relationships between plant composition and their medicinal or biological effects. Their findings show that date seeds contain a wide range of phytochemicals and essential minerals such as potassium and calcium and are capable of eliciting notable free radical buffering effects.

On the other hand, Abuelgassim et al. (2020) clarified that palm date seeds (PDS) extracts possess good antioxidant and antibacterial activity, and therefore could be effectively used as a natural source of antioxidants and to be detected against gram-positive bacteria. Their findings clearly showed that PDS extracts possess a powerful antioxidant potential and potentially scavenged different sources of free radicals. PDS extracts also exerted good antibacterial activity, especially against gram-positive bacteria.

In Karra et al. (2020), indicated that male date palm flowers (MDPF) could be an excellent source of minerals and amino acids, given its wealth in macro and microelement satisfying the human body requirements and in essential amino acids that exceed the references values. Indeed, the MDPF was rich in glutamate. This research used the quantitative and qualitative analysis (LC-ESI-MS) of phenolic acids and flavonoids led to the identification of 18 phenolic compounds that were dominated by quinic acid (84.52%). Results showed that MDPF is an excellent source of minerals especially regarding its high potassium and phosphorus contents (2684.23 and 318.66 mg/100 g, respectively).

The research by Asim et al. (2020) observed that incorporation of 50% DPF loading improved tensile modulus and impact properties but reduce tensile strength, flexural strength, and modulus. The obtained results concluded that 50% DPF composites have better mechanical and thermal properties with better interfacial bonding between fibres and matrix. Other research by Mia et al. (2020) stated that in vitro, in vivo, and human study-based evidence of date palm as an anti-diabetic fruit is summarized using different databases,

including PubMed, Scopus, and Google Scholar. These results suggest that date leaves have potential roles in lowering plasma glucose, HbA1c, regulating lipid profile, protecting haematological parameters and, subsequently, improving diabetes and diabetes-associated complications in animal models. Świąder et al. (2020) studied about date varieties, their characteristics, and stages of ripening by using qualitative analysis had found the cultivation of dates in the regions of the Arabian Peninsula, North Africa, and the Middle East and the main source of income, and dates are the basis of nutrition for local populations

BIBLIOMETRIC

On particular subjects related to agriculture, chemistry, biology, and medicine, several bibliometric investigations have been carried out. Diane Cooper (2015) explained the extent of its influence and how we may measure the effect of an article once it has been published. Bibliometrics is becoming more popular. It included finding downstream citations, developing thesauri (taxonomies) to assess the influence across disciplines and to enhance automated searches, assisting in the identification of the most pertinent score source, and assisting in the interpretation of various scoring models. A selection of the research that is pertinent to this topic is provided below.

For the objective of identifying the most appropriate study scope for upcoming research goals, Mohammad Fauzi et al., (2020) examined trends connected to *Sus scrofa* in existing research papers. While research on the analysis method used in earlier studies revealed that the majority of studies on *Sus scrofa domesticus* focus on scientific analysis, from 2015 to 2019 the majority of the themes studied in the research connected to *Sus scrofa domesticus* revolve around Islamic studies. Research on *Ziziphus Mauritiana* from Ainul et al., (2020) focused on content analysis, especially in the field of primary research on *Ziziphus Mauritiana*. researchers found that the majority of previous research on *Ziziphus Mauritiana* dominated by journal articles is 90.0%. Additionally, researchers discovered that 94% of previous studies on goat's milk were published in article publications. The biotechnology field is where most of the subjects examined in goat milk research are centred. Ikmal Hafiz et. al (2020) focused on statistical analysis of word zakat in Sahih al-Bukhari which can be discussed in several themes related to linguistic s well as hadith related notion.

METHODOLOGY

A bibliometric analysis was used in this study to quantify and gather data from the literature review. The term "bibliometric" refers to the statistical methods used to assess bibliometric publication data, including reviews, reports, peer-reviewed journal articles, books, conference proceedings, journals, and related documents. It is frequently employed to demonstrate the connections between various study topics and quantitative techniques (Kulakli, 2020).

This research will concentrate on three factors, including the language, the information source, and the year that journal articles were published, in order to ascertain the demographics and date palm review. Additionally, two components—journal subject dispersion and journal publication on date palm-related publications—will be used to pinpoint the research area. These three concepts and words were chosen because date palm research heavily rely on their respective contents. Both of these are centred on the date palm and include unambiguous information regarding scientific investigations and their value to human life.

Bibliometric analysis will be used as the data gathering technique to assess the results of the last five years of date palm study. In summary, there are four crucial phases that researchers must complete to make sure the data gathering process goes properly. Several procedures must be completed before the data collection process can be carried out. Identifying the issue and the reason for data collecting is the first step. The selection of sources was then done by gathering as many journal articles from 2017 to 2021 that were relevant to date palms as possible. The next stage is to determine the most recent journal publications and pinpoint the date palm research field. Last but not least, the data was split up into various field studies and assessed using categories, frequencies, and percentages. Additionally, a chart with the analysed data is shown for better understanding. In searching for relevant articles related to the topics, these are the keywords used:

Table 2: Keywords on scope of research method

Keyword
Kurma
Date palm
Phoenix dactylifera
Phoenix dactylifera + Date palm

FINDINGS

Collected Journals

Initially, the researcher discovered 154 journals articles was analyzed after extensive research. The list of articles listed in table 3:

Table 3: Collected Journal

NO	TITLE
1	Abass, M. H., Al-Utbi, S. D., & Al-Samir, E. A. (2017). Genotoxicity assessment of high concentrations of 2, 4-D, NAA and Dicamba on date palm callus (<i>Phoenix dactylifera</i> L.) using protein profile and RAPD markers. <i>Journal of Genetic Engineering and Biotechnology</i> , 15(1), 287-295. DOI: https://doi.org/10.1016/j.jgeb.2016.12.003
2	Abdeen, A., Samir, A., Elkomy, A., Aboubaker, M., Habotta, O. A., Gaber, A., ... & Abdelkader, A. (2021). The potential antioxidant bioactivity of date palm fruit against gentamicin-mediated hepato-renal injury in male albino rats. <i>Biomedicine & Pharmacotherapy</i> , 143, 112154. DOI: https://doi.org/10.1016/j.biopha.2021.112154
3	Abdel-Salam, A. M., Al Hemaïd, W. A., Afifi, A. A., Othman, A. I., Farrag, A. R. H., & Zeitoun, M. M. (2018). Consolidating probiotic with dandelion, coriander and date palm seeds extracts against mercury neurotoxicity and for maintaining normal testosterone levels in male rats. <i>Toxicology reports</i> , 5, 1069-1077. DOI: https://doi.org/10.1016/j.toxrep.2018.10.013
4	Abdul-Hamid, N. A., Abas, F., Ismail, I. S., Tham, C. L., Maulidiani, M., Mediani, A., ... & Umashankar, S. (2019). ¹ H-NMR-based metabolomics to investigate the effects of <i>Phoenix dactylifera</i> seed extracts in LPS-IFN- γ -induced RAW 264.7 cells. <i>Food Research International</i> , 125, 108565. DOI: https://doi.org/10.1016/j.foodres.2019.108565
5	Abdul-Hamid, N. A., Mustaffer, N. H., Maulidiani, M., Mediani, A., Ismail, I. S., Tham, C. L., ... & Abas, F. (2020). Quality evaluation of the physical properties, phytochemicals, biological activities and proximate analysis of

	nine Saudi date palm fruit varieties. <i>Journal of the Saudi Society of Agricultural Sciences</i> , 19(2), 151-160. DOI: https://doi.org/10.1016/j.jssas.2018.08.004
6	Abuelgassim, A. O., Eltayeb, M. A., & Ataya, F. S. (2020). Palm date (<i>Phoenix dactylifera</i>) seeds: A rich source of antioxidant and antibacterial activities. <i>Czech Journal of Food Sciences</i> , 38(3), 171-178. DOI: https://doi.org/10.17221/269/2019-CJFS
7	Abu-Reidah, I. M., Gil-Izquierdo, Á., Medina, S., & Ferreres, F. (2017). Phenolic composition profiling of different edible parts and by-products of date palm (<i>Phoenix dactylifera</i> L.) by using HPLC-DAD-ESI/MSn. <i>Food Research International</i> , 100, 494-500. DOI: https://doi.org/10.1016/j.foodres.2016.10.018
8	Adel, A., El-Shafei, A., Ibrahim, A., & Al-Shemy, M. (2018). Extraction of oxidized nanocellulose from date palm (<i>Phoenix dactylifera</i> L.) sheath fibers: Influence of CI and CII polymorphs on the properties of chitosan/bionanocomposite films. <i>Industrial Crops and Products</i> , 124, 155-165. DOI: https://doi.org/10.1016/j.indcrop.2018.07.073
9	Ahmed, H. S., & Coquet, Y. (2018). Water uptake by date palm on Haplic Luvisols in the Djibouti coastal plain. <i>Geoderma Regional</i> , 15, e00189. DOI: https://doi.org/10.1016/j.geodrs.2018.e00189
10	Ait-El-Mokhtar, M., Laouane, R. B., Anli, M., Boutasknit, A., Wahbi, S., & Meddich, A. (2019). Use of mycorrhizal fungi in improving tolerance of the date palm (<i>Phoenix dactylifera</i> L.) seedlings to salt stress. <i>Scientia Horticulturae</i> , 253, 429-438. DOI: https://doi.org/10.1016/j.scienta.2019.04.066
11	Akhavan, F., Kamgar, S., Nematollahi, M. A., Golneshan, A. A., Nassiri, S. M., & Khaneghah, A. M. (2021). Design, development, and performance evaluation of a ducted fan date palm (<i>Phoenix dactylifera</i> L.) pollinator. <i>Scientia Horticulturae</i> , 277, 109808. DOI: https://doi.org/10.1016/j.scienta.2020.109808
12	Al Alawi, R., Alhamdani, M. S. S., Hoheisel, J. D., & Baqi, Y. (2020). Antifibrotic and tumor microenvironment modulating effect of date palm fruit (<i>Phoenix dactylifera</i> L.) extracts in pancreatic cancer. <i>Biomedicine & Pharmacotherapy</i> , 121, 109522. DOI: https://doi.org/10.1016/j.biopha.2019.109522
13	Alahyane, A., Harrak, H., Ayour, J., Elateri, I., Ait-Oubahou, A., & Benichou, M. (2019). Bioactive compounds and antioxidant activity of seventeen Moroccan date varieties and clones (<i>Phoenix dactylifera</i> L.). <i>South African Journal of Botany</i> , 121, 402-409. DOI: https://doi.org/10.1016/j.sajb.2018.12.004
14	Al-Alawi, R. A., Al-Mashiqri, J. H., Al-Nadabi, J. S., Al-Shihi, B. I., & Baqi, Y. (2017). Date palm tree (<i>Phoenix dactylifera</i> L.): natural products and therapeutic options. <i>Frontiers in plant science</i> , 8, 845. DOI: https://doi.org/10.3389/fpls.2017.00845
15	Alam, M. Z., Alhebsi, M. S., Ghnimi, S., & Kamal-Eldin, A. (2021). Inability of total antioxidant activity assays to accurately assess the phenolic

	compounds of date palm fruit (<i>Phoenix dactylifera</i> L.). <i>NFS Journal</i> , 22, 32-40. DOI: https://doi.org/10.1016/j.nfs.2021.01.001
16	Alansi, S., Al-Qurainy, F., Nadeem, M., Khan, S., Tarrour, M., Alshameri, A., & Gaafar, A. R. Z. (2019). Cryopreservation: A tool to conserve date palm in Saudi Arabia. <i>Saudi journal of biological sciences</i> , 26(7), 1896-1902. DOI: https://doi.org/10.1016/j.sjbs.2019.02.004
17	Al-Asmari, F., Mereddy, R., & Sultanbawa, Y. (2018). The effect of photosensitization mediated by curcumin on storage life of fresh date (<i>Phoenix dactylifera</i> L.) fruit. <i>Food Control</i> , 93, 305-309. DOI: https://doi.org/10.1016/j.foodcont.2018.06.005
18	Al-Asmari, F., Nirmal, N., Chaliha, M., Williams, D., Mereddy, R., Shelat, K., & Sultanbawa, Y. (2017). Physico-chemical characteristics and fungal profile of four Saudi fresh date (<i>Phoenix dactylifera</i> L.) cultivars. <i>Food chemistry</i> , 221, 644-649. DOI: https://doi.org/10.1016/j.foodchem.2016.11.125
19	Alatawi, F. J. (2020). Field studies on occurrence, alternate hosts and mortality factors of date palm mite, <i>Oligonychus afrasiaticus</i> (McGregor)(Acari: Tetranychidae). <i>Journal of the Saudi Society of Agricultural Sciences</i> , 19(2), 146-150. DOI: https://doi.org/10.1016/j.jssas.2018.08.003
20	Alawad, M. N., & Fattah, K. A. (2019). Superior fracture-seal material using crushed date palm seeds for oil and gas well drilling operations. <i>Journal of King Saud University-Engineering Sciences</i> , 31(1), 97-103. DOI: https://doi.org/10.1016/j.jksues.2017.01.003 .
21	Al-Bagmi, M. S., Khan, M. S., Ismael, M. A., Al-Senaigy, A. M., Bacha, A. B., Husain, F. M., & Alamery, S. F. (2019). An efficient methodology for the purification of date palm peroxidase: Stability comparison with horseradish peroxidase (HRP). <i>Saudi journal of biological sciences</i> , 26(2), 301-307. DOI: https://doi.org/10.1016/j.sjbs.2018.04.002
22	Alem, C., Ennassir, J., Benlyas, M., Mbark, A. N., & Zegzouti, Y. F. (2017). Phytochemical compositions and antioxidant capacity of three date (<i>Phoenix dactylifera</i> L.) seeds varieties grown in the Southeast Morocco. <i>Journal of the Saudi Society of Agricultural Sciences</i> , 16(4), 350-357. DOI: https://doi.org/10.1016/j.jssas.2015.11.002
23	Alghamdi, A. A. (2021). Impact of the invasive plant species " <i>Nicotiana glauca</i> " toxins on the larvae of the invasive insect species " <i>Rhynchophorus ferrugineus</i> ": A damaging pest of date palm trees in Saudi Arabia. <i>Saudi Journal of Biological Sciences</i> , 28(1), 1154-1157. DOI: https://doi.org/10.1016/j.sjbs.2020.11.051
24	Alghamdi, M. A., Hussein, A. M., Al-Eitan, L. N., Elnashar, E., Elgendy, A., Abdalla, A. M., ... & Khalil, W. A. (2020). Possible mechanisms for the renoprotective effects of date palm fruits and seeds extracts against renal ischemia/reperfusion injury in rats. <i>Biomedicine & Pharmacotherapy</i> , 130, 110540. DOI: https://doi.org/10.1016/j.biopha.2020.110540
25	Alikhani-Koupaei, M., & Aghdam, M. S. (2021). Defining date palm leaf pruning line in bearing status by tracking physiological markers and expression of senescence-related genes. <i>Plant Physiology and Biochemistry</i> , 167, 550-560. DOI: https://doi.org/10.1016/j.plaphy.2021.08.035

26	Alikhani-Koupaei, M., Aghdam, M. S., & Faghieh, S. (2020). Physiological aspects of date palm loading and alternate bearing under regulated deficit irrigation compared to cutting back of bunch. <i>Agricultural Water Management</i> , 232, 106035. DOI: https://doi.org/10.1016/j.agwat.2020.106035
27	Al-Kindi, K. M., Kwan, P., Andrew, N. R., & Welch, M. (2017). Modelling spatiotemporal patterns of dubas bug infestations on date palms in northern Oman: A geographical information system case study. <i>Crop protection</i> , 93, 113-121. DOI: https://doi.org/10.1016/j.cropro.2016.11.033
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30	Al-Mayahi, A. M. W., Ali, A. H., & Shareef, H. J. (2018). Influence of cold pretreatment on shoot regeneration from callus in date palm (<i>Phoenix dactylifera</i> L.) cv. 'Barhee'. <i>Journal of Genetic Engineering and Biotechnology</i> , 16(2), 607-612. DOI: https://doi.org/10.1016/j.jgeb.2018.07.002
31	Al-Msalleem, M. Q., Alqurashi, R. M., & Al-Khayri, J. M. (2020). Bioactive compounds of date palm (<i>Phoenix dactylifera</i> L.). <i>Bioactive Compounds in Underutilized Fruits and Nuts</i> , 91-105. DOI: https://doi.org/10.1007/978-3-030-30182-8_6
32	Al-Muaini, A., Green, S., Abou Dahr, W. A., Kennedy, L., Kemp, P., Dawoud, M., & Clothier, B. (2019). Water use and irrigation requirements for date palms on commercial farms in the hyper-arid United Arab Emirates. <i>Agricultural Water Management</i> , 223, 105702. DOI: https://doi.org/10.1016/j.agwat.2019.105702
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34	Al-Muaini, A., Green, S., Dakheel, A., Abdullah, A. H., Sallam, O., Abou Dahr, W. A., ... & Clothier, B. (2019). Water requirements for irrigation with saline groundwater of three date-palm cultivars with different salt-tolerances in the hyper-arid United Arab Emirates. <i>Agricultural Water Management</i> , 222, 213-220. DOI: https://doi.org/10.1016/j.agwat.2019.05.022
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37	Allothman, O. Y., Jawaid, M., Senthilkumar, K., Chandrasekar, M., Alshammari, B. A., Fouad, H., ... & Siengchin, S. (2020). Thermal characterization of date palm/epoxy composites with fillers from different parts of the tree. <i>Journal of Materials Research and Technology</i> , 9(6), 15537-15546. DOI: https://doi.org/10.1016/j.jmrt.2020.11.020
38	Allothman, O. Y., Kian, L. K., Saba, N., Jawaid, M., & Khiari, R. (2021). Cellulose nanocrystal extracted from date palm fibre: Morphological, structural and thermal properties. <i>Industrial Crops and Products</i> , 159, 113075. DOI: https://doi.org/10.1016/j.indcrop.2020.113075
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The Demographic Review of the Article

This objective will discuss in three categories which is language, source of information, year of publishing and subject dispersion. Each category will be explained in tables containing journal related, frequency, and percentages to make it simpler for the researcher to evaluate the relevant journal article.

Language

Table 4 below indicate the percentage of the language medium used on the date palm related publications in English and Malay. Based on the data obtained, the total number of related journal articles is 154 articles. The table shows that there are 141 (92%) journal articles written in English and 13 (8%) journal articles written in Malay. It may be assumed that the majority of dates are studied in English rather than Malay.

Table 4: Percentage and frequency of the Language Medium Used on the Date Palm Related Publications

Language (n=154)	Freq. (f)	Percentage (%)	Article related
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English	141	92	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 77, 78, 79, 80, 81, 82, 83, 84, 86, 87, 88, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 130, 132, 133, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 146
Malay	13	8	44, 45, 76, 85, 89, 118, 128, 129, 131, 134, 145

Source of Information

Table 5 shows the source of information on the date palm related publications that contain two source which is Science Direct and Google Scholar. According to the table, there are 154 journal articles in total, 131 article (84%) are from Science Direct. While there are 24 article (16%) from Google Scholar. It may be argued that Science Direct is the source of most of the study on dates. This proves that Science Direct is an effective search engine for locating information sources, especially when it relates to Date Palm (*Phoenix dactylifera* L).

Table 5: Source of Information on the Date Palm Related Publications

Publisher (n=154)	Freq. (f)	Percentage (%)	Article Related
Science direct	130	84	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 46, 47, 48, 49, 50, 51, 52, 53, 55, 56, 57, 58, 59, 60, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 77, 78, 79, 80, 81, 82, 83, 84, 86, 87, 88, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 119, 120, 121, 122, 123, 125, 126, 127, 130, 132, 135, 136, 138, 139, 140, 141, 143, 144, 146, 149, 150, 151, 152, 153, 154
Google scholar	24	16	6, 14, 31, 44, 45, 54, 74, 76, 85, 89, 90, 106, 118, 124, 128, 129, 131, 133, 134, 137, 142, 145, 147, 148

Year of Publishing

Table 6 illustrates the year of publication for date palm-related publications throughout a five-year period, begin in 2017 and ending in 2021. In 2017, there were 16 articles (10%) on date palms. Next, there are 20 articles (13%) in 2018. Furthermore, 38 articles (25%) have been recorded in 2019 and 2021. Finally, in 2020, the higher recorded article from the related article is 42 articles (27%). In summary, in 2020 was the highest year for date palm analysis. While the year 2017 is the lowest researched of the five years analyzed, with just 16 publications were identified.

Table 6: Year of Publishing on the Date Palm Related Publications

Language (n=154)	Freq. (f)	Percentage (%)	Article Related
2017	16	10	1, 7, 14, 18, 22, 27, 50, 62, 66, 84, 95, 115, 121, 125, 126, 127

2018	20	13	3, 8, 9, 17, 30, 49, 65, 68, 71, 80, 82, 91, 101, 105, 108, 111, 118, 128, 137
2019	38	25	4, 10, 13, 16, 20, 21, 28, 32, 33, 34, 40, 41, 45, 52, 55, 56, 59, 61, 69, 74, 77, 79, 81, 85, 107, 110, 112, 116, 117, 131, 134, 135, 143, 144
2020	42	27	5, 6, 12, 19, 24, 26, 31, 37, 42, 43, 44, 46, 47, 48, 51, 57, 58, 64, 72, 78, 83, 86, 87, 88, 89, 92, 93, 94, 96, 97, 102, 103, 104, 119, 123, 124, 130, 133, 136, 139, 142
2021	38	25	2, 11, 15, 23, 25, 29, 35, 36, 38, 39, 53, 54, 60, 63, 67, 70, 73, 75, 76, 90, 98, 99, 100, 106, 109, 113, 114, 120, 122, 129, 132, 138, 140, 141, 145, 146

Subject Dispersion of Journal

The scatter and inter-disciplinary nature of the literature on Phoenix dactylifera L may be shown in Table 7 subject dispersion of journals. From 154 articles collected, Agriculture with 37 article (24%), Biology with 28 article (18%), Horticulture and Food science and Technology have counted the same number of articles related with 20 article (13%) have the largest number of articles. Among the three subject dispersion that had the lowest article record were Pharmacy, General and Nuclear Science which had only 1 journal article (1%). The study on Phoenix dactylifera L is primarily concerned with the scientific study of life and the cultivation of plants and livestock.

Table 7: Subject Dispersion on the Date Palm Related Publications

Subject Category (n=154)	Freq.(f)	Percentage (%)	Article Related
1. Agriculture	37	24	5, 8, 19, 22, 26, 27, 32, 33, 34, 38, 45, 47, 48, 53, 55, 73, 81, 83, 95, 97, 98, 99, 101, 102, 106, 112, 113, 117, 120, 125, 127, 133, 136, 140, 144, 150, 152
2. Biology	28	18	3, 4, 16, 21, 23, 29, 31, 35, 36, 39, 54, 57, 58, 62, 65, 70, 71, 77, 85, 93, 96, 103, 110, 114, 116, 122, 146, 154
3. Food science and Technology	20	13	6, 7, 15, 17, 37, 41, 43, 44, 49, 64, 66, 80, 84, 90, 117, 124, 130, 131, 145, 148
4. Chemistry	10	6	18, 46, 52, 61, 86, 87, 92, 94, 108, 119
5. Botany	6	4	13, 42, 59, 67, 88, 143
6. Science (General)	12	8	9, 14, 56, 63, 68, 74, 75, 78, 79, 100, 142, 147
7. Horticulture	20	13	10, 11, 50, 51, 69, 72, 82, 91, 104, 107, 109, 111, 115, 118, 128, 129, 134, 138, 151, 153,
8. Medical Sciences	2	1	12, 24
9. Environmental Science	2	1	40, 132
10. Engineering and Technology	5	3	1, 20, 28, 30, 141

11.	Pharmacy	1	1	2
12.	Engineering Sciences	7	5	20, 121, 123, 126, 135, 137, 149
13.	Nutrition	2	1	60, 105
14.	General	1	1	76
15.	Nuclear Science	1	1	139

CONCLUSION

Two goals guided the collection of the data, which took place over a five-year period, from 2017 to 2021. First of all, English has 141 articles (92%) more research than Malay, which has 13 articles (8%). Following that, Science Direct is a beneficial search engine for discovering sources of information, particularly regarding date palm. Then, in 2020 with 42 journal article (27%) was the most popular for date palm analysis. While in 2017 only 16 journal article (10%) discovered, the lowest investigated of the five years examined. Additionally, the research on Phoenix Dactylifera.L is primarily focused on the scientific study of life, plant, and livestock cultivation. From 154 article that was found, Agriculture with 37 article (24%), Biology with 28 article (18%), and Horticulturæ with 20 article (13%) have the largest number of articles based on subject dispersion.

According to the growth of the literature analyzed in this study, research on this subject increased from 2017 to 2020, and then stabilized in 2021. The findings support the multidisciplinary nature of the date palm literature. However, most of the subject dispersion deal with Agriculture, Biology, and horticulture. The improvement of food and feed quality, management of plant diseases, and plant breeding are major areas of emphasis in this research. The animal side is given greater emphasis than the human side in the medical literature. In addition, journal articles and the English language predominate in this study. The study's findings will be highly beneficial to academics and students across a variety of fields, both in terms of generating ideas for new studies and raising awareness among concerned researchers.

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CONFLICT OF INTERESTS

The authors declare no competing interests such as financial or personal relationship regarding the writing of this article.

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