

ANALYSIS OF ARTICLES PUBLISHED IN THE JOURNAL OF CAMEL PRACTICE AND RESEARCH OVER A 28-YEAR PERIOD BASED ON SCOPUS DATABASE

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ABSTRACT

The Journal of Camel Practice and Research (JCPR) provides a unique platform for publishing submissions on New World and Old World camelids. This study analyses and categorises the characteristics of articles published in JCPR from 1996 to 2023, with a focus on the top 10 most cited articles. The top ten-cited papers were identified by their topic, year of publication, category, authors, institution, country and citations. Scopus database was used to determine details of the documents and their citations on April 3, 2024. A total of 1203 documents were published in JCPR during a 28-year span (1996-2023), with an average of 42.9 articles each year. All of these documents related to agricultural and biological sciences. These publications comprised 1031 original articles (85.7%), 82 conference papers (6.9%), 36 editorials (2.9%), 30 review articles (2.5%), 11 notes (0.9%), 8 brief surveys (0.7%), 4 erratum (0.3%) and one letter (0.1%). The top five years for camel research publication in JCPR were 1998 (62 documents), 2013 (61), 2021 (59), 2014 (58) and 2011 (57). Out of 56 countries, the top five concerned with JCPR publishing were India, Saudi Arabia, Egypt, United Arab Emirates and Iran. In terms of document counts, the most active researchers in JCPR, in decreasing order of ranking, are: Wernery, U., Gahlot, T.K., Kinne, J., Tharwat, M. and Faye, B.; affiliations: King Faisal University, ICAR-National Research Centre on Camel, Bikaner, College of Veterinary and Animal Science, Bikaner, Central Veterinary Research Laboratory- Dubai and Rajasthan University of Veterinary and Animal Sciences; sponsors: Deanship of Scientific Research-King Faisal University, King Abdulaziz City for Science and Technology, National Natural Science Foundation of China, Deanship of Scientific Research-King Saud University and Science Foundation of Inner Mongolia. The total number of citations for JCPR publications was 4721 in 2,678 documents, with an average of 3.9 citations per document. All of the top-cited documents were original research articles derived from United Arab Emirates (n= 3), India (n= 2), France, Argentina, Germany, United States of America and Iran (n= one article each). The most-cited papers studied camel milk, interdisciplinary production and fertility diagnostics, as well as pathological abnormalities. In conclusion, this bibliometric study is the first attempt at a multi-parameter analysis of the JCPR publications, including citation count. Authors could use the reported data to help them choose their future research projects and make a lasting contribution to the field of camelids health and production. It gives the editorial team information into the types of articles that JCPR readers find interesting, which will aid in the development of side ideas to eventually increase penetrance and the journal's quality.

Key words: Affiliation, bibliometrics, camelids, citation, funders, Journal of Camel Practice and Research

“Bibliometrics” refers to a collection of quantitative tools for analysing academic publications (Bellis, 2009). It employs statistical and mathematical approaches to track the overall trends of research in a certain topic (Zhu *et al*, 2021; Hernández-González *et al*, 2022).

“Citation analysis” is the most frequent bibliometric approach used in library and information science. Furthermore, all study domains employ

bibliometrics tools to assess the influence of their research, a researcher, research group, institution, region, or publication (Pena-Cristobal *et al*, 2018; Toom, 2018).

The amount of citations received by an article is one way to assess its effect among its readers (Dhua *et al*, 2021). Citations, in which one publication refers to prior works, are the normal way for authors to recognise the source of their techniques, ideas

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and discoveries and they are frequently cited as an indicator of a study's value. Eugene Garfield released the Science Citation Index (SCI) 50 years ago, which was the first systematic attempt to track citations in scientific publications (Van Noorden *et al*, 2014). The number of citations a publication receives does not always reflect the quality of the research or the relevance of its authors (Cheek *et al*, 2006), but it has been suggested that articles with the most citations may be able to generate changes in practice, controversy, discussion and more research (Lefavivre *et al*, 2011).

Other things can distort citation numbers. The number of citations has grown, for example, while older works have had more time to accumulate citations. Biologists quote each other's work more frequently than physicists. Not all fields generate the same amount of articles. When determining the worth of a work, modern bibliometricians avoid using simple approaches such as counting citations and instead prefer to compare counts for articles of similar age and in relevant subjects (Van Noorden *et al*, 2014).

Although, camelids are understudied in scientific research, there has been a promising increase in camel research over the past five years (Kandeel *et al*, 2023; Abu-Seida *et al*, 2024). The JCPR is an exclusive journal that publishes submissions about New World and Old World camelids. Based on a recent study, JCPR is considered the top source of camel research all over the world (Abu-Seida *et al*, 2024). This journal provides an excellent platform for publishing camelid material in order to identify research gaps and keep camelid practitioners and academics up to speed on the most recent findings. JCPR is published by Camel Publishing House, India and its main subject is agricultural and biological sciences, category of animal science and zoology. The coverage on Scopus is extended from 1996 to 2023.

There have been many bibliometric evaluations of articles in the fields of veterinary medicine (Colombino *et al*, 2021; İnan, 2024), but the overall category of camel health and management has received little attention internationally (Kandeel *et al*, 2023; Masebo *et al*, 2023; Abu-Seida *et al*, 2024).

To our knowledge, no study has bibliometrically analysed the documents published in JCPR. With this backdrop, we aimed to identify, analyse and categorise the essential characteristics of the articles published in JCPR from 1996 to 2023, with particular focus on the top ten cited articles using Scopus database.

Materials and Methods

On April 3, 2024, a sources search was done to discover the documents finally published in JCPR and indexed in Scopus® using the search term "Journal of Camel Practice and Research". Scopus database was used to determine details of the documents and their citations. Regarding the top ten-cited articles, the individual article attributes were tabulated in a Microsoft Excel® spreadsheet. The year of publication, document type, topic, authors, affiliations, country of origin, sponsor and citations were collected. Descriptive statistics of all collected data were conducted. A full day was spent gathering all the data (3/4/2024). The top 10 highly-cited articles in JCPR were selected and analysed.

Results and Discussion

Journal of Camel Practice and Research published a total of 1203 documents during a 28-year span (1996-2023), with an average of 42.9 articles each year. All of these documents related to agricultural and biological sciences. These publications comprised 1031 original articles (85.7%), 82 conference papers (6.9%), 36 editorials (2.9%), 30 review articles (2.5%), 11 notes (0.9%), 8 brief surveys (0.7%), 4 erratum (0.3%) and one letter (0.1%), as shown in (Fig 1). The top 5 years for camel research publication in JCPR were 1998 (62 documents), 2013 (61), 2021 (59), 2014 (58) and 2011 (57).

Table 1 lists the top 5 authors, affiliations, countries and sponsors who contributed to JCPR publications during a 28-year period, according to the Scopus database. Out of 56 countries, the top 5 concerned with JCPR publishing were India, Saudi Arabia, Egypt, United Arab Emirates and Iran.

On April 3, 2024, the total number of citations for JCPR publications was 4721 in 2,678 documents, with an average of 3.9 citations per document. The document types cited the articles published in JCPR included; 2191 original articles, 235 reviews, 147 book chapters, 63 conference papers and 13 books. In terms of language, JCPR-published papers were mentioned in documents written in English (2,596), French (23), Spanish (20), Chinese (15), German (7), Persian (7), Turkish (5), Bosnian (3), Croatian (3) and Portuguese (3).

Table 2 displays the top 5 most-cited authors, affiliations, countries and sponsors who contributed to JCPR articles during a 28-year period, as determined by the Scopus database. The cited sources included; journals (2498), books (157), conference proceedings (13) and book Series (10). The top 5 most

cited journals for publications published in JCPR were: Journal of Camel Practice and Research (468 citations), Tropical Animal Health and Production (91), Indian Journal of Animal Sciences (58), Veterinary Practitioner (49) and Animal Reproduction Science (42).

Table 3 shows the top 10 most-cited documents of all categories published during the research period. The top 10 most-cited documents garnered a total of 449 citations till April 3, 2024. All of these documents were original research articles published between

1996 and 2007. These articles derived from United Arab Emirates (n= 3), India (n= 2), France, Argentina, Germany, United States of America and Iran (n= one article each). The top article was sourced from India and quoted 71 times, while the tenth article was derived from the United States of America and cited 36 times (Table 3).

After 30 years of establishment, JCPR has become a well-known international publication in the field of camel practice and research. Our results indicate the unique nature and widespread of JCPR all over the world and its positive impact in the field of camelids health and production.

There are several databases which provide the bibliometric information for an article. Web of Science, CrossRef, Scopus and Google Scholar are some of the most widely used sites. Each has a different catchment region and it has been noticed that the number of citations they reveal for a given article at any one moment might alter (Kulkarni *et al*, 2009). Elsevier Corporation owns “Scopus” which is a citation database that includes bibliographic information, abstracts and citations of academic journal articles. Scopus covers a wide range of research topics, including science, technology, medicine, social sciences and the humanities. Therefore, we preferred Scopus database in the present bibliometric study.

According to our findings, the bulk (85.7%) of JCPR’s published content throughout the study period is comprised of original works. As a result, it comes as no surprise that all of the top 10 most-cited papers are original articles. The present data also show that JCPR is steadily improving its share of

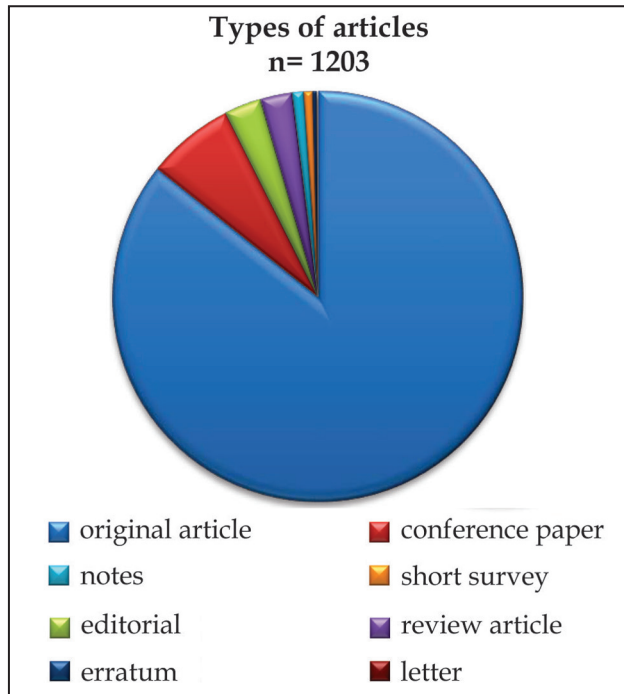


Fig 1. Type of articles published in JCPR during a 28-year period based on Scopus database and their distribution.

Table 1. The top 5 authors, affiliations, countries and funders shared in articles published in JCPR during a 28-year period based on Scopus database.

No	Authors		Affiliations		Countries		Funders	
	Name	Number of articles	Name	Number of articles	Name	Number of articles	Name	Number of articles
1	Wernery U.	83	King Faisal University	135	India	289	Deanship of Scientific Research, King Faisal University	9
2	Gahlot T.K.	64	ICAR - National Research Centre on Camel, Bikaner	114	Saudi Arabia	248	King Abdulaziz City for Science and Technology	6
3	Kinne J.	36	College of Veterinary and Animal Science, Bikaner	102	Egypt	141	National Natural Science Foundation of China	6
4	Tharwat M.	34	Central Veterinary Research Laboratory- Dubai	90	United Arab Emirates	132	Deanship of Scientific Research, King Saud University	5
5	Faye B.	33	Rajasthan University of Veterinary and Animal Sciences, Bikaner, India	64	Iran	91	Natural Science Foundation of Inner Mongolia	4

Table 2. The top 5 most highly cited authors, affiliations, countries and funders who contributed to JCPR articles during a 28-year period, as determined by Scopus database.

No	Authors		Affiliations		Countries		Funders	
	Name	Number of citations	Name	Number of citations	Name	Number of citations	Name	Number of citations
1	Faye B.	94	King Faisal University	154	Saudi Arabia	433	Deanship of Scientific Research, King Saud University	57
2	Wernery U.	97	ICAR - National Research Centre on Camel, Bikaner	126	India	425	National Natural Science Foundation of China	43
3	Tharwat M.	54	Al Qassim University	106	Egypt	360	Deanship of Scientific Research, King Faisal University	27
4	Kataria A.K.	38	CIRAD	101	Iran	225	United Arab Emirates University	27
5	Khalafalla A.I.	36	King Saud University	99	United Arab Emirates	225	European Commission	23

Table 3. The top 10 most cited articles published in JCPR over a 27-year period based on Scopus database.

No	Title	Country of origin	Affiliation	Authors	Type of article	Year of publication	Citations (as on April 3, 2024)
1	Effect of camel milk on glycemic control, risk factors and diabetes quality of life in type-1 diabetes: A randomised prospective controlled study	India	National Research Centre on Camel, Bikaner	Agrawal <i>et al</i>	Original article	2003	71
2	Selected vitamins and fatty acid patterns in dromedary milk and colostrum	Germany	University of Veterinary Medicine Hannover Foundation	Stahl <i>et al</i>	Original article	2006	53
3	Ultrasonographic changes of the reproductive tract in the female camel (<i>Camelus dromedarius</i>) during the follicular cycle and pregnancy.	United Arab Emirates	Veterinary Research Centre, Abu Dhabi	Tibary and Anouassi	Original article	1996	51
4	Camel milk, the white gold of the desert	United Arab Emirates	Central Veterinary Research Laboratory	Wernery	Original article	2006	47
5	Electroejaculation in llama (<i>Lama glama</i>)	Argentina	Universidad de Buenos Aires	Director <i>et al</i>	Original article	2007	39
6	Milk yield performance of dromedaries with an automatic bucket milking machine	United Arab Emirates	Central Veterinary Research Laboratory	Wernery <i>et al</i>	Original article	2004	39
7	Investigations on a new pathological condition of camels in Ethiopia	France	Campus International de Baillarguet	Roger <i>et al</i>	Original article	2000	39
8	Studies on normal haematological and biochemical parameters of turkmen camel in Iran	Iran	Shiraz University, Shir	Rezakhani <i>et al</i>	Original article	1997	38
9	Effect of raw camel milk in type 1 diabetic patients: 1 Year randomised study	India	S.P. Medical College, Bikaner	Agrawal <i>et al</i>	Original article	2005	36
10	Approach to diagnosis of infertility in camelids: Retrospective study in alpaca, llamas and camels	United States of America	Washington State University	Tibary <i>et al</i>	Original article	2001	36

original papers. Similarly, a recent analysis indicated that JCPR is the top source for publishing camel research from throughout the world (Abu-Seida *et al*, 2024).

It's natural that the bulk of the articles (289, 24.02%) published in JCPR would have come from Indian institutes. This is owing to the country's large populations of camelids and scholars who study them as well as JCPR is recognised as the official publication of camel research and practice in India.

Saudi Arabia is the second-largest publisher of JCPR articles (248, 20.62%). The observed result is consistent with prior research on national contributions to camel research (Kandeel *et al*, 2023; Abu-Seida *et al*, 2024). Also, it was no surprise that Saudi Arabia was among the top 5 nations, affiliations and supporters. Saudi Arabia has achieved significant progress in higher education, particularly in research, development and knowledge generation during the last decade. The Saudi government is working hard to offer adequate funds to the education industry and construct new academic institutions (Pavan, 2016). Funding agencies and research organisations have significant roles in furthering scientific research (Azeem *et al*, 2021). Furthermore, Saudi Arabia has been classified as having one of the greatest proportion of camels (Faye, 2020). Although, Egypt is classified as a camel nation, it is experiencing falling growth and has a smaller percentage of camel research than India and Saudi Arabia (Faye, 2020). The present rankings include a disclaimer. It is not permissible to generalise these ratings and evaluate research capabilities and outcomes only on the basis of these data. As a result, these findings are particular to JCPR and do not provide broad conclusions regarding the authors, institutions' or countries, research output.

The citation impact metric assesses the number of citations in scientific works. It is the sum of citations to publications divided by the number of articles (Moed, 2010). JCPR averages 3.9 citations per document. A recent research reported a similar finding (Abu-Seida *et al*, 2024). JCPR-published articles were cited in publications written primarily in English, but also in French, Spanish, Chinese, German, Persian, Turkish, Bosnian, Croatian and Portuguese. A notable fraction implies that JCPR's popularity goes beyond nations with an English-speaking population and has a worldwide reach. In addition, it is unsurprising that English is the dominant language in camel research citations. English is the global language of science and the

vast majority of title sources use it in their published works (Abu-Seida *et al*, 2024).

The top ten-most cited articles are all original and come from various nations and affiliations. This is significant because original publications on key areas of study are more likely to be cited repeatedly. The most-cited papers studied camel milk (S. No. 1,2,4,6 and 9), interdisciplinary production and fertility diagnostics (S. No. 3, 5 and 10), as well as pathological abnormalities (S. No. 7 and 8). Therefore, researchers in the field of camelids must pay attention to these topics in their future research

The present observations on citation analysis have offered critical insights into the citation requirements. The publications with the most citations focus on hotspots for study and have a long-term influence on camel research and practice. This sort of study can be conducted at frequent intervals to depict a trend rather than simply a snapshot in order to be informative. In this regard, highly-cited articles differ significantly from 'regular' cited papers. Typically, they are written by a large number of scientists, with worldwide participation (Aksnes, 2003).

Readers are cautioned to be aware of the study's limitations. The authors want to provide a brief summary of the citation analysis of JCPR. The length of time that has gone since an article was published might affect how many citations it receives. A newly published work on an interesting topic may acquire more citations in the future than one that is reviewed soon after publication. This problem has been somewhat addressed by focusing primarily on manuscripts published until 2023.

This research is the first attempt at a multi-parameter analysis of the JCPR publications, including citation count. Authors could use the reported data to help them choose their future research projects and make a lasting contribution to the field of camelids health and production. It gives the editorial team information into the kinds of articles that JCPR readers find interesting, which will aid in the development of side ideas to eventually increase penetrance and the journal's quality.

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