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# Canine brucellosis: A bibliometric analysis based on scopus and web of science databases

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**ABSTRACT**

Brucellosis is a zoonotic infection that poses a threat to both human and animal health. The aim of this study is to investigate the publication trends in research on canine brucellosis and to determine the changes and general characteristics of the disease throughout history using bibliometric analysis. For this reason, we conducted a bibliometric analysis of 316 articles published in the Scopus and Web of Science (WoS) databases from 1980 to 2022. The analysis was performed using the RStudio-Bibliometrix package and the Biblioshiny application. The publications included contributions from a total of 1241 authors. In addition, a total of 804 keywords plus and 398 author keywords were identified. The earliest study among the top 10 most cited articles dates back to 1985, while the most recent one was published in 2011. The majority of the publications were published in the years 2012 (n=17) and 2014 (n=17). The United States of America (USA) (n=55), Brazil (n=40), and Argentina (n=25) were identified as the countries with the highest number of published articles. Notably, Switzerland ranked first in terms of the average number of citations per article category (n=55.50), despite only two publications being attributed to this country. Keid L. (n=15), Lucero N. (n=14), Carmichael L. (n=13), and Kim J. (n=13) emerged as the most prolific contributors. Lucero N. obtained the highest number of total citations (TC=408). In the initial years of publication, the disease was predominantly characterized by keywords such as "brucellosis," "infection," "abortus," and "*Brucella canis*". However, keywords related to diagnosis and treatment, such as "diagnosis," "serodiagnosis," "vaccine," and "agar gel," gained significance and became increasingly relevant. The themes and sub-themes identified through this study can provide a basis for further investigation and scientific inquiry, thus contributing to the development of new research questions and opportunities for future studies.

**Keywords:** bibliometrix; biblioshiny; *Brucella canis*; brucellosis; bibliometric analysis

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## Introduction

Canine brucellosis is a zoonotic disease caused by the bacteria *Brucella canis*, which can infect both dogs and humans. The disease is transmitted through direct contact with infected dogs, particularly by the contact with contaminated aborted fetuses or secretions. While symptoms of intermittent fever, chills, sweating, back pain or joint pain in humans (Holst et al., 2012; Lucero et al., 2005), among dogs; infertility, abortion, and orchitis are frequently observed (Keid et al., 2009; Wanke, 2004).

*B. canis* agent, which was identified by Carmichael in 1966, has been diagnosed and reported in many countries around the world (Carmichael, 1966; Hollett, 2006; Wanke, 2004). Various approaches have been

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used to understand the disease and determine optimum diagnostic strategies (Daly et al., 2020; Hinić et al., 2008; Holst et al., 2012; Keid et al., 2009; López-Goñi et al., 2011; Saytekin et al., 2018). These approaches can be combined and analyzed using bibliometric analysis methods.

Although bibliometric analyses employ various methods, certain indices such as citations, authors, and keywords (Leung et al., 2017) are commonly used to measure productivity, while others such as the most influential journals or articles and the most productive countries (Silva et al., 2022) are used to assess impact. In this article, we used the bibliometric method, a statistical approach that allows for quantitative and qualitative analysis of written sources (Ekundayo and Okoh, 2018; Ellegaard and Wallin, 2015). Through this analysis, we aimed to facilitate the correct allocation of resources and policy formation for public health (Geaney et al., 2015).

While several publications have conducted bibliometric analyses, systematic reviews, and meta-analyses on brucellosis (Bakri et al., 2018; Dastani et al., 2022; Jamil et al., 2022; Mizrakçi et al., 2021; Shi et al., 2021), none have specifically focused on B. canis. Therefore, this study seeks to fill this gap in the related literature by focusing on the research specifically on canine brucellosis, using the bibliometric approach proposed by Cobo et al. (2011a). By visualizing the thematic development of the field, this approach allows for a deeper understanding of the existing literature. This study seeks to address the following research questions: 1. What is the distribution of the articles written on canine brucellosis by years and by journal? 2. What are the top 10 most highly-cited articles written on canine brucellosis between 1980 and 2022? 3. What are the most frequently used keywords in canine brucellosis-related research and how have they changed over years? 4. What is the thematic evolution of research articles on canine brucellosis between 1980 and 2022? 5. What is the productivity level of the most productive authors and countries?

## Material and Methods

This current study used bibliometric data retrieved from Scopus and WoS databases as they are considered to be the major online data sources to be used for bibliometric analysis. Scopus allows researchers to search both forward and backwards in time, making it easy to access a wide range of data and references (Abbas et al., 2022; Cobo et al., 2011b). Meanwhile, WoS is a reliable and comprehensive database that hosts a wide range of high-impact scientific studies (Ekundayo and Okoh, 2018; Martín-Martín et al., 2018).

The purpose of the bibliometric analysis methodology in this study was to analyze publications, citations, and journals through the contents obtained from data sources. By using the this method, appropriate answers to purpose-oriented questions can be found through analysis (Aria and Cuccurullo, 2017; Cobo et al., 2011a; Rodríguez-Soler et al., 2020).

These bibliographic data are processed in a prepared workflow methodology: Study strategy, data collection, data analysis, visualization, Interpretation (Aria and Cuccurullo, 2017; Cobo et al., 2011b; Derviş, 2020).

### Study strategy

Data for bibliometric analysis were obtained by using word combinations of "*Brucella canis*", "canine brucellosis", and "*B. canis*". These words were the most widely used ones in scientific literature and in the publications that were investigating canine brucellosis. The word “babesia” was excluded from the results as it refers to a blood parasite transmitted by ticks called "*Babesia canis* (*B. canis*)", which can also infect dogs (Schnittger et al., 2012). The data was retrieved from Scopus and WoS on 17/12/2022 by selecting only articles as the document type. The search flow of the study is presented in Appendix A and Appendix B. Data analysis was performed using Bibliometrix R-Tool (Aria and Cuccurullo, 2017).

### Data collection

Data were retrieved from the Scopus database as Bibtex and from the WoS database as Plain text format. The Bibliometrix package (Aria and Cuccurullo, 2017) was used to combine the retrieved data and to eliminate duplicate publications using mathematical analysis methods. To ensure accuracy, articles published before 1980 and grey literature with incomplete or missing information (such as authors or keywords) were excluded from the study. No language restrictions were applied. The data were processed using the data collection flow diagram utilized by Rocio Rodriguez-Soler et al. (2020). This diagram consisted of five sub-steps (Figure 1) to obtain the final data set.

We first removed duplicate publications after the data collection process. 417 articles were retrieved. Out of these, 101 articles were excluded from the study as they did not fit the research purpose. This excluded set of articles consisted of 96 publications that were published before 1980 and 5 publications that did not include authors, keywords, or author keywords.

### Data analysis

The R program (Version 4.2.2) was used to examine

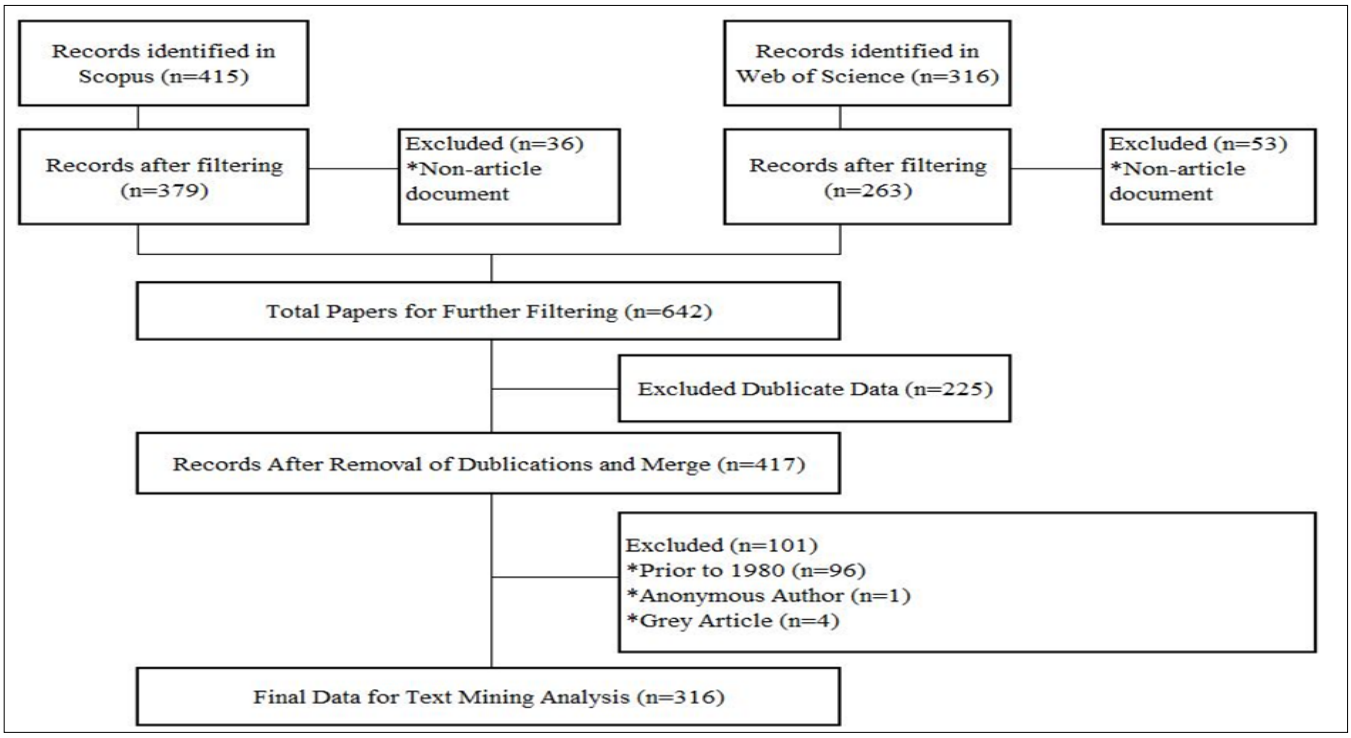


**Figure 1.** Data collection flow diagram of articles downloaded from Scopus and Wos

the contents of the articles bibliometrically. For data analysis, the program's Bibliometrix package was used. This package provides numerous tools for quantitative research (Aria and Cuccurullo, 2017).

### Visualization

The results of the analysis were made more accessible and easy to understand by using the Biblioshiny interface, which is a user-friendly software based on Java (Rusliana et al., 2022). By utilizing the Biblioshiny interface, the analyzed results were presented in a clear and concise manner, making it easier for readers to comprehend the findings.

### Interpretation

Using the data gathered in this study, various aspects of canine brucellosis research were analyzed. This included key information about the topic, yearly scientific output, important sources, highly cited articles, commonly used keywords, thematic trends, productivity of top authors over time, the most cited countries, and details regarding each country's scientific output.

## Results

### Main information

The Bibliometrix package was used to create a table of performance indicators (Aria and Cuccurullo, 2017), which served as the first step of the analysis. Table 1 presents the characteristics of publications on canine brucellosis between 1980 and 2022. A total of 316 articles were identified, yielding 4085 references from 161 sources. The average number of citations per article was 12.16, indicating that most articles received a low number of citations (Niknejad et al., 2021; Wang and Zhang, 2022). The study identified 1241 authors and 398 author keywords, with an average of 5.41 author collaborations per article (Co-Authors per Article). 14 authors also contributed to 18 single-author publications, and all other authors worked on multi-author articles. Biblioshiny estimated the average number of articles published per year to be 17.8.

**Table 1.** The analysis was conducted on 316 articles, revealing valuable insights and capturing significant research trends

| Description | Results |
|---|---|
| Articles | 316 |
| Timespan | 1980-2022 |
| Keywords Plus | 804 |
| Author's Keywords | 398 |
| Sources | 161 |
| Article Average Age | 17,8 |
| Average Citations per Articles | 12,16 |
| References | 4085 |
| Authors | 1241 |
| Authors of Single-Authored Articles | 14 |
| **Authors Collaboration** | |
| Single-Authored Articles | 18 |
| Co-Authors per Articles | 5,41 |
| International Co-Authorships % | 11,39 |

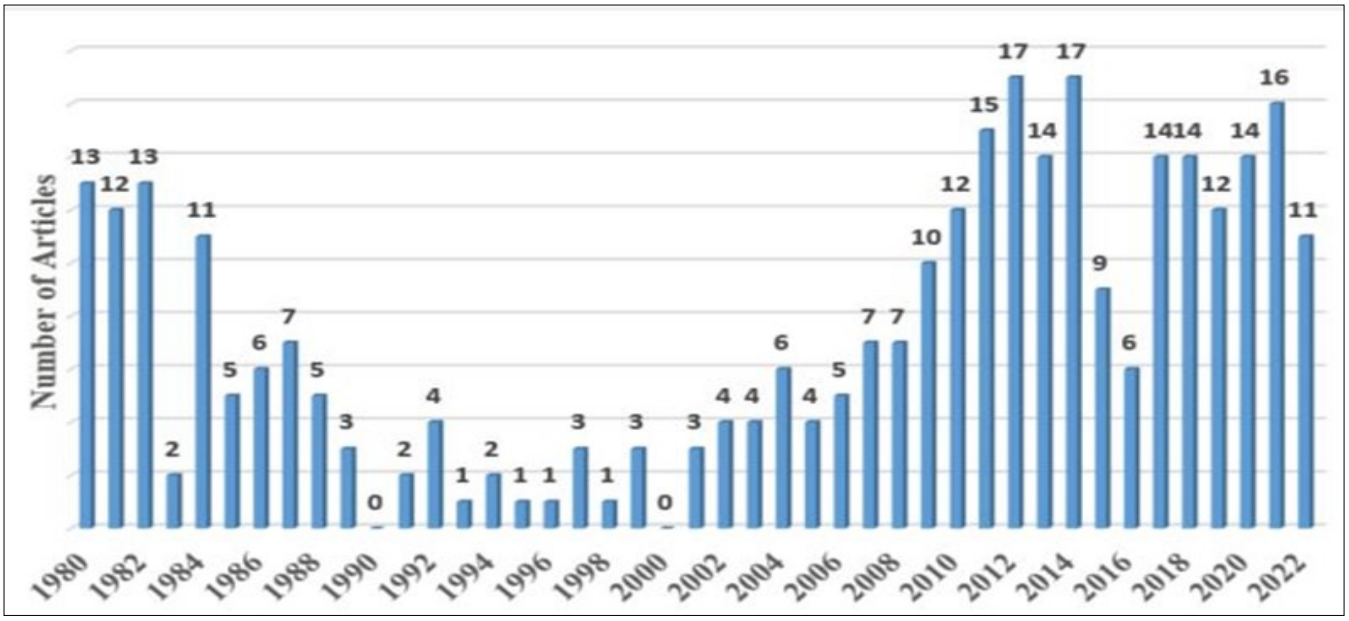


**Figure 2**. Annual scientific production from 1980 to 2022. Source: Data extracted from Biblioshiny

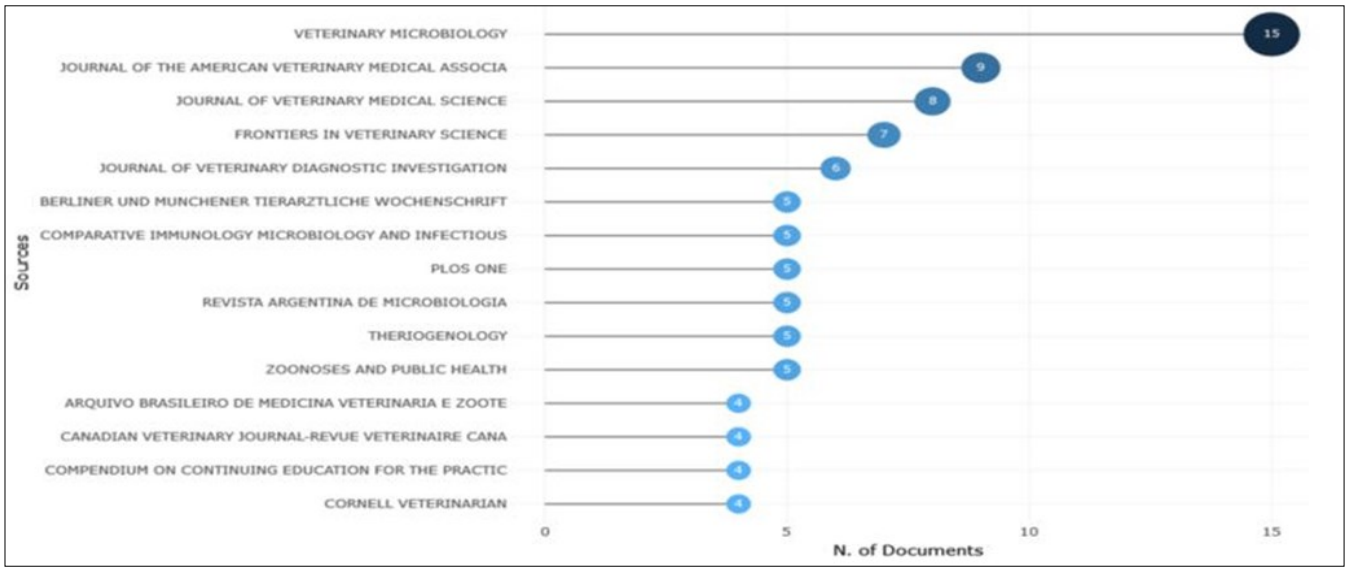


**Figure 3.** Most relevant sources that publish articles on canine brucellosis**.** N. of Documents**=** Number of Documents**.** Source: Data extracted from Biblioshiny

**Annual scientific production**

Figure 2 displays the years of publication for the literature analyzed. As can clearly be seen in Figure 2 below, while there was no consistent pattern in the number of publications between 1980 and 2022, a significant increase in the number of articles was observed since 2011, with a total of 15 articles published that year. Furthermore, varying numbers of publications were produced in subsequent years, with the highest number of articles published in 2012 (n=17) and 2014 (n=17). In this study, the 316 publications included were published in a variety of languages: English (n=257, 81.33%) was the most common language, followed by Spanish (n=18, 5.70%), Portuguese (n=14, 4.43%), German (n=10, 3.16%), Chinese (n=6, 1.90%), Turkish (n=6, 1.90%), Italian (n=2, 0.63%), Korean (n=1, 0.32%), Hungarian (n=1, 0.32%), and Russian (n=1, 0.32%).

**Most relevant sources**

Figure 3 displays the 15 most relevant sources in canine brucellosis studies out of a total of 161 published sources. The top five journals in this field are Veterinary Microbiology, Journal of The American Veterinary Medical Association, Journal of Veterinary Medical Science, Frontiers in Veterinary Science, and Journal of Veterinary Diagnostic Investigation. Veterinary Microbiology published the highest number of articles (n=15, 4.7%), followed by Journal of the American Veterinary Medical Association (n=9, 2.8%), Journal of Veterinary Medical Science (n=8, 2.5%), Frontiers in Veterinary Science (n=7, 2.2%), and Journal of Veterinary Diagnostic Investigation (n=6, 1.9%). The remaining sources produced 5 (1.6%) and 4 (1.3%) publications, respectively.

**Table 2.** The top 10 most cited articles in the field of canine brucellosis

| R | Title of Article | Autor(s) | Year | LC | GC | TCpY |
|---|---|---|---|---|---|---|
| 1 | Canine Brucellosis | Wanke M | 2004 | 66 | 121 | 6,05 |
| 2 | Canine Brucellosis: outbreaks and compliance | Hollett RB | 2006 | 56 | 107 | 5,94 |
| 3 | Novel identification and differentiation of *Brucella melitensis, B. abortus, B. suis, B. ovis, B. canis*, and *B. neotomae* suitable for both conventional and real-time PCR systems | Hinić V, Brodard I, Thomann A, Cvetnić Z, Makaya PV, Frey J, Abril C. | 2008 | 4 | 103 | 6,44 |
| 4 | Human *Brucella canis* outbreak linked to infection in dogs. | Lucero NE, Corazza R, Almuzara MN, Reynes E, Escobar GI, Boeri E, Ayala SM. | 2010 | 45 | 88 | 6,29 |
| 5 | New Bruce-ladder multiplex PCR assay for the biovar typing of *Brucella suis* and the discrimination of *Brucella suis* and *Brucella canis* | López-Goñi I, García-Yoldi D, Marín CM, de Miguel MJ, Barquero-Calvo E, Guzmán-Verri C, Albert D, Garin-Bastuji B. | 2011 | 11 | 80 | 6,15 |
| 6 | Treatment of *Brucella canis* and *Brucella abortus* in vitro and in vivo by stable plurilamellar vesicle-encapsulated aminoglycosides | Fountain MW, Weiss SJ, Fountain AG, Shen A, Lenk RP. | 1985 | 0 | 78 | 2 |
| 7 | Diagnosis of human brucellosis caused by *Brucella canis*. | Lucero NE, Escobar GI, Ayala SM, Jacob N. | 2005 | 35 | 63 | 3,32 |
| 8 | Diskospondylitis associated with *Brucella canis* infection in dogs: 14 cases (1980-1991) | Kerwin SC, Lewis DD, Hribernik TN, Partington B, Hosgood G, Eilts BE. | 1992 | 17 | 61 | 1,91 |
| 9 | Canine brucellosis: a diagnostician's dilemma | Carmichael LE, Shin SJ. | 1996 | 37 | 59 | 2,11 |
| 10 | Comparison of agar gel immunodiffusion test, rapid slide agglutination test, microbiological culture and PCR for the diagnosis of canine brucellosis | Keid LB, Soares RM, Vasconcellos SA, Megid J, Salgado VR, Richtzenhain LJ. | 2009 | 31 | 54 | 3,6 |

**R=** Rank; **LC=** Local Citations within the 316 articles; **GC=** Global Citations; **TCpY=** Total Citations per Year, Source: Data extracted from Biblioshiny

## Most cited articles

Table 2 below displays the top 10 most cited articles written on canine brucellosis and it includes details such as the author(s), year of publication, local citations, global citations, and total citations per year. Local citations indicate how many times an article was cited among the 316 articles included in this research, while global citations represent the number of citations of the article in Scopus and WoS databases (Niknejad et al., 2021). The results of the analysis indicate that there are differences between the local citation and global citation values, which suggests that the topic of this research has also drawn the attention of researchers from other fields.

The authors with the highest global citation counts were Wanke M. (GC=121), Hollet RB. (GC=107), and Hinić V. et al. (GC=13). Wanke M. was also the most cited author (LC=66) among the authors of the 316 articles in this study. The article with the highest total citations per year (TCpY) was "Novel identification and differentiation of Brucella melitensis, B. abortus, B. suis, B. ovis, B. canis, and B. neotomae suitable for both conventional and real-time PCR systems" published by Hinić et al. in 2008.

## Most frequent words

Word Cloud is a data visualization technique used to represent text data of the published articles' keywords, in which the size of each word indicates its frequency or importance (Javed Ali et al., 2022; Nasir et al., 2020; Wang and Zhang, 2022). The term "Author's keywords" commonly denotes the topical and contextual inclinations of researchers in a given study, whereas "keywords plus" expresses the terms, methods, and techniques used in a particular study (Patil, 2020; Zhang et al., 2016). In our study, we limited the number of keywords to 50 and randomly chose the colours for both keyword plus (Figure 4) and authors' keywords (Figure 5). The most frequently used keyword plus in the articles was "brucellosis" (n=113), followed by "dogs" (n=90), "brucella" (n=85), "animal" (n=79), "article" (n=63), "infection" (n=61), "diagnosis" (n=60), "dog" (n=55), "male" (n=49), and "*Brucella canis*" (n=48). "*Brucella canis*" (n=113) was the most frequently used authors' keyword, followed by "brucellosis" (n=49), "canine brucellosis" (n=40), "zoonosis" (n=26), "dog" (n=21), "serology" (n=19), and "dogs" (n=19).


**Figure 4.** Word cloud showing the most used keywords plus in publications. Source: Data extracted from Biblioshiny.

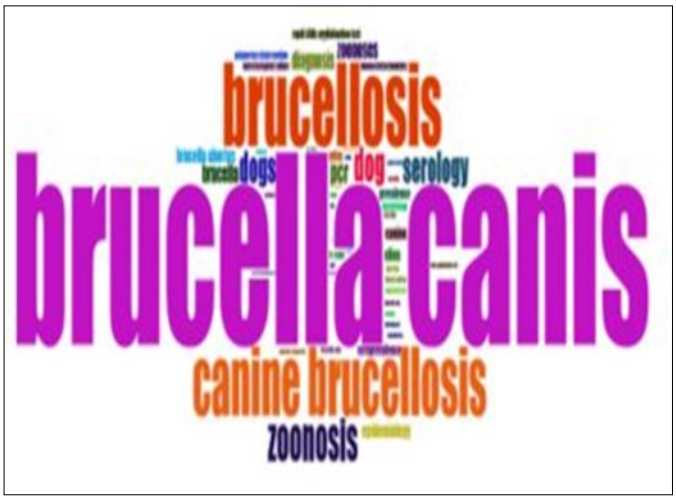


**Figure 5.** Word cloud showing the most used autor's keywords in publications. Source: Data extracted from Biblioshiny

**Thematic evolution**

Thematic evolution analysis is a useful tool for understanding how the focus of research in a specific field has changed over time (Hernandez-Cruz, 2021; Rusliana et al., 2022). To perform a comprehensive analysis of the evolution of research on canine brucellosis over time, the study was divided into three distinct segments based on year ranges: 1980-1999, 2001-2015, and 2016-2022 (Figure 6.). The first segment, spanning from 1980 to 1999, mainly focused on describing the disease using words such as "infection", "abortus", "brucellosis", and "Brucella canis". However, in the second and third segments (2001-2015 and 2016-2022), there was a shift towards research on the diagnosis and prevention of the disease. The most commonly used words during these periods were "abortus", "dogs", "infection", "outbreak", "brucellosis", "diagnosis", "abortus infection", "*brucella canis*", "serodiagnosis", "animals", "kennel", "vaccine", and "agar gel". Nonetheless, the words "infection" and "abortus" remained the two dominant subjects and remained at the focal point throughout all periods.

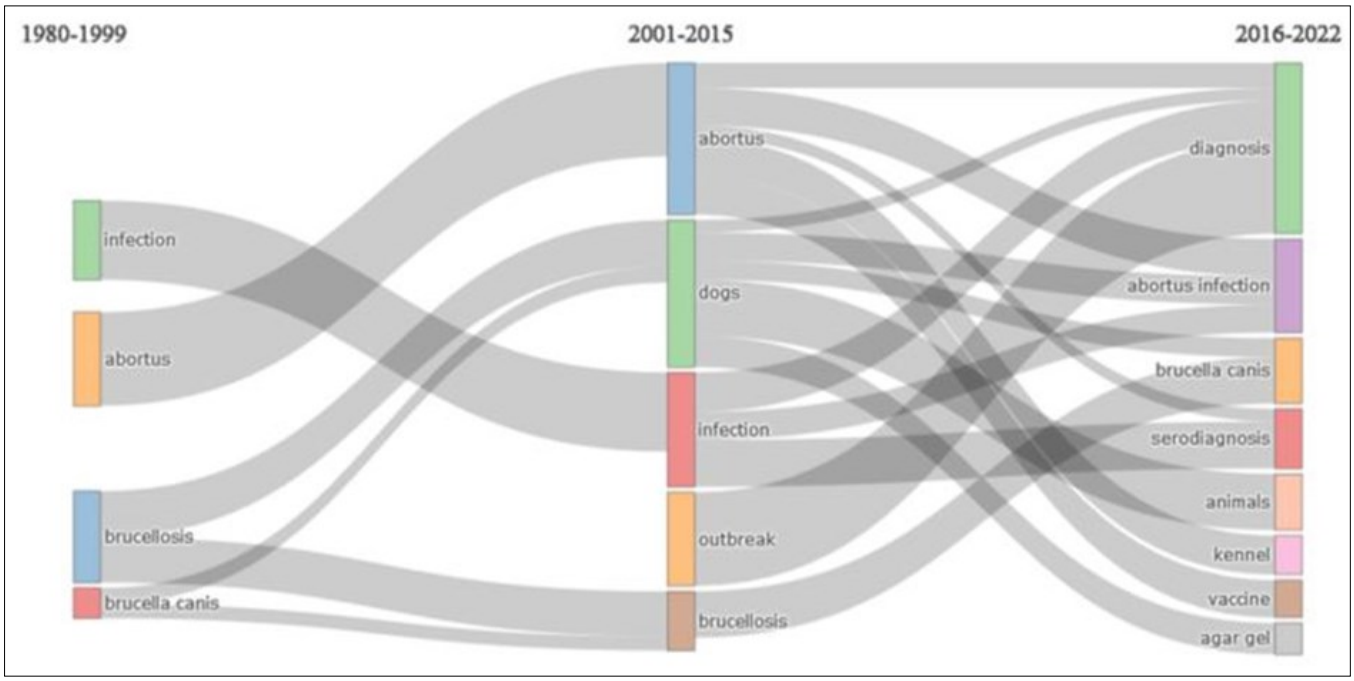


**Figure 6.** Thematic evolution of words from 1980 to 2022. Source: Data extracted from Biblioshiny

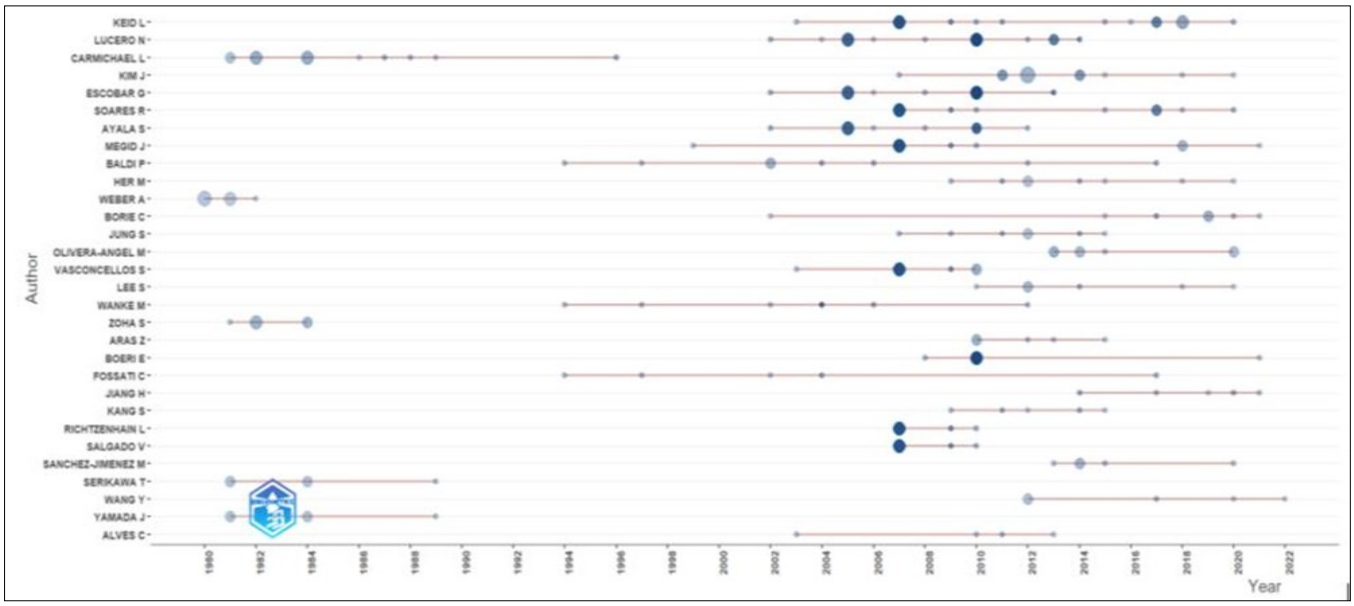


**Figure 7.** Production trends of the top 30 authors over the time period spanning from 1980 to 2022. Source: Data extracted from Biblioshiny

### Top authors production over the time

Figure 7 displays the quality of articles produced by the 30 most productive authors between 1980 and 2022. The figure depicts the total number of citations received per year as indicated by the darkness of the circle, while the size of the circle corresponds to the number of publications. This visualization technique helps determine the most influential authors and their contributions to the research field (Wang and Zhang, 2022). The 30 most productive authors contributed to a total of 222 (70.25%) articles in the field of canine brucellosis. Among these authors, Keid L. (n=15), Lucero N. (n=14), Carmichael L. (n=13), Kim J. (n=13), Boeri E. (n=12), Escobar G. (n=10), and Soares R. (n=10) are the most prolific writers. Figure 7 further illustrates that Carmichael L. (n=13), Weber A. (n=7), Zoha S. (n=6), Serikawa T. (n=5), and Yamada J. (n=5) are considered pioneers in the field of canine brucellosis. Table 3 summarizes the publication numbers of the top 10 most productive authors, the total number of citations received by all their publications, and the year of the most cited publication. Keid L. has the highest number of publications (n=15), while Lucero N. (TC=408), Escobar G. (TC=353), and Carmichael L. (TC=337) are the top three authors with the highest total citation count.

### Number of articles and citations by countries

Table 4 presents the top 10 countries with publications in the field of "Canine Brucellosis," along with the number of publications, total citation count, and average number of citations per article. The United States leads the pack with the highest number of publications (n=55), followed by Brazil (n=40) and Argentina (n=25). In terms of total citation count, the USA (n=942), Argentina (n=694), and Brazil (n=453) are

**Table 3.** The study assessed the productivity of the top 10 authors, analyzing their contributions and output within the field

| Authors | Articles | TC | MCPY |
|---|---|---|---|
| Keid L. | 15 | 310 | 2007 |
| Lucero N. | 14 | 408 | 2005 |
| Carmichael L. | 13 | 337 | 1984 |
| Kim J. | 13 | 105 | 2011 |
| Boeri E. | 12 | 175 | 2010 |
| Escobar G. | 10 | 353 | 2005 |
| Soares R. | 10 | 264 | 2007 |
| Ayala S. | 9 | 290 | 2005 |
| Megid J. | 9 | 228 | 2007 |
| Baldi P. | 8 | 183 | 2004 |

**TC**= Total Citations, **MCPY**= Most Cited Publication Year.
Source: Data extracted from Biblioshiny

**Table 4.** The study identified the top 10 highly cited countries, highlighting their significant contributions to the field.

| R | Country | Articles | TC | AAC |
|---|---|---|---|---|
| 1 | USA | 55 | 942 | 17.13 |
| 2 | Brazil | 40 | 453 | 11.32 |
| 3 | Argentina | 25 | 694 | 27.76 |
| 4 | Colombia | 15 | 98 | 6.53 |
| 5 | China | 14 | 69 | 4.93 |
| 6 | Turkey | 14 | 96 | 6.86 |
| 7 | Korea | 13 | 84 | 6.46 |
| 8 | Chile | 9 | 42 | 4.67 |
| 9 | Japan | 9 | 92 | 10.22 |
| 10 | Germany | 8 | 52 | 6.50 |

R= Rank; TC= Total Citations; AAC= Average Article Citations
Source: Data extracted from Biblioshiny

Appendix A

| No | Search query (Scopus) | Result |
|---|---|---|
| 2 | (TITLE("*brucella canis*") OR TITLE("canine brucellosis") OR TITLE("*B. canis*") AND NOT TITLE(babesia)) AND ( LIMIT-TO ( DOCTYPE,"ar" ) ) | 379 |
| 1 | (TITLE("*brucella canis*") OR TITLE("canine brucellosis") OR TITLE("*B. canis*") AND NOT TITLE(babesia)) | 415 |

Appendix B

| No | Search query (Web of Science) | Result |
|---|---|---|
| 2 | **"***Brucella canis*" (Title) OR "canine brucellosis" (Title) OR "*B. canis*" (Title) NOT babesia (Title) and Article (Document Types) | 263 |
| 1 | "*Brucella canis*" (Title) OR "canine brucellosis" (Title) OR "*B. canis*" (Title) NOT babesia (Title) | 316 |

at the forefront. Interestingly, Switzerland, with only two articles, has the highest average number of citations per article (n=55.50), which is significantly higher than the other countries on the list. Other countries with the highest number of citations per article are Spain (n= 36.25), Finland (n= 31.00), Argentina (n= 27.76), Sweden (n= 27.00), and Hungary (n= 19.50).

## Discussion

In bibliometric analyses, it is observed that English is the most common language for articles (Abbas et al., 2022; Cuccurullo et al., 2016; Wang and Zhang, 2022). This finding arises due to the higher citation rate of English articles (Bakri et al., 2018). The determination that 81.33% of the publication language in our study is English supports this finding.

Bibliometric analyses reveal quantitative data. Due to its ability to provide a robust and versatile statistical software environment, RStudio is widely utilized in the processing of such data (Rodríguez-Soler et al., 2020). which is why we also chose to use it. Our research focuses on canine brucellosis and addresses the significance of this zoonotic disease, as well as the ongoing challenges associated with its eradication. Although no specific article has conducted a bibliometric analysis solely on canine brucellosis, previous studies have examined bibliometric analyses of brucellosis in general, including highly cited articles, institutions, and journals in the field (Bakri et al., 2018; Dastani et al., 2022; Mizrakçi et al., 2021).

Comprehensive studies on various aspects of Brucella species have consistently shown an increase in research publications since 2000. Mizrakçi et al. (2021) identified 2020 as the year with the highest number of publications (n=254), while Destani et al. (2022) found a continuous rise in brucellosis publications in Iran, reaching a peak in 2019 and 2020. Bakri et al. (2018) reported that the highest number of papers was in 2002.

Focusing specifically on canine brucellosis, our study reveals a rising trend in the number of publications since 2011, with the highest number of articles (n=17) published in 2012 and 2014. This indicates a growing interest and recognition of the importance of studying this zoonotic infection.

Mizrakci et al. (2021) identified a total of 8,903 articles on brucellosis spanning the years 1930 to 2021, while Destani et al. (2022) extracted 816 scientific publications on brucellosis conducted by Iranian researchers until 2020. In our study, which specifically focuses on canine brucellosis, we found 316 articles published between 1980 and 2022. Bakri et al. (2018) focused on the 50 most cited articles in the field of Brucella studies. While none of the top 50 articles specifically addressed canine brucellosis, the article identifies that within the topic of Brucella outbreaks, the article "Canine Brucellosis: Outbreaks and Compliance" by R. Bruce Hollet (2006) had the highest number of citations. In our own findings, Wanke M's article "Canine Brucellosis" (2004) ranked first, with "Canine Brucellosis: Outbreaks and Compliance" being the second most cited publication. The disparity in citation counts is believed to be attributed to the topics addressed in the content of the article.

The prominence of Veterinary Microbiology as the leading journal in canine brucellosis research is a noteworthy finding. Our study, along with Bakri et al. (2018)'s findings, emphasizes the significant role of this journal in publishing research on canine brucellosis. Additionally, the breadth of topics covered

by the articles demonstrates the multidimensional nature of canine brucellosis research. Diagnostic methods received significant attention, highlighting the importance of accurate detection techniques. Similarly, Destani et al. (2022) found that Iranian scientific publications on brucellosis primarily revolved around three main topics: prevalence, diagnosis, and treatment. Bakri et al. (2018) conducted an analysis that categorized their findings into different topics, such as genome sequencing, new species identification, molecular diagnostic tests, vaccination, pathogenicity, and case series. Our word cloud analysis of keywords further reinforces the evolving research focus and priorities in the field.

## Conclusion

The bibliometric findings of this study can serve as a valuable reference for future research on canine brucellosis. Future studies could further explore the topic using terms such as "diagnosis" and "brucellosis", which were not analysed in depth within this study. Additionally, comprehensive studies could be designed using databases other than Scopus and WoS to provide a more comprehensive understanding of this important topic.

### Acknowledgements

We would like to thank Pelin Tuncer Göktuna for their contributions.

### Conflict of interest

The authors declared that there is no conflict of interest.

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