

## Bibliometric Analysis of Allelopathy Journal

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### ABSTRACT

Allelopathy Journal is the official publication of 'Allelopathy Books' that promotes allelopathy research and publish researches related to plant sciences and health sciences. This study aimed to present an insight about the researches published in this journal, to help the Authors, Readers and Editorial team to understand the journal in depth. We analyzed the scholarly publications published in the Allelopathy Journal, their Citations, focussing on other aspects such as Publication output, Citation analysis, Co-authorship patterns, Collaboration networks, Research productivity, Research topics and International collaboration. This study is useful to identify emerging trends and evaluate research impact. The data for the study was extracted from the Scopus Database for the period from 1996 to 2022. The results showed that the journal has published 1209 papers during this period, which received 9826 citations with an average of 8.13 citations per paper. F.Z. Wu was the most prolific author with 22 papers receiving 127 citations and Prof. S.S. Narwal, with second highest papers in the journal, received the highest number of citations (242). China was the most productive country with 425 papers in the journal, followed by India (243 papers). The Chinese Academy of Sciences was the most productive institute in the journal and published 67 papers with 678 citations. A total of 4870 authors have appeared in 1209 papers with 0.91 degree of collaboration and a collaboration index of 4.03. Thematic maps indicated that the topics represented by keywords such as "Distribution", "Habitat", "Essential Oil", "Lettuce", "Morphology," have potential importance for future research.

**Keywords:** Allelopathy, authorship pattern, bibliometrics, China, citation analysis, research trends, scopus.

### INTRODUCTION

Allelopathy is a "common biological phenomenon, where biochemicals produced from one organism influences the growth, survival, development and reproduction of other organism" (2). This definition includes plants and animals. The allelopathy plays an important role in managed ecosystems, particularly in agricultural productivity (3). Allelopathy is a new branch of science, it has been actively researched in many countries since the 1950s. To provide a single journal to publish allelopathy researches, the Allelopathy Books, began publishing the 'Allelopathy Journal (AJ)' in 1994. The Allelopathy Journal is the world's most suitable professional journal in this field. It aimed to promote allelopathy research and publish research results. Since 2021 onwards, the journal has expanded its scope to include health sciences also as mentioned on the homepage of the journal website (1). It has completed 29 years of publication and provides free online access from 1994 to 2022. Since 2016, it has been published 6-times a year i.e. bimonthly (January, March, May, July, September and November). Manuscript is published within 60-90 days after submission. The journal is available Online and in Print Editions. The journal is indexed in Current Contents (Agri), SCOPUS, BIOSIS and Abstracted in CAB International Abstracts and UGC Care List. Till December 2022, 57 volumes have been published (1).

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Bibliometrics is the study of "academic publishing that uses statistics to describe publishing trends and to highlight relationships between published works" (6). It deals with bibliographic data to portray the growth, international collaboration and top-profile nations, institutes and authors (11) and also indicates information about the structure of knowledge and how it is communicated and also describes the pattern of publication within a field of scientific literature (5,8). A bibliometric study helps to identify, quantify and compare the influence of research in a particular field. Bibliometrics studies "can be useful in identifying the research trends in a subject, authorship trends and research collaborations" (7). These studies can also be used to measure the impact of scientific journals, such as the number of citations they receive or the h-index of their authors. This information can be used to evaluate the quality and influence of journals and to make informed decisions about in which journals to publish or subscribe to.

The major objective of the study was to analyse the "Allelopathy Journal" from a bibliometric point of view. The present study attempted to analysis the document types published in the allelopathy journal along with year-wise distribution, most prolific authors, institutions and countries, co-authorship pattern and research trends, etc. The specific objectives are listed below:

- To investigate the year-wise distribution of papers in the journal,
- To identify the document types published in the journal,
- To find the most prolific authors, institutions and countries publishing in the journal,
- To find the co-authorship pattern among the highly productive countries,
- To explore the authors' collaboration pattern,
- To study the citation pattern and top cited papers in the journal and
- To visualize the co-occurrence map of highly frequent keywords.

## **MATERIALS AND METHOD**

This study, a bibliometric analysis of "Allelopathy Journal", was undertaken to examine the publishing pattern of research articles in this journal. To fulfil the study's objectives, data were extracted from the Scopus database, which is the most widely used and largest abstracting and citation database of peer-reviewed scientific literature. The data was collected in the month of December 2022. "Allelopathy Journal" was retrieved through a source search (SOURCE-ID: 16682). The search yielded 1209 documents published between 1996 and 2022. The extracted data was exported as a CSV file and analysed using MS Excel and Biblioshiny. Descriptive statistics like percentage, average and frequency were used. Tables, figures and charts were used for visual representation of data. The study is limited only to the documents of the journal indexed in the Scopus database. The documents which are not covered by the Scopus database were not included in the study.

## **RESULTS AND DISCUSSION**

Table 1 provides a concise overview of the journal's publications. The journal is continuously indexed in the Scopus database since 1996. During the span of 27 years from 1996 to 2022, a total of 1,209 documents have been indexed in the Scopus database. These documents received a total 9826 citations with an average of 8.13 citations per document.

These have been authored by 2984 authors, with an average of 4.04 co-authors per document. The authors have used a total of 4,317 keywords in the papers published in the Allelopathy Journal.

Table 1. Summary of publications in Allelopathy Journal (1996-2022)

Description	Results
Timespan	1996-2022
Documents	1209
Annual Growth Rate (%)	1.74
Average citations per doc	8.13
References	36195
Author's Keywords (DE)	4317
Authors	2984
Authors of single-authored docs	63
Single-authored docs	107
Co-Authors per Doc	4.04
International co-authorships %	10.42

### 3.1 Type of Documents

Table 2 shows the type of documents published in the journal. The main document type were Research articles, followed by reviews, conference papers and other documents. Till 2022, 1062 Research articles have been published, these received 7869 citations with an average of 7.41 citations per paper. The 42 review papers received 737 citations and thus have the highest average citation per paper (17.55).

Table 2. Type of documents published in Allelopathy Journal (1996-2022)

Documents Type	Total Publications	Total Citations	Average Citations per Paper
Research Papers	1062	7869	7.41
Conference Paper	93	1219	13.11
Review	42	737	17.55
Editorial	10	1	0.1
Erratum	2	0	0
<b>Total</b>	<b>1209</b>	<b>9826</b>	<b>8.13</b>

### 3.2 Year-Wise Publication Distribution and Citations

Figure 1 illustrates the number of documents published each year and how many times these documents were cited from 1996 to 2022. Scopus has listed 1209 papers from this journal in the last 27 years. The journal published 23 papers in 1996. In 2007, the journal has published the highest number of publications in a year (95). The line graph in the figure shows the number of citations received by the papers published in a particular year. The papers published during the 2007 received the highest number of citations (1,089 citations) as compared to any previous year. Till 2014, the average number of citations per paper was nearly 10.

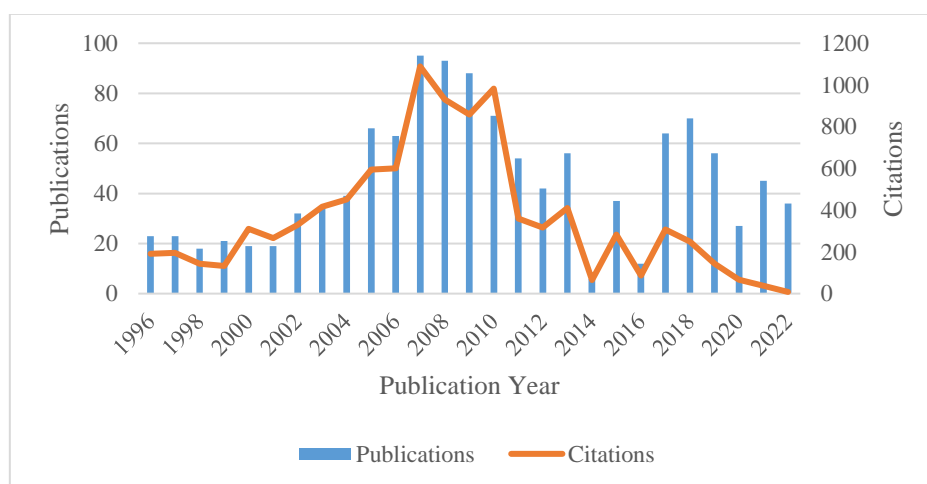


Figure 1. Year wise trend of publications in Allelopathy Journal (1996-2022)

### 3.3 Most Prolific Authors, Institutions and Countries

Table 3 lists the most prolific authors in the journal. The top 10 productive authors produced 151 papers which received 1534 citations with an average of 10.16 citations per paper. Among these 10 authors, 6 were from China, one each from India, Australia, Pakistan and Japan. F.Z. Wu of Northeast Agricultural University, China published the highest number of papers (22) which received 127 citations with an average of 5.77 citations per paper. S.S. Narwal of CCS Haryana Agricultural University (India), the second highest contributor to the journal, received the highest number of citations (242). T.D. Xuan of Hiroshima University (Japan) received the highest citations per paper (17.08) among the top 10 prolific authors.

Table 3. Most prolific Authors in Allelopathy Journal (1996-2022)

Author	Affiliation	Publications	Citations	Average Citations per Paper
Wu, F.Z.	Northeast Agricultural University, China	22	127	5.77
Narwal, S.S.	CCS Haryana Agricultural University, India	17	242	14.24
Peng, S.	Sun Yat-Sen University, China	17	189	11.12
Zhou, X.G.	Northeast Agricultural University, China	17	98	5.76
An, M.	Charles Sturt University, Australia	14	174	12.43
Javaid, A.	University of the Punjab, Pakistan	13	175	13.46
Wang, H.B.	Longyan University, China	13	68	5.23
Xuan, T.D.	Hiroshima University, Japan	13	222	17.08
Zeng, R.S.	Fujian Agriculture and Forestry University, China	13	167	12.85
He, H.B.	Fujian Agriculture and Forestry University, China	12	72	6.00
<b>Total</b>		<b>151</b>	<b>1534</b>	<b>10.16</b>

The top 10 most contributing institutions in the journal are shown in Table 4. It was observed that top 7 out of 10 institutions are situated in China, while other three institutes are from Australia, Mexico and India. The top 10 institutes have produced 340 papers that have been cited 2953 times. The “Chinese Academy of Sciences” was the most productive institute contributing to the journal. It has published 67 papers which also received the highest number of citations (678). The “South China Agricultural University” ranked second with 46 papers, followed by the “Northeast Agricultural University” with 44 papers, and the “Fujian Agriculture and Forestry University” with 38 papers.

Table 4. Top Contributing Institutions in Allelopathy Journal (1996-2022)

Institution	Country	Total Publications	Total Citations	h-index
Chinese Academy of Sciences	China	67	678	17
South China Agricultural University	China	46	446	11
Northeast Agricultural University	China	44	270	11
Fujian Agriculture and Forestry University	China	38	290	11
Shenyang Agricultural University	China	29	142	6
Northwest A&F University	China	29	181	9
Sun Yat-Sen University	China	28	318	11
Charles Sturt University, Wagga	Australia	22	229	9
National Autonomous University of Mexico (Universidad Nacional Autónoma de México)	Mexico	19	150	7
CCS Haryana Agricultural University	India	18	249	9
<b>Total</b>		<b>340</b>	<b>2953</b>	<b>-</b>

The countries contributing most to the journal are shown in Table 5. The maximum number of publications in the journal comes from these 10-countries. China has published the highest number of papers (425) in the journal, followed by India (243 papers) and the USA (82 papers). Thus, China and India accounts for more than half of the total publications in the journal. The papers produced by Italy have received the highest average citation per paper (15.14) among these top 10 countries.

Table 5. Top contributing countries in Allelopathy Journal (1996-2022)

Rank	Country	Total Papers	TP %	Citations	Citation %	*ACPP	h-index
1	China	425	35.15	3094	31.52	7.28	24
2	India	243	20.10	1611	16.41	6.63	17
3	USA	82	6.78	847	8.63	10.33	17
4	Japan	54	4.47	544	5.54	10.07	13
5	Poland	53	4.38	387	3.94	7.31	11
6	Brazil	46	3.80	429	4.37	9.33	11
7	Pakistan	41	3.39	455	4.63	11.09	14
8	Australia	34	2.81	400	4.07	11.76	10
9	Italy	28	2.32	424	4.32	15.14	13
10	Mexico	27	2.23	176	1.79	6.52	8
<b>Total</b>		<b>1033</b>	<b>85.44</b>	<b>8367</b>	<b>85.23</b>	<b>8.09</b>	<b>34</b>

\*ACPP = Average Citations Per Paper

### 3.4 Collaborations Pattern among Top Countries

Table 6 shows the collaboration among the top 10 contributing countries in the journal. China has the highest number of papers (41) in the collaboration with the top10 productive countries. China has collaborated mainly with Australia (16 papers), and the United States (12 papers). It can be observed that India is at the second place in the number of publications, but it merely has 3 papers in collaboration with the top10 countries. Australia has produced nearly half of its publications in collaboration with China.

Table 6. Publishing collaboration among the most productive countries in Allelopathy Journal (1996-2022)

Country	China	India	United States	Japan	Poland	Brazil	Pakistan	Australia	Italy	Mexico
China		2	12	6	0	0	5	16	0	0
India	2		0	0	0	1	0	0	0	0
United States	12	0		1	1	1	2	0	0	0
Japan	6	0	1		1	0	2	0	0	0
Poland	0	0	1	1		0	0	0	0	0
Brazil	0	1	1	0	0		0	0	0	1
Pakistan	5	0	2	2	0	0		1	0	0
Australia	16	0	0	0	0	0	1		0	0
Italy	0	0	0	0	0	0	0	0		0
Mexico	0	0	0	0	0	1	0	0	0	
<b>Total</b>	<b>41</b>	<b>3</b>	<b>17</b>	<b>10</b>	<b>2</b>	<b>3</b>	<b>10</b>	<b>17</b>	<b>0</b>	<b>1</b>

Figure 2 shows the collaboration among the countries. The figure illustrates 4 clusters, the largest cluster consists of 18 countries, and China and the USA were the major

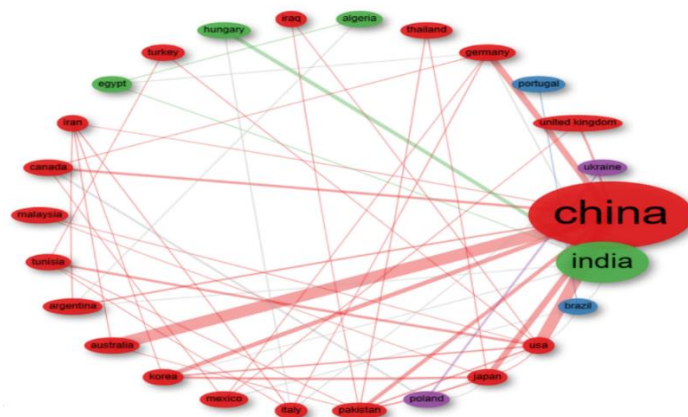


Figure 2. Country collaboration in Allelopathy Journal (1996-2022)

countries in the group. India was the major contributing country in the second largest group, the other collaborating countries in this cluster were Hungary, Algeria and Egypt.

### 3.5 Citation Profile and Top Cited Papers

Table 7 reveals that 1209 documents have received 9826 citations. Nearly 66 % of the total citations were received by only 26 % papers. Only 5 papers have received more than 50 citations, while 113 papers received citations between 21 to 50 and 197 papers received citations between 11 to 20. The rest of papers received 10 or less citations among which 148 papers were not cited at all. The i10 index of the journal was calculated to be 246.

Table 7. Citation profile of publications in Allelopathy Journal (1996-2022)

No. of Citations	Total Papers	Total Papers (%)	Total Citations	Total Citations (%)
Zero	148	12.24	0	0.00
1	124	10.26	124	1.26
2	115	9.51	230	2.34
3	96	7.94	288	2.93
4	88	7.28	352	3.58
5	69	5.71	345	3.51
6	60	4.96	360	3.66
7	56	4.63	392	3.99
8	56	4.63	448	4.56
9	51	4.22	459	4.67
10	31	2.56	310	3.15
11 to 20	197	16.29	2814	28.64
21 to 50	113	9.35	3382	34.42
51 to 100	5	0.41	322	3.28
<b>Total</b>	<b>1209</b>	<b>100.00</b>	<b>9826</b>	<b>100.00</b>

Table 8 shows the list of the top 10 highly cited papers published in the journal. It was observed that these top 10 papers were published between the year 2000 and 2010, i.e., these publications are at least 12 years old. The paper titled “*Juglans* spp., juglone and allelopathy” by R.J. Willis published in 2000, received the highest citations (82). This was followed by the paper titled “Rice allelopathic potential and its modes of action on Barnyardgrass” by Lin et al. (70 Citations) and “Allelopathy: Current status of research and future of the discipline: A commentary” by S.O. Duke (66 citations).

Table 8. Top 10-cited papers published in Allelopathy Journal (1996-2022)

Rank	Author and Title	Citations	Year
<b>I</b>	Willis, R.J., “ <i>Juglans</i> spp., juglone and Allelopathy”	82	2000
<b>II</b>	Lin, W.X. <i>et al</i> , “Rice allelopathic potential and its modes of action on Barnyardgrass ( <i>Echinochloa crus-galli</i> )”	70	2000
<b>III</b>	Duke, S.O., “Allelopathy: Current status of research and future of the discipline: A commentary”	66	2010
<b>IV</b>	Nagabhushana, G.G., <i>et al</i> , “Allelopathic cover crops to reduce herbicide use in sustainable agricultural systems”	53	2001

<b>V</b>	Ruilong, W., et al., "Cloning, expression and wounding induction of $\beta$ -caryophyllene synthase gene from <i>Mikania micrantha</i> H.B.K. and allelopathic potential of $\beta$ -caryophyllene"	51	2006
<b>VI</b>	Yang, G.Q., et al., "Physiological effects of allelochemicals from leachates of <i>Ageratina adenophora</i> (Spreng.) on rice seedlings"	49	2009
<b>VII</b>	Zhang, T.T., et al., "Allelopathic effects of submerged macrophyte <i>Chara vulgaris</i> on toxic <i>Microcystis aeruginosa</i> "	48	2009
<b>VIII</b>	Lorenzo, P., et al., "Allelopathic interference of invasive <i>Acacia dealbata</i> : Physiological effects"	48	2008
<b>IX</b>	Xuan, T.D., et al., "Methods to determine allelopathic potential of crop plants for weed control"	48	2004
<b>X</b>	Kordali, S., et al., "Screening of antifungal activities of 21 oxygenated monoterpenes <i>in-vitro</i> as plant disease control agents"	47	2007

### 3.6. Authorship Pattern

Table 9 shows the authors' collaboration pattern. "Degree of Collaboration (DC)" was calculated using K. Subramanyam formula (10) and "Collaboration Index" was calculated using Lawani (1980) formula (4). It was found that a total of 4870 authors have appeared in 1209 papers with 0.91 degree of collaboration and a collaboration index of 4.03. So, it was noted that maximum papers in the journals had multiple authors. The author collaboration index was found to be increasing with time. The author collaboration index for the papers published during 1996-2000 was 2.82 and it reached 5.58 for the papers published during 2021-2022. The degree of Collaboration has also increased with time.

Table 9. Authorship pattern of publications in Allelopathy Journal (1996-2022)

Authors	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020	2021-2022	Total Papers	TP (%)
Not given	0	2	5	0	4	1	12	0.99
1	16	25	37	9	3	5	95	7.86
2	34	40	74	28	17	6	199	16.46
3	29	47	85	34	36	5	236	19.52
4	11	40	93	47	40	8	239	19.77
5	9	27	52	32	33	13	166	13.73
6	2	3	30	15	38	9	97	8.02
7	3	3	19	18	23	18	84	6.95
8	0	1	11	7	17	8	44	3.64
9	0	2	2	4	8	2	18	1.49
10	0	0	1	1	5	5	12	0.99
>10	0	0	1	0	5	1	7	0.58
<b>Total</b>	<b>104</b>	<b>190</b>	<b>410</b>	<b>195</b>	<b>229</b>	<b>81</b>	<b>1209</b>	<b>100.00</b>
<b>TP (%)</b>	8.60	15.72	33.91	16.13	18.94	6.70	100.00	---
Collaboration Index	2.82	3.19	3.69	4.22	5.13	5.58	4.03	---
Degree of Collaboration	0.85	0.86	0.90	0.95	0.97	0.93	0.91	---

TP: Total Papers

### 3.7. Most Frequently Used Keywords

The authors in this journal used 4317 keywords in 1209 documents with an average of 3.57 keywords per document. To identify the most commonly used keywords in the Title and Abstract of publications in the Journal, the authors analyzed data by splitting it into three different time periods, i.e., 1996-2004, 2005-2013, and 2014-2022 (Table 10). The analysis focussed on keywords that occurred at least 15 times, and calculating the relevancy score for these keywords. The most frequently used words were visualized on overlay visualization diagrams, where the font size of text and circle size represent the frequency of keywords occurrence.

Table 10. Top 15 frequently used Terms in Title and Abstract in Allelopathy Journal (1996-2022)

1996-2004		2005-2013		2014-2022	
Term	Frequency	Term	Frequency	Term	Frequency
Plant	116	Crop	188	Soil	288
Soil	93	Root exudate	142	Seed germination	148
Species	81	Rice	135	Leaf	138
Weed	75	Allelopathy	132	Essential oil	95
Allelochemical	61	Cultivar	121	Weed	81
Leafe	56	Leachate	89	Ginseng	73
Compound	54	Lettuce	87	Leachate	73
Leaf	51	Fungi	85	Community	70
Allelopathy	50	Herbicide	66	Phenolic acid	69
Seedling	45	Tree	64	Oil	67
Seed germination	43	Component	63	Allelopathy	60
Shoot	43	Medium	63	Seed	60
Inhibition	42	enzyme	61	Cucumber	53
Rice	40	phenolic acid	61	fungi	49
Yield	36	root length	60	bacterium	46

The result shows that 47 keywords were used at least 15 times during 1996-2004. The relevancy score was calculated for the 47 most frequently used keywords and it was found that 28 keywords (60 %) had a high relevancy score. The visualization of these 28 keywords is illustrated on an overlay visualization diagram [Figure 3(a)], which showed that these keywords occurred in 3 clusters. The most frequently used keywords during this time period were: Plant (116), Soil (93), Species (81), Weed (75), Allelochemical (61), and Leaf (56). However, based on the relevancy score, the most relevant keywords were Barnyardgrass, Maize, Cowpea, Sunflower, Allelopathic potential, Rice and Sorghum.

Figure 3(b) shows the keywords used most frequently from 2005 to 2013. We identified a total of 247 keywords that were used at least 15 times in the Title or Abstract. Based on the relevancy score, 148 (60 % of 247) keywords were selected to illustrate the most frequently used keywords during this time period. The most relevant keywords used during this period were predator, *Microcystis aeruginosa*, *M. aeruginosa*, *M. niveum* concentration, saponin etc.

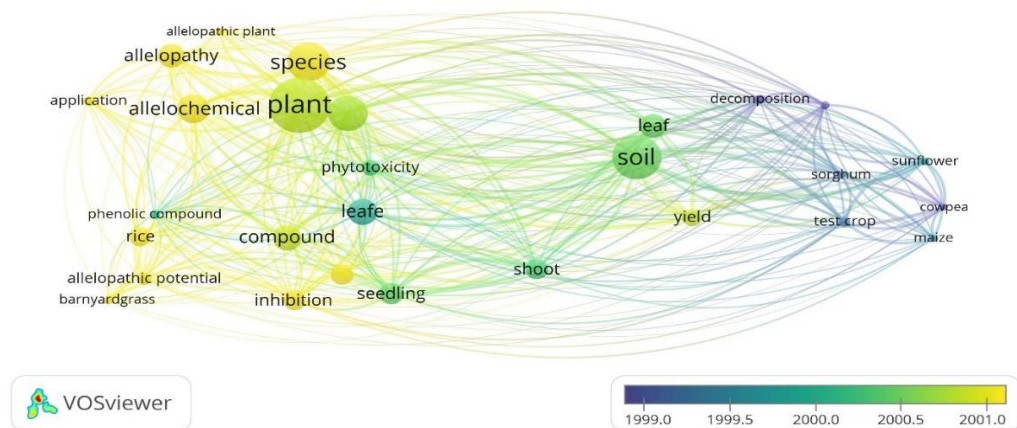


Figure 3(a). Most frequently used keywords in Allelopathy Journal (1996-2004)

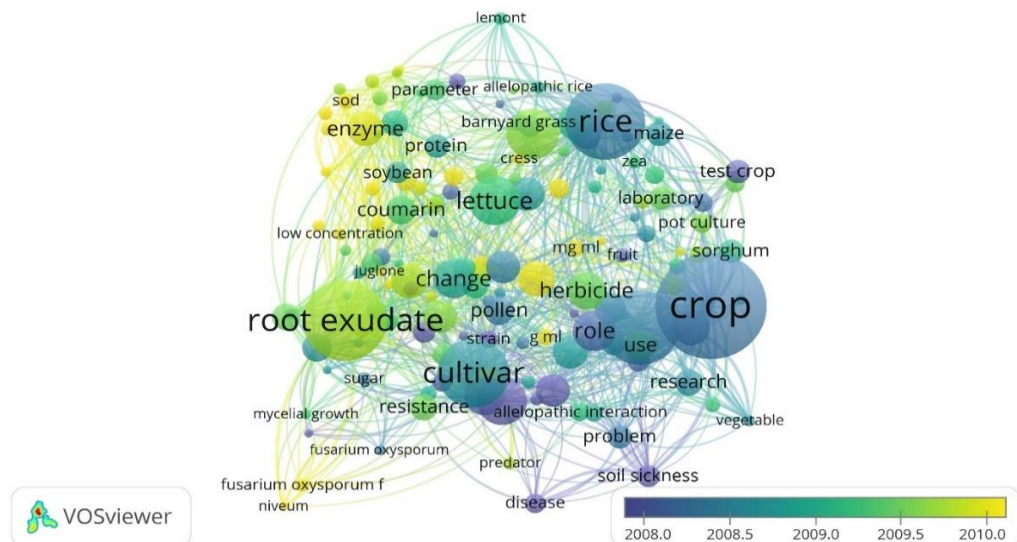


Figure 3 (b). Most frequently used keywords in Allelopathy Journal (2005-2013)

Figure 3(c) illustrates the most frequently used keywords during the time interval of 2014-2022. It was found that 133 keywords appeared at least 15 times in the Titles or Abstracts of publications during this time frame. On the basis of their relevance score, the top 80 (60 % of 133) keywords were selected to illustrate the most frequently used keywords.

The analysis revealed that the most relevant keywords during this period were Oil, Essential oil, Chemical composition, Abundance, Syringic acid and Invasive plant. These findings suggest that research in the field of allelopathy during this time period has focussed on the chemical and biological aspects of allelopathic interactions, with a particular emphasis on the role of oils and their chemical composition.

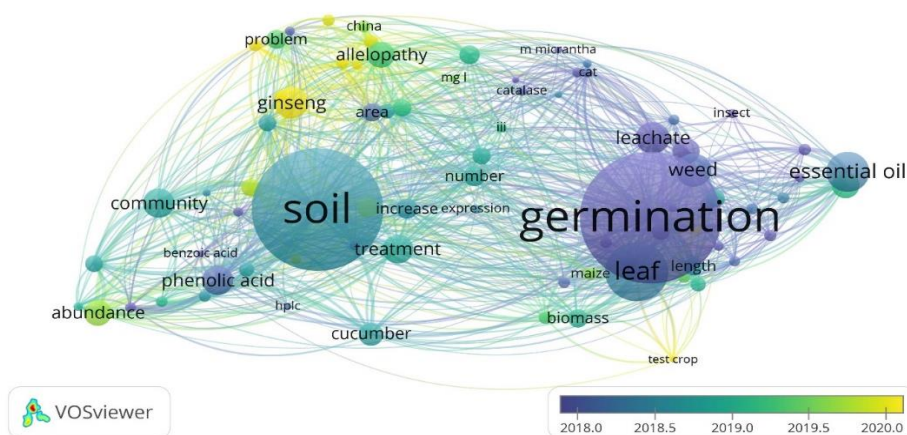


Figure 3(c). Most frequently used keywords in Allelopathy Journal (2014-2022)

### 3.8 Trending Topics and Thematic Map

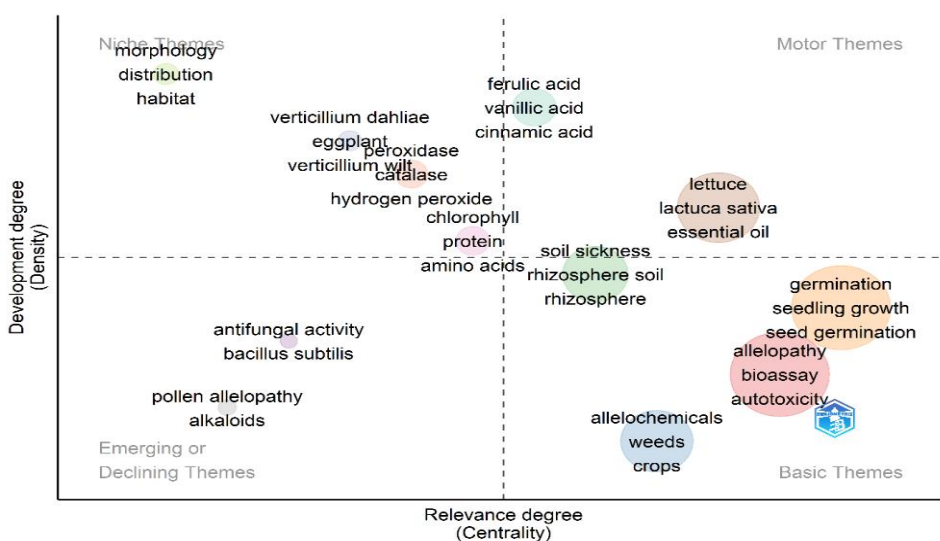


Figure 4. Thematic map of publications in Allelopathy Journal (1996-2022)

We also analysed the thematic maps based on density and centrality of references. The maps were divided into four topological regions (Figure 4). These results were derived from a semiautomatic algorithm that analyzed the Titles of all research article and includes relevant keywords other than the author's keywords, allowing the results to capture deeper changes. The visualization of the topic modelling results revealed some interesting patterns that can provide insights into the current state and future directions of research in the field.

The upper right quadrant represents the topics that are highly dense and central, indicating their importance for future research. The keywords such as "lettuce," and "essential oil" represent the prominent "motor" topics that require further development. Conversely, the under-represented keywords such as "morphology," "distribution," and "habitat" are experiencing fast development despite their low centrality, indicating their potential importance for future research.

The lower left quadrant reveals a declining centrality and density of research topics represented by keywords such as "pollen allelopathy," "alkaloids," and "antifungal activity." This indicates a reduced focus on these topics in recent research. The lower right quadrant, on the other hand, includes basic topics that play a crucial role in laying the foundation for further research in the field. These keywords include "Allelochemicals," "Autotoxicity," "Bioassay," "Crops," "Seed germination" and "Weeds," indicating their significance in research.

## CONCLUSIONS

This study aimed to examine the research productivity of the Allelopathy Journal during 1996 to 2022 using various bibliometric indicators, such as Annual production, Citation pattern, the Most prolific authors, the Most cited articles, the Most frequently used keywords, etc. The study is limited only to the publications of the journals indexed in Scopus database. The results showed that the journal has published 1209 papers in this period, which received 9826 citations with an average of 8.13 citations per paper. These papers have a total of 36195 references. Research Articles were the most prominent type of document constituting 87 % of the documents receiving 7.41 citations per paper. The review papers received the highest average citation (17.55) per paper. The maximum number of papers (95) in a particular year appeared in 2007. Prof. F.Z. Wu was the most prolific author while Prof. S.S. Narwal received the highest number of citations. It can be observed that nearly 85 % of the publications came from the top 10 contributing countries. China was the most contributing country with 425 papers in the journal, followed by India with 243 papers. A large number of International Collaborations were seen in the papers published in the journal. As regards the top contributing country China, it has collaborated mainly with authors from Australia (16 papers) and the United States (12 papers). Among the top 10 institutions contributing to the journal, it was observed that 7 are from China. The Chinese Academy of Sciences was the most Prolific Institute publishing 67 papers. As regards the citations, nearly 88 % papers published in the journal have been cited by others. There are 5 papers which have received more than 50 citations. The paper titled "Juglans spp., juglone and allelopathy" by R.J. Willis published in 2000 have received the highest citations (82) among all the papers. The Authors collaboration was quite significant as the degree of

collaboration was 0.91 and collaboration index was 4.03. Also, the Author Collaboration Index has increased with time from 2.82 during 1996-2000 to 5.58 for the latest published papers. The authors of Allelopathy Journals used 4317 keywords with an average of 3.57 keywords per document.

During the initial years of publication (1996-2004), the most relevant keywords were: Allelopathic potential, Barnyardgrass, Cowpea, Maize, Rice, Sorghum and Sunflower. The next phase (2005-2013) saw the most relevant keywords such as *Microcystis aeruginosa*, *M. aeruginosa*, *M. niveum*, M concentration, Predator and Saponins. During the next phase of publication (2014-2022), the most relevant keywords were : Abundance, Chemical Composition, Essential Oil, Invasive Plant, Oil and Syringic Acid which suggested that research in the field of allelopathy recently focussed on the Chemical and Biological Aspects of Allelopathic Interactions, with a particular emphasis on the role of oils and their chemical composition.

This bibliometric study will be useful for Authors, Readers and Researchers, interested in allelopathy research. The journal is a leading journal in allelopathy which is continuously being indexed in Scopus Database and currently have CiteScore 1.8, SJR 0.222 and SNIP 0.417 (2021). It is ranked 264 out of 482 journals in the 'Plant Science' category of Scopus (9). The journal is truly International in nature as the contributors are from a large number of countries across the globe. The papers in the journal are being cited significantly, thus have a good impact on allelopathy research.

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### **DECLARATION**

We declare that all authors of this manuscript have made substantial contributions. We did not exclude any author who substantially contributed to this manuscript. We have followed the ethical norms established by our institution.

### **CONFLICT OF INTEREST**

The authors announce that they have no conflict of interest.

### **ETHICAL APPROVAL**

The authors declare that the study was carried out following scientific ethics and conduct. However, this study did not involve any use of animals, hence no ethical approval has been obtained from the concerned committee.

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