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Global Publication Output of *Tinospora cordifolia* (Medicinal Plant) Research: A Scientometric Study

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Abstract: ***Scientometrics is described as a technique for analysing a researcher's quantitative research output. This study examines scientometric analysis on Tinospora cordifolia, medicinal plant by measuring the year-wise distribution of articles, annual growth rate, authorship pattern, author productivity, relative growth rates, article doubling time, degree of author collaboration, ranked list of authors, and distribution of publications output by broad topic areas. By observing the output, we found that a maximum of 166 articles (25.75%) were published in 2021. According to the authorship pattern, 40 publications out of 1054 were written by a single author. There are 227 two-author papers, 216 three-author papers, and 206 four-author papers. Author productivity is 0.238. This indicates that production per author is just 23.80% on average, while the average number of authors per manuscript is 4.20. The average doubling time is 0.969 and the relative growth rate (RGR) is 0.68. The overall cooperation rate is 0.96. India ranks first, having published 900 articles (0.85%) out of a total of 1054 articles. By publishing 22 publications, Maharishi Dayanand University and Banaras Hindu University have taken the lead. The University Grants Commission funded 52 articles, with Dabur, R ranking first with 12 papers published.***
Keyword: Tinospora cordifolia, Relative Growth Rate, Degree of Collaborations. DoublingTime, Global Publication Output, Medicinal plant.

I. INTRODUCTION

Medicinal plants have long been important and are used as primary sources healing from diseases. A long history of medicinal plants has been used to treat ailments by humans based on instinct, taste, and experience. And hence the research on medicinal plants has attracted many researchers to analyse medicinal plants. Recently, during the Covid-19, it was used tremendously. Among many different medicinal plants, *Tinospora cordifolia (Giloy),* has proved to be effective medicinal plant.

Tinospora cordifolia is a wide evergreen climbing vine with several branches. It has simple, roundish leaves. It has reddish-colored fruits. This medicinal plant's fruits grow in bunches. This herb is used in Ayurveda to cure a variety of ailments. *Tinospora cordifolia* is commonly known as heart leaved Moonseed Plant (English), Amrita Guduchi (Sanskrit), Giloy (Hindi), Gulancha (Bengali), Galo (Gujrati) and Teppatige (Telugu), It is found throughout India, and also in Sri Lanka, Bangladesh and China. Mittal, Sharma and Batra [1] described the importance of *Tinospora cordifolia* in the treatment of various diseases such as viral infections, cancer, diabetes, inflammation, leukemia neurological, immunomodulatory and psychiatric conditions it relaxes norepinephrine induced contractions. It is anti-microbial, anti-hypertensive and anti-viral Sangeetha et al. [2] assessed oxidative stress and distorted carbohydrate metabolism activities in rats related to type 2 diabetes. The stem of *Tinospora cordifolia* is widely used in regulating the blood glucose (by promoting insulin secretion and inhibitor for gluconeogenesis and glycogenosis). Zinjarde, Bhargava and Kumar [3] explained that in *Tinospora cordifolia* major phytoconstituents are Alkaloids, tannins, cardiac glycosides, flavonoids, saponins, and steroids. Uma Maheswari and Prince [4] performed research on the root extract of *Tinospora cordifolia* and concluded that the root extract of this plant can decrease the levels of glycosylated hemoglobin, plasma thiobarbituricacid, hydroperoxides, ceruloplasmin and vitamin E in diabetic rats. Sinha et al. [5] reviewed that *Tinospora cordifolia* has been used in indigenous medical systems as described in various classical texts of the Ayurvedic system of medicine. Charak, Sushrut, Ashtang Hridaya and other ancient treaties. It is also specifically mentioned for its use in tribal and folk medicine in various parts of India.

Scientometrics, a field of information science concerned with the use of bibliometrics, is necessary to investigate the scientific concepts found in the published literature in all of its forms.

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According to the Glossary of Thompson Scientific Terminology [6], "Scientometric is the quantitative study of the disciplines of science based on published literature and communication. Scientometric can identify innovative and emerging areas of scientific research; examine their development over the time and over the geographical location. According to Dobrov and Korennoi [7], 'Scientometrics' and bibliometrics, both carry the same meaning.

Merton and Garfield [8], stated that scientometric as 'the field of enquiry given over to the quantitative analysis of science and scientific field'.

II. REVIEW OF LITERATURE

García-Ávila, F. et al.[9] analysed Application of ornamental plants in constructed wetlands for wastewater treatment using Scientometric technique from 2002 to 2022 using Scopus database. Mexico, Brazil, USA, China and India have the highest number of publications in the field of ornamental plants in the CWs and the most used ornamental plants are Canna, Iris, Heliconia and Zantedeschia.

Chaman Sab M. et al.[10] assessed Ethnopharmacology Research: A Scientometric Assessment of Indian Publications During 2011 to 2020 Web of Science (WoS) database Total 7,159 papers were retrieved , consisting of 84.24% journal articles and 14.23% review articles. The Council of Scientific Industrial Research (CSIR) India collaborates with the Indian Council of Agricultural Research (ICAR) and Central Institute of Medicinal Aromatic Plants (CIMAP) in terms of domestic collaboration.

Haungm Z. et al.[11] studied and analysed Medicinal and Edible Plant *Coptis* a total of 367 documents were analyzed. China (214) is at top position followed by Japan (57) and South Korea (52). The anti-oxidative stress, pharmacokinetics, and Alzheimer's disease treatment of *Coptis* are new hotspots in this field.

Atlasi et al. [12] carried out a scientometric analysis on herbal medicines used in the treatment of COVID-19. Data is retrieved from Web of Science (WOS) and Scopus database published till 26 October 2020. A total of 3185 records were analysed. Original and review articles have been the two predominant varieties of papers in each database. Major subject areas are drugs and medicine, respectively in WOS and Scopus databases.

The top three productive countries are China, US and India. "Journal of Biomolecular Structure Dynamics" in WOS and "Chinese Traditional and Herbal Drugs" in Scopus have been the top journals. Top keywords are "COVID-19″ and "Traditional Chinese Medicine". US is at top in collaboration with different authors.

Sivankalai and Sivasekaran [13] analyses the global level outlook of research publications on Mucormycosis output between the period of 1923 to 2021 (May). 4451 publications downloaded from core collection of Web of Science database. First publication was in 1923. 3798 institutions and 8562 different disciplines contributed and 2808 publications were in Articles. 4451 publications were published by 17320 authors and 23552 collaborations, documents per author is 0.257, authors per document are 3.89. First article published in 1923 was in German language. Total records published in 1161 journals, eleven languages, ninety-five countries and 1504 are open access and 12 articles are highly cited in this field.

Kumari, Amsaveni and Surulinathi [14] performed scientometrics analysis in the field of Occupational Therapy research output during the period of 1989 to 2015. The data is retrieved from the Web of Science. A total of 8095 publications were found the highest number of publications were published in 2013. In 2007, 386 publications were published with highest Global Citation Score of 6525. In Global Citation Scores, University of Queensland tops followed by the University of Toronto. India is at 25th position in the global ranking.

Jeyshankar and Babu [15] have assessed scientometric analysis of leukemia research on Indian contributions between 1960 to 2011. The data is retrieved from Scopus database. Out of 29 states in India, only 20 states contributed 2120 records. New Delhi ranked first, followed by Chandigarh, Maharashtra.

Surulinathi, Balasubramani and Kalidhasa [16] analysed the growth and development of Green Computing. A total of 3324 records are found in Web of Science from the period 1956-2011. Germany is at top by publishing 270 (16.24 %) articles followed by France and Italy, UK and Spain contributed more than 100 articles. India is also a leading country by publishing 128 Articles.

Gupta and Bala [17] have analysed the research output of India (Citation analysis of theoretical population genetics literature). The ten years of data was retrieved from Scopus using the keyword alzheimer disease. USA is at top with 25% publications followed by UK (16.20 %). India with 900 publications is on 16th position among top 20 countries. All India Institute of Medical Sciences (AIIMS), New Delhi have highest publications but University Institute of Pharmaceutical Sciences, Punjab Chandigarh got highest h-index (26) with 35 publications.

III. OBJECTIVES OF THE STUDY

This study has the following objectives:

1) To study year-wise distribution of the articles published during 2011 to 2021.
2) To find annual growth rate of articles.
3) To reveal authorship pattern and author productivity.
4) To check the co-authorship network.
5) To examine Relative Growth Rates and Doubling Time of articles.
6) To classify the Degree of authors collaboration
7) To studycountry wise and subject -wise distribution of articles.
8) To identify and prepare the ranked list of authors.
9) To study the distribution publications output by broad subject areas.

IV. RESEARCH METHODOLOGY AND LIMITATION OF THE STUDY

The required data was collected from Scopus database for the period 2011to 2021. It can be seen that 1054 research articles retrieved from this database on *Tinospora cordifolia* medicinal plant. The researcher downloaded the data and analysed the data with the help of MS Excel software as per the objectives of the study and the VOSviewer software was used for visualization of Co-authorship network. Various statistical methods are used to calculate AGR, RGR, Doubling Time, Author productivity and degree of authors collaboration.

V. RESULT AND DISCUSSIONS

1) Year-Wise Distribution of Articles

Table 1: Year-Wise Distribution of Articles & Annual Growth Rate

S. No.	Year	No. of Articles	%	Cumulative No. of Articles	AGR (%)
1	2011	91	8.64	91	-
2	2012	109	10.35	200	19.70
3	2013	105	9.97	305	-3.66
4	2014	91	8.64	406	-13.30
5	2015	78	7.40	484	-14.20
6	2016	66	6.26	550	-15.30
7	2017	67	6.36	617	1.51
8	2018	75	7.12	682	11.94
9	2019	73	6.93	755	-2.66
10	2020	133	12.53	887	80.00
11	2021	166	15.76	1053	25.75
Total		1054	100		

Table 1 shows total ‘1054’ articles have been published in these eleven years. Maximum 166 articles are published in 2021.Trend is oscillatory it first increases for one year then decreases from 2012(109) to 2016(66). Minimum publications are in 2016. After 2016 publications increased.
The year-wise distribution of articles is displayed in Figure 1. The figure shows the growth of articles with respect to the Year. It is clear from the Figure that maximum number of articles was published in 2021.

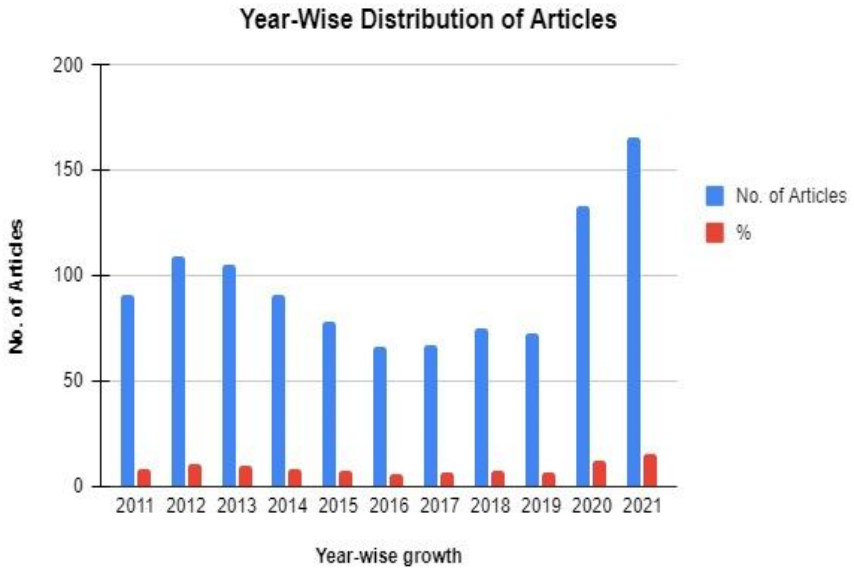


Figure 1: Year-Wise Distribution of Articles

2) Annual Growth Rate

The *annual growth rate* (AGR) reflects the rate of growth over a single year. It is calculated by the following formula (1).

$$Annual\ Growth\ Rate = \frac{(Suceeding\ Value - Previous\ Value)}{Previous\ Value} \quad (1)$$

The figure 2 demonstrates the annual growth rate of articles. It is observed that the year 2020 has the highest and positive AGR while the years 2013-2016 and 2019 shows negative AGR.

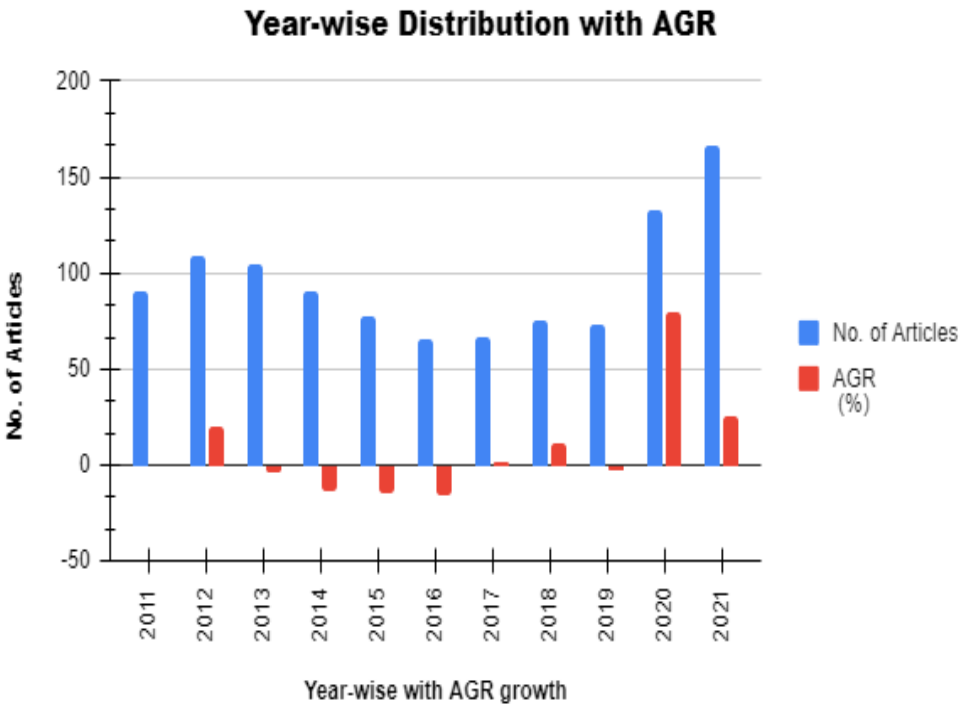


Figure 2: Year-Wise Distribution with AGR

A. Authorship Pattern

Table 2: Authorship Pattern

Year	Single Author	Two Authors	Three Authors	Four Authors	Five Authors	Six Authors	More than Six Authors	No. of Publications
2011	3	29	17	22	8	1	11	91
2012	5	26	24	19	10	12	13	109
2013	4	22	35	25	6	8	5	105
2014	5	27	15	16	17	6	5	91
2015	5	25	15	16	9	3	5	78
2016	2	13	15	15	5	6	10	66
2017	1	16	10	13	11	7	9	67
2018	2	10	15	14	14	6	14	75
2019	3	9	12	13	15	8	13	73
2020	1	32	21	24	19	8	28	133
2021	9	18	37	29	27	13	33	166
Total	40	227	216	206	141	78	146	1054
Percentage	3.79	21.53	20.49	19.54	13.66	7.40	13.85	100

Table 2 describes the authorship pattern of articles during the period 2011 to 2021. The total number of publications are 1054, in which 40(3.79%) single author publications, 227 (21.53%) two authors publications, 216 (20.49%) three authors publications, 206 (19.54%) four authors publications, and so on. It shows that article publication trend was towards the multiple author approach. 60% publication work is published by double, triple and four author's collaborations.

The following Figure 3 demonstrate the authorship pattern between the No. of publication and years. From this figure, it is found that the category of three authors has the largest community.

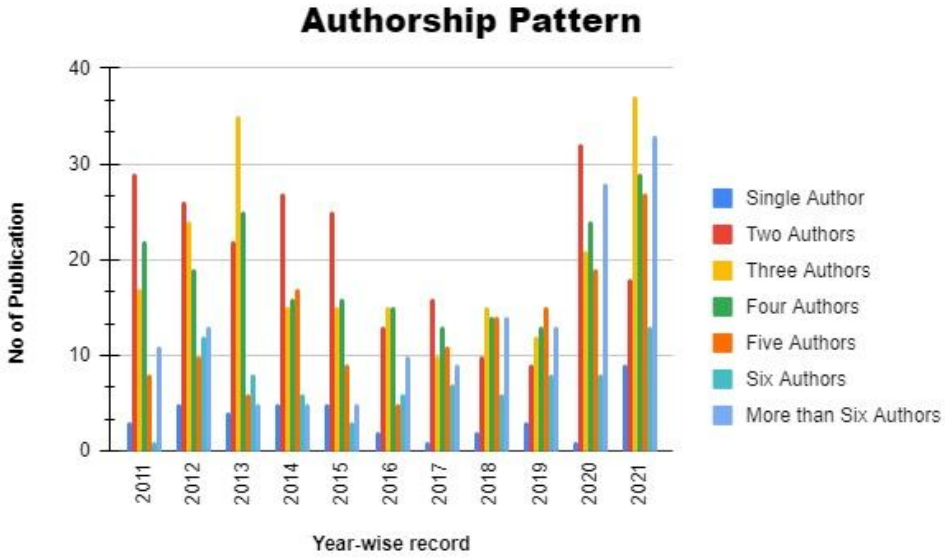


Figure 3: Authorship Pattern

B. Author Productivity

Table 3: Author Productivity

Year	Number of Authors	Number of Articles	APA	AAPP
2011	345	91	0.26	3.84
2012	440	109	0.247	4.05
2013	372	105	0.282	3.55
2014	327	91	0.278	3.59
2015	291	78	0.268	3.73
2016	274	66	0.241	4.15
2017	288	67	0.233	4.29
2018	340	75	0.220	4.54
2019	362	73	0.201	4.97
2020	602	133	0.220	4.54
2021	786	166	0.211	4.74
Total	4427	1054	0.238	4.20

Table 3 reveals author productivity. The productivity per author and average authors per paper are calculated by the following formulae (2) and (3).

$$Productivity\ per\ author = \frac{Number\ of\ Articles}{Number\ of\ Authors} = 0.238 \qquad (2)$$

The *Productivity per author* is less than one which means on an average *Productivity per author* is only 23.80%.

$$Average\ Authors\ Per\ Paper = \frac{Number\ of\ Authors}{Number\ of\ Articles} = 4.20 \qquad (3)$$

The average number of authors per paper is obtained by dividing the total number of articles by the total number of authors (papers). This may be a very useful indicator for determining a journal's or author's average effect.

The figure 4 represents the year wise productivity per author and average author per paper. From the figure 4, it is clear that in year 2021, the AAPP of articles as well as authors are highest and APA is lowest.

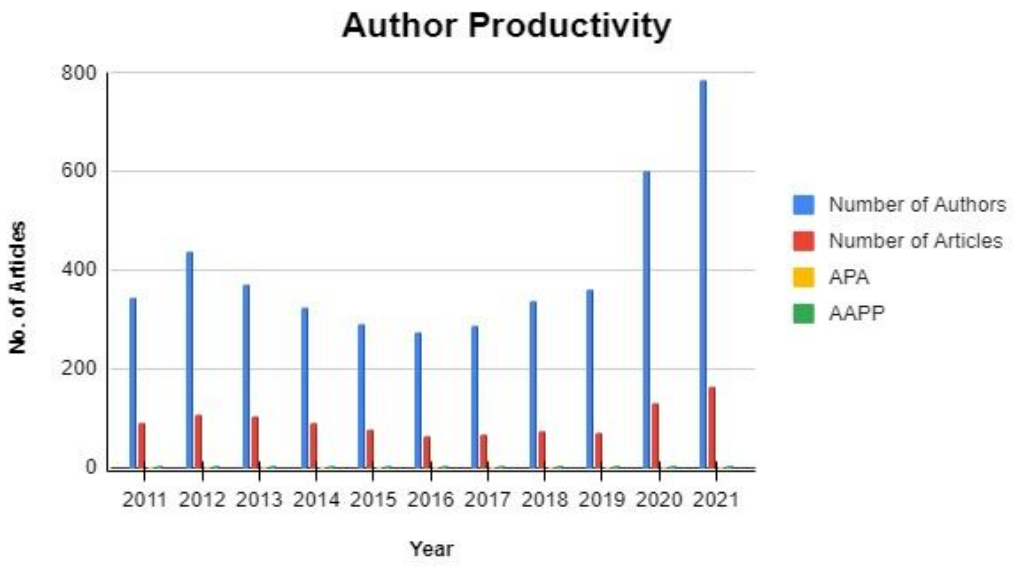


Figure 4: Author Productivity

C. Co-authorship Network

Figure 5 displays the visualisation of the co-authorship network. Networks were created using the VOS viewer Software (https://www.vosviewer.com/), which was used to evaluate data obtained from Scopus. The figure's node symbol stands in for the author, while the size of the node denotes the author's activity and the curving line connecting the two authors denotes their relationship of collaboration. The co-authorship network is analysed with respect to the highest document-wise, citation-wise and total link strength-wise.

1) *Document-wise Co-authorship Network:* With 19 documents in collaboration, each in collaboration, *Kumar a., Kumar s., and Singh a.* have equal but highest contributions and have the first rank. Subsequently, *Sharma p. and Sharma* **a**. had 17 documents each and got the second rank. Additionally, *Singh s. (14), Singh s., and Sharma s. (13) are* in the rank list.
2) *Citation-wise Network:* Considering the highest citation-wise, *Dhama k., Latheef s. k., and Samad h. a.*, achieved the top (419) citations equally. Subsequently, *Tiwari r. (381), Sharma p. (365), and Kumar a. (364)* have achieved the good citation score.
3) *Total Link Strength:* For the link-wise analysis, we have found that *Kumar a.* has the strongest connection among others, with 29 links. *Patwardhan b.* comes in second with 25 connections, followed by *Chopra a.* with 24 connections and *Bichie l.* with 23 connections.

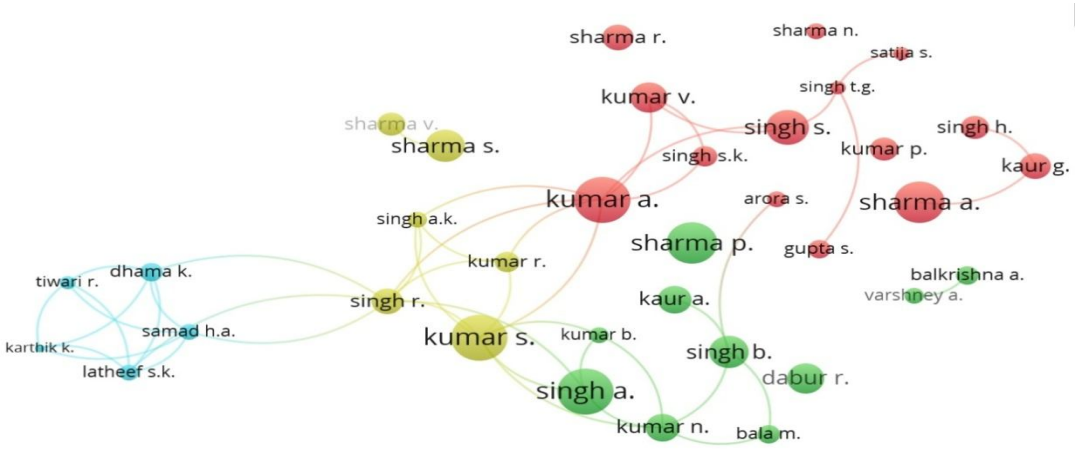


Figure 5: Co-authorship Network

D. Relative Growth Rate of Articles& Doubling Time

Relative Growth Rate (RGR) is a measure to study the growth of number of articles over the period whereas Doubling Time (DT) is defined as the time when records become doubles values. The relative growth rate of articles and doubling time statics are mentioned in the following Table 4.

Table 4: Relative Growth Rate of Articles & Doubling Time

Year	No. of Articles	Cumulative Total	$LogW_1$	$LogW_2$	RGR	Doubling Time (DT=0.693/RGR)	Mean RGR= ΣR/N	Mean ΣDt/N
2011	91	91	1.959	1.959	-	-	0.69	0.969
2012	109	200	2.037	2.301	0.264	2.62		
2013	105	305	2.02	2.484	0.464	1.49		
2014	91	396	1.959	2.597	0.638	1.08		
2015	78	474	1.89	2.675	0.785	0.882		
2016	66	540	1.819	2.732	0.913	0.759		
2017	67	607	1.826	2.783	0.957	0.724		
2018	75	682	1.875	2.833	0.958	0.723		
2019	73	755	1.86	2.877	1.017	0.681		
2020	133	888	2.123	2.948	0.825	0.84		
2021	166	1054	2.22	3.022	0.802	0.864		
Total	1054					10.66		

According to Table 4, RGR rises and reaches its peak in 2019, when it is 1.017. The year with the fastest doubling time was 2012. The RGR and DT model developed by Mahapatra (1985) and calculated by the following formula (4) and (5).

$$RGR = \frac{\log W_1 - \log W_1}{(T_2 - T_1)} \qquad (4)$$

where, T_1 and T_2 represent initial and final Time respectively. $T_2 - T_1$ shows the time interval.

$$Doubling\ Time = \frac{0.693}{R} \qquad (5)$$

The figure 6 represents the graph of RGR and DT. From this figure, it is clear that year 2012 has the highest RGR. And year 2019 was calculated as the highest doubling time.

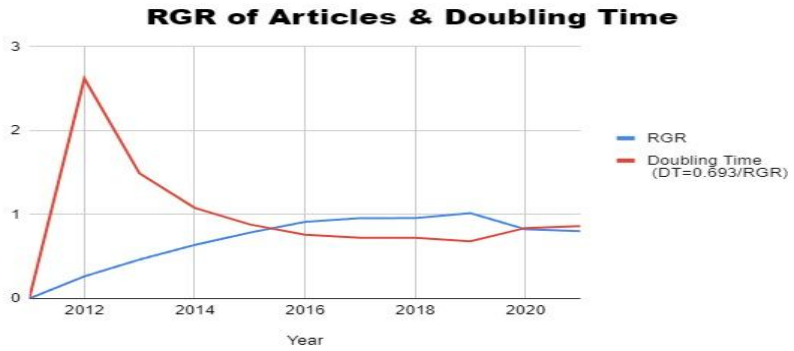


Figure 6: AGR Growth and DT of Articles

E. Degree of Collaboration

The degree of collaboration is defined as the ratio of collaborative research publications to total research papers in the subject during a certain time period. Subramanyam (1983) proposed a formula for the degree of collaboration as-

$$Degree\ of\ Collaboration\ (DC) = \frac{N_m}{(N_m + N_s)} \qquad (6)$$

Where N_m and N_s represent multiple author publications and single author publications respectively.

Table 5 figures out the degree of collaboration. From this table, it is observed that years (2017) and (2020) have the highest (0.99) degree of collaboration. Subsequently, years 2016 and 2018 (0.97) each, and years 2011, and 2013 have the same degree of collaboration with 0.96. From this table, we have also observed the average degree of collaboration was achieved at a rate of 0.96, which is nearly equal to one. This implies that multiple authors contributed more than single authors.

Table 5: Degree of Collaboration

Year	Single Author Articles (Ns)	Multiple Author Articles (Nm)	Nm+Ns	Degree of Collaboration DC=Nm/(Nm+Ns)
2011	3	88	91	0.96
2012	5	104	109	0.95
2013	4	101	105	0.96
2014	5	86	91	0.94
2015	5	73	78	0.94
2016	2	64	66	0.97
2017	1	66	67	0.99
2018	2	73	75	0.97
2019	3	70	73	0.95
2020	1	132	133	0.99
2021	9	157	166	0.95
Total	40	1014	1054	0.96

F. Country–Wise Distribution of Articles (Top 10)

Table 6 and figure 7 displays the country-wise contribution of 1054 published articles. It is found that the highest number of publications are from India (900), followed by the United States (40), Pakistan (23), Saudi Arabia (22), Malaysia (18) and Bangladesh (17).

Table 6: Country-Wise Distribution of Articles (Top 10)

Rank	Name of Country	Number of Articles
1	India	900
2	United States	40
3	Pakistan	23
4	Saudi Arabia	22
5	Malaysia	18
6	Bangladesh	17
7	Iran	12
8	China	11
9	Australia	10
9	Indonesia	10
9	Sri Lanka	10
10	Italy	9

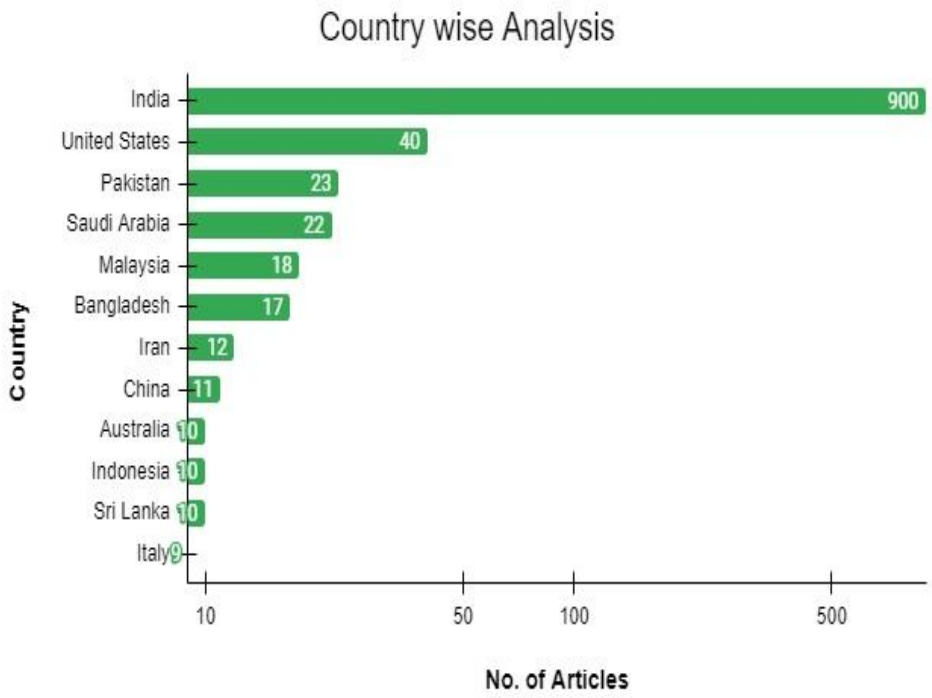


Figure 7: Country-Wise Distribution of Articles

G. Institution Wise Distribution of Articles

Table 7 displays the contribution of 1054 published articles from different Institution (Top 5). Maharishi Dayanand University and Banaras Hindu University are at I rank by publishing 22 articles each. Lovely Professional University is at II rank by publishing 20 articles. Guru Nanak Dev University and Savitribai Phule Pune University are at III rank by publishing 18 articles each.

Table 7: Institution Wise Distribution of Articles (Top 5)

Name of Institution	Number of Articles	Rank
MaharshiDayanand University	22	1
Banaras Hindu University	22	1
Lovely Professional University	20	2
Guru Nanak Dev University	18	3
SavitribaiPhule Pune University	18	3
Gujarat Ayurved University	17	4
Indian Veterinary Research Institute	14	5
King Saud University	14	5
Manipal Academy of Higher Education	14	5

H. Funding Sponsor Wise Distribution of Articles (Top 10)

Table 8 displays about the funding agencies statistics that sponsored articles University Grants Commission had sponsored 52 Articles and at rank I, Indian Council of Medical Research had sponsored 27 articles, second highest, Department of Science and Technology, Ministry of Science and Technology, India had sponsored 25 Articles third highest.

Table 8: Funding Sponsor Wise Distribution of Articles (Top 10)

Rank	Name of Funding Sponsor	Number of Articles
1	University Grants Commission	52
2	Indian Council of Medical Research	27
3	Department of Science and Technology, Ministry of Science and Technology, India	25
4	Council of Scientific and Industrial Research, India	24
5	Department of Biotechnology, Ministry of Science and Technology, India	23
6	University Grants Committee	15
7	Department of Science and Technology, Government of Kerala	10
8	Department of Biotechnology, Government of West Bengal	9
9	Science and Engineering Research Board	8
10	Bangladesh Council of Scientific and Industrial Research	6

I. Subjects-Area Wise Distribution of Articles

Table 9 represents a list of subject area that have maximum contribution in research publication of *Tinospora cordifolia***.** Pharmacology, Toxicology and Pharmaceutics had published about 50% articles followed by Medicine.

Table-9: Subject-Area WiseDistribution of Articles

S. No.	Subject-Area	Total Number of Articles
1	Pharmacology, Toxicology and Pharmaceutics	525
2	Medicine	343
3	Biochemistry, Genetics and Molecular Biology	256
4	Agricultural and Biological Sciences	191
5	Chemistry	78
6	Immunology and Microbiology	55
7	Environmental Science	48
8	Veterinary	44
9	Chemical Engineering	34
10	Engineering	34

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J. Ranked List of Source Title (Top 10)

Table 10 represents list of those Journals who have maximum contribution in research publication of *Tinospora cordifolia***.** International Journal of Pharma and Bio Sciences is at top position by publishing 30 articles followed by Research Journal of Pharmacy and Technology, 29 articles, International Journal of Research In Pharmaceutical Sciences, 27 articles, Journal of Ethnopharmacology 26 articles. International Journal of Research in Ayurveda and Pharmacy is at 10th rank by publishing 15 research articles.Pharmacy and Pharmaceutical Journals are the major publishers on this medicinal plant

Table-10: Ranked List of Source Title (Top 10)

Rank	Name of Source Title	Total Number of Articles
1	International Journal of Pharma And Bio Sciences	30
2	Research Journal of Pharmacy And Technology	29
3	International Journal of Research In Pharmaceutical Sciences	27
4	International Journal of Pharmacy And Pharmaceutical Sciences	26
5	Journal of Ethnopharmacology	24
6	Journal of Ayurveda And Integrative Medicine	22
7	Asian Journal of Pharmaceutical And Clinical Research	18
8	Medicinal Plants	18
9	International Journal of Green Pharmacy	17
10	International Journal of Research In Ayurveda And Pharmacy	15

K. Ranked List of Prolific Authors

Table 11 represents list of those authors who have published more than 6 papers and are at top 5 ranks. Dabur, R is at top by publishing 12 papers followed by Kaur, G Patwardhan, B. published nine papers, Rahmatullah, M. is at 3rd rank, Dhama, K. and Balkrishna, A are at 4th rank and have published seven papers. Most of the fifth ranked authors have published six papers.

Table 11: Ranked List of Prolific Authors (Top 5)

Rank	Name of Author	Number of Articles
1	Dabur, R.	12
2	Kaur, G.	9
2	Patwardhan, B.	9
3	Rahmatullah, M.	8
4	Balkrishna, A.	7
4	Dhama, K.	7
5	Akram, M.	6
5	Kaur, A.	6
5	Latheef, S.K.	6
5	Samad, H.A.	6
5	Tillu, G.	6
5	Varshney, A.	6

VI. FINDINGS AND CONCLUSIONS

For studying *Tinospora cordifolia* (Medicinal Plant), we fetched '1054' articles from the year of 2011 to 2021 using the Scopus database. We have examined such articles based on different scientometric parameters.

1) It is found that in year 2021 maximum no. of articles 166 (25.75%) were published. In year 2016, lowest no. of articles were published.

2) It is analyzed by authorship pattern that 40 articles out of 1054 are of single author. 227 of two authors, 216 of three authors and 206 of four authors.

3) Productivity per author is 0. 238. This is less than one. It means on an average Productivity per author is only 23.80% and Average authors per-paper is 4.20.

4) Relative Growth Rate (RGR) of publication of articles related to *Tinospora cordifolia* is 0.68 and average of Doubling time is 0.969.

5) The overall degree of collaboration was 0.96. And 40 articles are of single authored publications and 1014 articles are multi authored.

6) India is a top position by publishing 900 articles (0.85%) out of 1054 articles.

7) Maharishi Dayanand University & Banaras Hindu University are at I rank by publishing 22 articles.

8) University Grants Commission had Sponsored 52 articles and is at rank I, whereas Indian Council of Medical Research had Sponsored 27 article and is at rank II.

9) In research publication of *Tinospora cordifolia* **.** Pharmacology, Toxicology and Pharmaceutics had published 50% articles followed by Medicine.

10) International Journal of Pharma and Bio Sciences is at top position by publishing 30 articles followed by Research Journal of Pharmacy and Technology, 29 articles.

11) Dabur, R is at top by publishing 12 papers.

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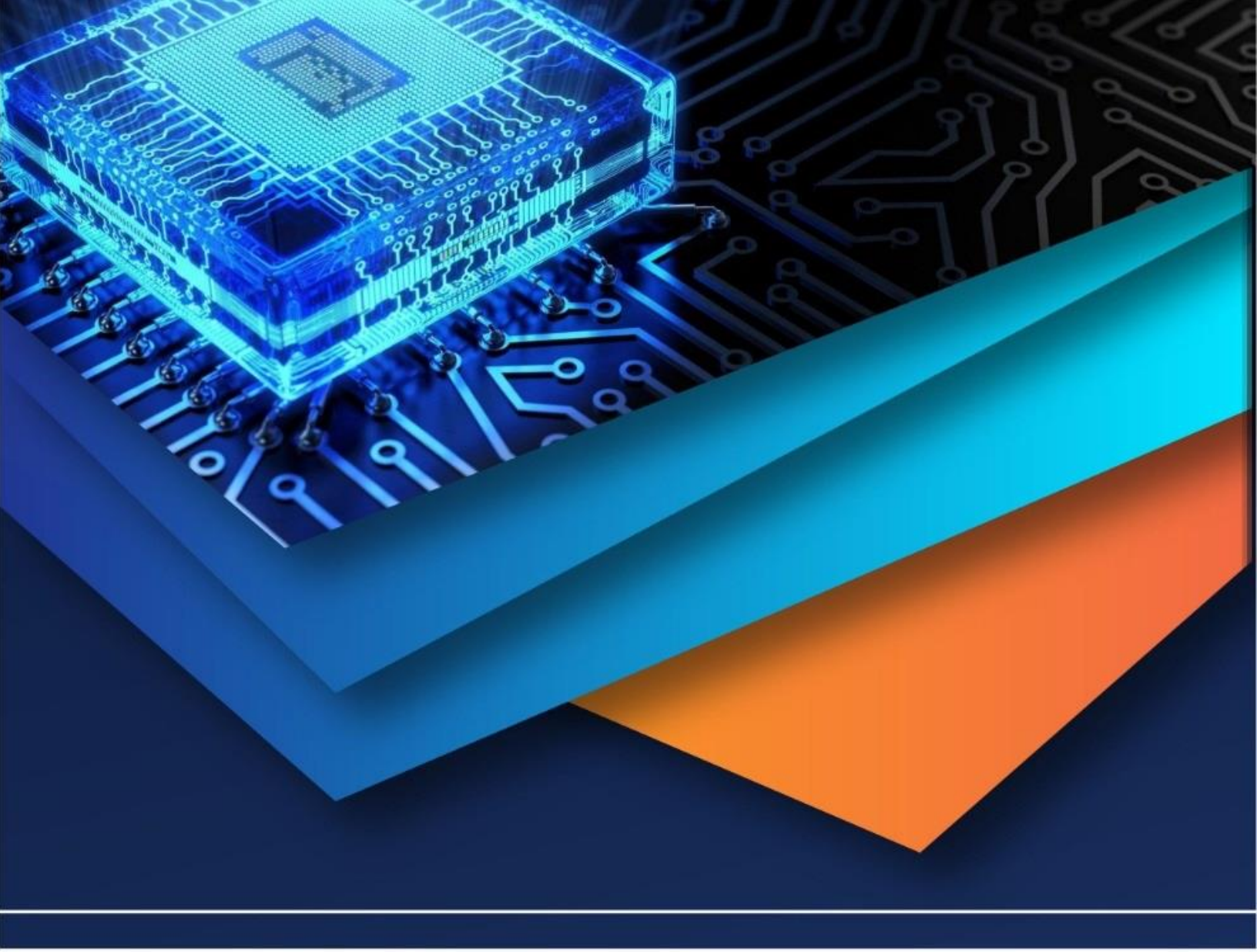
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