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Organic Botany Research in India: A Scientometric Study

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Abstract:

The present paper focused on Organic Botany Research in India: A Scientometric Study The Study analyzed research productivity for a period of 05 years between 2017 and 2021 & for this web of science database are used. In this 05 years period total 473 articles present on Organic Botany research in India. Analysis part focuses on the parameters like, Year, Author, types of Documents, Publisher, institutions and countries, Research Area and total Keywords used in this articles This study reveals that the categories of article distributions are remarkable in this research.

Keywords: Scientometric, Organic. Botany, Research, India

Introduction:

Scientometrics is the science of method scientific output similar to bibliometric used by librarians and information scientist. (Agrawal, aruna, 1982); related fields are the history of science and technology philosophy of science and sociology of scientific knowledge. (Eugene Garfield, 1995) ; application of mathematical and statistical methods of scientific literature (Derek de solla, 2000) ; to identify national an international network and to map the development of new fields of science and technology as well as to know the inner logic of science development (yadav Jaisi Ram, 1984) ; this enables to evaluate the size of scientific production on the assumption that the essence of scientific activity is the assumption the production of knowledge (Eugene Garfield, 2002).

Plants are the major source of life on earth. They provide us with food, oxygen and a variety of raw materials for various industrial and domestic purposes. That is why humans have always been interested in plants since time immemorial. Botany is the branch of Biology that deals with the study of plants." The term 'botany' is derived from an adjective 'botanic' that is again derived from the Greek word 'butane'. One who studies 'botany' is known as a 'botanist'. Botany is one of the world's oldest natural sciences. Initially, Botany included all the plant-like organisms such as algae, lichens, ferns, fungi, mosses along with actual plants. Plants are an integral part of human life. They are used in various aspects of day to day lives. Botany studies the characteristics and uses of these plants and hence are very important.

Organic is a system of farming and food production. Organic farmers aim to produce high-quality food, using methods that benefit our whole food system, from people to planet, plant health to animal welfare.

Organic farming can be defined as an agricultural process that uses biological fertilizers and pest control acquired from animals or plant waste. Organic farming was actually initiated as an answer to the environmental sufferings caused by the use of chemical pesticides and synthetic fertilizers.

Web of Science:

The Web of Science (WoS; previously known as Web of Knowledge) is a website that provides subscription-based access to multiple databases that provide comprehensive citation data for many different academic disciplines. It was originally produced by the Institute for Scientific Information.

Review of Literature:-

Tayade, Suraj M. et al. (2022) utilized data from the Web of Science database to look into studies on rainwater harvesting performed during 2012 and 2021. During this time, 811 research review articles were released. 'Jia ZK' and 'Zhang P' were the most prolific authors, depending to the study. The majority of the publications were articles, mainly authored in English. The survey also revealed patterns of collaboration between significant countries such as Germany, China, Australia, India, and the United States. These results provide researchers and archives with helpful data for monitoring rainwater harvesting research trends. The PubMed database includes 315 studies on the networking of court libraries written **by Deo, Nileema Nitin, Khaparde Vaishali, (2023**). Law libraries assist legislators, students, and lawyers with their legal research. With 77 papers, the review found that 2018 had the most contributions. With 13 publications, Scientific Reports was determined to be the top journal using Bradford's Law. With 54 papers, the USA led the world in corresponding author contributions. Likewise, with 75 incidents while "Humans" became the most popular keyword. The study presents essential fresh knowledge on the patterns and trends in court library networking research **Jayshila and Khaparde V.S. (2022**) analyzes exercise for postmenopausal women. The study used the web of Science database to evaluate research productivity throughout the course of five years, from 2018 to 2022.There have already been 546 articles about exercise for postmenopausal women during every one of these five years. The aspects like journal, author, ranking of contributing nations and institutions, and total keywords used for the research are the primary focal point of the analysis section. The datasets have been demonstrated using the application applications R Studio and VOSviewer

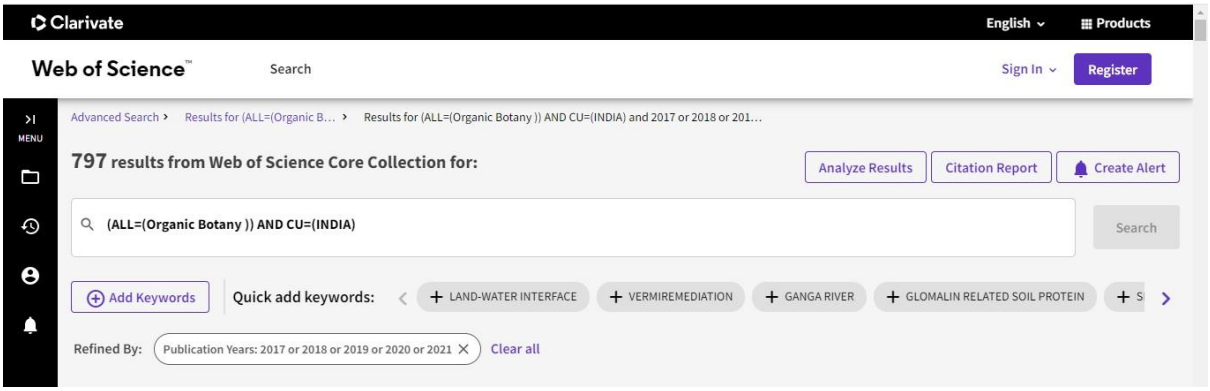
A methodological framework for the systematic literature review Research Output of Gender Disparities in STEM: A Scientometric Analysis of Research covering the 23-year period from 1993 to 2023 is presented in this paper. Citation and source data have been obtained using Carafate Analytics' Scopes database. **Anil and Khaparde Vaishali (2024**) The datasets have been displayed via the Histcite application software. Scientific Assessment Male students prefer to pursue degrees in nearly every engineering field, while female students prefer to study medical sciences, basic sciences, and mathematics, according to data analysis displaying a difference in preferences and percentages of male and female students enrolled within STEM programs. The study

Objectives of Research:

1. To study the Annual growth year-wise distribution of articles
2. To identify most relevant sources.
3. To Estimate most relevant Author
4. To measure country wise distribution of articles.
5. To find out most Global cited documents.
6. To observe most cited keywords

Scope and Limitation:

Limitation and Scope: "Organic Botany" Research in India creates a base for this study. Studying Scientometrics Though there are 797 records in this, I have selected five years between 2017 and 2021. There were 473 items collected throughout this time. Additionally, the main information of collection table below presents additional important information.



Data Collection :

The research publications were retrieved from the Web of Science core collections Database on the topic Organic Botany Research in India Scientometric Study of 05 years in between 2017-2021. A total number of 473 Articles. The data was download and analyzed by using the Excel sheet.

Methodology:

The research publications were retrieved from the Web of Science core collections Database on the topic Organic Botany Research in India: A Scientometric Study which is scattered over the period from 2017 to 2021. The search was carried out using the key word ' Organic Botany Research in India' in the, topic field. A total of 473 research articles was downloaded and collected with bibliographic various Parameters like year- wise distribution, type of document, most productive authors, institutions, Countries etc. Additionally, it was analyzed using Microsoft-excel along with R studio and vos viewer statistical and mapping visualization bibliometric software tools.

Data Analysis and Interpretation:

Table No. 1 Main Information

MAIN INFORMATION ABOUT DATA	
Timespan	2017:2021
Sources (Journals, Books, etc)	268
Documents	473
Annual Growth Rate %	16.84
Document Average Age	4.65
Average citations per doc	21.52
References	30217
DOCUMENT CONTENTS	
Keywords Plus (ID)	2070
Author's Keywords (DE)	1813
AUTHORS	
Authors	1582
Authors of single-authored docs	5
AUTHORS COLLABORATION	
Single-authored docs	5
Co-Authors per Doc	5.14
International co-authorships %	31.5
DOCUMENT TYPES	
article	381
article; book chapter	24
article; data paper	1
article; proceedings paper	4
article; retracted publication	2

correction	1
letter	1
review	59

The table No. 1 & Figure No.1 analysis of the collected data has led to several interesting findings that reflect the scholarly qualities of the source articles. Total Timespan taken for the study is 2017-2021, in this period of time sources available i.e. (268), Annual Growth Rate % (16.84), documents (473), various document types are present i.e. highest is Journal Article (381) Authors (1582)single-authored documents (5), International Co –authorship % 31.5 Documents per Author (0.186) co-Authors per Document (5.14) .

Table No. 2 Annual Scientific Production

Year	Articles	%	AGR	AROG
2017	66	13.95	0	0
2018	73	15.43	10.6	0.9
2019	88	18.6	20.54	0.82
2020	120	25.36	36.36	0.73
2021	126	26.63	5	0.73
Total	**473**	**100**		

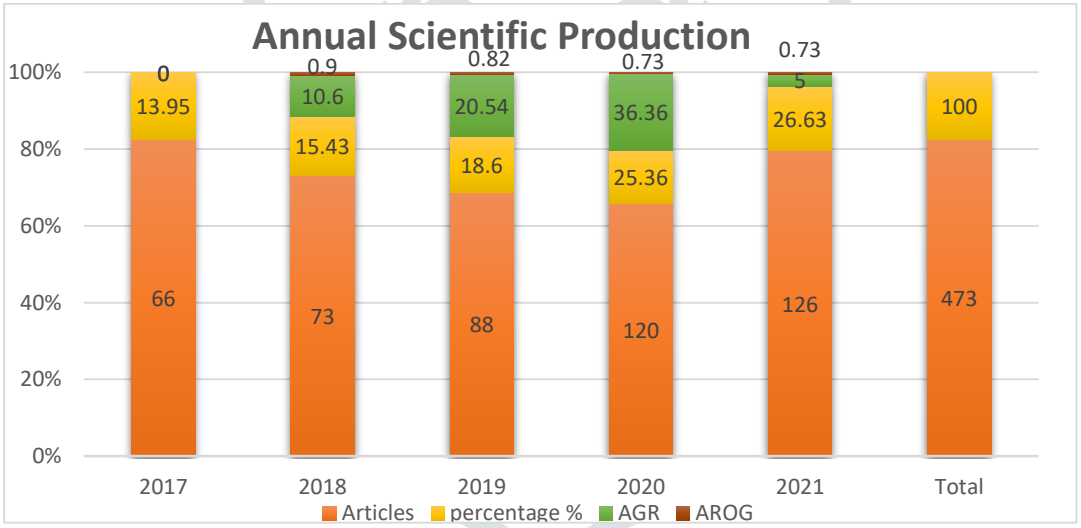


Table No.2 and Figure No.2 show the web of science database was used to gather data on the distribution of articles and the Annual Scientific Production on "Organic Botany Research in India: A Scientometric Study" from 2017 to 2021.The year 2021 saw the most amount of research contributions 126, (26.63%) in the 2021 years , while the year 2017 saw the lowest 66 (13.95%) , percent. The highest annual ratio of growth (ARoG) is (0.82) in 2019 and the lowest is 00. in 2017 . The maximum annual growth rate (AGR) is 36.36 in 2020.

Table No 3 . Top twenty Relevant Author

Authors	Articles	Articles Fractionalized
SHARMA A	26	4.43
BHARDWAJ R	21	3.26
KUMAR A	19	3.89
KUMAR V	19	3.53
SINGH R	19	3.57
SINGH S	18	3.75

AHMAD P	15	1.92
KARMEGAM N	15	2.54
SINGH H	13	2.75
SINGH J	13	2.59
KUMAR S	12	2.5
RAI A	12	2.41
PANDEY J	11	4.37
RAGHUBANSHI AS	11	2.02
SINGH AK	11	1.88
SINGH P	10	1.5
VIG AP	10	2.35
AGRAWAL M	9	3.25
ALYEMENI MN	9	1.17
SINGH A	9	1.76

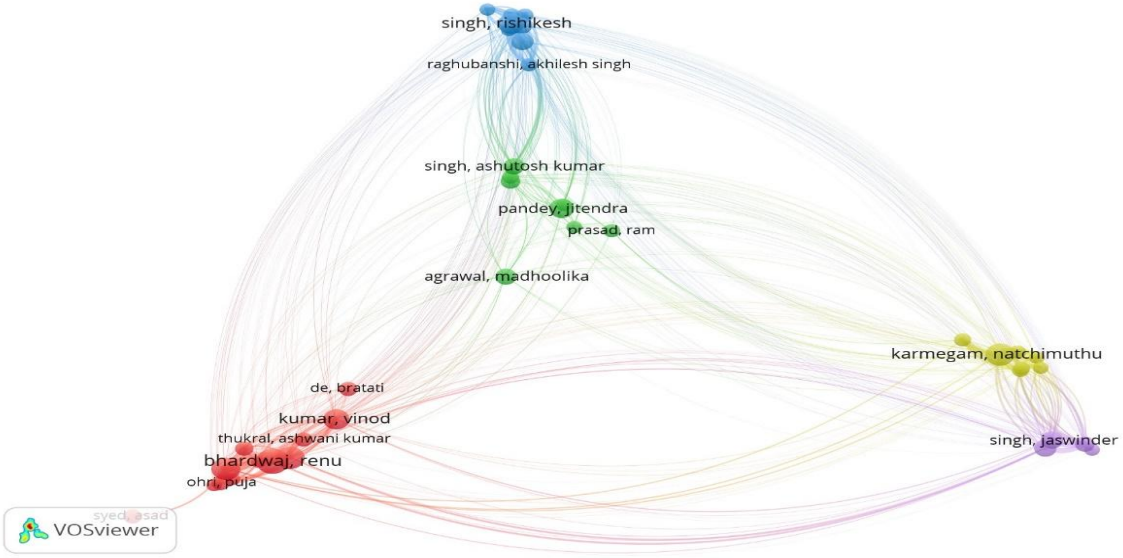


Table No.3 and Figure No.3 show the top 20 most Relevant authors from the research publication of Organic Botany Research in India: A Scientometric Study" from 2017 to 2021.. From the 381 research articles, a total of 473 organic botany research in India: A Scientometric Study . Authors were examined. Sharma A 26 (4.43 %) articles each. This is followed by BHARDWAJ R second place articles 21 (3.46 %) , Kumar A third place with 19 (3.89 %).

Table No 4 . Most Relevant Sources

BIORESOURCE TECHNOLOGY	13
ENVIRONMENTAL MONITORING AND ASSESSMENT	13
TROPICAL ECOLOGY	11
BANGLADESH JOURNAL OF BOTANY	9
CHEMOSPHERE	9
ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH	9
SCIENTIFIC REPORTS	8
SOUTH AFRICAN JOURNAL OF BOTANY	8

ECOLOGICAL INDICATORS	6
JOURNAL OF KING SAUD UNIVERSITY SCIENCE	6
ECOTOXICOLOGY AND ENVIRONMENTAL SAFETY	5
ENVIRONMENTAL TECHNOLOGY & INNOVATION	5
JOURNAL OF ENVIRONMENTAL MANAGEMENT	5
PEDOSPHERE	5
PROTOPLASMA	5
ARCHIVES OF MICROBIOLOGY	4
BIOCATALYSIS AND AGRICULTURAL BIOTECHNOLOGY	4
BIOSCIENCE BIOTECHNOLOGY RESEARCH COMMUNICATIONS	4
CATENA	4
ECOLOGICAL ENGINEERING	4

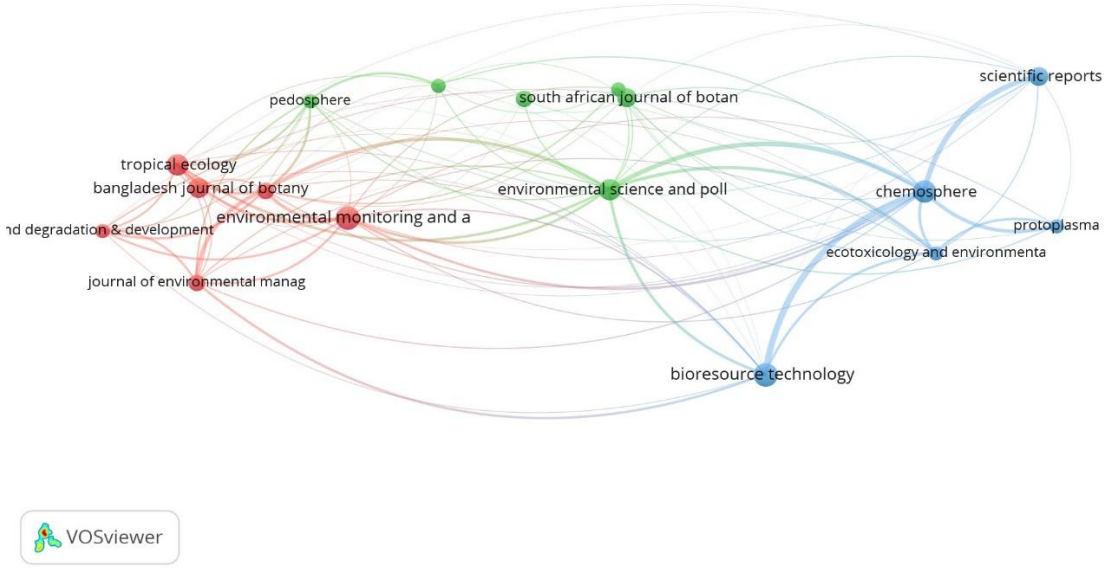


Table No.4 & Figure No.4 suggest that the majority of publications 13 were published as articles in journals in the fields of environmental monitoring and evaluation and bio resource technology. Microbiology, bio catalysis, agricultural biotechnology, bioscience, biotechnology research communications, and ecological engineering archives are the lowest sources, accordingly. Published in a limited number of different media.

Table No 5 Most Cited Country

Country	TC	Average Article Citations
INDIA	8095	19.74
CHINA	552	39.43
MALAYSIA	396	132
KOREA	251	35.86
SAUDI ARABIA	245	40.83
BANGLADESH	115	38.33
CHILE	114	114
GERMANY	71	71
VIETNAM	39	39
JAPAN	38	12.67
AUSTRALIA	33	33

PAKISTAN	31	10.33
PORTUGAL	28	28
RUSSIA	24	24
EGYPT	22	7.33
ESTONIA	22	22
INDONESIA	22	22
ETHIOPIA	20	6.67
CZECH REPUBLIC	18	9
TUNISIA	15	15

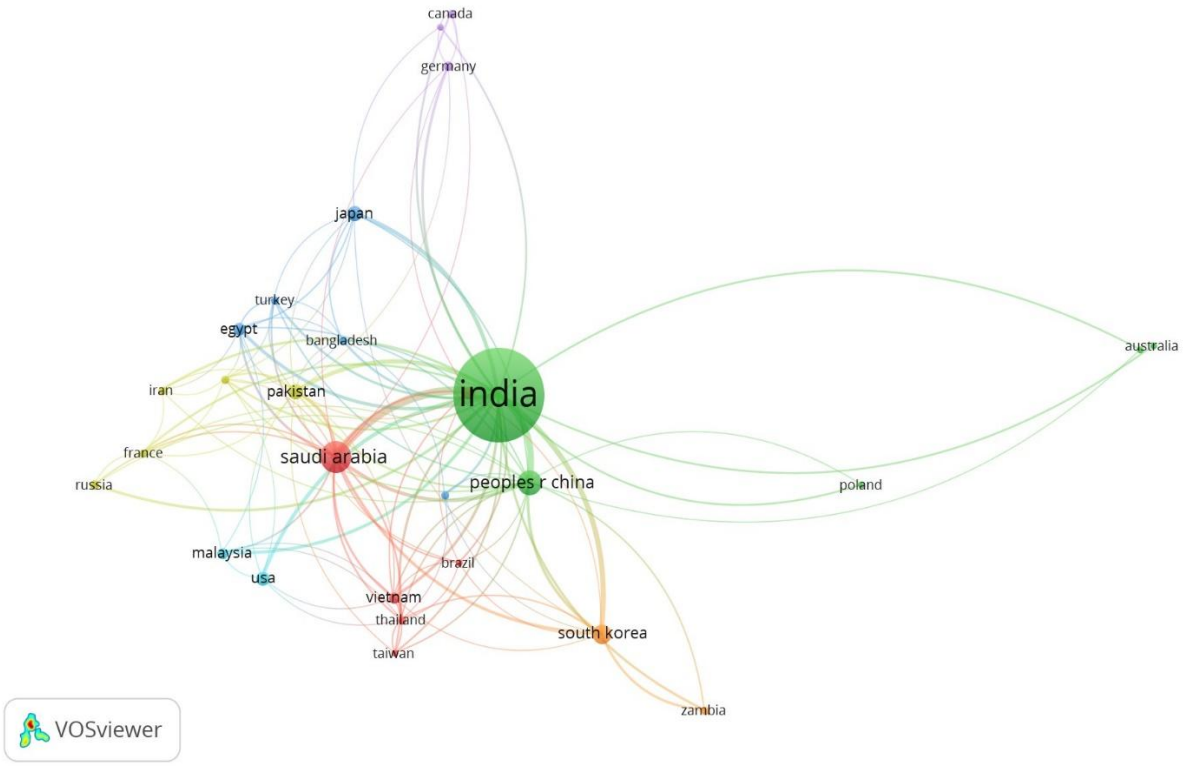


Table No. 5 and Figure No. 5 list the top 20 countries by average article citation. India has been scored first using an average article citation of 19.74 and a TC of 8095. With a TC of 252 and an average article citation of 39.43, China comes second. With an average article citation of 132 and a TC of 396, Malaysia comes in third.

Table No 5. Most Global Cited Documents

Paper	DOI	Total Citations	TC per Year	Normalized TC
YAQOOB AA, 2020, WATER-SUI	10.3390/w12020495	302	60.4	12.86
THEERTHAGIRI J, 2018, J SOLID STATE CHEM	10.1016/j.jssc.2018.08.006	178	25.43	6.82
VIMAL SR, 2017, PEDOSPHERE	10.1016/S1002-0160(17)60309-6	162	20.25	6.51
YADAV IC, 2019, CHEMOSPHERE	10.1016/j.chemosphere.2018.11.202	136	22.67	6.37
JAYAKUMAR M, 2021, BIORESOURCE TECHNOL	10.1016/j.biortech.2021.125054	126	31.5	8.33

DWIVEDI S, 2018, ENVIRON INT	10.1016/j.envint.2018.05.015	125	17.86	4.79
SARKAR S, 2020, ENVIRON CHEM LETT	10.1007/s10311-020-01021-w	114	22.8	4.85
BHAT SA, 2018, BIORESOURCE TECHNOL	10.1016/j.biortech.2018.01.003	111	15.86	4.25
BARGALI K, 2018, CATENA	10.1016/j.catena.2018.07.001	110	15.71	4.21
CHAUHAN R, 2019, CRIT REV ENV SCI TEC	10.1080/10643389.2019.1598240	107	17.83	5.01
KOSAR F, 2021, PHYSIOL PLANTARUM	10.1111/ppl.13155	104	26	6.87
GAUTAM P, 2020, FUEL	10.1016/j.fuel.2020.117783	102	20.4	4.34
SOREN S, 2018, MICROB PATHOGENESIS	10.1016/j.micpath.2018.03.048	101	14.43	3.87
SHARMA A, 2018, CURR MED CHEM	10.2174/0929867324666171006144208	97	13.86	3.72
BALI AS, 2020, ENVIRON CHEM LETT	10.1007/s10311-020-01012-x	96	19.2	4.09
KAYA C, 2020, SCI REP-UK	10.1038/s41598-020-62669-6	95	19	4.04
NAZIR F, 2020, CHEMOSPHERE	10.1016/j.chemosphere.2020.126486	90	18	3.83
KHANNA K, 2019, CHEMOSPHERE	10.1016/j.chemosphere.2019.05.072	88	14.67	4.12
KUMARI A, 2018, ENVIRON EXP BOT	10.1016/j.envexpbot.2017.12.021	86	12.29	3.29
GOVARTHANAN M, 2021, J HAZARD MATER	10.1016/j.jhazmat.2021.125522	83	20.75	5.49

Fig No. 5 Most Global Cited Documents

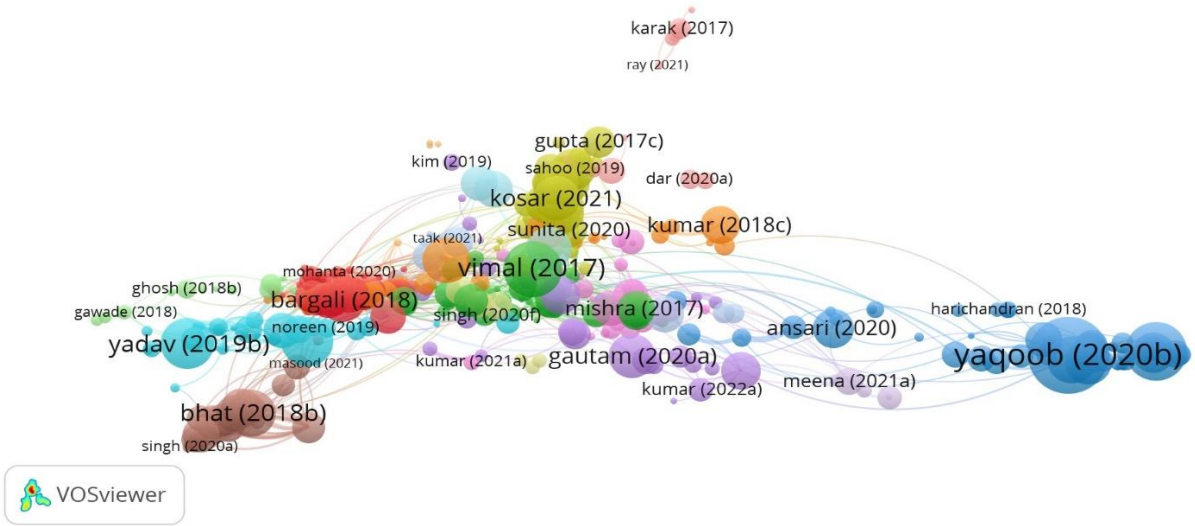


Table No. 5 & Figure No.5 the sample 797 records were downloaded from the web of science database related to Organic Botany Research in India Collected database includes several types of Cited document types such as books and documents; Research Paper ; journal articles; meta- analysis; and systematic review, book chapter, ; data paper, proceedings paper, retracted publication, letter, review. It was found from the below table that

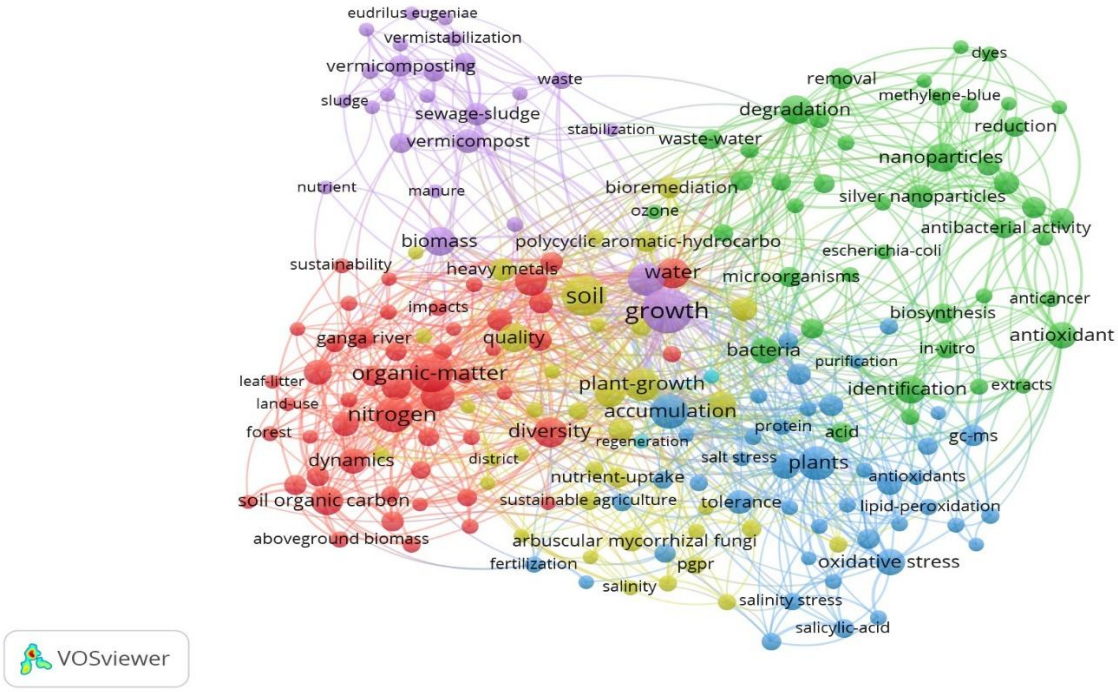
journal articles is at first positions with Yaqoob aa,2020 (302), 12..86 of publications and Last GOVARTHANAN M, 2021, (83) 5.49.

Table No 6. Most Frequent Keyword Occurrence

Words	Occurrences	Percentage%
growth	50	11.0864745
organic-matter	36	7.982261641
soil	31	6.873614191
accumulation	29	6.430155211
nitrogen	29	6.430155211
heavy-metals	26	5.764966741
plants	25	5.543237251
plant-growth	24	5.321507761
carbon	21	4.65631929
water	20	4.4345898
diversity	19	4.21286031
quality	18	3.99113082
identification	17	3.76940133
dynamics	16	3.54767184
Impact	16	3.54767184
yield	16	3.54767184
degradation	15	3.32594235
management	15	3.32594235
matter	14	3.10421286
organic-carbon	14	3.10421286

Table No. 6 and Figure No. 6 Shown the twenty most prolific keywords of articles. It was discovered that 473 publications include 451 keywords. Growth 50 (11.08 %).Organic matter is the second-most-frequently used keyword, with 36 results (7.98 %). Soil is the third most often used keyword, appearing 31 (6.87 %) times.

Table No. 6 Most Frequent Keyword Occurrence



CONCLUSIONS:

Modern scientometrics is mostly based on latter founded the institute for scientific information which is heavily used for scientometric analysis This study deals with the Organic Botany as reported in web of science database. 2017 to 2021 there is an increasing trend in publication. A total number of 473 publications are published. Maximum of 2021 (26.63%) articles are published in the year 2021.The findings of the study reveal that most of the researchers were interested to publish their publication in the form of articles.

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