

Review

Scientometrics Profile of Agronomy Literature

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This paper attempts to highlight the growth and development of world literature on Agronomy particularly in India. Data from CABI is collected for 10 years (i.e., 2006-2015). The chronological distribution of articles indicates that the number of articles is highest in 2014 (377) articles. From Table-2 it is clear that out of the total 2844 articles, 2723 are journal articles where as 60 are conference articles followed by 19 conference papers and book chapters.

This paper also studied the productive author in the field of agronomy. It's clear that out of 2846 articles, 2834 articles are in English language. Study reveals that out of 1777 articles 748 articles are under the source title of Indian Journal of Agronomy.

Key Word: Agronomy, Scientometrics, Growth Study.

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INTRODUCTION

Scientometrics is the science of measuring and analyzing science research. In practice, scientometrics is often done using bibliometric which is a measurement of the impact of (scientific) publications. Modern scientometrics is mostly based on the work of Derek J. de Solla Price and Eugene Garfield.^[1]

During the early 20th century, the application of quantitative methods to library science was known as "statistical bibliography". Dr. S.R.Ranganathan introduced the concept "librametry" on the lines of biometry, econometry and psychometry at the ASLIB conference in 1948. In 1969 Pritchard used the term "bibliometrics" to describe all studies to quantify the progress of return communication. In the same year, Fairthorne also defined "bibliometric" as "the quantitative treatment of the

properties of the recorded discourse and behavior pertaining to it". Bibliometrics may be treated as synonym to informetrics having scope to analyze quantitative characteristics of information. While scientometrics mostly deals with analysis of science data, informetrics is mostly concerned with modeling.^[3]

Scientometrics techniques have been gaining importance and recognition in their application to real situation in library and information resource management.

A vast amount of literature has been produced on scientometrics investigations during the last two decades⁵. Citation technique is one of the most popular techniques among the scientometrics techniques. Understanding the characteristics of information and information sources, particularly, of the subject literature,

Table 1

Sl. No.	Year	India (TP)	%	World (TP)	%
1	2006	282	9.90516	2903	7.605449
2	2007	242	8.50018	3096	8.111082
3	2008	207	7.27081	3181	8.33377
4	2009	245	8.60555	3737	9.790411
5	2010	285	10.0105	3658	9.583442
6	2011	264	9.27292	3826	10.02358
7	2012	309	10.8535	4442	11.63741
8	2013	353	12.399	5000	13.09929
9	2014	377	13.242	4303	11.27325
10	2015	283	9.94029	4024	10.54231
Total		2847	100	38170	100

is necessary if effective and efficient information systems are to be designed and developed. ^[4]

There are two approaches viz. Quantitative and Qualitative to the study of characteristics of subject literature. The former generally known as scientometrics. In recent years, a newly and fast emerging branch in the field of information science, has gained much importance and wider applications in the study of characteristics of subject literature. ^[1]

METHODOLOGY

For the present study the data are collected from CABI. It is a gateway to the world's applied life sciences. The data is collected on Agronomy from 2006 to 2015 (10 Years). Data on Language, Productive Authors, Sources and Document Types are collected and analyzed.

OBJECTIVES

The objectives of the present study are as follows:

1. To identify the growth pattern of Agronomy in the world and with special reference to India.
2. To know the type of documents in which the literature is published more.
3. To know the productive authors in the field of agronomy.
4. To identify the language wise scattering of literature published in Agronomy
5. To know the ranked list of Sources of publication

Data Analysis and Interpretation:

Chronological Distribution of Agronomy: The total

numbers of articles published that year have been displayed in the table 1 to show the year wise growth of the literature in agronomy. Starting from year 2006 to till 2015 total number of articles published under the title Agronomy is collected.

Table 1 reveals the total number of articles published from 2006 to 2015, the total number of articles published in India was 2847 and in world is 38170, and this table indicates that the number of articles is highest in 2014 (377) articles followed by 353 articles in 2013 and 309 articles in 2012. It is clear that there is a lot of variation in the number of articles published thought the years. This shows the variation in growth of literature in agronomy.

Distribution of literature in different type of documents: Number of articles published in different type of document will be listed. The purpose of this table is to show the number of articles published under each category of document types like journal articles, conference articles, etc.

From the Table 2 it is clear that out of the total **2844** articles, 2723 are journal articles where as 60 are conference articles followed by 19 conference papers and book chapters. And 16 conference papers were published in CAB International from the 2006-15 on agronomy.

Author Wise Distribution of Articles: The number of articles under different authors of the is collected and tabulated in Table-3. This table helps to analyze the data and know the productive authors in the field of agronomy.

From the Table-3 it is clear that out of 955 total articles, 100 are written by Kumar, A. followed by 70 by Kumar, S. and Singh, S. and Singh, A. K. has written 63 articles, followed by Kumar, R. with 59 articles. Sign B. has written 53 in the field of agronomy.

Table 2

Sl. No.	Document Type	No. of Articles	%
1	Journal article	2723	95.74543
2	Journal article; Conference paper	60	2.109705
3	Book chapter; Conference paper	19	0.668073
4	Conference paper	16	0.562588
5	Book chapter	14	0.492264
6	Bulletin	4	0.140647
7	Book	3	0.105485
8	Journal issue; Conference proceedings	3	0.105485
9	Book; Conference proceedings	1	0.035162
10	Bulletin article; Conference paper	1	0.035162
Total		2844	100

Table-3

Author	No. of Articles	%
Kumar, A.	100	10.4712
Kumar, S.	70	7.329843
Singh, S.	70	7.329843
Singh, A. K.	63	6.596859
Kumar, R.	59	6.17801
Singh, B.	53	5.549738
Singh, R.	49	5.13089
Singh, P.	47	4.921466
Kumar, P.	42	4.397906
Singh, A.	41	4.293194
Shivay, Y. S.	40	4.188482
Singh, D.	39	4.08377
Kumar, D.	38	3.979058
Singh, H.	37	3.874346
Kumar, V.	36	3.769634
Rana, D. S.	36	3.769634
Singh, R. K.	35	3.664921
Singh, K.	34	3.560209
Singh, M.	33	3.455497
Upadhyaya, H. D.	33	3.455497
Total	955	100

Language Wise Distribution of Articles: Table- 4 shows the articles appeared in different languages. From this table we come to know that in which language Agronomy articles are published more, as there are many different languages namely English, Chinese, Spanish, etc. The purpose of this table is to know the predominant language of the paper subject field.

From Table 4 it's clear that out of 2846 articles, 2834 articles are in English language. Only 5 articles in Chinese and 3 articles in Spanish language, followed by 2 articles in Portuguese language. Only 1 article is

published in both German and Italian languages each. English language is the most predominant language in the field of agronomy.

Source Title: Table 5 indicates the number of articles and their source title is displayed. From this table we can come to know the distribution of literature under different source titles related to Agronomy. This helps researchers to know the most prominent source in the field of agronomy.

Table 5 reveals that out of 1777 articles 748 articles are

Table 4

Language	No. of Articles	%
English	2834	99.57836
Chinese	5	0.175685
Spanish	3	0.105411
Portuguese	2	0.070274
German	1	0.035137
Italian	1	0.035137
Total	2846	100

Table 5

Source Title	No. of Articles	%
Indian Journal of Agronomy	748	42.09342
Haryana Journal of Agronomy	221	12.43669
Archives of Agronomy and Soil Science	87	4.895892
Indian Journal of Agricultural Sciences	69	3.882949
International Journal of Agricultural Sciences	62	3.489026
Environment and Ecology	51	2.870006
Research on Crops	34	1.913337
Indian Journal of Fertilisers	32	1.800788
Crop Research (Hisar)	31	1.744513
Annals of Plant Physiology	28	1.575689
Trends in Biosciences	28	1.575689
Sugar Tech	26	1.46314
Journal of Agronomy	25	1.406866
Journal of Soils and Crops	25	1.406866
International Journal of Agronomy and Plant Production	24	1.350591
Indian Journal of Genetics and Plant Breeding	23	1.294316
European Journal of Agronomy	22	1.238042
African Journal of Agricultural Research	21	1.181767
Journal of SAT Agricultural Research	21	1.181767
Annals of Biology	20	1.125492
International Journal of Tropical Agriculture	20	1.125492
Agronomy Journal	19	1.069218
Field Crops Research	19	1.069218
Journal of Cotton Research and Development	19	1.069218
Agronomy for Sustainable Development	18	1.012943
Advances in Agronomy	17	0.956669
Annals of Agri Bio Research	17	0.956669
Asian Journal of Soil Science	17	0.956669
Journal of Agronomy and Crop Science	17	0.956669
Acta Horticulturae	16	0.900394
Total	1777	100

under the source title of Indian Journal of Agronomy , 221 are under the source title Haryana Journal of Agronomy, followed by 87 articles are under the source title of Archives of Agronomy and Soil Science . Indian Journal of Agricultural Sciences has 69 articles, followed by 62 articles under the source title of International Journal of Agricultural Sciences . 51 articles are published in

Environment and Ecology.

CONCLUSION

The analysis of published literature on various aspects of Agronomy indicates that in this field research being

carried out in several institutions and is being reported in CAB Online Direct. Several numbers of institutions contributing to literature and the number of journals are published. The study reveals that in the year 2014 (377) highest numbers of articles are produced. There is a lot of variation in a number of articles published throughout the year.

Library Science professionals is concerned with how different information resources are generated, organized, distributed and utilized by different users in different context. For this, the study will help to know the latest information in the today's world. This study will be useful to any kind of users.^[1]

Abbreviations:

1. CABI: Commonwealth Agricultural Bureaux International.

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