

# Citation Analysis of International Journal of Agronomy

**Mrs. Jayalaxmi Kittur**

Librarian

Govt. First Grade College, Lokapur Dist . Baglkot

State : Karnataka

Pin code :587122

Email: [kitturjayalaxmi@gmail.com](mailto:kitturjayalaxmi@gmail.com)

## **Abstract :**

*Present study is about citation analysis of Open Access Journal, International Journal of Agronomy. The study has reviewed the articles published in the year 2013 and 2014. There are 66 articles published in this duration. International Journal of Agronomy is a peer reviewed, scholarly published, research oriented open access journal. The citations cited in the articles published in this journal are analyzed by authorship pattern, chronological distribution and form wise distribution of information resources. The journals are ranked on the base of frequency of citations cited.*

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## **Introduction :**

Agronomy is the branch of agricultural sciences which involves science and technology for production of plants. The areas of Agronomy are plant genetics, plant physiology, meteorology and soil science. It is application of a combination of sciences like biology, chemistry, economics, ecology, earth science and genetics. Agronomy deals with the issues of producing food, creating healthier food, managing environmental impact of agriculture and extracting energy from plants. Agronomist who involved in the study of Agronomy are specialize in the areas of crop rotation, irrigation, drainage, plant breeding, plant physiology, soil classification. Soil fertility, weed control and pest control.

Citation analysis is a tool used to measure the quality of publications. Garfield emphasized that journal citation analysis could also be used to study the scholarly communication system and could contribute to its better functioning. Hundreds of citation analysis studies almost in each branch of the natural and social science carried out by Library and Information science investigators. The citation analysis studies lead to find the impact factor of the journals. The impact factor of journal is used as direct reflection of journal's quality. The impact factor of journal used to rank journals as well is used to evaluate individual scholars and research groups.

International journal of Agronomy is an open access peer reviewed journal that publishes original research articles as well as review articles in all areas of agronomy. The journal is published by Hindawi Publishing Corporation. The articles published in the journal have been cited 163 times. Hindawi is a leading Open Access publisher with 438 peer-reviewed journals covering a wide range of

academic disciplines. When publishing in any of Hindawi's journals, authors retain the copyright of their article, which is freely distributed under the Creative Commons Attribution License, permitting the unrestricted use, distribution, and reproduction of the article in any medium, provided the original work is properly cited. The articles published in the International Journal of Agronomy are indexed and abstracted in many abstracting and Indexing databases such as AGRIS, AGRICOLA, CAB ABSTRACT, CHEMICAL ABSTRACT SERVICE, DOAJ and EBSCO HOST etc.

### **Review of related literature:**

Fagbola and Adejoro (2012) studied citation patterns of the Nigerian Journal of Horticultural Science in the duration 1990- 2005. The Nigerian Journal of Horticultural Science is published by National Horticultural Research Institute. The citations present in Volume 1- 10 of the Nigerian Journal of Horticultural science were analyzed to find authorship pattern, principal form of information resource used and to rank the journals.

Singh, Sharma and Kour (2011) studied citation analysis of journal of documentation. The study covers all the articles published in the Journal of Documentation from 1996-2010. 467 articles were published in the journal in this duration in 2005 highest number of articles published. 15587 citations were analysed to find the authorship pattern and to find the core journals in the library and information science.

Shokeen and Kaushik (2004) analysed the citations of Indian journal of Plant Physiology. The study covers the journal volume 7 of 4 issues published in the year 2002. The study was aimed to find the citation and author pattern of articles appeared in the Indian Journal of Plant Physiology. Totally 61 articles were published in these issues and they were having 1149 citations featuring 2770 authors during that period. 39% cited articles are three authored. The ratio of author self-citation to total citations was 1:16.65 and the ratio of author self-citation of total citation was 1:31.91. The average number of articles published in each issue was 15.25, which were higher than others.

Lawani (1977) studied a sample containing 1, 373 citations taken from three American journals and three French journals in Agronomy. This study was aimed to provide information on the age, language origin and the types of literature. 97.7% of the American journal citations were in English and 77.5% of articles having North American origin.

### **Objectives of the study:**

The study is carried out to aiming the following objectives

- To study the collaborative authorship pattern
- To determine the use pattern of different types of documents
- To observe the age wise distribution of citations
- To list the core journals in Agronomy

## Methodology

International journal of Agronomy is a peer reviewed open access journal published by Hindawi Publishing Corporation. International Journal of Agronomy is an open access journal. It produces high level of research and review articles in the field of Agronomy. The citation entries are entered in excel work sheet and analysed.

## Scope

The study is limited to the articles published in the duration January 2013 – December 2014. There were 66 articles and 808 citations are taken for the study.

## Results and analysis:

### Citations per article

The citations appended to articles published in International Journal of Agronomy are taken for the study. The journal published online and available freely for scholarly community in the field of agronomy. The journal doesn't mention the volume and issue numbers the information about the citations appended is given in the following table 1.

Table 1 Average Citations per article

Sl. No	Year	No of Articles published	No of Citations	Average citations per article
1	2013	25	115	5
2	2014	41	693	17
	<b>Total</b>	<b>66</b>	<b>808</b>	<b>12</b>

### Authorship Pattern:

The following table 1. Describes the authorship pattern of citations appended in this journal.

Table 2. Authorship Pattern

Sl. No.	No of Authors	No. of citations	Percentage
1	Single authored	127	15.71%
2	Two Authored	184	22.77%
3	Three Authored	159	19.67%
4	More than three	330	40.84%

5	Corporate Author	8	0.99%
	<b>Total Citations</b>	<b>808</b>	<b>100%</b>

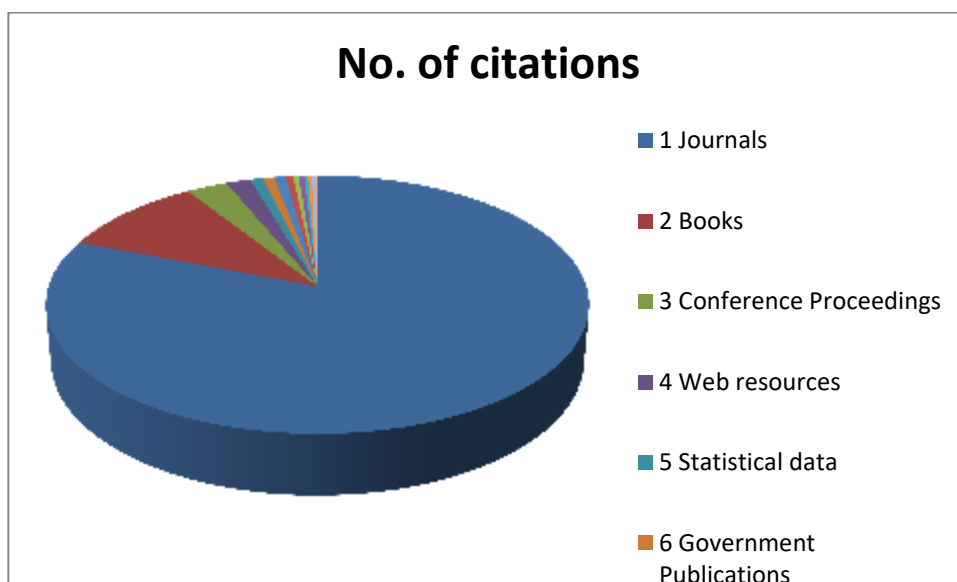
The 15.71% of the articles cited in the journal are single authored, 22.77% are double/two authored, 19.67% of three authored and 40.84% are authored by more than three authors. Very less about 0.99% of citations are authored by Corporate author. The results show the articles contributed to the journal International journal of Agronomy are of collaborative authorship i.e. about 83.69% of articles are authored by two or more than two authors.

### Type of Information Sources approached by Authors

Contributed authors have used wide variety types of information resources from formal resources such as Books, journals, theses to informal resources such as reports, standards, statistical data for their research work. The list of information sources used by authors is given in the following table. The statistics show that Journals are most preferred document form. In this study 78.34% of citations are from journal articles, 9.6% are from Books and 2.7% are from Conference proceedings. The rest 9.36% of citations are from web resources, statistical data, Government publications, reports, Theses, project reports, research reports, standards, and handbook.

**Table 3 Use pattern of Information resources**

Sl. No.	Type of Information source	No. of citations	Percentage
1	Journals	633	78.34%
2	Books	78	9.60%
3	Conference Proceedings	22	2.70%
4	Web resources	13	1.60%
5	Statistical data	7	0.87%
6	Government Publications	6	0.74%
7	Report	6	0.74%
8	Theses	4	0.49%
9	Project Report	3	0.37%
10	Standards	3	0.37%
11	Handbook	2	0.25%
12	Lab Manual	2	0.25%
13	Research report	2	0.25%
14	Monographs	1	0.12%



### Chronological distribution of citations

Table 3 gives the chronological distribution of citations. The citations cited in the journal before 1963 were 18 and other are divided into 6 periods of ten years each. The result indicates that citations of period 2004 -2013 is high i.e. 44.43%. The following table shows after 50 years the publication will obsolete.

**Table 4. Chronological distribution of citations**

Span of Period	No. of citations	Percentage
1911-1963	18	2.22%
1964-1973	30	3.712%
1974-1983	51	6.311%
1984-1993	104	12.87%
1994-2003	246	30.44%
2004-2013	359	44.43%
<b>Total</b>	<b>808</b>	<b>100%</b>

### Journal Ranking

Journals are ranked here based on the number of citations appeared in this journal. Totally 318 journals are cited in this journal. Field crops research and Agronomy journals are most cited journal. The top 10 journal list given below those are ranked on the base of frequency of citations cited.

Table 5. Journal Ranking

Sl. No	Journal Name	Frequency of journal cited	Ranking
1	Field crops research	44	1
2	Agronomy Journal	40	2
3	Crop Science	25	3
4	Theoretical and applied genetics	14	4
5	Plant and soil	10	5
6	Advances in Agronomy	9	6
7	Plant Disease	9	6
8	Plant Physiology	9	6
9	Remote sensing of Environment	9	6
10	Crop Protection	8	7
11	Euphytica	8	7
12	Molecular Breeding	8	7
13	Crop Science	7	8
14	Journal of Agricultural and Food Chemistry	6	9
15	Soil Biology and Biochemistry	6	9
16	Agronomy Journal	5	10
17	Field Crops Research	5	10
18	Annals of Botany	5	10
19	Journal of Experimental Botany	5	10
20	Plant Pathology	5	10
21	Soil Science	5	10
22	Soil Science Society of America Journal	5	10

## Conclusion and Recommendation

The citation analysis of an open access journal, International Journal of Agronomy was studied. The results shown that, the agricultural scientists use journals more for their information need than any other type of information resources. Other primary resources such as patents, standards, statistical data also been used. The other resources like electronic resources magazines, newspapers to meet their information need but reference to electronic database, digital materials and the world wide web are fewer than the traditional print resources. This may be due to some factors such as lack of awareness, limited access to relevant agricultural databases and poor electronic power supply. The library and information resources centers should keep abreast the types of documents to acquire and provide a wealth of information for agricultural scientists, to enhance their research work. The authorship pattern was studied

the most of citations cited in the articles published in International Journal of Agronomy are collaborated authorship. The age of citations were studied after 50 year of its publication will get obsolete.

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