

## Scientometric Analysis of Agricultural Journal

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**ABSTRACT:** *The Indian Journal of Agronomy had taken for this study covers from 2008-2012. This paper analyses the authorship pattern, the range and frequency of articles published. The maximum number of papers published in 'Indian Journal of Agronomy' during the study period is 74 research papers published in 2012 and minimum number of papers is 55 in 2008. The results indicate that the trend is towards triple authorship 29.78% and average length of papers as 5, degree of collaboration as 0.922% and maximum number of articles are from the subject Cereal Crops 33.86%.*

**KEYWORDS:** *Scientometrics, Agriculture, Crop.*

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### I. INTRODUCTION

Scientometrics is part of the sociology of a science and has application to science policy making. It involves quantitative studies of scientific activities, including among others, publication, and so overlaps bibliometrics to some extent. Scientometrics is a branch of the 'Science of Science'. Nalimov and Mulchenko define this term, 'as a sub-field which applies quantitative methods to the study of science as an information process'. Haitun treats 'Scientometrics', as a scientific discipline, which performs reproducible measurements of scientific activity and reveals its objective quantitative regularities. According to him, Scientometric methods include statistical and thesaurus methods, and indicators as to the number of citations, term etc. One of the most important subjects in Agriculture is Agronomy. Hence, the Journal "Indian Journal of Agronomy" is selected for this study.

### II. OBJECTIVES

The following are the objectives for this study to find out:

- Year-wise distribution of papers
- The nature of authorship pattern in Indian Journal of Agronomy
- The degree of collaboration
- The average length of papers
- The subject-wise distribution of articles.

### III. SOURCE AND METHODOLOGY

The Journal "Indian Journal of Agronomy" has been selected as the source journal. It is a quarterly publication of The Indian Society of Agronomy, Indian Agricultural Research Institute, New Delhi, India. The data has been compiled from Indian journal of agronomy articles from 2008 to 2012. For each article, the following data has been noted: a) number of author, b) number of page, c) degree of collaboration, d) subject of article. All the collected data are tabulated year-wise for the period of 2008-2012.

### IV. ANALYSIS AND INTERPRETATION

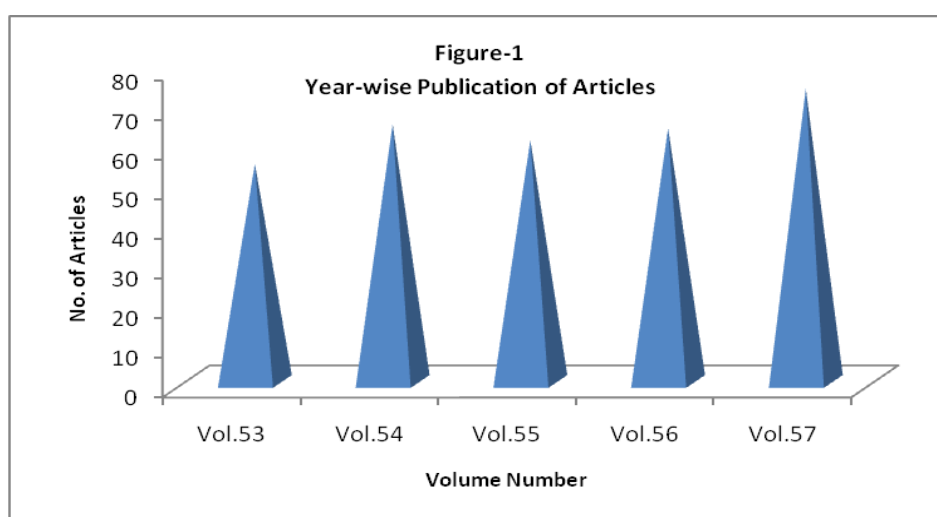
The total number of papers published in five years (2008-2012) is 319. The observed data are clearly tabulated and figured in the following pages.

#### 4.1 Year-wise Distribution of Papers

Table-1 provides the details regarding the distribution of 319 articles in the volume 53-57 of Indian Journal of Agronomy. The maximum number of papers 74 was published in 2012 and minimum number of papers 55 in 2008. From the analysis from 2010 the number of articles is gradually increasing.

Table-1 Distribution of Articles

Year	Volume Number	Issue Wise Articles				Total
		1	2	3	4	
2008	53	13	14	14	14	55
2009	54	15	18	15	17	65
2010	55	16	16	14	15	61
2011	56	12	16	18	18	64
2012	57	18	20	18	18	74
					<b>Total</b>	<b>319</b>



#### 4.2 Length of the Articles

Table-2 depicts the details regarding the number of pages published during the study period. From the observed data 103 (32.29%) articles cover five pages and 7 (2.19%) articles cover three pages. Hence, average number of pages observed as five.

Table-2 Length of the Articles

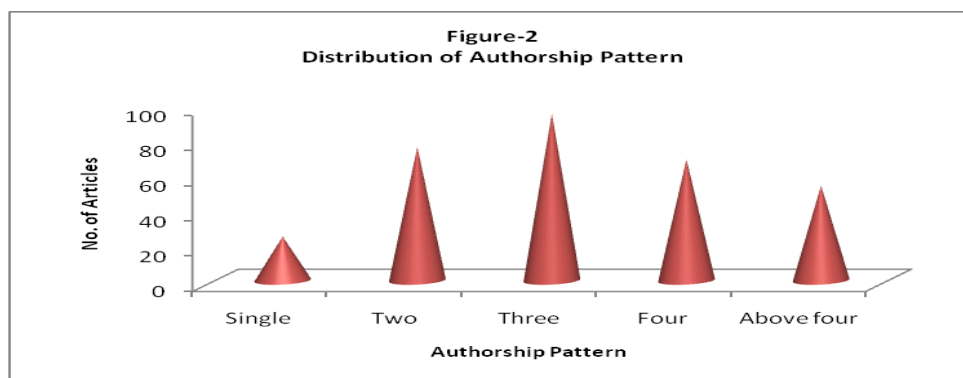
Number of Pages	2008	2009	2010	2011	2012	Total	%
Three	1	0	0	0	6	7	2.19
Four	12	4	14	7	16	53	16.61
Five	21	19	23	19	21	103	32.29
Six	14	17	17	18	20	86	26.96
Seven	2	5	4	13	4	28	8.78
Above Seven	5	20	3	7	7	42	13.17
Total	55	65	61	64	74	319	100

#### 4.3 Authorship Pattern

Table-3 indicates the details about the authorship pattern. Out of 319 articles 25 (7.84%) articles was contributed by single author, 76 (23.82%) was by two authors, 95 (29.78%) articles was by three authors, 69 (21.63%) articles was by four authors and 54 (16.93%) articles was by above four authors. Joint authorship is widely accepted in this era.

**Table-3 Authorship Pattern**

Pattern	2008	2009	2010	2011	2012	Total	%
Single	8	7	1	4	5	25	7.84
Two	13	18	18	14	13	76	23.82
Three	12	21	24	18	20	95	29.78
Four	13	9	13	17	17	69	21.63
Above four	9	10	5	11	19	54	16.93
<b>Total</b>	<b>55</b>	<b>65</b>	<b>61</b>	<b>64</b>	<b>74</b>	<b>319</b>	<b>100</b>



#### 4.4 Degree of Collaboration

To analyze the nature of the researcher’s participation in research activity, author productivity is tested. Degree of collaboration enables one to examine the research trends in terms of author productivity.

In order to determine the collaboration in quantitative forms, “K. Subramaniam formula  $C = N_m / (N_m + N_s)$  where  $C$  = Degree of collaboration of scientists,  $N_m$  = Number of multiple authored papers,  $N_s$  = Number of single authored papers” was tested. From Table-4 the degree of collaboration in publications during the study period is calculated as 0.922 percent.

**Table-4 Degree of Collaboration**

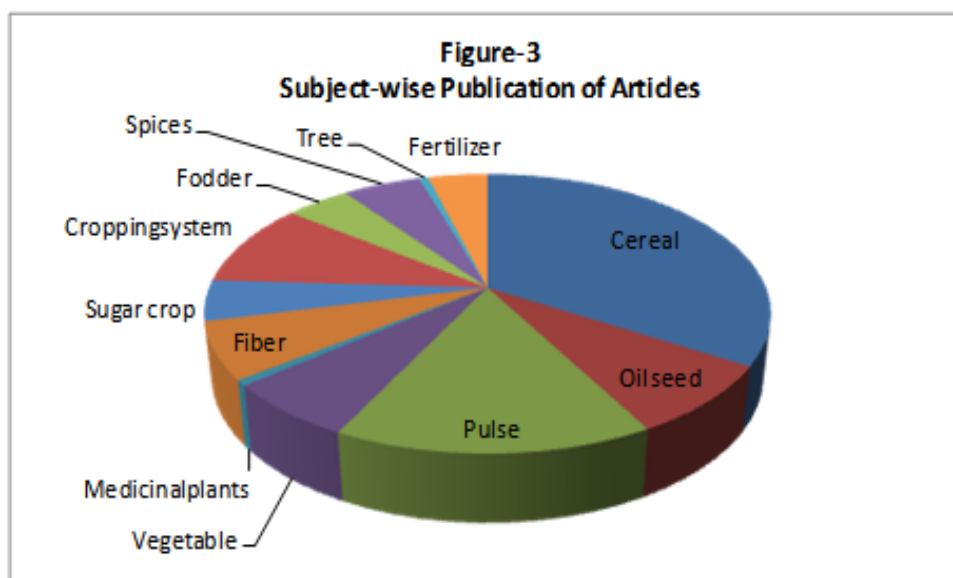
Year	Single Author Papers	Multiple Author Papers	Degree of Collaboration
2008 to 2012	25	294	0.922

#### 4.5 Subject-Wise Distribution of Articles

Table-5 deals with the Subject-Wise Distribution of Articles during the study period. Out of 319 articles Cereals crops occupy first place as 33.86% with 108 articles, Pulse crops occupy second place as 15.36% with 49 articles. The minimum number of articles was in Medicinal Plant and Tree each sharing with 2 articles.

**Table-5 Subject-Wise Distribution of Articles**

Sl. No.	Subject	2008	2009	2010	2011	2012	Total	%
1	Cereal	19	14	23	22	30	108	33.86
2	Pulse	4	7	13	13	12	49	15.36
3	Cropping system	8	12	1	5	5	31	9.72
4	Oil seed	3	6	5	6	6	26	8.15
5	Vegetable	4	1	5	4	7	21	6.58
6	Fiber	1	7	3	7	3	21	6.58
7	Spice	7	3	4	1	2	17	5.33
8	Sugar crop	4	1	3	4	3	15	4.70
9	Fodder	3	4	3	1	3	14	4.39
10	Fertilizer	2	8	1	0	2	13	4.08
11	Medicinal plant	0	1	0	1	0	2	0.63
12	Tree	0	1	0	0	1	2	0.63
	<b>Total</b>	<b>55</b>	<b>65</b>	<b>61</b>	<b>64</b>	<b>74</b>	<b>319</b>	<b>100</b>



## V. FINDINGS AND CONCLUSION

The following findings and conclusion can be drawn from the present study:

- ✚ The average length of papers is five, which cover 103 (32.29%) articles.
- ✚ Most of the articles are contributed by three authors with 95 (29.78%) papers.
- ✚ Maximum numbers of articles are in Cereal crops with 108 (33.86%) articles.

Hence, it can be concluded that single authorship trend is decreasing and joint authorship is getting increased. From the result it is shows that the research in Indian agriculture concentrates in cereal crop during 2008-2012.

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