

STUDY PUBLICATIONS: A SCIENTOMETRIC REVIEW ON CAB DIRECT FOR MOSQUITO (ANOPHELES DISEASES) DURING 1992–2018

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ABSTRACT

Study in mosquito field during the period 1992-2018, was obtained via Scientometric method from the CAB Direct Online database. The Study showed that during the period from 1992 to 2018, 452 papers were published and the highest number of publications was 57 papers published in 2013. Journal of Vector Borne Diseases is the most productive ranking journal with 101 papers (22.34 %) publishing their research papers¹ in the most influential 10 journals. South Africa could be the world's leading country with 84 papers (18.58 %), followed by India (15.04%) and Iran (9.51 %).

KEYWORDS: *Scientometric, Mosquito, CAB Direct Online, Countries, Relative Growth Rate, Doubling Time*

INTRODUCTION

Nearly everybody has had the uncomfortable experience of a mosquito biting him. Mosquito bites can cause irritation of the skin through an allergic reaction to the saliva of the mosquito; this is what causes the red bump and scratch. However, a more severe effect of such mosquito bites may be the transmission of severe diseases and viruses such as malaria, dengue virus, Zika and West Nile virus. This can cause debilitating and potentially deadly effects (such as encephalitis, meningitis and microcephalus). Not only do mosquitoes bear human infected disease, but they can also spread many diseases and parasites to which dogs and horses are highly susceptible. Which involve heart worms of horses, encephalitis of the eastern equine, and West Nile Virus? Just female mosquitoes deliberately take a meal in the blood so they can lay eggs. Males feed on nectar, vegetable juices, and other fluids. Mosquitoes are irritating animals, inducing blood loss and transmitting illness. Additionally, the toxins injected during biting can cause systemic effects. Feeding large numbers of swarming mosquitoes in domestic animals can cause severe anemia. Although they are known for spreading malaria, yellow fever, dengue, and elephantiasis in people, mosquitoes are probably best known in veterinary medicine as the intermediate host for the canine heartworm, *Dirofilaria immitis*, and as the vectors of the equine viral encephalitides, including West Nile virus. While they are known to transmit malaria, yellow fever, dengue and elephantiasis in humans, mosquitoes are possibly best known in veterinary medicine as the intermediate host for the canine heartworm, *Dirofilaria immitis*, and as the vectors of the equine viral encephalitides including West Nile virus. Various mosquito species prefer various types of standing water, in which to lay their eggs. The presence of beneficial predators in permanent wetlands, lakes and streams, such as fish and dragonfly nymphs, helps to keep these water bodies relatively free from mosquito larvae. But portions of marshes, swamps, clogged ditches, temporary ponds and puddles are all prolific breeding of mosquitoes.

OBJECTIVES OF THE STUDY

The main objective of this study is to research, the results of the analysis in Mosquito- Anopheles disease research, as reflected in the CAB Direct Online database throughout 1992-2018 in its publications output². The analysis focuses, in the exacting, on the following objectives:

- To examine the overall range of publications output on mosquito analysis supported CAB Direct Online database for the period 1992-2018.
- Studying the top 10 journals publishing more research papers on analysis of mosquitoes.
- Identify the top 10 author's in mosquito analysis field.
- To identify the highest rank-wise countries in the analysis of mosquito.
- Identify the language distribution of an analysis of mosquitoes.

METHODOLOGY

For the 27 years (1992-2018), the CAB Direct Online database was used to retrieve the data by looking into the keyword 'Mosquito' inside the title area. The entire array of records collected from the CAB Direct Online database is 452.

RESULTS AND ANALYSIS

The data obtained from the CAB Direct Online database on the Anopheles disease mosquito has been analyzed and presented different types of statistical tools such as tables are used for presenting the results.

Growth Rate and Doubling Time in Mosquito Research Output

A study of the growth rate of the performance of mosquito research is an essential factor in the analysis of field research and production. Table 1 indicates the relative growth rate in the mosquito or the study production³. Citations are extracted from the Relative Growth Rate and Doubling Time and described in Table 1. It can be found that the relative growth rate of publication decreased and increased, but not a constant from the rate 0.69 in 1995 to 0.96 in 2008 i.e. the frequency of the growth has been varied. The mean relative growth for the 27 years period (1992-2018) showed a growth rate of 0.33 while the corresponding doubling time for specific year steadily increased from 0.96 in 2008. For the 27 years (1992-2018), the mean doubling time was just 3.99 which were increased in the subsequent doubling time.

Table 1: Relative Growth Rate [R(c)] and Doubling Time [Dt(C)] of Overall Research Output

S. No	Year	No. of Publications [x]	Cumulative No. of Output [y]	$\text{Log}_e 1^{y-x}$	$\text{Log}_e 2^{y-x}$	[R(c)]	Mean [R(c)]	[Dt(C)]	Mean [Dt(C)]
1.	1992	1	1	0	0	0	0.33	-	3.99
2.	1995	1	2	0	0.69	0.69		1.00	
3.	1998	1	3	0.69	1.09	0.40		1.73	
4.	2002	1	4	1.09	1.38	0.29		2.39	
5.	2003	1	5	1.38	1.60	0.22		3.15	
6.	2005	7	12	1.60	2.48	0.88		7.91	
7.	2007	4	16	2.48	2.77	0.29		2.39	
8.	2008	26	42	2.77	3.73	0.96		7.25	
9.	2009	30	72	3.73	4.27	0.54		1.28	
10.	2010	36	108	4.27	4.68	0.41		1.69	
11.	2011	45	153	4.68	5.03	0.35		1.98	

12.	2012	42	195	5.03	5.27	0.24	2.59
13.	2013	57	252	5.27	5.52	0.25	2.77
14.	2014	47	299	5.52	5.70	0.18	3.85
15.	2015	44	343	5.70	5.83	0.13	5.33
16.	2016	37	380	5.83	5.94	0.11	6.30
17.	2017	34	414	5.94	6.02	0.08	8.66
18.	2018	38	452	6.02	6.11	0.09	7.70
Total		452					

Most Popular Journals

Journal of Vector Borne Diseases with 101 papers (22.34 %) followed by Journal of Arthropod Borne Diseases with 42 papers (9.29 %) were the most common of the scientists concerned with mosquito research⁴. The study revealed that 22 papers (4.86 %) and Boletin De Malariology Salud Ambiental 17 papers (3.76 %) were published out of the high five most prominent mosquito researcher's journals, three journals viz., Tropical Biomedicine 35 papers (7.74 %) and Medical Entomology and Zoology. Table 2 lists the top 10 most popular journals, with the amount of papers reported.

Table 2: Popular Journals

S. No	Journal Name	No. of Papers	Percentage
1.	Journal of Vector Borne diseases	101	22.34
2.	Journal of Arthropod Borne Diseases	42	9.29
3.	Tropical Biomedicine	35	7.74
4.	Medical Entomology and Zoology	22	4.86
5.	Boletin De Malariologiay Salud Ambiental	17	3.76
6.	Tanzania Journal of Health Research	17	3.76
7.	Acta Entomological Sinica	14	3.09
8.	Geospatial Health	14	3.09
9.	Iranian Journal of Arthropod Borne Diseases	11	2.43
10.	Pakistan Journal of Zoology	11	2.43

Prolific / Ranking Authors

The study reveals that Vatandosst. H is the most prolific / ranking authors of mosquito analysis who reported 31 papers (6.85 %) followed by 23 papers (5.08 %) from Abai M.R. It is observed that out of the top five authors who contributed⁴ a lot of papers in mosquito analysis, the world ranking author contributed a paper level of 9 to 31 viz., Robinson W.H18 papers (3.98 %), Chen, B15 papers (3.31 %), and Oshaghi, M.A12 Papers (2.65 %). Table 3 lists the top10 prolific/ranking authors in the mosquito analysis field.

Table 3: Top 10 Prolific / Ranking Authors

S. No	Name of Author	No. of Papers	Percentage
1.	Vatandosst.H	31	6.85
2.	Abai M.R	23	5.08
3.	Robinson W.H	18	3.98
4.	Chen B	15	3.31
5.	Oshaghi M.A	12	2.65
6.	Hanafi Bojd A.A	11	2.43
7.	Chen Bin	10	2.21
8.	Raeishi A	10	2.21
9.	Cameron M.M	9	1.99
10.	Moos Kazemi S.H	9	1.99

Rank-Wise Countries Distribution of Publications

The study reveals that South Africa is the top country in mosquito research with 84 papers contributing⁵ almost (18.58 %) of the global mosquito research output, followed by India with 68 papers (15.04 %) such as (Punjab, Odisha, Uttarakhand, West Bengal, Gujarat and Tamil Nadu) contributing Indian publications. Iran ranks third with 43 papers (9.51 %), Pakistan ranks fourth with 22 (4.86 %) and Nigeria ranks with 21 papers (4.64 %) out of South Africa's 10 nations¹¹. The top 10 countries are furnished in Table 4, based on a variety of publications.

Table 4: Rank-wise Countries

S. No	Location	No of Articles	Cumulative Publications	Cumulative Percentage of Articles (%)
1.	South Africa	84 (18.58 %)	84	18.58
2.	India	68 (15.04 %)	152	33.62
3.	Iran	43 (9.51 %)	195	43.14
4.	Pakistan	22 (4.86)	217	48.00
5.	Nigeria	21 (4.64)	238	52.65
6.	Tanzania	17 (3.76)	255	56.41
7.	Thailand	14 (3.09)	269	59.51
8.	Japan	12 (2.65)	281	62.16
9.	Italy	10 (2.21 %)	291	64.38
10.	Kenya	10 (2.21 %)	301	66.59

Predominant Languages

It is observed that English, with 403 papers (89.15 %) followed by Spanish with 22 (4.86) and Chinese with 11 (2.43 %) is the most prevalent language⁶ used by the researchers in mosquito research. Table 5 furnishes the top 10 predominant languages.

Table 5: Types of Language

S. No	Language	No. of Papers	Percentage
1.	English	403	89.15
2.	Spanish	22	4.86
3.	Chinese	11	2.43
4.	Japanese	10	2.21
5.	Russian	5	1.10
6.	Croatian	4	0.88
7.	Thai	4	0.88
8.	Italian	3	0.66
9.	Turkish	2	0.44
10.	Latvian	1	0.22

CONCLUSIONS

The CAB Direct Online database based Scientometric analysis on mosquito research shows that South Africa is the leading producer of scientific research production with 84 publications, around (18.59 %) of the total output⁷ of mosquito research from the 10 countries. The other interesting aspect is that the area the most prolific / ranked authors are Vatandosst, H with 31 papers (6.85 %), followed by Abai M.R. with 23 papers (5.08 %) articles. It is observed that out of top five authors who contributed a lot of papers in mosquitoresearch¹⁰, world ranking author has contributed a paper level of 9 to 31 viz., Robinson W.H18 papers (3.98 %), Chen, B15 papers (3.31 %), and Oshaghi, M.A12 Papers (2.65 %). The study reported that the top five most preferred journals by the mosquito researchers⁸ of Vector Borne Diseases with 101papers (22.34 %), followed by 42 papers (9.29 %) from Journal of Arthropod Borne Diseases. The study reported that three journals, Tropical Biomedicine35 papers (7.74 %) and Medical Entomology and Zoologywere among the top five most popular journals by mosquito researchers.

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