

A bibliometric analysis of pre- and post-Stockholm Convention research publications on the Dirty Dozen Chemicals (DDCs) in the African environment

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Supplementary material

Table S1. Summarized bibliometric data retrieved from the WoS and Scopus databases from 1951 to 2021 on research conducted on the assessment of dirty dozen chemicals in the African environment.

General information		Publication types		Publication contents		Authors information	
Publications	884	Article	856	Keywords	5315	Single-authored publications	54
Average years from publication	12.2	Book	1	Authors	2436	Publications per Author	0.36
Average citations per publication	19.1	Book chapter	4	Author Appearances	4081	Authors per Publication	2.76
Average citations per year	1.83	Review	23	Authors of single-publication	42	Co-Authors per publications	4.62
References	28773	Total publications	884	Authors of multi-authored publication	2394	Collaboration Index	2.88

Table S2. Top 20 most productive author countries on research conducted on the assessment of dirty dozen chemicals in the African environment from 1951 to 2021 ranked based on number of publication, total citation (TC), and publication start year (PSY).

Rank	Authors	Affiliations	Publications	TC	PSY
1	Bouwman H	North-West University, South Africa	42	1292	1990
2	Ikenaka Y	Hokkaido University, Japan	18	385	2013
3	Ishizuka M	Hokkaido University, Japan	18	385	2013
4	Bornman R	University of Pretoria, South Africa	17	256	2011
5	Yohannes Y	Hokkaido University, Japan	17	382	2013
6	Driss M	University of Carthage, Tunisia	16	525	1986
7	Polder A	Norwegian University of Life Sciences, Norway	15	457	1991
8	Wepener V	North-West University, South Africa	14	264	2006
9	Ahmed M	Sebha University, Libya	13	229	1991
10	Chevrier J	McGill University, Canada	13	229	2015
11	Covaci A	University of Antwerp, Belgium	13	422	2002
12	Nakayama S	Hokkaido University, Japan	12	285	2013
13	Osibanjo O	University of Ibadan, Nigeria	12	178	1990
14	Smit N	North West University, South Africa	12	203	2012
15	El N A	National Institute of Oceanography and Fisheries, Egypt	11	232	1987
16	Oyekunle J	Obafemi Awolowo University, Nigeria	11	83	2011
17	Pieters R	North-West University, South Africa	11	194	2007
18	Barnhoorn I	University of Venda, South Africa	10	235	2009
19	Eskenazi B	University of California, USA	10	143	2015
20	Humphries M	University of the Witwatersrand, South Africa	10	179	2013

Table S3. Occurrence of the top 30 keywords in published literature covering research conducted on the assessment of dirty dozen chemicals in the African environment from 1951 to 2021.

S/N	1949 - 1990		1991 - 2000		2001 - 2010		2011 - 2020		Global	
	KWs	F	KWs	F	KWs	F	KWs	F	KWs	F
1	DDE	43	Pesticides	37	Polychlorinated-biphenyls	77	Polychlorinated biphenyls	292	Polychlorinated biphenyls	399 (45.13)
2	Fish	32	Polychlorinated biphenyls	38	Pesticides	53	Organochlorine pesticides	179	Pesticides	266 (30.09)
3	Chlorphenotane	32	Pesticide residues	36	Organochlorine pesticides	45	Pesticides	170	Organochlorine pesticides	250 (28.82)
4	Insecticides	31	Insecticides	34	Organochlorines	36	Persistent organic pollutants	111	DDT	179 (20.25)
5	Animals	25	DDT	29	DDT	35	DDT	94	Sediments	174 (19.68)
6	DDT	21	Egypt	24	Fish	31	Fish	74	Fish	139 (15.72)
7	Article	17	Chlorphenotane	21	Egypt	22	Sediments	72	Pesticide residues	134 (15.15)
8	Geographic distribution	17	Lindane	20	Residues	22	Humans	69	Persistent organic pollutants	119 (13.46)
9	Pesticide residues	16	Dieldrin	15	Chlorphenotane	21	Residues	65	Chlorphenotane	110 (12.44)
10	Residue analysis	16	Fish	14	Pesticide residue	21	Organochlorine	57	Residues	100 (11.31)
11	Nonhuman	15	Nonhuman	14	Contamination	19	Sediment	53	Organochlorine	97 (10.97)
12	Egypt	14	Organochlorine pesticide	14	Africa	18	Contamination	52	Insecticides	91 (10.29)
13	Dieldrin	13	Chromatography	13	Sediments	18	Water	52	Egypt	88 (9.95)
14	Lindane	12	Aldrin	12	Water	16	Organic pollutants	47	Contamination	80 (9.05)
15	Polychlorinated biphenyl	11	Hydrocarbons	12	Bioaccumulation	15	Polybrominated diphenyl ethers	46	Water	78 (8.82)
16	Chromatography	10	Residues	12	Environmental monitoring	15	Polycyclic aromatic-hydrocarbons	44	Human	69 (7.81)
17	Gas	10	Chemical	11	Lindane	14	Risk assessment	44	Gas chromatography	68 (7.69)
18	Human	10	Environmental monitoring	11	Nonhuman	14	Exposure	40	Environmental monitoring	64 (7.24)
19	Hydrocarbons	10	Gas chromatography	11	Sediment	14	Bioaccumulation	38	Lindane	64 (7.24)
20	Organochlorine insecticide	10	Organochlorine	11	Animals	13	Environmental monitoring	38	Bioaccumulation	63 (7.13)
21	Chlorinated	9	Animals	10	Gas chromatography	13	South Africa	38	Hydrocarbons	63 (7.13)
22	Gas chromatography	9	Chlorinated	10	Insecticides	13	Concentration (composition)	37	Nonhuman	62 (7.01)
23	Bird	8	Female	10	River	13	River	37	South Africa	56 (6.33)
24	Milk	8	Milk	10	Endosulfan	12	Chlorphenotane	36	1:1 dichloro 2:2 bis(4 chlorophenyl)ethylene	55 (6.22)
25	Animal experiment	7	Water pollution	10	Dieldrin	11	Gas chromatography	35	Chlorinated	55 (6.22)
26	Endrin	7	Animal tissue	9	Human	11	Hydrocarbons	34	River	55 (6.22)
27	Kenya	7	Contamination	9	Dioxins	10	Insecticides	33	Dieldrin	54 (6.11)
28	Metabolism	7	Food contamination	9	1:1 Dichloro 2:2 bis(4 chlorophenyl)ethylene	9	Pollutants	31	Risk assessment	53 (6.00)
29	South Africa	7	Hexachlorobenzene	9	Chlorinated hydrocarbons	9	Chlorinated	30	Africa	52 (5.88)
30	Adult	6	Pollution	9	Milk	9	Controlled study	29	Animals	52 (5.88)

KW – keywords; F – Frequency of occurrence.

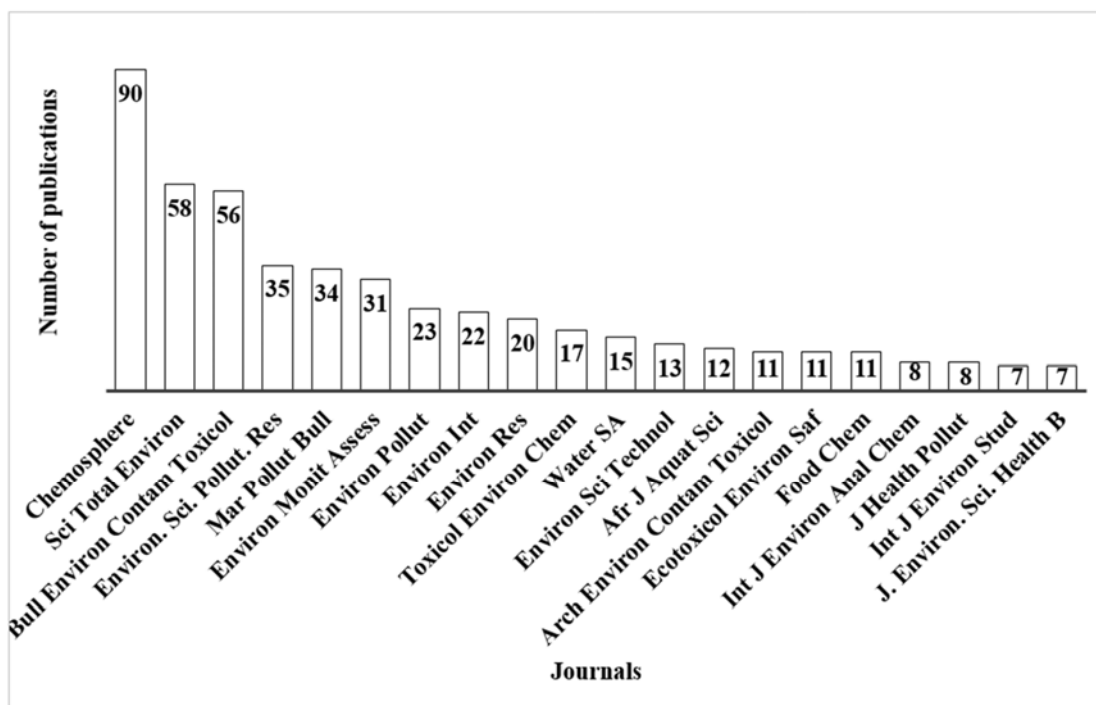


Figure S1: Top twenty most prolific journals on Dirty Dozen chemical research in Africa.