

S1 Table. Published occurrence of *Anaplasma* species or taxa in cattle in Africa (1970-2022)a. *Anaplasma marginale*

S_No.	Study	Country	Region	Cattle tested	Cattle positive
1	Abanda et al 2019a	Cameroon	Central Africa	1260	276
2	Abanda et al 2019b	Cameroon	Central Africa	31	19
3	Abd ElBaky and Allam 2018	Egypt	Northern Africa	40	4
4	Abdela et al 2018	Ethiopia	Eastern Africa	408	21
5	Abdullah et al 2021	Egypt	Northern Africa	88	18
6	Abdullahi et al 2014	Nigeria	Western Africa	50	21
7	Ahmadu et al 1997	Zambia	Eastern Africa	300	78
8	Ajayi and Dipeolu 1986	Nigeria	Western Africa	500	397
9	Akinboade 1985	Nigeria	Western Africa	256	105
10	Akinboade and Dipeolu 1984	Nigeria	Western Africa	200	68
11	AL-Hosary et al 2020	Egypt	Northern Africa	309	211
12	Alfredo et al 2005	Mozambique	Southern Africa	478	300
13	Awad et al 2011	Sudan	Northern Africa	692	42
14	Barradas et al 2021	Angola	Central Africa	98	0
15	Beckley 2013	Ghana	Western Africa	397	249
16	Belkahia et al 2021	Tunisia	Northern Africa	791	19
17	Belkahia et al 2015	Tunisia	Northern Africa	232	1
18	Belkahia et al 2017a	Tunisia	Northern Africa	1035	49
19	Bell-Sakyi et al 2004	Ghana	Western Africa	673	12
20	Berggoetz et al 2014	South Africa	Southern Africa	50	2
21	Bitrus et al 2021	Nigeria	Western Africa	400	20
22	Boucher et al 2020	Comoros	Eastern Africa	457	71
23	Boularias et al 2020	Algeria	Northern Africa	205	15
24	Byaruhanga et al 2015a	Uganda	Eastern Africa	397	344
25	Byaruhanga et al 2018	Uganda	Eastern Africa	240	199
26	Chatanga et al 2022	Malawi	Eastern Africa	191	47
27	Chiuya et al 2021	Kenya	Eastern Africa	422	21
28	Dahmani et al 2019	Senegal	Western Africa	62	12
29	Deem et al 1993	Kenya	Eastern Africa	316	289
30	Dreyer et al 1998	South Africa	Southern Africa	151	149
31	Eisawi et al 2020	Sudan	Northern Africa	196	21
32	El-Ashker et al 2015	Egypt	Northern Africa	164	33
33	El-Dakhly et al 2020	Egypt	Northern Africa	150	16
34	El Maghrbi et al 2008	Libya	Northern Africa	178	15
35	Elelu et al 2016	Nigeria	Western Africa	253	192
36	Elhachimi et al 2021	Morocco	Northern Africa	508	139
37	Feleke et al 2008	Ethiopia	Eastern Africa	228	226

38	Fereig et al 2017	Egypt	Northern Africa	90	25
39	Fernandes et al 2019	Mozambique	Eastern Africa	219	213
40	Foughali et al 2021	Algeria	Northern Africa	169	22
41	Gachohi et al 2010	Kenya	Eastern Africa	440	256
42	Hailemariam et al 2017	Ethiopia	Eastern Africa	392	57
43	Haji et al 2014	Tanzania	Eastern Africa	295	13
44	Haji et al 2022	Tanzania	Eastern Africa	520	58
45	Hamou et al 2012a	Morocco	Northern Africa	668	146
46	Hamou et al 2012b	Morocco	Northern Africa	1764	402
47	Hove et al 2018	South Africa	Southern Africa	517	294
48	Jongejan et al 1988	Zambia	Eastern Africa	2729	26
49	Kabi et al 2008	Uganda	Eastern Africa	184	106
50	Kamani et al 2010	Nigeria	Western Africa	637	12
51	Kamani et al 2022a	Nigeria	Western Africa	582	38
52	Kamani et al 2022b	Nigeria	Western Africa	275	31
53	Karanja 2005	Kenya	Eastern Africa	2827	464
54	Kasozi et al 2014	Uganda	Eastern Africa	295	42
55	Kipronoh et al 2011	Kenya	Eastern Africa	197	105
56	Kivaria et al 2012	South Sudan	Eastern Africa	805	464
57	Kolo et al 2020	South Africa	Southern Africa	100	5
58	Kubelová et al 2012	Angola	Central Africa	76	29
59	Latif et al 1995	Kenya	Eastern Africa	162	58
60	Lolli et al 2016	Uganda	Eastern Africa	3935	912
61	Lorusso et al 2016	Nigeria	Western Africa	704	268
62	M'ghirbi et al 2016	Tunisia	Northern Africa	328	83
63	Magona et al 2001	Uganda	Eastern Africa	98	13
64	Malak et al 2012	South Sudan	Eastern Africa	202	101
65	Maloo et al 2001	Kenya	Eastern Africa	939	751
66	Martins et al 2010	Mozambique	Eastern Africa	477	45
67	Marufu et al 2010	South Africa	Southern Africa	144	37
68	Marufu et al 2012	South Africa	Southern Africa	149	88
69	Matovu et al 2020	Uganda	Eastern Africa	1285	581
70	Mattioli et al 1997	Gambia	Western Africa	648	192
71	Mbati et al 2002	South Africa	Southern Africa	386	335
72	Mhoma et al 2010	Tanzania	Eastern Africa	458	24
73	Moumouni et al 2015	Kenya	Eastern Africa	192	56
74	Moumouni et al 2018	Benin	Western Africa	207	109
75	Mtshali et al 2007	South Africa	Southern Africa	755	684
76	Mtshali et al 2004	South Africa	Southern Africa	386	88
77	Mtshali et al 2013	South Africa	Southern Africa	74	35
78	Muhanguzi et al 2010	Uganda	Eastern Africa	375	14

79	Mutshembele et al 2014	South Africa	Southern Africa	465	311
80	Nasreldin et al 2020	Egypt	Northern Africa	31	12
81	Ndi et al 1991	Cameroon	Central Africa	524	12
82	Ndou et al 2010	South Africa	Southern Africa	157	155
83	Ngangnang et al 2021	Cameroon	Central Africa	162	67
84	Ngeranwa et al 2008	Kenya	Eastern Africa	148	142
85	Ngole et al 2003	Cameroon	Central Africa	100	58
86	Norval et al 1984	Zimbabwe	Southern Africa	118	117
87	Nyabongo et al 2021	Burundi	Eastern Africa	398	304
88	Obi 1978	Nigeria	Western Africa	573	195
89	Obi and Anosa 1980	Nigeria	Western Africa	35	17
90	Okal et al 2020	Kenya	Eastern Africa	680	4
91	Okuthe and Buyu 2006	Kenya	Eastern Africa	760	265
92	Ola-Fadunsin et al 2018	Nigeria	Western Africa	501	27
93	Ola-Fadunsin et al 2021	Nigeria	Western Africa	478	121
94	Olabode et al 2014	Nigeria	Western Africa	312	41
95	Omer et al 2007	Sudan	Northern Africa	1185	763
96	Osiyemi and Agbonlahor 1980	Nigeria	Western Africa	1373	28
97	Otim et al 2004	Uganda	Eastern Africa	454	3
98	Ouedraogo et al 2021	Burkina Faso	Western Africa	490	25
99	Ouedraogo et al 2021	Benin	Western Africa	456	4
100	Oura et al 2004	Uganda	Eastern Africa	90	8
101	Oura et al 2011	Uganda	Eastern Africa	144	9
102	Parvizi et al 2020	Egypt	Northern Africa	758	40
103	Paul et al 2016	Nigeria	Western Africa	120	7
104	Peter et al 2020	Kenya	Eastern Africa	306	9
105	Pothmann et al 2016	Madagascar	Eastern Africa	214	192
106	Pukuma et al 2011	Nigeria	Western Africa	1532	96
107	Raboloko et al 2020	Botswana	Southern Africa	301	271
108	Ramabu et al 2017	Botswana	Southern Africa	429	135
109	Ringo et al 2018	Tanzania	Eastern Africa	245	39
110	Ringo et al 2020	Tanzania	Eastern Africa	236	24
111	Rjeibi et al 2018	Algeria	Northern Africa	180	20
112	Sadeddine et al 2020	Algeria	Northern Africa	35	4
113	Sahibi et al 1998	Morocco	Northern Africa	475	42
114	Salih et al 2009	Sudan	Northern Africa	280	109
115	Salih et al 2008	Sudan	Northern Africa	90	34
116	Salm et al 2011	Egypt	Northern Africa	5290	461
117	Satti et al 2021	Sudan	Northern Africa	292	118
118	Selim et al 2021	Egypt	Northern Africa	650	130
119	Sili et al 2021	Angola	Central Africa	88	25

120	Simuunza et al 2011	Zambia	Eastern Africa	986	528
121	Solomon et al 1998	Ethiopia	Eastern Africa	600	568
122	Ssenyonga et al 1992	Uganda	Eastern Africa	320	200
123	Stevens et al 2007	South Africa	Southern Africa	2726	1913
124	Swai et al 2005	Tanzania	Eastern Africa	1329	379
125	Talabi et al 2011	Nigeria	Western Africa	245	23
126	Tayebwa et al 2018	Uganda	Eastern Africa	409	137
127	Tembo et al 2018	Zambia	Eastern Africa	299	77
128	Tembue et al 2011	Mozambique	Eastern Africa	809	619
129	Teshale et al 2018	Ethiopia	Eastern Africa	457	202
130	Tumwebaze et al 2020	Egypt	Northern Africa	92	15
131	Usman et al 2008	Nigeria	Western Africa	218	2
132	Verhulst et al 1983	Morocco	Northern Africa	223	48
133	Verhulst et al 1983	Cameroon	Central Africa	186	17
134	Verhulst et al 1983	DRC	Central Africa	173	62
135	Weny et al 2017	Uganda	Eastern Africa	186	3
136	Wesonga et al 2010	Kenya	Eastern Africa	547	273
137	Wesonga et al 2017	Kenya	Eastern Africa	421	225
138	Wiesenhutter 1975	Tanzania	Eastern Africa	430	175
139	Yamada et al 2009	Zambia	Eastern Africa	71	34
140	Yawa et al 2021	South Africa	Southern Africa	240	31
141	Younis et al 2009	Egypt	Northern Africa	136	122
142	Ziam and Benaouf 2004	Algeria	Northern Africa	54	29
143	Ziam et al 2017	Algeria	Northern Africa	268	11
144	Ziam et al 2020	Algeria	Northern Africa	299	12

b. *Anaplasma centrale*

S/No	Study	Country	Region	Cattle tested	Cattle positive
1	Abanda et al 2019a	Cameroon	Central Africa	1260	98
2	Abanda et al 2019b	Cameroon	Central Africa	31	13
3	Abdela et al 2018	Ethiopia	Eastern Africa	408	5
4	Abdullah et al 2021	Egypt	Northern Africa	88	1
5	Barradas et al 2021	Angola	Central Africa	98	0
6	Belkahia et al 2015	Tunisia	Northern Africa	232	35
7	Belkahia et al 2017b	Tunisia	Northern Africa	1035	72
8	Boularias et al 2020	Algeria	Northern Africa	205	37
9	Byamukama et al 2021	Uganda	Eastern Africa	208	40
10	Byaruhanga et al 2018	Uganda	Eastern Africa	240	29
11	Chiuya et al 2021	Kenya	Eastern Africa	422	5
12	Dahmani et al 2019	Senegal	Western Africa	62	6
13	Eisawi et al 2020	Sudan	Northern Africa	196	4
14	Hove et al 2018	South Africa	Southern Africa	517	89
15	Kolo et al 2020	South Africa	Southern Africa	100	3
16	Lorusso et al 2016	Nigeria	Western Africa	704	57
17	Martins et al 2010	Mozambique	Eastern Africa	477	21
18	Mhoma et al 2010	Tanzania	Eastern Africa	458	6
19	Muhanguzi et al 2010	Uganda	Eastern Africa	375	17
20	Ngangnang 2021	Cameroon	Central Africa	162	14
21	Okwelum et al 2014	Nigeria	Western Africa	452	12
22	Ola-Fadunsin et al 2021	Nigeria	Western Africa	478	25
23	Rjeibi et al 2018	Algeria	Northern Africa	180	71
24	Sili et al 2021	Angola	Central Africa	88	11
25	Tembo et al 2018	Zambia	Eastern Africa	299	3
26	Teshale et al 2018	Ethiopia	Eastern Africa	457	123

c. Anaplasma platys

S_No	Study	Country	Region	Cattle tested	Cattle positive
1	Abanda et al 2019a	Cameroon	Central Africa	1260	460
2	Abanda et al 2019b	Cameroon	Central Africa	31	13
3	Abd El-Baky and Allam 2018	Egypt	Northern Africa	40	1
4	Abdullah et al 2021	Egypt	Northern Africa	88	3
5	Barradas et al 2021	Angola	Central Africa	98	3
6	Ben Said et al 2017a	Tunisia	Northern Africa	367	13
7	Boularias et al 2020	Algeria	Northern Africa	205	6
8	Byamukama et al 2021	Uganda	Eastern Africa	208	24
9	Chatanga et al 2022	Malawi	Eastern Africa	191	26
10	Chiuya et al 2021	Kenya	Eastern Africa	422	57
11	Dahmani et al 2015	Algeria	Northern Africa	36	1
12	Dahmani et al 2019	Senegal	Western Africa	62	14
13	Elhachimi et al 2021	Morocco	Northern Africa	508	7
14	Kamani et al 2022b	Nigeria	Western Africa	275	62
15	Kolo et al 2020	South Africa	Southern Africa	100	1
16	Okal et al 2020	Kenya	Eastern Africa	680	115
17	Peter et al 2020	Kenya	Eastern Africa	306	1
18	Sili et al 2021	Angola	Central Africa	88	16
19	Tumwebaze et al 2020	Egypt	Northern Africa	92	13

d. *Anaplasma phagocytophilum*

S_No	Study	Country	Region	Cattle tested	Cattle positive
1	Abd El-Baky and Allam 2018	Egypt	Northern Africa	40	6
2	Barradas et al 2021	Angola	Central Africa	98	0
3	Ben Said et al 2017b	Tunisia	Northern Africa	367	9
4	Dahmani et al 2015	Algeria	Northern Africa	36	15
5	Elhachimi et al 2021	Morocco	Northern Africa	508	74
6	Fernandes et al 2019	Mozambique	Eastern Africa	219	6
7	Kolo et al 2020	South Africa	Southern Africa	100	1
8	M'ghirbi et al 2016	Tunisia	Northern Africa	328	2
9	Muhanguzi et al 2010	Uganda	Eastern Africa	375	10
10	Njiiri et al 2015	Kenya	Eastern Africa	453	2
11	Teshale et al 2018	Ethiopia	Eastern Africa	457	19

e. *Anaplasma ovis*

S_No	Study	Country	Region	Cattle tested	Cattle positive
1	Abd El-Baky and Allam 2018	Egypt	Northern Africa	40	10
2	Abdullah et al 2021	Egypt	Northern Africa	88	3
3	Barradas et al 2021	Angola	Central Africa	98	0
4	Eisawi et al 2020	Sudan	Northern Africa	196	1
5	Sadeddine et al 2020	Algeria	Northern Africa	35	1

f. *Anaplasma bovis*

S_No.	Study	Country	Region	Cattle tested	Cattle positive
1	Abd El-Baky and Allam 2018	Egypt	Northern Africa	40	2
2	Belkahia et al 2015	Tunisia	Northern Africa	232	9
3	Belkahia et al 2017b	Tunisia	Northern Africa	1035	50
4	Boularias et al 2020	Algeria	Northern Africa	205	1
5	Chatanga et al 2022	Malawi	Eastern Africa	191	5
6	Elhachimi et al 2021	Morocco	Northern Africa	508	5
7	Martins et al 2010	Mozambique	Southern Africa	477	10
8	Mtshali et al 2013	South Africa	Southern Africa	74	1
9	Muhanguzi et al 2010	Uganda	Eastern Africa	375	19
10	Njiiri et al 2015	Kenya	Eastern Africa	453	172
11	Okal et al 2020	Kenya	Eastern Africa	680	118
12	Peter et al 2020	Kenya	Eastern Africa	306	4
13	Rjeibi et al 2018	Algeria	Northern Africa	180	8
14	Sili et al 2021	Angola	Central Africa	88	1
15	Tembo et al 2018	Zambia	Eastern Africa	299	2

g. *Anaplasma capra*

S_No	Study	Country	Region	Cattle tested	Cattle positive
1	Barradas et al 2021	Angola	Central Africa	98	0
2	Elhachimi et al 2021	Morocco	Northern Africa	508	29

h. *Anaplasma* uncharacterised taxa

S_No	Study	Identity	Country	Region	Cattle tested	Cattle positive
1	Berggoetz et al 2014	<i>Anaplasma</i> sp. Omatjenne	South Africa	Southern Africa	50	3
2	Hailemariam et al 2017	<i>Anaplasma</i> sp. Omatjenne	Ethiopia	Eastern Africa	392	100
3	Lorusso et al 2016	<i>Anaplasma</i> sp. Omatjenne	Nigeria	Western Africa	704	239
4	Mtshali et al 2013	<i>Anaplasma</i> sp. Omatjenne	South Africa	Southern Africa	74	1
5	Muhanguzi et al 2010	<i>Anaplasma</i> sp. Omatjenne	Uganda	Eastern Africa	375	7
6	Ngangnang et al 2021	<i>Anaplasma</i> sp. Omatjenne	Cameroon	Central Africa	162	25
7	Njiiri et al 2015	<i>Anaplasma</i> sp. Omatjenne	Kenya	Eastern Africa	453	187
8	Sili et al 2021	<i>Anaplasma</i> sp. Omatjenne	Angola	Central Africa	88	22
9	Tembo et al 2018	<i>Anaplasma</i> sp. Omatjenne	Zambia	Eastern Africa	299	22
10	Teshale et al 2018	<i>Anaplasma</i> sp. Omatjenne	Ethiopia	Eastern Africa	457	29
11	Teshale et al 2018	<i>Anaplasma</i> sp. Omatjenne	Ivory coast	Western Africa	53	2
12	Teshale et al 2018	<i>Anaplasma</i> sp. Omatjenne	Morocco	Northern Africa	80	1
13	Teshale et al 2018	<i>Anaplasma</i> sp. Omatjenne	Rwanda	Eastern Africa	50	8
14	Teshale et al 2018	<i>Anaplasma</i> sp. Omatjenne	Zambia	Eastern Africa	37	6
15	Abanda et al 2019a	<i>Anaplasma</i> sp. Hadesa	Cameroon	Central Africa	1260	98
16	Abanda et al 2019b	<i>Anaplasma</i> sp. Hadesa	Cameroon	Central Africa	31	13
17	Hailemariam et al 2017	<i>Anaplasma</i> sp. Hadesa	Ethiopia	Eastern Africa	392	49
18	Kolo et al 2020	<i>Anaplasma</i> sp. Hadesa	South Africa	Southern Africa	100	1
19	Hailemariam et al 2017	<i>Anaplasma</i> sp. Saso	Ethiopia	Eastern Africa	392	56
20	Kolo et al 2020	<i>Anaplasma</i> sp. Saso	South Africa	Southern Africa	100	1
21	Hailemariam et al 2017	<i>Anaplasma</i> sp. Dedessa	Ethiopia	Eastern Africa	392	22
22	Kolo et al 2020	<i>Anaplasma</i> sp. Dedessa	South Africa	Southern Africa	100	1
23	Kolo et al 2020	<i>Anaplasma</i> sp. Mymensingh	South Africa	Southern Africa	100	2
24	Okal et al 2020	<i>Anaplasma</i> sp. Lambwe_1	Kenya	Eastern Africa	680	97
25	Dahmani et al 2019	<i>Candidatus Anaplasma africae</i>	Senegal	Western Africa	62	5
26	Dahmani et al 2015	<i>Anaplasma</i> sp.	Algeria	Northern Africa	36	5
27	Boularias et al 2020	<i>Anaplasma</i> sp.	Algeria	Northern Africa	205	6
28	Chatanga et al 2022	<i>Anaplasma</i> sp.	Malawi	Eastern Africa	191	27
29	Kamani et al 2022b	<i>Anaplasma</i> sp.	Nigeria	Western Africa	275	32
30	Kolo et al 2020	<i>Anaplasma</i> sp.	South Africa	Southern Africa	100	11
31	Peter et al 2020	<i>Anaplasma</i> sp.	Kenya	Eastern Africa	306	4
32	Kolo et al 2020	<i>Candidatus Anaplasma boleense</i>	South Africa	Southern Africa	100	1

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