

Table 1 Mean, standard error and sample size of morphometric antenna, palp, wing and legs measurements of five populations of female *An. arabiensis*. Measurements are in (mm) except for palpal index.

Mosquito body part	Character	Collection sites					P. value	
		Colony		Field				
		Sennar	Kassala	New Halfa	Aroma	Wagar		
Antenna	Flagellum length	1.27±0.011 (27)	1.43±0.010 (43)	1.35±0.010 (49)	1.442±0.010 (45)	1.36±0.013 (30)	P<0.05	
Palp	Segment I	0.11±0.003 (24)	0.14±0.009 (14)	0.14±0.007 (15)	0.14±0.011 (10)	0.11±0.006 (12)	P<0.05	
	Segment II	0.690±0.008 (27)	0.77±0.011 (22)	0.74±0.008 (18)	0.79±0.008 (15)	0.72±0.009 (25)	P<0.05	
	Segment III	0.68±0.007 (50)	0.79±0.007 (45)	0.75±0.006 (43)	0.79±0.006 (47)	0.74±0.007 (49)	P<0.05	
	Segment IV	0.32±0.004 (49)	0.37±0.005 (45)	0.35±0.003 (45)	0.38±0.004 (46)	0.34±0.004 (49)	P<0.05	
	Segment V	0.20±.003 (48)	0.23±.002 (45)	0.21±.003 (44)	0.23±.002 (46)	0.21±.002 (49)	P<0.05	
	Palp length	1.99±0.028 (22)	2.28±0.037 (14)	2.19±0.020 (15)	2.36±0.016 (10)	2.15±0.030 (21)	P<0.05	
	Palpal index	0.75±0.006 (48)	0.76±0.006 (43)	0.75±0.006 (43)	0.77±0.005 (46)	0.75±0.006 (49)	P<0.05	
	Apical pale spot	0.25±0.003 (45)	0.29±0.003 (45)	0.27±0.004 (43)	0.29±0.003 (46)	0.27±0.003 (46)	P<0.05	
	Median pale spot	0.08±0.002 (41)	0.08±0.002 (44)	0.09±0.004 (43)	0.09±0.003 (45)	0.09±0.003 (45)	P<0.05	
	Basal pale spot	0.08±0.003 (40)	0.09±0.002 (45)	0.09±0.003 (44)	0.10±0.002 (46)	0.09±0.002 (47)	P<0.05	
	Wing	Humeral pale spot	0.14±0.003 (29)	0.14±0.004 (36)	0.13±0.005 (36)	0.15±0.006 (32)	0.13±0.005 (33)	P>0.05
		Pre-sector pale spot	0.12±0.004 (43)	0.12±0.008 (38)	0.10±0.005 (41)	0.11±0.005 (32)	0.13±0.006 (37)	P<0.05
		Pre-sector dark spot	0.36±0.007 (43)	0.46±0.008 (42)	0.43±0.007 (44)	0.47±0.010 (40)	0.39±0.008 (49)	P<0.05
Sector pale spot		0.14±0.003 (52)	0.15±0.005 (45)	0.13±0.005 (44)	0.15±0.004 (49)	0.15±0.005 (49)	P>0.05	
Median dark spot		0.57±0.008 (52)	0.76±0.010 (44)	0.70±0.007 (44)	0.79±0.010 (45)	0.67±0.007 (49)	P<0.05	
Accessory sector pale spot		0.12±0.004 (39)	0.14±0.004 (26)	0.13±0.004 (35)	0.14±0.003 (31)	0.14±0.003 (39)	P<0.05	
Sub-costal pale spot		0.32±0.007 (52)	0.31±0.008 (45)	0.29±0.008 (44)	0.30±0.010 (45)	0.29±0.008 (49)	P<0.05	
Pre-apical dark spot		0.45±0.007 (52)	0.50±0.012 (45)	0.50±0.011 (44)	0.53±0.010 (45)	0.49±0.010 (49)	P<0.05	
Pale interruption of 3 rd main dark area at 1 st vein		0.09±0.002 (47)	0.10±0.004 (24)	0.09±0.004 (23)	0.10±0.004 (20)	0.09±0.003 (34)	P>0.05	
Sub-apical pale spot		0.27±0.007 (50)	0.36±0.009 (45)	0.33±0.007 (44)	0.34±0.008 (45)	0.31±0.009 (50)	P<0.05	
Apical dark spot		0.16±.004 (50)	0.22±0.006 (45)	0.22±0.006 (44)	0.21±0.004 (45)	0.20±0.007 (49)	P<0.05	
Apical pale spot	0.21±0.005 (33)	0.24±0.007 (44)	0.23±0.004 (42)	0.24±0.003 (42)	0.23±0.005 (41)	P<0.05		

	Wing length excluding the fringe	3.23±0.022 (48)	3.79±0.024 (45)	3.59±0.026 (43)	3.84±0.022 (45)	3.52±0.032 (45)	P<0.05
	Wing width excluding the fringe	0.82±0.007 (49)	0.94±0.008 (44)	0.88±0.007 (43)	0.94±0.007 (45)	0.87±0.008 (49)	P<0.05
Fore leg	Leg length	6.15±0.051 (39)	7.32±0.058 (35)	7.00±0.064 (26)	7.37±0.049 (25)	6.79±0.061 (44)	P<0.05
	t1-t2	0.20±0.004 (49)	0.22±0.004 (49)	0.22±0.003 (49)	0.21±0.003 (48)	0.21±0.004 (48)	P<0.05
	t2-t3	0.18±0.003 (48)	0.19±0.004 (48)	0.19±0.004 (48)	0.20±0.004 (48)	0.20±0.003 (50)	P<0.05
	t3-t4	0.04±0.001 (46)	0.04±0.001 (49)	0.04±0.001 (49)	0.04±0.001 (47)	0.04±0.001 (47)	P<0.05
Mid leg	Leg length	6.82±0.080 (27)	8.35±0.072 (40)	7.86±0.064 (31)	8.51±0.071 (30)	7.62±0.074 (38)	P<0.05
	t1-t2	0.08±0.003 (46)	0.11±0.003 (50)	0.11±0.004 (47)	0.11±0.003 (45)	0.11±0.004 (47)	P<0.05
	t2-t3	0.08±0.002 (43)	0.10±0.003 (50)	0.10±0.003 (48)	0.11±0.002 (49)	0.11±0.004 (43)	P<0.05
	t3-t4	0.07±0.003 (39)	0.08±0.003 (49)	0.09±0.003 (47)	0.09±0.003 (46)	0.09±0.003 (44)	P<0.05
Hind leg	Leg length	8.74±0.105 (27)	10.65±0.094 (40)	10.03±0.095 (26)	10.95±0.085 (21)	9.84±0.112 (24)	P<0.05
	t1-t2	0.08±0.003 (42)	0.10±0.002 (50)	0.10±0.003 (49)	0.11±0.003 (48)	0.10±0.003 (38)	P<0.05
	t2-t3	0.08±0.003 (37)	0.10±0.002 (49)	0.10±0.002 (48)	0.10±0.002 (48)	0.10±0.003 (35)	P<0.05
	t3-t4	0.07±0.002 (42)	0.09±0.002 (50)	0.09±0.003 (49)	0.09±0.003 (49)	0.08±0.003 (36)	P<0.05

Note: Numbers between parentheses are sample sizes; P. values are based on One Way ANOVA test.

t1-t2= Pale band at the joint of tarsomeres 1 and 2; t2-t3= Pale band at the joint of tarsomeres 2 and 3; t3-t4= Pale band at the joint of tarsomeres 3 and 4.