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Supplementary material
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Supplementary Table S1. Morphometrics of *Heterorhabditis kankabi* n. sp. from Tikuch, Yucatan. Measurements in µm as follows: mean ± S.D. (range).

Character	Hermaphrodite	Female	Infective juvenile
N	10	10	10
L	2893.7 ± 597	1028 ± 87.5	545 ± 95
	(2200 - 3750)	(880 −1175)	(420 − 685)
a	20 ± 3.6	16.8 ± 3.5	20 ± 1.8
	(14.2 – 25)	(12.2 – 21.5)	(18 – 24)
b	13 ± 2.2	5.1 ± 0.3	3.8 ± 0.3
	(10.4 – 16.3)	(4.6 – 5.6)	(3 - 4.4)
c	-	-	6.5 ± 0.9
	-	-	(5.2 − 8.9)
v	50.7 ± 5.7	61.80 ± 7.7	-
	(42.1 – 61.8)	(50 – 70.4)	
Greatest body width (D)	146.6 ± 27.9	63 ± 10	26 ± 4
	(100 − 125)	(50 – 80)	(20 − 35)
Stoma length	12 ± 3.2	40.6 ± 4.3	-
	(9 − 18)	(34 − 50)	-
Stoma width	9.3 ± 1.6	2.7 ± 0.2	-
	(8 − 12)	(2.5 − 3.2)	-
EP	205.3 ± 33.1	175 ± 19.5	119 ± 19
	(142 − 242)	(145 - 210)	(85 − 159)
NR	132.3 ± 12	171. 3 ± 20.4	98 ± 19
	(110 - 145)	(137.5 - 170)	(71.9 - 134)
ES	221.1 ± 16.6	199.2 ± 11. 8	143 ± 23
	(195 - 245)	(182.5 - 220)	(95 - 177)
Testis reflexion	-	-	-
	-	-	-
Tail length with sheath	100.7 ± 12.9	106 ± 11.4	66 ± 12.9
	(86 − 125)	(80 − 125)	(50 − 86)
Anal body diameter (ABD)	48.6 ± 6.3	34.8 ± 8.6	18.9 ± 5.6
	(40 − 58)	(25− 50)	(13 − 29)
Spicule length (SP)	-	-	-
	-	-	-
Spicule width	-	-	-
	-	-	-
Gubernaculum length (GU)	-	-	-
	-	-	-
D % = EP/ES x 100	-	-	83.7 ± 5.8
	-	-	(71.6 − 89.8)
E % = EP/T x 100	-	-	143.8 ± 20
	-	-	(109.5 − 178.8)
SW % = SP/ABD x 100	-	-	-
	-	-	-
GS % = GU/SP x 100	-	-	-
	-	-	-

n = number of specimens measured; L = total body length; a = total body length/greatest body width; b = total body length/distance from the head to the oesophagus; c = total body length/tail length; D = greatest body width; V= distance from the head to the vulva / length of the body x 100; EP = distance from the head to the excretory pore; NR = distance from the head to the nerve ring; ES = distance from the head to the base of the oesophagus.T = distance from the anus to the tip of the tail with sheath; ABD = anal body diameter; D% = distance from the head to the excretory pore/distance from the head to the base of the oesophagus x 100; E% = distance from the head to the excretory pore/length of tail x 100; SW% = spicule length / anal body diameter x 100; GS% = gubernaculum length / spicule length x 100.

Supplementary Table S2. Morphometrics of *Heterorhabditis kankabi* infective juveniles compared with others species of *Heterorhabditis*. Measurements in µm as follows: mean ± S.D. (range).

ESPECIES	L	a	b	c	D	EP	NR	ES	T	ABD	D%	E%
AMA	589 ± 12 (567 – 612)	26 ± 1 (24 – 29)	4.9 ± 0.3 (4.4 – 5.5)	5.5 ± 0.2 (5.1 – 6.1)	23 ± 1 (20 – 24)	107 ± 6 (89 – 115)	85 ± 5 (76 – 93)	121 ± 6.6 (107 – 132)	107 ± 5 (98 – 115)	14 ± 1.4 (13 - 17)	14 ± 2.7 (83 – 92)	100 ± 6 (89 – 109)
BAC	558 (512 – 671)	25 (17 – 30)	4.5 (4 – 5.1)	6.2 (5.7 – 7)	23 (18 – 31)	103 (87 – 110)	85 (72- 93)	125 (10 – 139)	98 (83 – 112)	- (-)	84 (76 – 92)	112 (103 – 130)
BAU	551 ± 27 *(497-595)*	28 ± 1 (26 – 30)	4.8 ± 0.2 (4.5 – 5.1)	6 ± 0.3 (6 – 6.7)	20 ± 2 (18 – 22)	97 ± 3 (91 -103)	81 ± 3 (75 – 86)	115 ± 3 (107 – 120)	90 ± 4 (83 – 97)	13 ± 0.7 (11 – 14)	84 ± 3 (78 – 88)	108 ± 4 (98 – 114)
DOW	637 ± 32 (588 – 692)	35 – 4 (29- 42)	4.7 ± 0.3 (4.4 – 5.3	9.5 ± 5 (8.5 – 10.5)	18.2 ± 2 (15 – 22)	115 ± 8 (96 – 128)	101 ± 3 (96 – 105)	131 ± 4 (126 -141)	69 ± 4 (62 – 74)	12 ± 1 (9 – 14)	85 ± 5 (78 — 98)	170 ± 10 (100 – 180)
FLO	562 ± 24 (554 – 609)	28 ± 5 (25 – 32)	4.3 ± 2.1 (3.9 – 4.9)	5.6 ± 2.4 (5.3 – 6.6)	21 ± 5 (19 - 23)	100 ± 10 (101 - 122)	86 ± 9 (68 - 107)	135 ± 11 (123- 1 42)	103 ± 10 (91 - 113)	14 ± 3.7 (12 - 16)	81 ± 8.9 (71 - 90)	105 ± 10 (95 - 134)
GEO	598 ± 27 (547 - 651)	27 ± 3 (23 - 34)	4.7 ± 0.3 (4.1 – 5.3)	6.1 ± 0.4 (5.5 – 6.9)	22 ± 2 (17 - 26)	104 ± 4 (97 - 113)	85 ± 5 (74 - 94)	127 ± 7 (110 - 139)	98 ± 5 (86 - 108)	15 ± 1.5 (13 - 17)	- (70 - 93)	107 ± 8 (95 – 117)
GER	604 ± 39 (551 – 683)	13 ± 3 (23 - 32)	0.21 ± 0.02 (0.14 - 0.23)	0.17 ± 0.03 (0.11 – 0.21)	23 ± 3 (18 - 29)	98 ± 6 (92 - 111)	93 ± 18 (81 – 111)	124 ± 5 (110 - 130)	102 ± 14 (76 - 141	15 ± 2.9 (12 – 21)	80 ± 0.5 (73 - 92)	99 ± 2 (73 – 138)
IND	528 ± 26 (479 – 573)	26 ± 4 (25 - 27)	4.5 ± 0.34 (4.3 – 4.8)	5.3 ± 0.5 (4.5 – 5.6)	20 ± 6 (19 – 22)	98 ± 7 (88 – 107)	82 ± 4 (72 -85)	117 ± 3 (100 – 123)	101 ± 6 (93 - 109)	- -	84 – 5 (79 – 90)	94 ± 7 (83 - 103)
KAN	**555 ± 95** **(420 – 685)**	**20 ± 1.8** **(18 – 24)**	**3.8 ± 0.3** **(3 – 4.4)**	**6.5 ± 0.9** **(5.2- 8.9)**	**26 ± 4** **(20 - 35)**	**119.9 ± 19** **(85 - 159)**	**98 ± 19** **(71.9 -134)**	**143 ± 23** **(95 - 177)**	**66 ± 12.9** **(50 - 86)**	**18.9 ± 5.6** **(13 - 29)**	**83.7 ± 5.8** **(71.6 – 89.8)**	**143.8 ± 20** **(109.5 – 178.8)**
MEX	578 ± 23 (530 - 620)	26 (23 - 28)	4.6 (4.2 – 5.1)	5.9 (5.5 – 6.3)	23 ± 1 (20 - 24)	102 ± 5 (83 - 109)	81 ± 4 (74 - 88)	122 ± 27 (104 – 142)	90 ± 4 (91- 106)	15 ± 1.2 (12- 17)	81 ± 3 (72 - 86)	104 ± 5 (87 - 111)
NOE	536 ± 21 (484 - 578)	21 ± 1 (21 27)	4.9 ± 0.2 (4.3 – 5.2)	6.2 ± 0.3 (5.5 – 6.8	23 ± 1 (21 - 25)	97 ± 3 (88 - 105)	81 ± 6 (69 - 96)	106 ± 9 (79 - 96)	86 ± 3.4 (78 - 95)	14 ± 1 (12 - 16)	89 ± 3 (81 - 95)	113 ± 6 (99 - 125)
SAF	600 ± 27 (550 - 676)	29 ± 2 (21.8 – 31.8)	4.5 ± 0.2 (3.9 – 4.9)	6.4 ± 0.6 (5.4 – 7.5)	21 ± 1 (19 - 23)	110 ± 4 (103 - 122)	93 ± 4 (86 - 101)	131 ± 3.7 (125 - 141)	93 ± 6 (86 - 108)	13 ± 0.6 12 - 14	84 ± 2.6 (80 - 90)	19 ± 9 (99 - 133)
SON	557 ± 28 (495 - 570)	23 ± 1.5 (19 – 26)	4.8 ± 0.4 (4.4 – 5.4)	5.5 ± 1 (4 – 6.5)	26 ± 4 (19 - 32)	99 ± 5 (97 - 116)	93 ± 4 (87 - 98)	119 ± 7 (110 - 131)	105 ± 7 (91 - 125)	16 ± 2 (13 - 16)	90 ± 8.5 (78 - 110)	99 ± 8 (81 - 111)
TAY	418 ± 38 (648 - 736)	21 ± 2 (38 - 48)	3 ± 0.2 (78 - 120)	7 ± 0.7 (54 - 88)	20 ± 2 (85 -123)	90 ± 9 (20 - 29)	74 ± 7 (21 - 30)	110 ± 8 (30 - 27)	55 ± 7 (14 - 21)	- -	83 ± 6 (71 - 96)	180 ± 27 (110 - 230)

L = total body length; a = total body length/greatest body width; b = total body length/distance from the head to the oesophagus; c = total body length/tail length; D = greatest body width; V= distance from the head to the vulva / length of the body x 100; EP = distance from the head to the excretory pore; NR = distance from the head to the nerve ring; ES = distance from the head to the base of the oesophagus; T = distance from the anus to the tip of the tail with sheath; ABD = anal body diameter; D% = distance from the head to the excretory pore/distance from the head to the base of the oesophagus x 100; E% = distance from the head to the excretory pore/length of tail x 100; **AMA**= *H. amazonensis*; **BAC**= *H. bacteriophora*; **BAU**= *H. baujardi*; **DOW**= *H. downesi*; **FLO**= *H. floridensis*; **GEO**= *H. georgiana*; **GER**= *H. gerrardi*; **IND**= *H. indica*; **KAB**=*H. kankabi*; **MEX**= *H. mexicana*; **NOE**= *H. noenieputensis*; **SAF**= *H. safricana*; **SON**= *H. sonorensis*; **TAY**= *H. taysearae*.

Supplementary Table S3. Morphometrics of *Metarhabditis rainai* from Tikuch, Yucatan. Measurements in µm as follows: mean ± S.D. (range).

Character	Male
Testis reflexion	334 ± 58.7 (255 - 450)
Tail length without sheath	43.7 ± 4.3 (24.4 − 37)
Anal body diameter (ABD)	16 ± 1.5 (15 − 19)
Spicule length (SP)	39.7 ± 3.9 (32.5 – 47.5)
Spicule width	6.7 ± 1.1 (5 – 7.5)
Gubernaculum length (GU)	21.5 ± 7.6 (15 − 30)
D % = EP/ES x 100	109.7 ± 8.3 (96.2 – 126.3)
E % = EP/T x 100	- -
SW % = SP/ABD x 100	243.7 ± 11.4 (229 − 258)
GS % = GU/SP x 100	54. 6 ± 22 (30.7− 87.5)
N	10
L	812 ± 105 (650 -980)
a	15 ± 3.4 (11.6 – 24.5)
b	4.7 ± 0.63 (3.8 – 6.3)
c	- -
v	- -
Greatest body width (D)	52.2 ± 7.9 (40 – 62.5)
Stoma length	13.8 ± 1.1 (12.5 − 15)
Stoma width	2.5 ± 0.1 --
EP	184 ± 11.8 (162 -202)
NR	136 ± 10.7 (115 - 155)
Es	169 ± 19 (140 - 197)

n = number of specimens measured; L = total body length; a = total body length/greatest body width; b = total body length/distance from the head to the oesophagus; D = greatest body width; EP = distance from the head to the excretory pore; NR = distance from the head to the nerve ring; ES = distance from the head to the base of the oesophagus; T = distance from the anus to the tip of the tail with sheath; ABD = anal body diameter; D% = distance from the head to the excretory pore/distance from the head to the base of the oesophagus x 100; E% = distance from the head to the excretory pore/length of tail x 100; SW% = spicule length / anal body diameter x 100; GS% = gubernaculum length / spicule length x 100.