

Supplementary Materials

**Title: Unraveling Microbial Endosymbiosis Dynamics in Plant-Parasitic Nematodes with a
Genome Skimming Strategy**

Supplementary Table S1. Metagenomic assembly statistics for 52 nematode populations consist of twelve plant parasitic nematode species. All statistics are based on contigs of size ≥ 500 bp.

Nematode species	Population	Number of contigs	Assembly size (total length) (Mb)	N50 (bp)	GC %
<i>B. cocophilus</i>	Bc_Cr	33724	121.9	6545	42.4
<i>G. pallida</i>	Gp_Bin25_0	192940	241.6	1410	56.33
	Gp_Bin26_0	319350	407.7	1493	63.22
	Gp_Bin32_0	289064	313.1	1126	54.58
	Gp_Bin54_0	101360	150.3	2046	44.58
	Gp_Bin64_0	133979	190.8	1885	49.82
	Gp_Bin258_0	135871	186.0	1712	48.35
	Gp_GH	132155	197.3	1977	45.54
<i>H. glycines</i>	Hg_Al	48172	100.7	3676	38.99
	Hg_Aud	73535	167.5	3860	48.66
	Hg_Pet	73828	134.5	2492	49.11
	Hg_War	54187	125.4	4022	45.43
<i>M. incognita</i>	Mi_Al	66004	129.1	2636	32
	Mi_Ca	111282	173.7	1989	41.23
	Mi_Har	62587	118.6	2606	29.35
	Mi_Mo	100394	155.1	2107	29.23
<i>N. aberrans</i>	Psp_Ch6	176502	255.1	2085	38.31
<i>P. coffeae</i>	Pc_Cr	64553	136.8	3766	36.11
	Pc_DC2	46131	137.1	6003	35.55
	Pc_Y2	54715	113.8	3311	34.7
<i>P. neglectus</i>	Pn_Bec	103020	146.8	1767	48.15
	Pn_Cem	88970	186.2	4882	52.16
	Pn_Hen	74679	127.1	2839	53.63
	Pn_Jep	95029	150.9	2116	49.04
	Pn_Lon	80973	118.1	1922	51.79
	Pn_Smi	102159	150.3	1877	52.8
	Pn_Tur	115456	142.1	1367	48.85

	Psp_Ch3	148213	129.8	873	41.99
	Psp_Ch4	57411	59.4	1050	53.76
<i>P. penetrans</i>	Pp_Cr	191262	206.3	1155	37.79
	Pp_Fhp	133029	156.6	1227	44.39
	Pp_GH2	154349	152.6	1023	37.95
	Psp_Ch2	37342	46.9	1500	49.22
	Psp_Ch5	41821	34.1	791	41.9
	Psp_Ch7	17836	13.4	715	38.37
	Psp_Ch8	143524	255.7	3097	37.03
<i>P. thornei</i>	Psp_Ch1	129688	125.6	957	40.45
	Psp_Tut	128467	170.9	1515	46.84
<i>P. vulnus</i>	Pv_Ca	34903	84.3	5734	43.67
	Pv_Ga	50015	119.6	5488	47.85
<i>R. reniformis</i>	Rr_Al	133331	182.7	1666	36.98
	Rr_Fl	115945	193.7	2266	36.62
	Rr_Hal	77143	122.2	2147	50.79
	Rr_Mi	109199	163.8	1866	45.35
	Rr_Poa	88107	121.5	1550	45.91
<i>R. similis</i>	Rs_Fl	44727	118.2	16346	54.45
	Rs_Rd	12689	66.4	19178	48.02
	Rs_Rv	5528	51.7	24082	47.01
	Rs_5	43101	199.5	26194	57.74
	Rs_14	112064	241.1	5362	58.99
	Rs_N1	92254	146.4	2013	51.41
	Rs_cit	155355	260.3	3171	56.49

Supplementary Table S2. *Wolbachia* and *Cardinium* bacterial endosymbiont occurrence in 52 nematode populations.

Nematode species	Location	Population	<i>Wolbachia</i>	<i>Cardinium</i>
<i>B. cocophilus</i>	Costa Rica	Bc_Cr	N	N
<i>G. pallida</i>	Idaho	Gp_Bin25_0	W	W
		Gp_Bin26_0	W	N
		Gp_Bin32_0	N	N
		Gp_Bin54_0	N	N
		Gp_Bin64_0	N	N
		Gp_Bin258_0	N	N
		Gp_GH	N	N
<i>H. glycines</i>	Alabama	Hg_Al	N	S
	Missouri	Hg_Aud	N	W
		Hg_Pet	N	N
		Hg_War	N	W
<i>M. incognita</i>	Alabama	Mi_Al	N	N
	California	Mi_Ca	N	N
	New York	Mi_Har	N	N
	Missouri	Mi_Mo	W	N
<i>N. aberrans</i>	Chile	Psp_Ch6	N	N
<i>P. coffeae</i>	Costa Rica	Pc_Cr	W	N
		Pc_DC2	N	N
		Pc_Y2	N	N
<i>P. neglectus</i>	Montana	Pn_Bec	N	W
		Pn_Hen	N	N
		Pn_Lon	N	N
		Pn_Smi	W	N
		Pn_Tur	N	N
	Oregon	Pn_Cem	N	N
		Pn_Jep	N	N
	Chile	Psp_Ch3	N	N
		Psp_Ch4	N	N
<i>P. penetrans</i>	Costa Rica	Pp_Cr	S	W

	Oregon	Pp_Fhp	W	N
		Pp_GH*	S	W
	Chile	Psp_Ch2	W	N
		Psp_Ch5	N	N
		Psp_Ch7	W	N
		Psp_Ch8	W	N
<i>P. thornei</i>	Chile	Psp_Ch1	W	N
	Oregon	Psp_Tut	N	N
<i>P. vulnus</i>	California	Pv_Ca	N	N
	Georgia	Pv_Ga	N	N
<i>R. reniformis</i>	Alabama	Rr_Al	N	W
	Florida	Rr_Fl	N	W
	Mississippi	Rr_Mi	N	W
	Hawaii	Rr_Poa	W	W
		Rr_Hal	W	W
<i>R. similis</i>	Florida	Rs_Fl	N	N
	Costa Rica	Rs_Rd	N	N
		Rs_Rv	N	N
	Uganda	Rs_5	S	N
	Colombia	Rs_14	S	N
	Nigeria	Rs_N1	S	N
	Florida	Rs_cit	W	N

“N” indicates no detectable symbiont (no evidence), “W” indicates weak evidence, “S” indicates strong evidence. “*” indicates positive control.