

**Supplementary Table 1** Genera relative abundance of soil nematode at booting stage in winter wheat under the fertilizer and weed species treatments in 2013. 0, 1, 2, and 4 indicate weed species richness.

Genus	Guild	Control				NPK fertilization			
		0	1	2	4	0	1	2	4
<i>Cephalobus</i>	Ba2	11.17	13.50	13.75	4.17	7.00	20.54	8.67	8.33
<i>Eucephalobus</i>	Ba2	5.67	6.17	3.92	5.67	5.17	6.75	5.17	9.83
<i>Rhabditis</i>	Ba1	11.00	12.50	14.08	11.83	17.33	16.00	17.67	19.33
<i>Diplogastrellus</i>	Ba1	0.33	0.75	0.33	0.17	0.33	0.00	0.00	0.33
<i>Caenorhabditis</i>	Ba1	0.17	1.92	0.67	0.17	0.33	0.00	0.17	0.33
<i>Chiloplacus</i>	Ba2	3.67	3.67	3.50	4.50	4.00	3.17	4.17	2.50
<i>Cervidellus</i>	Ba2	1.33	1.00	2.33	2.33	3.33	3.75	4.33	2.33
<i>Acrobeles</i>	Ba2	0.67	1.00	1.00	0.33	0.67	0.67	0.33	0.67
<i>Plectus</i>	Ba2	3.67	1.75	0.92	1.33	0.83	1.42	1.50	1.33
<i>Prismatolaimus</i>	Ba3	2.67	2.83	2.42	5.17	2.50	1.25	2.00	2.67
<i>Alaimus</i>	Ba4	3.00	5.17	3.92	3.17	1.67	0.83	2.67	1.17
<i>Aphelenchus</i>	Fu2	5.17	4.17	6.33	2.00	2.50	2.58	2.50	2.50
<i>Aphelenchoides</i>	Fu2	3.00	5.25	2.92	4.33	0.83	1.58	3.00	2.33
<i>Tylenchus</i>	Pp2	3.50	3.50	4.58	3.67	2.50	1.33	1.67	1.33
<i>Cephalenchus</i>	Pp3	5.17	4.58	5.75	4.33	2.67	2.58	2.83	1.83
<i>Psilenchus</i>	Pp2	0.33	0.67	1.58	1.67	0.33	0.50	0.33	0.67
<i>Pratylenchus</i>	Pp3	14.50	13.42	11.92	15.83	17.17	11.83	13.33	10.33
<i>Helicotylenchus</i>	Pp3	3.83	3.33	3.17	4.00	3.67	3.33	3.33	3.83
<i>Rotylenchus</i>	Pp3	5.17	2.33	3.92	7.00	2.33	3.00	2.67	2.17
<i>Tylenchorhynchus</i>	Pp3	4.50	2.83	2.75	4.67	12.33	13.50	10.67	12.83
<i>Hirschmanniella</i>	Pp3	0.00	0.00	0.00	0.00	0.50	0.00	0.33	0.50
<i>Criconrmoid</i>	Pp3	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.17

<i>Paratrichodorus</i>	Pp5	0.33	0.17	0.33	0.33	0.17	0.17	0.83	2.00
<i>Scutellonema</i>	Pp5	0.50	0.50	0.42	1.17	2.17	1.42	2.00	2.00
<i>Dorylaimus</i>	OP4	3.33	1.50	1.75	2.17	2.83	1.92	2.17	1.50
<i>Eudorylaimus</i>	OP4	0.17	0.67	0.50	0.33	0.17	0.42	0.33	0.50
<i>Labronema</i>	OP4	0.50	1.58	1.50	1.17	1.00	0.67	0.83	1.17
<i>Enchodelusthorne</i>	OP4	0.00	0.58	0.75	2.17	0.50	1.00	0.83	0.67
<i>Thorneella</i>	OP4	2.83	2.25	2.08	3.50	1.83	1.63	2.33	1.67
<i>Mesodorylaimus</i>	OP5	1.83	0.58	0.33	1.33	0.00	0.40	0.33	0.33
<i>Aporcelaimus</i>	OP5	1.67	1.25	1.67	1.50	0.83	1.08	1.00	1.17
<i>Discolaimus</i>	OP5	0.33	0.50	0.75	0.00	0.00	0.00	0.00	0.00

Data are means (n=6). Dominant groups (the number of individuals represented over 10% of the total sample) and common groups (the number of individuals represented between 1% and 10% of the total sample).

**Supplementary Table 2** Genera relative abundance of soil nematode at booting stage in winter wheat under the fertilizer and weed species treatments in 2014. 0, 1, 2, and 4 indicate weed species richness.

Genus	Guild	Control				NPK fertilization			
		0	1	2	4	0	1	2	4
<i>Cephalobus</i>	Ba2	7.00	9.17	5.43	4.00	6.83	9.00	6.92	6.83
<i>Eucephalobus</i>	Ba2	7.50	6.58	9.32	5.67	6.33	8.58	6.33	7.33
<i>Rhabditis</i>	Ba1	8.67	10.50	15.38	11.00	24.00	22.17	20.33	17.67
<i>Diplogastrellus</i>	Ba1	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
<i>Caenorhabditis</i>	Ba1	0.00	0.33	0.34	0.00	0.00	0.00	0.00	0.17
<i>Chiloplacus</i>	Ba2	4.17	3.67	5.30	4.50	4.17	3.67	3.92	3.83
<i>Cervidellus</i>	Ba2	2.33	1.50	2.52	2.33	3.17	3.83	4.00	3.17
<i>Acrobeles</i>	Ba2	0.17	0.08	0.00	0.50	0.83	0.58	0.58	0.67
<i>Plectus</i>	Ba2	2.17	3.08	1.14	1.83	1.50	1.75	1.08	3.00
<i>Prismatolaimus</i>	Ba3	2.17	4.17	2.92	4.67	2.17	2.33	1.83	2.83

<i>Alaimus</i>	Ba4	4.17	3.33	3.00	3.17	1.83	1.17	2.08	3.33
<i>Aphelenchus</i>	Fu2	3.33	2.33	2.95	2.83	2.00	2.42	3.25	2.50
<i>Aphelenchoides</i>	Fu2	3.00	5.42	2.25	4.00	2.00	1.33	2.17	2.67
<i>Tylenchus</i>	Pp2	2.33	2.50	1.98	3.00	0.83	0.67	0.83	0.83
<i>Cephalenchus</i>	Pp3	6.17	4.25	6.27	4.17	2.17	1.83	2.25	3.33
<i>Psilenchus</i>	Pp2	0.83	0.92	2.44	1.17	0.17	0.33	0.50	0.00
<i>Pratylenchus</i>	Pp3	14.17	22.33	12.51	15.50	21.00	13.75	16.83	12.83
<i>Helicotylenchus</i>	Pp3	4.17	3.33	6.03	3.83	1.83	4.08	2.17	4.17
<i>Rotylenchus</i>	Pp3	4.83	3.92	6.50	6.67	1.83	2.58	2.33	2.50
<i>Tylenchorhynchus</i>	Pp3	4.83	2.67	2.49	4.50	10.00	10.50	11.75	11.17
<i>Criconrmoid</i>	Pp3	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00
<i>Paratrichodorus</i>	Pp5	0.83	0.25	0.67	0.33	0.50	1.17	1.33	1.00
<i>Scutellonema</i>	Pp5	2.83	1.17	0.17	1.83	1.67	1.92	1.83	1.50
<i>Dorylaimus</i>	OP4	2.67	1.58	1.51	4.50	2.17	2.33	1.92	4.00
<i>Eudorylaimus</i>	OP4	0.00	0.00	0.75	0.33	0.17	0.00	0.08	0.00
<i>Labronema</i>	OP4	0.50	0.50	0.50	1.00	0.67	0.50	1.17	0.00
<i>Enchodelusthorne</i>	OP4	3.00	1.67	1.86	2.50	1.00	1.00	0.92	1.33
<i>Thorneella</i>	OP4	4.83	2.92	3.31	3.83	1.00	1.67	2.33	1.83
<i>Mesodorylaimus</i>	OP5	2.00	0.75	0.59	0.83	0.17	0.00	0.33	0.00
<i>Aporcelaimus</i>	OP5	1.33	1.08	1.78	1.50	0.00	0.67	0.92	1.50

Data are means (n=6). Dominant groups (the number of individuals represented over 10% of the total sample) and common groups (the number of individuals represented between 1% and 10% of the total sample).