

# Seasonal Stabilities of Soil Nematode Communities and Their Relationships with Environmental Factors in Different Temperate Forest Types on the Chinese Loess Plateau

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## Supplementary Material

**Table S1** Repeated measures ANOVA for the effects of forest type and sampling season on soil properties

Soil properties	Forest type (d.f.=2)	Season (d.f.=1)	Forest type×Season (d.f.=2)
SBD	0.25	0.10	0.49
SMC	24.98***	70.74***	2.48
pH	0.90	0.78	0.83
SOC	18.36***	0.50	0.96
TN	22.25***	0.15	0.60
MBC	3.77	22.22***	0.65
MBN	5.26*	2.78	8.56**
DOC	69.22***	77.04***	4.56*
DON	4.98*	22.39***	0.42
NO <sub>3</sub> <sup>-</sup> -N	11.91**	25.72***	6.47*
NH <sub>4</sub> <sup>+</sup> -N	6.33*	46.04***	3.69

Values are *F*-values for repeated measures ANOVA; d.f. is degree of freedom; \* *p* < 0.05; \*\* *p* < 0.01; \*\*\* *p* < 0.001. SBD, soil bulk density; SMC, soil moisture content; SOC, soil organic carbon; TN, soil total nitrogen; MBC, soil microbial biomass carbon; MBN, soil microbial biomass nitrogen; DOC, soil dissolved organic carbon; DON, soil dissolved organic nitrogen; NO<sub>3</sub><sup>-</sup>-N, soil nitrate nitrogen; and NH<sub>4</sub><sup>+</sup>-N, soil ammonium nitrogen.

**Table S2** Repeated measures ANOVA for the effects of forest type and sampling season on characteristics of soil nematode communities

Nematode characteristics	Forest type (d.f.=2)	Season (d.f.=1)	Forest type×Season (d.f.=2)
Total abundance	6.36**	29.44***	0.35
Genus number	3.56	0.04	0.82
PP abundance	4.88*	1.15	2.33
BF abundance	4.75*	12.54**	0.84
FF abundance	14.88***	35.21***	5.09*
OP abundance	0.17	6.08*	2.11
$H'$	25.52***	6.38*	3.03
$J'$	15.93***	6.18*	5.67*
$\lambda$	23.97**	10.37**	9.21**
$MI$	3.62*	18.46***	4.07*
$PPI$	37.42***	0.93	0.31
$PPI/MI$	3.91*	6.50*	2.81
$WI$	3.32*	6.25*	3.07
$NCR$	13.34***	0.18	0.80

Values are  $F$ -values for repeated measures ANOVA; d.f. is degree of freedom; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ . BF, PP, FF, and OP represent bacterial feeders, plant parasites, fungal feeders, and omnivores–predators.  $H'$ , Shannon–Wiener diversity index;  $J'$ , Pielou’s evenness index;  $\lambda$ , Simpson dominance index;  $MI$ , maturity index;  $PPI$ , plant parasite index;  $PPI/MI$ , plant parasite index/maturity index;  $WI$ , Wasilewska index; and  $NCR$ , nematode channel ratio index.

**Table S3** Correlation between the seasonal variations (%) of soil communities characteristics and soil properties

Pearson correlation	SV (SMC)	SV (SOC)	SV (MBC)	SV (DOC)	SV (TN)	SV (MBN)	SV (DON)	SV (NO <sub>3</sub> <sup>-</sup> -N)	SV (NH <sub>4</sub> <sup>+</sup> -N)
SV (TNA)	-0.152	-0.013	0.247	-0.050	-0.030	-0.114	0.054	0.083	0.163
SV (PP)	-0.045	0.264	-0.181	-0.376	0.311	-0.506	0.133	0.532	-0.540
SV (BF)	-0.256	-0.291	0.424	-0.260	-0.291	-0.125	0.279	0.070	-0.137
SV (FF)	0.058	-0.322	0.442	0.294	-0.268	0.326	-0.045	-0.502	0.493
SV (OP)	-0.035	0.373	0.019	-0.053	0.235	-0.054	-0.060	0.295	0.513
SV ( <i>H'</i> )	0.091	0.753*	-0.670*	-0.330	0.691*	-0.611	-0.164	0.793*	-0.091
SV ( <i>J'</i> )	-0.276	0.444	-0.512	-0.410	0.350	-0.750*	-0.419	0.772*	-0.044
SV ( $\lambda$ )	0.143	-0.498	0.335	0.346	-0.405	0.630	0.456	-0.668*	0.125
SV ( <i>MI</i> )	0.004	-0.296	0.495	0.322	-0.369	0.496	-0.265	-0.540	0.771*
SV ( <i>PPI</i> )	0.124	-0.219	0.352	-0.343	-0.201	0.014	-0.302	-0.024	0.179
SV ( <i>PPI/MI</i> )	0.085	0.220	-0.368	-0.575	0.316	-0.556	0.136	0.609	-0.784*
SV ( <i>WI</i> )	-0.083	-0.395	0.262	0.278	-0.430	0.395	-0.168	-0.488	0.711*
SV ( <i>NCR</i> )	-0.111	0.128	-0.074	-0.395	0.113	-0.306	0.556	0.454	-0.563

SV: the seasonal variability (%), indicated by Difference value (Rainy season – Dry season)/Average (Two seasons)  $\times$  100%. TNA, total nematode abundance. BF, PP, FF, and OP represent the abundance of bacterial feeders, plant parasites, fungal feeders, and omnivores–predators. *H'*, Shannon–Wiener diversity index; *J'*, Pielou’s evenness index;  $\lambda$ , Simpson dominance index; *MI*, maturity index; *PPI*, plant parasite index; *PPI/MI*, plant parasite index/maturity index; *WI*, Wasilewska index; and *NCR*, nematode channel ratio index. SMC, soil moisture content; SOC, soil organic carbon; MBC, soil microbial biomass carbon; DOC, soil dissolved organic carbon; TN, soil total nitrogen; MBN, soil microbial biomass nitrogen; DON, soil dissolved organic nitrogen; NO<sub>3</sub><sup>-</sup>-N, soil nitrate nitrogen; and NH<sub>4</sub><sup>+</sup>-N, soil ammonium nitrogen.