

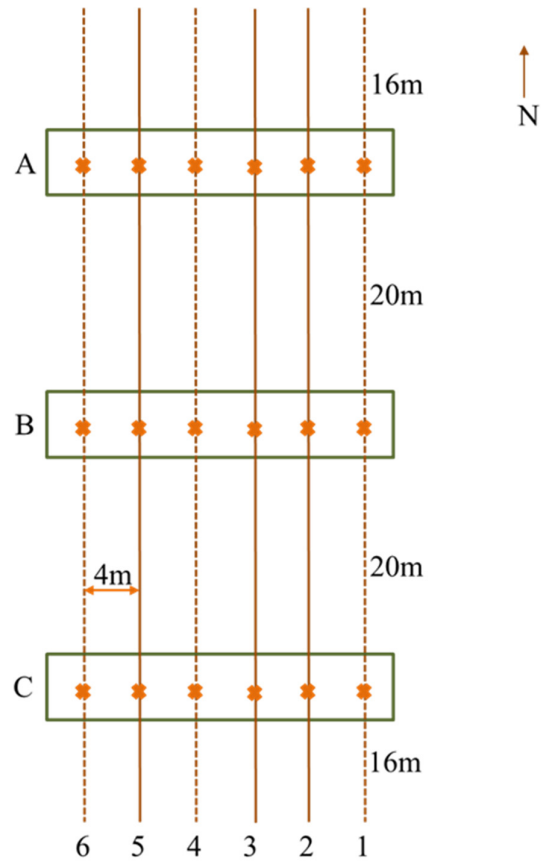


Figure S1. Sampling layout for the soil samples. The numbers (1-6) represent the rows of willow plants, and the letters (A-C) indicate the sampling points along the rows. The willow plants in rows 1, 4 and 6 were kept free of aphids, by weekly manual removal or insecticide spraying, while plants in rows 2, 3 and 5 were inoculated with aphids.

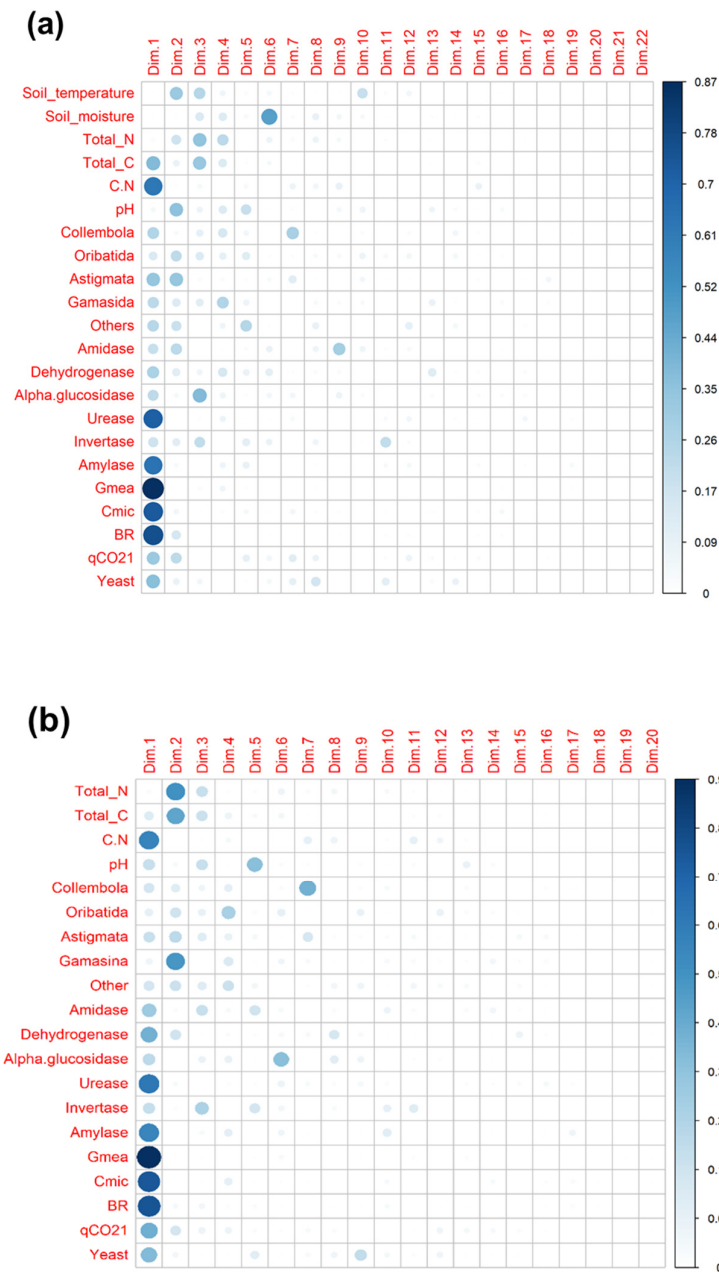


Figure S2. Correlation plots for contributing variables to each dimension in the PCA for (a) treatments, and (b) sampling times. The variables that contributed the most to the first few dimensions were selected for SEM.

Table S1. Summary of treatment effects of *T. salignus* honeydew deposition on soil biochemical properties, soil enzymes, and soil meso-fauna abundance in first and second year of the experiment (Generalized Linear Models, $\alpha=0.05$).

Parameter	Unit	df1, df2	First year		df1, df2	Second year	
			F-value	P-value		F-value	P-value
pH	-	2,20	0.75	0.485	2,23	0.03	0.973
Total C	%	2,20	3.55	0.043	2,23	3.62	0.044
Total N	%	2,20	3.26	0.061	2,23	0.10	0.904
C : N	-	2,20	18.10	0.001	2,23	7.12	0.004
Collembola	ind. m ⁻²	2,20	3.27	0.032	2,23	3.79	0.039
Gamasida	ind. m ⁻²	2,20	11.45	0.001	2,23	0.15	0.858
Astigmata	ind. m ⁻²	2,20	13.49	0.001	2,23	4.14	0.030
Oribatida	ind. m ⁻²	2,20	0.82	0.311	2,23	3.97	0.043
Other mesofauna	ind. m ⁻²	2,20	3.01	0.045	2,23	5.97	0.011
Dehydrogenase	mg TPF g ⁻¹ soil 24 h ⁻¹	2,20	3.64	0.042	2,23	10.25	0.001
Urease	NH ₄ ⁺ -N g ⁻¹ soil 4 h ⁻¹	2,20	17.29	0.001	2,23	20.70	0.001
Amidase	mg NH ₄ ⁺ -N g ⁻¹ soil h ⁻¹	2,20	3.62	0.047	2,23	0.09	0.915
β -amylase	mg starch g ⁻¹ soil 24 h ⁻¹	2,20	34.14	0.001	2,23	27.03	0.001
Invertase	mg glucose g ⁻¹ soil 24 h ⁻¹	2,20	21.86	0.001	2,23	0.26	0.821
α -glucosidase	mg glucose g ⁻¹ soil h ⁻¹	2,20	4.87	0.020	2,23	3.90	0.036
Gmea	-	2,20	50.37	0.001	2,23	23.99	0.001
Cmic	μ g C g ⁻¹ soil	2,20	44.14	0.001	2,23	19.90	0.001
BR	μ g CO ₂ -C g ⁻¹ soil h ⁻¹	2,20	89.54	0.001	2,23	45.53	0.001
qCO ₂	μ g CO ₂ -C μ g ⁻¹ Cmic h ⁻¹	2,20	1.51	0.247	2,23	28.34	0.001
Yeast CFU	log CFU g ⁻¹ soil	2,62	70.99	0.001	2,71	44.952	0.001