



Figure S1. The cumulative rainfall and air temperature in field experiments (2021).

Table S1. Effects of rain shelter and fertilizer on soil enzyme activity.

		Field			Pot		
		df	F	Sig	df	F	Sig
Sucrase	W	1	365.024	0.000	1	1586.047	0.000
	F	1	627.779	0.000	1	1153.972	0.000
	W * F	1	2.357	0.163	1	109.202	0.000
			R ² =0.989			R ² =0.996	
Urease	W	1	62.2	0.000	1	24.438	0.001
	F	1	29.584	0.001	1	69.319	0.000
	W * F	1	1.183	0.308	1	7.216	0.028
			R ² =0.891			R ² =0.899	
Phosphatase	W	1	97.633	0.000	1	335.439	0.000
	F	1	49.732	0.000	1	165.285	0.000
	W * F	1	3.198	0.112	1	101.954	0.000
			R ² =0.931			R ² =0.982	
Catalase	W	1	77.471	0.000	1	228.2	0.000
	F	1	92.197	0.000	1	49.185	0.000
	W * F	1	16.006	0.004	1	8.865	0.018
			R ² =0.943			R ² =0.963	

The W, F, and W*F indicates the (non-) rain-shelter, (non-) fertilizer, and its interaction, respectively. The effects of rain shelter and fertilization on soil enzyme activity using general linear model univariate with LSD

Table S2. The effects of rain shelter and fertilizer on on syringic acid (a), para-coumaric acid (b), ferulic acid (c), 3-indoleacetic acid (d), vanillin acid (e), Phthalic acid (f), and p-hydroxybenzoic acid (g), secreted from roots of *Panax Notoginseng*.

	P-hydroxybenzoic acid			Vanillin acid			Syringic acid			Para-coumaric acid			Ferulic acid			3-indoleacetic acid			Phthalic acid		
	df	F	Sig	df	F	Sig	df	F	Sig	df	F	Sig	df	F	Sig	df	F	Sig	df	F	Sig
W	1	139.738	0.000	1	44.366	0.000	1	39.427	0.000	1	10.534	0.012	1	22.096	0.002	1	0.512	0.495	1	12.638	0.007
F	1	32.807	0.000	1	8.508	0.019	1	51.467	0.000	1	63.106	0.000	1	76.5	0.000	1	90.542	0.000	1	14.694	0.005
W * F	1	58.946	0.000	1	120.429	0.000	1	82.42	0.000	1	7.7	0.024	1	2.26	0.171	1	0.459	0.517	1	0.434	0.529
	R ² =0.954			R ² =0.939			R ² =0.939			R ² =0.877			R ² =0.899			R ² =0.889			R ² =0.692		

The W, F, and W*F indicates the (non-) rain-shelter, (non-) fertilizer, and its interaction, respectively. *The effects of rain shelter and fertilizer on phenolic acid using general linear model univariate with LSD*

Table S3. The Effects of rain shelter and fertilizer on incidence of root rot.

Incidence of root rot	Field			Pot		
	df	F	Sig	df	F	Sig
W	1	309.495	0.000	1	676.459	0.000
F	1	6.592	0.033	1	10.978	0.011
W * F	1	0.522	0.490	1	1.839	0.212
	R ² =0.966			R ² =0.984		

The W, F, and W*F indicates the (non-) rain-shelter, (non-) fertilizer, and its interaction, respectively. *The effects of rain shelter and fertilizer on incidence of root rot using general linear model univariate with LSD*