

Table S1. Main chemical properties of Solonetz soil type and adsorbed cations content.

Horizon ¹	Depth (cm)	pH		CaCO ₃ (%)	Organic matter (%)	P ₂ O ₅ (mg/100 g)	K ₂ O (mg/100 g)	Adsorbed cations (mg/100 g)	
		H ₂ O	KCl					Ca ⁺⁺	Na ⁺
Aoh/E,na	0-13	5.90	4.60	0.00	6.05	7.3	87.6	124.6	20.24
	13-36	7.86	6.38	0.27	1.69	1.5	17.6	207.4	177.79
Bt,Na	36-58	8.20	6.87	0.00	1.48	5.4	23.4	249.4	235.98
	58-85	8.93	7.30	0.42	0.83	6.4	28.0	289.0	309.35

¹ A - Surface horizon, organic matter-accumulative (oh - Ohric horizon, E - Eluvium horizon); B - Subsoil horizon (Bt - Argiluvian horizon); Na - increased content of Na⁺

Table S2. Main chemical properties of Chernozem soil type.

Horizon ¹	Depth (cm)	pH		CaCO ₃ (%)	Organic matter (%)	P ₂ O ₅ (mg/100 g)	K ₂ O (mg/100 g)
		H ₂ O	KCl				
Ap	0-30	6.80	6.25	2.31	3.75	12.0	28.3
A	30-60	7.59	7.08	7.70	2.41	3.8	16.7

¹ A - Surface horizon, organic matter-accumulative horizon (p - ploughing layer)