

Supporting Information:

Plasma treated nitrogen enriched manure does not impose adverse effects on soil fauna feeding activity or springtails and earthworms abundance

Table S1. Effects of different fertilizing treatments, including mineral fertilizer, NEO, organic fertilizer (untreated cattle slurry), organic fertilizer + mineral fertilizer (MF), and no fertilizer on soil fauna feeding activity (%) in the early effect, mid-term, and late effect evaluations, springtail abundance in summer and fall samplings at crop and grass fields, and the abundance and weight change (g) of earthworms, respectively. The Games-Howell pairwise comparison method at a 95% confidence interval is used to compare the differences between means. Means that do not share a letter are significantly different.

Soil fauna feeding activity (early effects, 7 weeks)	Feeding activity (%)	Grouping
Mineral fertilizer 73 kg N ha-1	78.13	A
Organic fertilizer 73 kg N ha-1	74.74	A
NEO type D 73 kg N ha-1	73.7	AB
Organic fertilizer + MF 175 kg N ha-1	61.98	ABC
No fertilizer	54.17	BC
NEO type D 175 kg N ha-1	49.22	C
Mineral fertilizer 175 kg N ha-1	46.35	C
Soil fauna feeding activity (mid-term effects, 14 weeks)	Feeding activity (%)	Grouping
Mineral fertilizer 73 kg N ha-1	58.44	A
NEO type D 73 kg N ha-1	55.99	A
Organic fertilizer + Mineral fertilizer 175 kg N ha-1	49.48	A
Organic fertilizer 73 kg N ha-1	48.96	A
NEO type D 175 kg N ha-1	45.57	A
No fertilizer	41.41	A
Mineral fertilizer 175 kg N ha-1	34.38	A
Soil fauna feeding activity (late effects, 21 weeks)	Feeding activity (%)	Grouping
NEO type D 73 kg N ha-1	49.74	A
Mineral fertilizer 73 kg N ha-1	49.48	A
Organic fertilizer 73 kg N ha-1	46.35	A
No fertilizer	46.09	A
NEO type D 175 kg N ha-1	45.83	A
Mineral fertilizer 175 kg N ha-1	45.57	A
Organic fertilizer + Mineral fertilizer 175 kg N ha-1	45.05	A
Soil fauna feeding activity all treatments (early, mid-term, and late effects averages)	Feeding activity (%)	Grouping
7 weeks	62.61	A
14 weeks	47.75	A
21 weeks	46.88	A
Springtail abundance summer sampling crop field	Abundance per m ²	Grouping
Organic fertilizer	509.4	A
NEO	467	A
Mineral fertilizer	297.1	A
Springtail abundance summer sampling grass field	Abundance per m ²	Grouping
Organic fertilizer	1528	A
NEO	807	A
Mineral fertilizer	467	A
Springtail abundance fall sampling crop field	Abundance per m ²	Grouping
Organic fertilizer	212.3	A
No fertilizer	212.3	A

NEO	169.8	A
Mineral fertilizer	169.8	A
Springtail abundance fall sampling crop field	Abundance per m²	Grouping
Organic fertilizer	1486	A
No fertilizer	1486	A
NEO	1401	A
Mineral fertilizer	1316	A
Earthworm abundance change June 2021	Abundance change	Grouping
Organic fertilizer	4.33	A
Mineral fertilizer	4	A
NEO	2.33	A
No fertilizer	-1	A
Earthworm weight change June 2021	Weight change (g)	Grouping
Mineral fertilizer	4.07	A
Organic fertilizer	2.87	A
NEO	1.93	A
No fertilizer	-1.67	A
Earthworm abundance change June 2022	Abundance change	Grouping
Organic fertilizer	7	A
NEO	7	A
No fertilizer	6	A
Mineral fertilizer	3.67	A
Earthworm weight change June 2022	Weight change (g)	Grouping
No fertilizer	0.5	A
Organic fertilizer	0.22	A
NEO	0.05	A
Mineral fertilizer	- 0.95	A

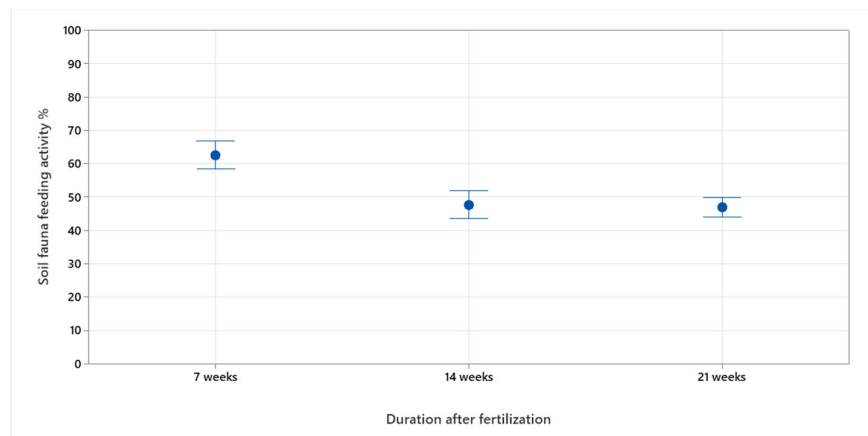


Figure S1. Effects of all fertilizing treatments on soil fauna feeding activity (%) at seven weeks, 14 weeks, and 21 weeks after fertilizing. Individual standard deviations at a 95% confidence interval are used in the graphs.