

Supplementary Material

Effect	Sum of Squares	Degree of freedom	Mean Squares	F-Distribution	P-Value
Not infected					
Soil treatment	216.74	6	36.12	12.74	< 0.001
Infected and asymptomatic					
Soil treatment	6.09	6	1.01	4.95	< 0.001
Infected with mild symptoms					
Soil treatment	8.52	6	1.42	7.42	< 0.001
Infected with severe symptoms					
Soil treatment	12.38	6	2.06	24.69	< 0.001

Supplementary Table 1. Summary of the four One-way ANOVA testing for main effect of soil treatments on TSWV incidence based on four classes: not infected (ELISA negative), infected (ELISA positive) and asymptomatic plants; infected plants (ELISA positive) with mild symptoms (stunting and/or mosaic), infected plants (ELISA positive) with severe symptoms (collapsing or death). Significance of *P*-values was determined with 0.05 alpha-level of confidence.

Variable: Infected plants (ELISA positive) with severe symptoms

	Untreated	Mineral	Fumigated + Mineral	Manure	Alfalfa	Manure + Char	Alfalfa + Char
Untreated		0.0001	0.0001	0.2055	1.0000	0.2176	0.1841
Mineral	0.0001		1.0000	0.0000	0.0000	0.0000	0.0001
Fumigated + Mineral	0.0001	1.0000		0.0000	0.0001	0.0000	0.0002
Manure	0.2055	0.0000	0.0000		1.1841	1.0000	0.0209
Alfalfa	1.0000	0.0000	0.0001	0.1841		0.2055	0.2055
Manure + Char	0.2176	0.0000	0.0000	1.0000	0.2055		0.0229
Alfalfa + Char	0.1841	0.0001	0.0002	0.0209	0.2055	0.0229	

Variable: Infected plants (ELISA positive) with mild symptoms

	Untreated	Mineral	Fumigated + Mineral	Manure	Alfalfa	Manure + Char	Alfalfa + Char
Untreated		0.0002	0.0000	0.0000	0.0000	0.0001	0.0001
Mineral	0.0002		0.0037	0.0000	0.0033	0.0937	0.0800
Fumigated + Mineral	0.0000	0.0037		0.0022	1.0000	0.0937	0.1023
Manure	0.0000	0.0000	0.0022		0.0028	0.0002	0.0001
Alfalfa	0.0000	0.0033	1.0000	0.0028		0.0800	0.0937
Manure + Char	0.0001	0.0937	0.0937	0.0002	0.0800		1.0000
Alfalfa + Char	0.0001	0.0800	0.1023	0.0001	0.0937	1.0000	

Variable: Infected (ELISA positive) and asymptomatic plants

	Untreated	Mineral	Fumigated + Mineral	Manure	Alfalfa	Manure + Char	Alfalfa + Char
Untreated		0.0092	0.0082	0.0001	0.0055	0.1223	0.0070
Mineral	0.0092		1.0000	0.0000	1.0000	0.0005	1.0000
Fumigated + Mineral	0.0082	1.0000		0.0000	1.0000	0.0004	1.0000
Manure	0.0001	0.0000	0.0000		0.0001	0.0002	0.0000
Alfalfa	0.0055	1.0000	1.0000	0.0001		0.0004	1.0000
Manure + Char	0.1221	0.0005	0.0004	0.0002	0.0004		0.0004
Alfalfa + Char	0.0070	1.0000	1.0000	0.0000	1.0000	0.0004	

Variable: Not infected plants (ELISA negative)

	Untreated	Mineral	Fumigated + Mineral	Manure	Alfalfa	Manure + Char	Alfalfa + Char
Untreated		0.0001	0.0009	0.0009	0.0000	0.0002	0.0001
Mineral	0.0001		0.0516	0.0001	0.0000	0.0000	0.0000
Fumigated + Mineral	0.0009	0.0516		0.0001	0.0000	0.0001	0.0000
Manure	0.0009	0.0001	0.0001		0.0013	0.3051	0.0617
Alfalfa	0.0000	0.0000	0.0000	0.0013		0.0085	0.0516
Manure + Char	0.0002	0.0000	0.0001	0.3051	0.0085		0.3051
Alfalfa + Char	0.0001	0.0000	0.0000	0.0617	0.0516	0.3051	

Supplementary Table 2. ANOVA one-way, followed by post hoc Duncan's test for the four plant categories: infected plants (ELISA positive) with severe symptoms (collapsing or death); infected plants (ELISA positive) with mild symptoms (stunting and/or mosaic); infected (ELISA positive) and asymptomatic plants; not infected plants (ELISA negative). Significance of *P*-values, highlighted in red, was determined with 0.05 alpha-level of confidence.

Treatment	OD 405
Alfalfa + Char	0.22±0.21b
Manure + Char	0.29±0.17b
Alfalfa	0.11±0.09a
Manure	0.31±0.18b
Fumigated + Mineral	0.27±0.21b
Untreated	0.38±0.29b
Mineral	0.24±0.18b

Supplementary Table 3. Mean absorbance at OD405 nm obtained by ELISA test. Data were submitted to one-way ANOVA to evaluate the main effects of soil treatments on viral titre. Values are average ± standard deviation of 18 replicates, different letters indicate significant differences (Duncan's test, significance determined with 0.05 alpha-level of confidence).

	Alfalfa	Alfalfa + Char	Fumigated + Mineral	+ Manure	Manure + Char	Mineral	Untreated
Alfalfa		0.000057	0.000037	0.000022	0.000027	0.000148	0.000064
Alfalfa + Char	0.000057		0.916635	0.558756	0.636379	0.609737	0.912797
Fumigated + Mineral	0.000037	0.916635		0.609737	0.688362	0.558756	0.841550
Manure	0.000022	0.558756	0.609737		0.884718	0.302341	0.505684
Manure + Char	0.000027	0.636379	0.688362	0.884718		0.356126	0.580431
Mineral	0.000148	0.609737	0.558756	0.302341	0.356126		0.662486
Untreated	0.000064	0.912797	0.841550	0.505684	0.580431	0.662486	

Supplementary Table 4. ANOVA one-way, followed by post hoc Duncan's test for the data obtained by ELISA test. Significance of *P*-values, highlighted in red, was determined with 0.05 alpha-level of confidence.