

Supplementary Material

Title: Interactions between high load of a bio-based and biodegradable plastic and nitrogen fertilizer affect plant biomass and health: a case study with *Fusarium solani* and mung bean (*Vigna radiata* L.).

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Figure S1. Detection of *F. solani* from seed, seedlings and soils using specific PCR by employing the primer pair 1- TEF-Fs4f and TEF-Fs4r (surface sterile seeds (Seed); sterile water (SW); sterile soil (SS); sterile soil and PBSA (SSP); sterile soil and N fertilizer (SSN); sterile soil PBSA and N fertilizer (SSPN); soil (S); (vii) soil and N fertilizer (SN); soil and PBSA (SP); and soil, PBSA and N fertilizer (SPN); mycelium (M); one year control soil (CS); one year control soil and N fertilizer (SN); one year soil and PBSA (SPS), one year soil, PBSA and N fertilizer (SPSN); *F. solani* positive control (FS); negative control (N)). Blue box shows the expected band for *F. solani* (658 bp).



Table S1. Repeated experiment on shoot and root biomass parameters across different treatments (mean $\pm$ SE, $n = 3$) for high and low soil dilution concentration. Different letters indicate significant differences ($P < 0.05$) according to one-way analysis of variance (ANOVA).

	Soil dilution concentration	SW	SS	SSP	SSN	SSPN	S	SN	SP	SPN	Statistics
shoot dry weight (mg)	high con	66.2 $\pm$ 7.9ab	72.1 $\pm$ 2.9b	81 $\pm$ 9.7b	59.7 $\pm$ 6.6ab	60.3 $\pm$ 2.5ab	66 $\pm$ 1.7ab	71.9 $\pm$ 4.6b	41 $\pm$ 7.3a	70.2 $\pm$ 3.4b	$F=3.75$, $P=0.009$
	low con	70.3 $\pm$ 10.5b	71.3 $\pm$ 4b	35.7 $\pm$ 10.2a	81.8 $\pm$ 1.4b	74.8 $\pm$ 10b	54 $\pm$ 1.2ab	66.8 $\pm$ 7.5ab	75.4 $\pm$ 2.3b	68.5 $\pm$ 3.5ab	$F=4.23$, $P=0.005$
root dry weight (mg)	high con	5.6 $\pm$ 0.3a	7.5 $\pm$ 0.7ab	12.2 $\pm$ 4.3ab	7.6 $\pm$ 1.2ab	7.2 $\pm$ 2.2ab	6.9 $\pm$ 3.4ab	18 $\pm$ 3b	11.3 $\pm$ 1.5ab	13 $\pm$ 2.5ab	$F=2.66$, $P=0.040$
	low con	13.4 $\pm$ 3a	49.5 $\pm$ 7.1a	29.6 $\pm$ 9.7a	38.1 $\pm$ 13.4a	25.2 $\pm$ 11.7a	30.3 $\pm$ 4a	22.4 $\pm$ 13.4a	29.8 $\pm$ 11.6a	27.1 $\pm$ 4.2a	$F=1.11$, $P=0.4003$

Table S2. Repeated experiment on *F. solani* disease incident in percent across different treatments (mean $\pm$ SE, $n = 3$) for high and low soil dilution concentration. Significant differences were tested using Kruskal-Wallis (KW) test.

	Mean	SW	SS	SSP	SSN	SSPN	S	SN	SP	SPN	<i>P</i> value
<i>F. solani</i> high incident (%)	con	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	83.3 $\pm$ 4.2	$P=0.00115$
<i>F. solani</i> low incident (%)	con	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	87.5 $\pm$ 0	$P=0.009$

Table S3. Repeated experiment on overall disease incident in percent across different treatments (mean $\pm$ SE, $n = 3$) for high and low soil dilution concentration. Significant differences were tested using Kruskal-Wallis (KW) test.

	Mean	SW	SS	SSP	SSN	SSPN	S	SN	SP	SPN	<i>P</i> value
Disease incident (%)	high con	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	33.3 $\pm$ 33.3	0 $\pm$ 0	0 $\pm$ 0	83.3 $\pm$ 4.2	$P=0.0115$
	low con	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	0 $\pm$ 0	62.5 $\pm$ 31.5	54.2 $\pm$ 23.2	8.3 $\pm$ 4.2	87.5 $\pm$ 0	$P=0.009$