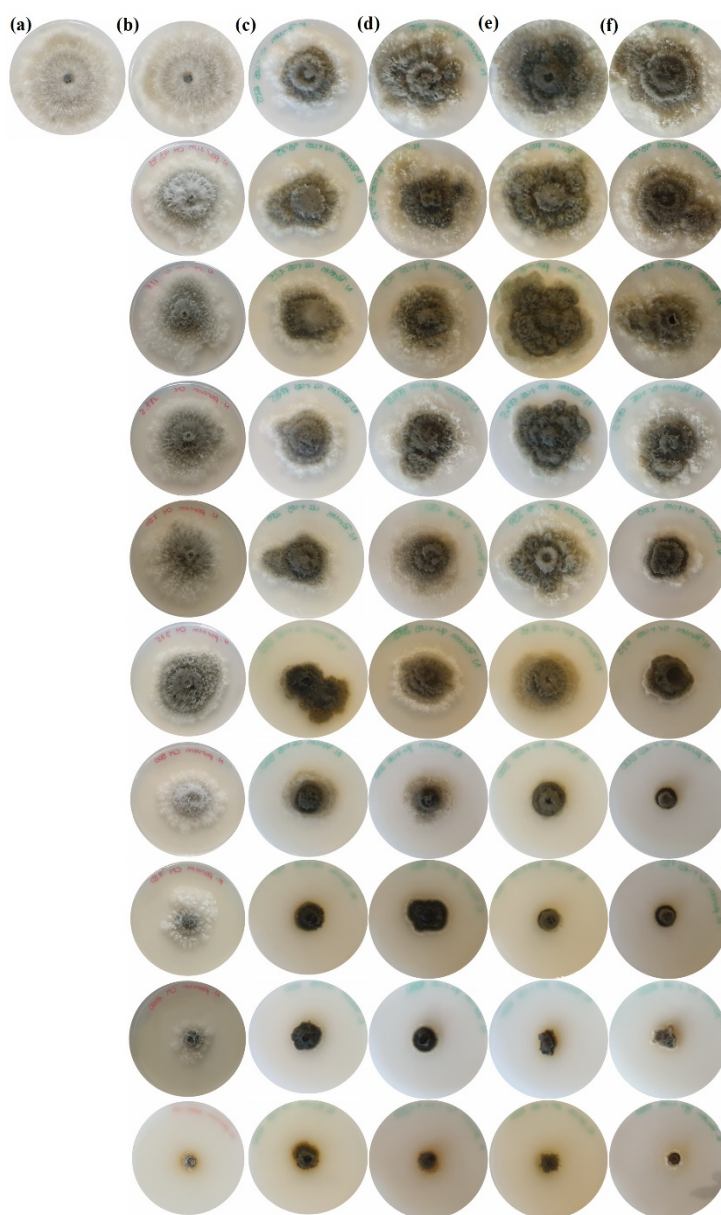


# On the Applicability of Chitosan Oligomers-Amino Acid Conjugate Complexes as Eco-Friendly Fungicides against Grapevine Trunk Pathogens

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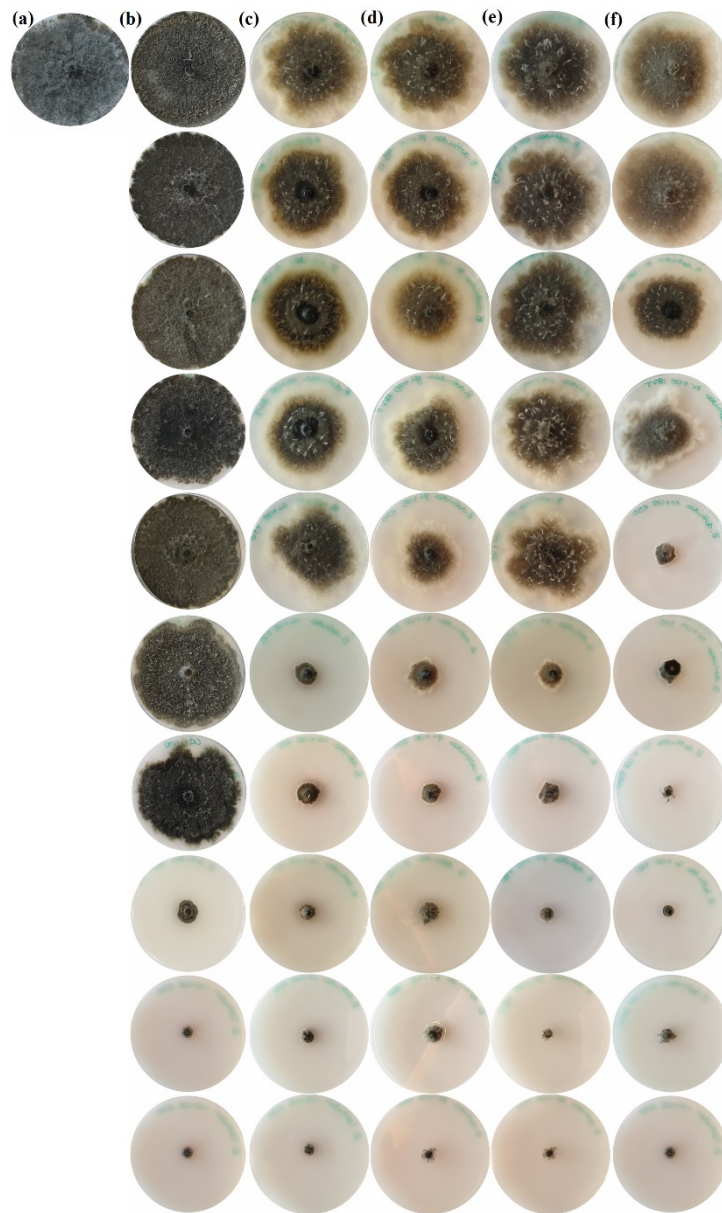
## SUPPORTING INFORMATION



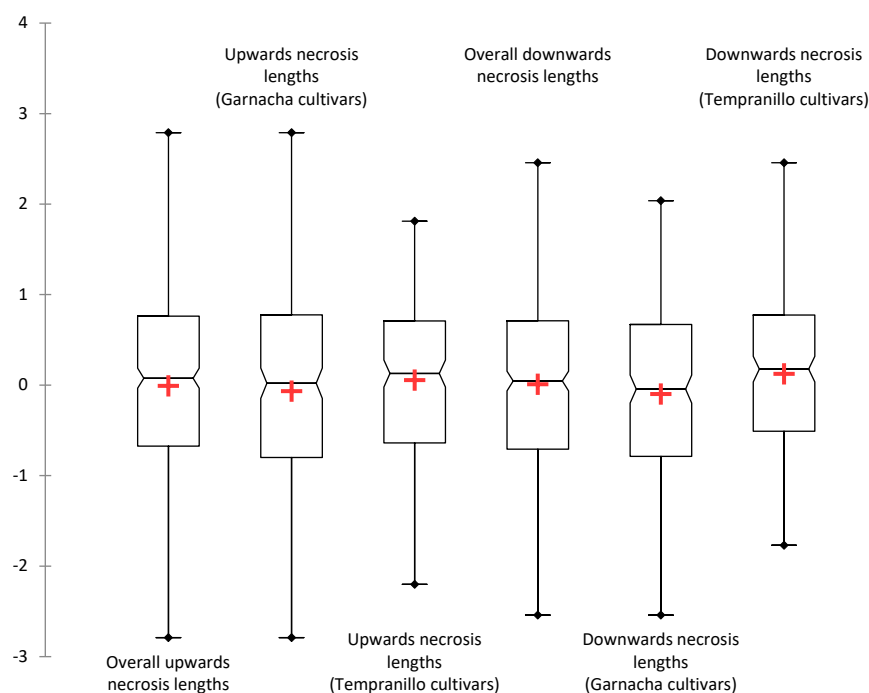
**Figure S1.** Sensitivity test for *N. parvum*. Radial growth of mycelium for: (a) control (PDA), (b) COS only, (c) COS-Cys, (d) COS-Gly, (e) COS-Pro, (f) COS-Tyr. From top to bottom: 62.5, 93.75, 125, 187.5, 250, 375, 500, 750, 1000 and 1500  $\mu\text{g}\cdot\text{mL}^{-1}$ . Only one replicate is shown.



**Figure S2.** Sensitivity test for *D. seriata*. Radial growth of mycelium for: (a) control (PDA), (b) COS only, (c) COS–Cys, (d) COS–Gly, (e) COS–Pro, (f) COS–Tyr. From top to bottom: 62.5, 93.75, 125, 187.5, 250, 375, 500, 750, 1000 and 1500  $\mu\text{g}\cdot\text{mL}^{-1}$ . Only one replicate is shown.



**Figure S3.** Sensitivity test for *B. dothidea*. Radial growth of mycelium for: (a) control (PDA), (b) COS only, (c) COS–Cys, (d) COS–Gly, (e) COS–Pro, (f) COS–Tyr. From top to bottom: 62.5, 93.75, 125, 187.5, 250, 375, 500, 750, 1000 and 1500  $\mu\text{g}\cdot\text{mL}^{-1}$ . Only one replicate is shown.



**Figure S4.** Box-plot of the lengths of the vascular necroses in the upper and lower wounds, considering all grafted plants in the experiment or separating the data according to the cultivar ('Tempranillo' or 'Garnacha').

**Table S1.** Repetitions for each of the plant/treatment combinations in the greenhouse bioassay. Each grafted plant was inoculated at two sites.

Pathogen	'Tempranillo' (CL. 32 clone) on 775P rootstock				'Garnacha' (VCR3 clone) on 110R rootstock			
	COS	COS-Tyr	Negative control	Positive control	COS	COS-Tyr	Negative control	Positive control
<i>N. parvum</i>	5	5	3	4	5	5	3	4
<i>D. seriata</i>	5	5	3	4	5	5	3	4
<i>B. dothidea</i>	5	5	3	4	5	5	3	4

**Table S2.** ANOVA of lengths of the vascular necroses in the positive and negative controls for the three fungi under study. Fungi labelled with the same letters are not significantly different at  $p < 0.05$  by Tukey's test.

Pathogen	Upper wound	Lower wound
<i>N. parvum</i>	0.848 a	0.895 a
<i>D. seriata</i>	0.609 a	0.486 ab
<i>B. dothidea</i>	0.529 a	0.397 b
Negative control	-1.444 b	-1.210 c
Pr > F	< 0.0001	< 0.0001
Significant	Yes	Yes