Culture conditions of *Stemphylium lycopersici* impacts isolates virulence

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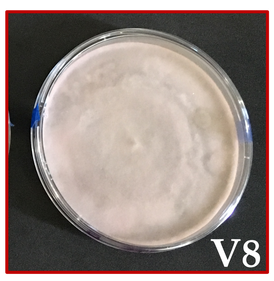
INTRODUCTION ***Stemphylium solani*, *S. lycopersici* and *S. botryosum* are the causal agents of tomato grey leaf spot [1], a disease with high incidence and severity within tomato production areas that has a relevant economic impact [2]. Necrotrophic fungi of the genus *Stemphylium* synthesize secondary metabolites including host and non-host specific toxins (HST and *non*-HSTs, respectively) [3-5]. The purpose is to study the metabolites synthesized and secreted by *S. lycopersici* isolate CIDEFI-216 when it is cultured under different conditions and their effect on plant tissue.**

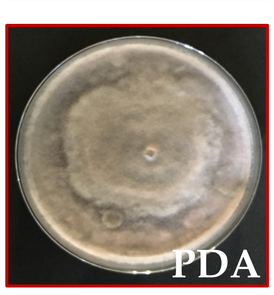
METHODS **CIDEFI-216 was grown on V8 media, potato dextrose agar (PDA) and potato dextrose broth alone or amended with a filtered macerate of a susceptible tomato hybrid leaves (PDB and PDBs). After 14 days of growth, cultures were lyophilized, mixed with water, sonicated for 3 hours and filtered (0.22 um)[6]. Leaflets of tomato and leaves of pepper were placed on water-soaked filter paper in plastic Petri dishes [1]. Then they were wounded with a needle and treated with extracts or filtered supernatants.**

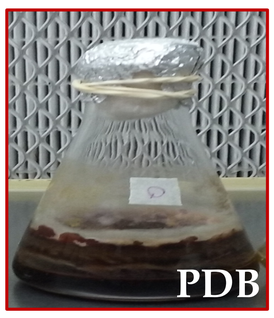
RESULTS

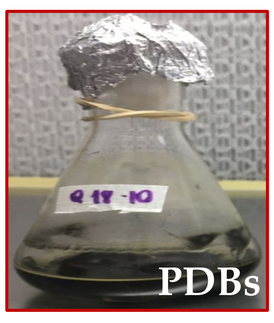
Grown media

CIDEFI-216









Leaflets of tomato assay

	Average necrotic area [mm²]	Group
un-inoculated V8	1.18	A
CIDEFI-216	1.99	**B**
un-inoculated PDA	1.04	A
CIDEFI-216	1.67	**B**
un-inoculated PDB	0.84	A
CIDEFI-216	5.66	**B**
un-inoculated PDBs	1.26	A
CIDEFI-216	0.62	A

CIDEFI-216 (V8; 1:2)

CIDEFI-216 (PDA; 1:2)

CIDEFI-216 (PDB)

CIDEFI-216 (PDBs)

Leaves of pepper assay

	Average necrotic area [mm²]	Group
un-inoculated V8	0.21	A
CIDEFI-216	1.64	**B**
un-inoculated PDA	0.18	A
CIDEFI-216	0.56	**B**
un-inoculated PDB	0.84	A
CIDEFI-216	1.29	A
un-inoculated PDBs	0.76	A
CIDEFI- 216	0.46	A

CIDEFI-216 (V8)

CIDEFI-216 (PDA)

CONCLUSIONS

***Stemphylium lycopersici* synthesizes and secretes toxins that are dependent on the culture conditions, including HST and non-HST. In addition, vegetal material inhibits toxins production by *S. lycopersici*.**

BIBLIOGRAPHY. **[1]** Franco, M. E. E et al. (2017). *European Journal of Plant Pathology*, 149(1900):983–1000 . **[2]** FAOSTAT (2016). FAO. http://faostat.fao.org/. **[3]** Lo Presti et al., (2015). *Annual Review of Plant Biology*, 66:513–45. **[4]** Wolpert et al., (2002). *Annual Review of Phytopathology*, 40:251–85. **[5]** Berestetskiy (2008). *Applied Biochemistry and Microbiology*, 44(5):453–65. **[6]** Zheng et al., (2010). *Plant Disease*, 94(10):1231–37.