

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/371780335>

Evaluation of inhibitory effect some bicarbonate carbonate salts against *Neoscytalidium dimiatum*

Conference Paper · June 2023

CITATIONS

0

READS

16

5 authors, including:



Elif Yıldırım

Ondokuz Mayıs Üniversitesi

25 PUBLICATIONS 51 CITATIONS

[SEE PROFILE](#)



Muharrem Turkkán

Ordu Üniversitesi

111 PUBLICATIONS 435 CITATIONS

[SEE PROFILE](#)



Göksel Özer

Bolu Abant İzzet Baysal University

192 PUBLICATIONS 640 CITATIONS

[SEE PROFILE](#)



Sibel Dervis

Mardin Artuklu Üniversitesi

92 PUBLICATIONS 587 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



soilborne fungal pathogens of kiwifruits [View project](#)



Soil-borne fungi associated with crown and root rot in wheat-growing areas of Kyrgyzstan [View project](#)

Evaluation of inhibitory effect of some bicarbonate and carbonate salts against *Neoscytalidium dimidiatum*

Elif Yildirim¹, Muharrem Türkkan², Göksel Özer³, Sibel Derviş⁴, İsmail Erper^{1,5}

¹ Department of Plant Protection, Faculty of Agriculture, Ondokuz Mayıs University, 55139 Samsun, TÜRKIYE

² Department of Plant Protection, Faculty of Agriculture, Ordu University, 52100 Ordu, TÜRKIYE

³ Department of Plant Protection, Faculty of Agriculture, Bolu Abant İzzet Baysal University, 14030 Bolu, TÜRKIYE

⁴ Department of Plant and Animal Production, Vocational School of Kızıltepe, Mardin Artuklu University, 47000 Mardin, TÜRKIYE

⁵ Department of Plant Protection, Faculty of Agriculture, Kyrgyz Turkish Manas University, 720044 Bishkek, KYRGYZSTAN

corresponding author: ismail.erper@manas.edu.kg; ismail@omu.edu.tr

ABSTRACT

Neoscytalidium dimidiatum, a member of the Botryosphaeriaceae family, has emerged as a significant pathogen causing canker and blight diseases in various fruit trees, field crops, park and forest trees, and other hosts. *Neoscytalidium dimidiatum* is the only recognized species within the genus, with the other two previously recognized species, *N. novaehollandiae* and *N. orchidacearum*. There is no suggested chemical control method against *Neoscytalidium*. In this study, we evaluated the inhibitory effect of some salts on the mycelial growth, germ tube elongation and conidial germination of the *N. dimidiatum* isolate phylogenetically clustered with the isolates previously recognized as *N. novaehollandiae*. The antifungal effects of the salts were determined at 0.125, 0.25, 0.5, 1.0 and 2.0% (w/v) concentrations of salts in vitro conditions. Statistically, differences were observed between the inhibitory effects of six salts on the parameters at $P \leq 0.05$. The 0.25% and higher concentrations of the ammonium bicarbonate and ammonium carbonate salts completely inhibited mycelial growth, germ tube elongation and conidial germination. Potassium and sodium bicarbonate salts in the highest concentration (2.0%) were able to decrease the mycelial growth, germ tube elongation and conidial germination with the rates of 95.58%-95.58%, 95.05%-95.76% and 77.44%-82.91%, respectively. In addition, potassium and sodium carbonate were able to completely inhibit investigated factors of the pathogen at 2.0% and 1.0% concentrations, respectively. The minimum inhibition concentration values of the ammonium bicarbonate, potassium carbonate and sodium carbonate varied between 0.25% and 2.0%. The minimum fungicidal concentration values of the ammonium carbonate and bicarbonate also ranged between 0.25% and 1.0%. As a result, this study showed that salts of carbonate and bicarbonate could be recommended to manage diseases caused by *N. dimidiatum*.

Key words: Antifungal effect, salts, *Neoscytalidium dimidiatum*