MICROBIOLOGICAL AND BIOCHMICAL STUDIES ON THE MYCOLYTIC ENZYMES OF SOME MICROORGANISMS

By

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Abbreviations

PDA	Potato Dextrose Agar
ISP	International Streptomyces Project
no.	number
med.	medium
temp.	temperature
min.	minute
rpm.	round/minute
v/v	volume/volume
w/v	weight/volume
g/l	gram/liter
ml	milliliter
mg	milligram
U	unit
h	hour
C.b.F.o	Cell biomass of *Fusarium oxysporum*
F.oxysporum	*Fusarium oxysporum*
F.solani	*Fusarium solani*
M.phaseolinae	*Macrophomina phaseolinae*
S.griseolus	*Streptomyces griseolus*
O.D	optical density
Sp.gr	specific gravity
coll.chitin	colloidal chitin
malt ext.	malt extract
yeast ext.	yeast extract
CSW	cotton seed waste
Chi	chitin
GPI	glucophosphatidylinositol
PPE	partially purified enzyme
NAGA	N-acetylglucosamine
fig.	figure
C-additives	carbon additives
N-additives	nitrogen additives
cm	centimeter

Abstract

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Microorganisms play an enormously important role in plant disease control, as naturally occurring resident antagonists. Also they can be exploited to achieve the desired results. Forty one soil microorganisms belonging to genus *Streptomyces* and bacteria were isolated from the rhizosphere of healthy and infected plants in a *Fusarium* wilt-infected crop field.

The different isolates were screened for their mycolytic capacity against *Fusarium oxysporum*, the causal agent of wilt disease which can cause major yield losses in economic crops. The best isolate for lytic capacity was identified to be *Streptomyces griseolus*. Due to the increasing importance of chitinolytic enzymes, *S.griseolus* was further tested for its chitinolytic productivity and the optimum cultural conditions for maximum production. The produced chitinases were partially purified and examined for the optimal activity conditions. The partially purified enzyme was tested for its lytic capacity against different phytopathogenic fungi.

Master Thesis

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