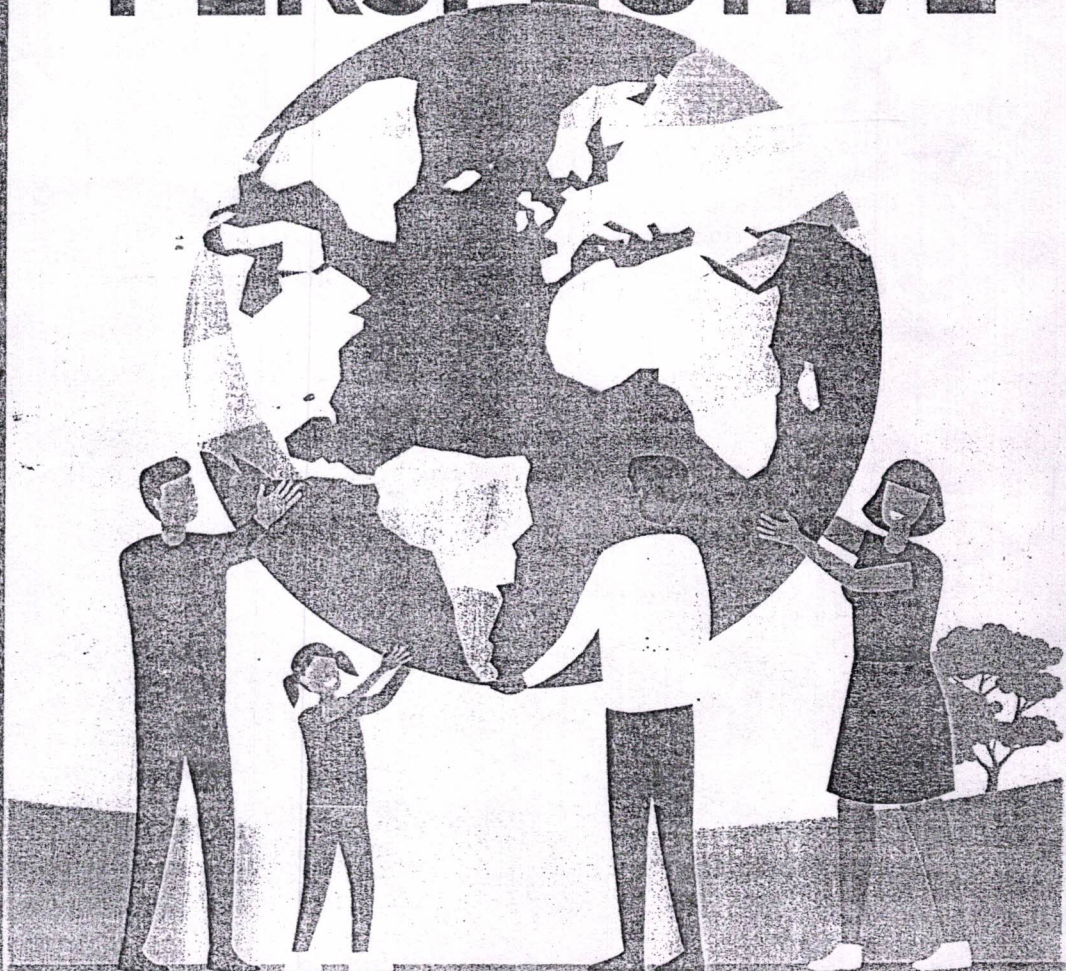


Book page 229

ENVIRONMENTAL CHALLENGES TODAY:

GLOBAL PERSPECTIVE



V.D. SATPUTE, M.B. PATIL, S.A. TENGSE

The research papers published in this book entitled 'Environmental Challenges Today: Global Perspective' cover almost all the aspects of environmental concerns and possible measures to be adopted by the people. It covers Local issues, literary references, and National as well as International issues regarding Environment. This book will be a good source of reference for the students, teachers and policy makers. The contributors have really made genuine attempt to come with the best possible remedies regarding the issues which will contribute in reshaping the sensibilities of the new generation.



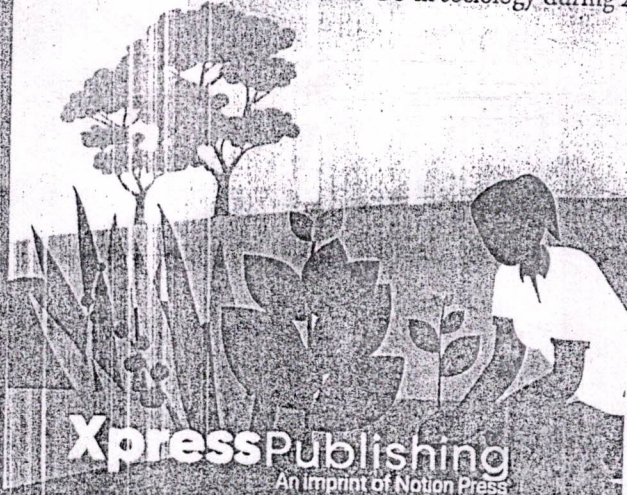
Dr. Vasant Satpute is principal and head of English department at Late Ramesh Warpudkar College Sonpeth, Dist. Parbhani (MS), worked as BOS members of S.R.T.M. University Nanded for two terms, Five research students have completed Ph.D. under his guidance and six pursuing their Ph.D. work. He has been member of editorial board of six books and written more than forty research papers in books and journals.



Dr. M.B. Patil is working as Assistant Professor in Botany since 2011 in LRW College, Sonpeth Dist. Parbhani Maharashtra. He is recognized research guide and two students are pursuing under his guidance. He has Published 25 research papers in reputed national and International journals. He has authored three Books and edited one book.



Dr. Sunita Tengse is Ph. D. in Sociology and works at on Assi. Professor at Late Ramesh Warpudkar College Sonpeth since 1998. She is a recognized Ph.D. guide of S.R.T.M.U. Nanded and four students are pursuing Ph.D. work under her supervision. She has written more than fifty scholarly articles in various Books and journals she has been the member of BOS in sociology during 2012-17 S.R.T.M.U. Nanded.



Price ₹380
ISBN 978-1-64869-730-2



9 781648 697302

Xpress Publishing
An Imprint of Notion Press

Contents



Xpress Publishing

Old No. 38, New No. 6
McNichols Road, Chetpet
Chennai - 600 031

First Published by Notion Press 2020

Copyright © V.D. Satpute, M.B. Patil, S.A. Tengse 2020
All Rights Reserved.

ISBN 978-1-64869-730-2

This book has been published with all efforts taken to make the material error-free after the consent of the author. However, the author and the publisher do not assume and hereby disclaim any liability to any party for any loss, damage, or disruption caused by errors or omissions, whether such errors or omissions result from negligence, accident, or any other cause.

While every effort has been made to avoid any mistake or omission, this publication is being sold on the condition and understanding that neither the author nor the publishers or printers would be liable in any manner to any person by reason of any mistake or omission in this publication or for any action taken or omitted to be taken or advice rendered or accepted on the basis of this work. For any defect in printing or binding the publishers will be liable only to replace the defective copy by another copy of this work then available.

Preface

7

Global Warming: Causes, Effects Warming
the Tragedy in Australia with Reference to
Bushfires as Consequences of Climate Change 11

A Study of the Greenhouse Effect and Global Warming 18

Global Warming and Biodiversity
Conservation (A Review) 25

Effect of Global Warming on
Bio-Diversity and It's Environment 30

Global Environmental Change and Human Health 33

Global Warming and its Impact on
Agricultural Production in India 39

Climate Impacts on Agriculture and Food 45

The Multidisciplinary Nature of Environmental Studies 51

Environmental Education
and Disaster Management 57

The Presentation of Environment
in Ancient Indian Culture 60

Reflection of Environmental Issues
in Elkunchwar's *Old Stone Mansion* 70

Reflection of Environmental Concerns
in Indian Writing in English 77

Arun Joshi's Novel *the Strange Case of Billy Biswas*
as a Message to Save Nature 84

The Use of Nature in Modern Indian Fictional World	93
Pollution: Causes & Effects	100
Water Pollution Sources Causes and Effects on Life	108
Water Pollution: Sources, Effects and Control	113
Environmental Impact of Amazon Forest Fires	120
Environmental Pollution: Major causes and Types Which Pollute all Environment	124
Abatement of Air, Water & Nuclear Pollution	131
Water Pollution: One of the Major Global Problem	138
Water Pollution – An Adverse Effect on Ecosystem	145
Pollution and its Control	152
Soil Algae from the Cultured Soil	158
Samples of Bhandarwadidam, Maharashtra	158
Loss of Biodiversity Is a Silent Killer to Life	163
Study of Indoor Aeromycoflora in College Library	169
Addition to the Euglenoids Flora-III of Marathwada, Maharashtra	175
Effect of Ecological Factors on the Development of Green Mould Rot of Citrus	182
Sustainable Development and Goals	186
Aerobiology in the Transmission of Infectious Diseases through Droplet Air Infection	196
Studies of <i>Annona Squamamosa L.</i> Leaf Extracts on Linear Growth of <i>Colletotrichum Capsici</i> Causing Spot of Tumeric	206
Environment and Human Health	210

Noise Pollution and Human Being: Prevention and Control	214
Aeromycological Survey of Outdoor Environment Over Soybean Field	224
Studies on Growth of <i>Macrophomina Phaseolina</i> with Effect of Methanolic Leaf Extract of Ashwagandha (<i>Withania Somnifera L.</i>)	229
Water Conservation Strategies and Solution	233
Studies on Issues of Rehabilitation and Resettlement among the Disaster Survivors	241
The Potential Applications of Cyanobacteria (Blue Green Algae) as Biofertilizer: A Review	254
Potability of Policewadi Tank TQ. Loha, DIST. NANDED (M.S.)	263
Ground Water Problems in Osmanabad City	270
Vertebrate Biodiversity of <i>Jambhul Bet</i> , Palam	273
Energy Conservation an Urgent Need	278
Environment and Deforestation	282
The Concept of Solid Waste and Waste Management	288
Education and Disaster Management Environment	297
Need of ISO 14000 in the Development of Business Units	305
Coastal Hazards and Risk	316
Environment Protection by Using Renewable Energy Sources	320
International Environmental Conventions their Objective and Outcomes: A Review	325

pective

tribution of spore
tion.

Percentage
0.13
15.24
3.43
68.08
13.12

new Air Sampler

nd fungal spores,

esand other plant
re for biochemical
tute, Lucknow.

nd fungal spores,

Illustrated genera
lishing Company,

ated Kingdom of
gabad.

ry Mycology. John
don, Sydney and

of Fungi, Bacteria
. Ltd. New Delhi,

emicPress, London.

Studies on Growth of *Macrophomina Phaseolina* with Effect of Methanolic Leaf Extract of Ashwagandha (*Withania Somnifera L.*)

M.M. Dudhbhate¹ B.M. Kareppa²

¹ACS College, Gangakhed Dist. Parbhani (MS)

²D.S.M. College, Parbhani Dist. Parbhani (MS)

MATERIALS AND METHODS

In order to study of antifungal activity of Ashwagandha (*Withania somnifera L.*) leaf extract on *Macrophomina phaseolina*. Locally available Ashwagandha (*Withania somnifera L.*) used i.e., leaves of Ashwagandha (*Withania somnifera L.*) was tested by poisoned food technique in vitro as used by Shiva et.al, (2008) and Francis Borgio, et.al, (2008) to know their inhibitory effect on the growth of *Macrophomina phaseolina*.

PREPARATION OF METHANOLIC PLANT PART EXTRACTS

Healthy fresh leaves of Ashwagandha (*Withania somnifera L.*) was taken, washed thoroughly with fresh water and finally rinsed with sterile distilled water and dried.

Fifty grams leaves of Ashwagandha (*Withania somnifera L.*) were cut into small pieces and grinded in a grinder to make fine powder and then extracted in 50 ml Methanol. Extracts thus obtained were filtered through double layered muslin cloth in 150 ml flasks and plugged. The

extracts then autoclaved at pressure 15 lbs for 20 minutes. Potato Dextrose Agar (PDA) medium was prepared and sterilized at 15 lbs pressure for 20 minutes. The sterilized extract was considered as standard plant extract and used for the testing their antifungal activity.

The different concentrations were prepared i.e. 1.00, 2.00, 3.00, 4.00, 5.00, 6.00, 7.00, 8.00, 9.00 and 10.00 percent. The 10 ml extracts of different concentrations were individually added in 10 ml melted, cooled and sterilized PDA at the time of pouring in the petriplates and incubated at room temperature. After solidification a 5 mm disc of actively growing 7 days old pure culture of *Macrophomina phaseolina* was incubated aseptically in the centre of plate. Three repetitions were made for each treatment. Medium without phytoextracts served as control. The fungal growth in diameter were observed and recorded and percent growth inhibition was also calculated as per the procedure given by Syeda Fakehha et.al. (2012).

EXPERIMENTAL RESULTS AND DISCUSSION

The effect of *Withania somnifera* (L.) leaf extract against *Macrophomina phaseolina* was studied by using Methanol as solvent at different concentrations i.e., 1.00, 2.00, 3.00, 4.00 and 5.00% for their antifungal efficacy.

Withania somnifera efficacy at 1% concentration shows 13.67 to 83.72%, at 2% concentration gives 23.72 to 85.27%, at 3% concentration shows 28.14 to 87.98% , at 4% concentration gives 28.90 to 90.00% and at 5% concentration gives 28.98 to 92.47% inhibition of the pathogen i.e., growth with Methanol solvent recorded at 1 to 7 days of incubation. The efficacy of *Withania somnifera*, at 5% concentration gives maximum inhibition of growth of the pathogen. The observation shows in table -1 and fig.-1 that increase in the concentration gives maximum inhibition of the growth with increase in incubation period.

for 20 minutes. s prepared and s. The sterilized act and used for

pared i.e. 1.00, 9.00 and 10.00 concentrations were d and sterilized s and incubated . 5 mm disc of *Macrophomina* centre of plate. tment. Medium e fungal growth l percent growth cedure given by

ION

extract against ing Methanol as 2.00, 3.00, 4.00

concentration n gives 23.72 to 87.98% , at 4% concentration ogen i.e., growth ys of incubation. % concentration e pathogen. The t increase in the the growth with

Table 1: Effect of methanolic plant extract of *Withania somnifera* (L.) on growth of *Macrophomina phaseolina*.

Incubation Period (Days)	Control (Methanol)	Percent inhibition				
		Concentration (%)				
		1.00	2.00	3.00	4.00	5.00
1	7.15 (4.64)	13.67 (7.85)	23.72 (13.72)	28.14 (16.34)	28.90 (16.79)	28.98 (16.84)
2	9.25 (5.30)	24.09 (13.93)	30.35 (17.66)	33.40 (19.51)	34.54 (20.20)	35.80 (20.97)
3	12.10 (6.94)	42.70 (25.27)	45.38 (26.98)	48.37 (28.92)	50.73 (30.48)	52.84 (31.89)
4	15.35 (8.82)	57.80 (35.30)	55.97 (34.03)	56.20 (34.19)	66.50 (41.68)	68.74 (43.80)
5	18.44 (10.62)	69.29 (44.25)	70.32 (45.04)	74.38 (48.63)	76.06 (50.04)	79.90 (53.03)
6	21.56 (12.45)	71.41 (46.04)	75.98 (49.44)	78.81 (52.00)	79.17 (52.96)	86.65 (62.16)
7	22.75 (13.14)	83.72 (56.84)	85.27 (59.64)	87.98 (63.87)	90.00 (64.17)	92.47 (67.64)
S.E ±	0.42	2.64	3.14	3.73	2.97	3.51
C.D at 5%	1.30	8.15	9.66	11.48	9.15	10.81

REFERENCES

1. Cloud, G.L. and Rupe, J.C. 1991. Comparison of three media for enumeration of sclerotia of *Macrophomina phaseolina*. *Plant Disease* 75:771-772.
2. Dhavle, S.D., B.M. Kareppa, V.S. Maske and L.R. Rathod, (2008). Utilization of *Allium cepa* leaf extracts on linear growth of *Colletotrichum capsici*. *Bionano Frontier*. 2 (1).
3. Dhavle, S.D., H.R. Aglave and B.M. Kareppa, (2012). Utilization of leaf extract of *Withania Somnifera* L. Dual on linear growth of *Colletotrichum capsici*. *Thematics J. Botany*. 1 (4): 37-38.