



P.D.E.A.'s

Annasaheb Magar Mahavidyalaya, Hadapsar, Pune-28

Department of Microbiology (U.G. & P.G.)

Date:- 13/12/2021

Notice

Certificate Course for Students

Department of Microbiology has arranged a Certificate Course on "Bioinoculants for sustainable agriculture" from 20.12.2021 to 20.02.2022 of 30 lectures duration. The topics covered during course will be different from your regular syllabus. This will help you in pursuing service in biofertilizer manufacturing industries and entrepreneurship.


A certificate will be awarded to those students, who will complete the course successfully.

Interested students should enroll their names before 17th December 2021.


Course Coordinator
Mr. Mangesh Deshpande


Dr. Neha N. Patil


Dr. R.P. Joshi
IQAC
Coordinator


Dr. P.R. Mulay
Vice principal


Dr. P.N. Shelke
Principal
Annasaheb Magar Mahavidyalaya
Hadapsar, Pune-411028.

Head
Department of Microbiology
Annasaheb Magar Mahavidyalaya
Microbiology
Hadapsar, Pune - 411028



**Pune District Education Association's
Annasaheb Magar Mahavidyalaya, Hadapsar, Pune-411028
Department of Microbiology**

***Certificate course*
“Bioinoculants for sustainable agriculture”**

Aim:

Certificate course in “Bioinoculants for sustainable agriculture” has been designed for students to enrich their knowledge for future career in organic farming practices and to build start up ideas.

Objectives:

Students can seek a career in biofertilizer formulation. This certificate course program will assist them to gain skills and knowledge about bioinoculants, their screening, formulations and testing on field.

Course Structure:

The certificate course comprises of theory and practical sessions. The practical sessions will be extensive at par to the hands on training. After completion of the certificate course by the students, he/she will be awarded certificate to augment their resume for seeking a fine career in future. Certificate will be provided to the students who will get proper score in evaluation test.

Expected certificate course outcome:

The certificate course outcome is aimed on progression pathways of the student:

- i. Can join industry as microbiologist in biofertilizer manufacturing industry.
- ii. Can become Entrepreneur in small scale unit.
- iii. Awareness about potential of bioinoculants for sustainable environment.
- iv. Scientific studies on bioinoculants.






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Annasaheb Magar Mahavidyalaya, Hadapsar, Pune-28


Department of Microbiology (U.G. & P.G.)


Syllabus of Certificate Course "Bioinoculants for sustainable agriculture"
(Duration:30 Hours)


SN	Title of Topic
Credit 01 : 15 Hours (Lectures + Practicals)	
1	Introduction of Bioinoculants
2	Isolation of Vesicular-arbuscular mycorrhiza (VAM)
3	Formulation of VAM Biofertilizer
4	Determination of shelf life of Biofertilizer
5	Field assay using VAM Biofertilizer
Credit 02 : 15 Hours (Lectures + Practicals)	
1	Concept of Rhizobacteria
2	Plant growth promoting rhizobacteria: Isolation methods
3	Plant growth promotion mechanism of bioinoculants: IAA, Siderophore , nitrogen fixation, phosphate solubalization, potash mobilization
4	Trichoderma as biocontrol agent
5	Sustainable agriculture using biobased products


Course Coordinator
Mr. Mangesh Deshpande


Head
Department of Microbiology,
Annasaheb Magar Mahavidyalaya,
Hadapsar, Pune - 411028
Department of
Microbiology


Dr. R.P. Joshi
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Coordinator


Dr. P.R. Mulay
Vice principal

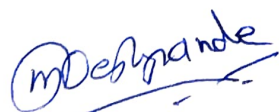

Dr. P.N. Shelke
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P.D.E.A.'s
Annasaheb Magar Mahavidyalaya, Hadapsar, Pune-28
Department of Microbiology
Syllabus of Certificate Course "Bioinoculants for sustainable agriculture"

Time table and distribution of Experimental work to teachers (20 Hs)

SN	Title of the experiment	Name of the Teacher	Date	Timing
1	Introduction to Bioinoculants, Study of ready made bioinoculants available in the market.	Mr. Shinde Suryakan. Dr. Shinde S.R. Ms. Waghmode M.S.	21/12/2021	4.00 pm to 5.30 pm.
2	Enrichment of Vesicular-arbuscular mycorrhiza (VAM) from plant roots.	Dr. Khisti U.V Ms. Waghmode M.S.	22/12/2021	3.00 pm to 5.00 pm
3	Isolation of VAM fungus on selective media	Dr. Patil N.N Ms. Waghmode M.S.	03/1/2022	3.00 pm to 5.30 pm.
4	Study of characters of isolated of VAM Formulation of isolated VAM culture Preparation of Pots for assay	Dr. Patil N.N Mr. Deshpande M.V.	05 /1/2022	3.00 pm to 5.00 pm
5	Study of sidling in pots	Mr. Deshpande M.V. Ms. Waghmode M.S. Ms. Dhangar U.S.	14/01/2022	3.00 pm to 5.00 pm
6	Study and Measurement of growth parameters of plants grown in the pots.	Ms. Waghmode M.S. Ms. Dhangar U.S. Dr. Karande V.A.	18/01/2022	3.00 pm to 5.00 pm
7	Inoculation of media for detection of plant growth promoting substances by VAM fungus	Ms. Sherkar S.D Ms. Kale A.B.	04/02/2022	3.00 pm to 5.00 pm
8	Observation and Result of biochemical tests Determination of shelf life of VAM Biofertilizer	Ms. Sherkar S.D. Ms. Kale A.B. Ms. Jagtap P.D Ms. Borade U.,B	07/2/2022	3.00 pm to 6.00 pm
9	Result of Viability and Purity of VAM Biofertilizer	Ms. Jagtap P.D Ms. Borade U.,B	19/2/2022	3.00 pm to 5.00 pm



Course Coordinator



Head
Department of Microbiology
Annasaheb Magar Mahavidyalaya
Hadapsar, Pune - 4110



Pune District Education Association's

ANNA SAHEB MAGAR MAHAVIDYALAYA

Hadapsar, Pune - 411 028 ☎ 020 - 2699 0376 Fax : 020 - 2699 0353

E-mail : plasma_amm@yahoo.co.in • Website : www.amc.pdeapune.org

Affiliated to Savitribai Phule Pune University • Id No. : PU/PN/ASC/029/1971 • Jr.Coll.No. 11.15.005 (Mah.)

• Re-Accredited by NAAC at 'A' Grade • Best College Award by Savitribai Phule Pune University

Managing Trustee

Outward No. : AMMH/2021-22/782

Date : 17-12-2021

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Rajendra Ghadge

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L. M. Pawar

Principal
Dr. Pandit Shelke

To,
Mr. Suryakant S. Shinde

I/C Microbiology Laboratory,
Bio-fertilizer Unit
BAIF Development research foundation
Uruli Kanchan
Pune-4120202.

Letter of Invitation

Respected Sir,

We hereby take an opportunity to invite you as a guest lecturer for a certificate course on "**Bioinoculants for sustainable agriculture**". We would like to have your expertise on VAM Bioinoculants and its application.

We would be highly obliged if you enlightened the participant with your immense knowledge.

Venue : Department of Microbiology
Date : 21.12.2021.
Day : Tuesday
Time : 02:00 pm to 05.00 pm

Thank you

Yours sincerely


Dr. P. **Principal**
Annasaheb Magar Mahavidyalaya,
Hadapsar, Pune-411028.




P.D.E.A.'s
Annasaheb Magar Mahavidyalaya, Hadapsar, Pune-28
Department of Microbiology
Syllabus of Certificate Course "Bioinoculants for sustainable agriculture"

Time table and distribution of Theory topics to teachers

SN	Title of Topic	Name of the teacher	Date and Timing
Credit 01			
1	Introduction of Bioinoculants	Dr. Shinde S.R	21/12/2021 3.00pm-4.00pm
2	Isolation of Vesicular-Arbuscular Mycorrhiza (VAM)	Dr. Khisti U.V	21/01/2022 9.00am-10.00am
3	Field assay using VAM Biofertilizer	Ms. .Kamshetti A.O	22/01/2022 3.00pm-4.00pm
4	Formulation of VAM Biofertilizer	Ms. Borade U.B	29/01/2022 11.00am-12.00pm
5	Determination of shelf life of Biofertilizer	Ms. Jagtap P.D	31/01/2022 11.00am-12.00pm
Credit 02			
1	Trichoderma as biocontrol agent	Ms. .Kale A.B	22/01/2022 3.00pm-4.00pm
2	Concept of Rhizobacteria	Ms. .Dhangar U.S	01/02/2022 11.00am-12.00pm
3	Plant growth promoting rhizobacteria: Isolation methods	Dr. Karande V.A	03/02/2022 11.00am-12.00pm
4	Plant growth promotion mechanism of bioinoculants: IAA, Siderophore , nitrogen fixation, phosphate solubalization, potash mobilization	Ms. .Sherkar S.D	04/02/2022 11.00am-12.00pm
5	Sustainable agriculture using biobased products	Prof. Deshpande M.V	05/02/2022 11.00am-12.00pm


Course Coordinator


Head
Department of Microbiology
Head
Department of Microbiology
Annasaheb Magar Mahavidyalaya
Hadapsar, Pune - 411028



Links for Online lectures on Zoom platform

1) Dr. Khisti U,V,

4:20 PM 100%
M.Sc.One 2021-22
Join our Cloud HD Video Meeting
Zoom is the leader in modern enter...
us04web.zoom.us
Ujwala Khisti is inviting you to
a scheduled Zoom meeting.
T Y B Sc Microbiology
M Sc Microbiology part I
M Sc Microbiology part II
Certificate course Jan 2022
"Bioinoculants for sustainable
agriculture"
Topic- Isolation of vesicular
arbuscular mycorrhiza
21 January 2022 at 9 am
Join Zoom Meeting
[https://us04web.zoom.us/j/
3032384210?](https://us04web.zoom.us/j/3032384210?pwd=cEpKaThyWnBBSm5lOX)
pwd=cEpKaThyWnBBSm5lOX

2) Dr. Shinde S.R.

join the meeting on Google Meet, click this link:

<https://meet.google.com/kmm-mtqg-bmc>

Or open Meet and enter this code: kmm-mtqg-bmc

3) Anjali Kamshetty is inviting you to a scheduled Zoom meeting.

Topic: field assay using VAM biofertilizer

TYBSc microbiology

MSc microbiology part I

MSc microbiology part II

Time: Jan 22, 2022 03:00 PM Mumbai, Kolkata, New Delhi

Join Zoom Meeting

<https://us04web.zoom.us/j/2775773133?pwd=cmpvanhaTURFRExaK0gwV3pSVXVnUT09>

Meeting ID: 277 577 3133

Passcode: q1uyE1

4) Ashwini Kale is inviting you to a scheduled Zoom meeting.

Topic: Topic - Trichoderma as a biocontrol agent (VAM)

Time: Jan 23, 2022 11:30 AM Mumbai, Kolkata, New Delhi

Join Zoom Meeting

https://us04web.zoom.us/j/77875373836?pwd=7rD33qWtoxcSCybG711_cNHg3DTLFT.1

Meeting ID: 778 7537 3836

Passcode: iGi5F8

5) Uma Borade is inviting you to a scheduled Zoom meeting.

Topic: TY.B.Sc Microbiology

M.Sc I Microbiology

M.Sc II Microbiology

Certificate course Jan 2022

Formulation of VAM Biofertilizer

Time: Jan 29, 2022 11:00 AM Mumbai, Kolkata, New Delhi

Join Zoom Meeting

https://us04web.zoom.us/j/71000020836?pwd=U56aShqUwRQhS2pL_Z5JDinSG6njES.1

Meeting ID: 710 0002 0836

Passcode: 6mHRj1

6) Poonam Jagtap is inviting you to a scheduled Zoom meeting

Topic: Topic-Determination of shelf life of biofertilizers.

Certificate course for T.Y.B.Sc., M.Sc.-I and M.Sc.-II

Time: Jan 31, 2022 11:00 AM Mumbai, Kolkata, New Delhi

Join Zoom Meeting

https://us04web.zoom.us/j/76178526297?pwd=kR-bgvgQ03tC_bc9F9a2lMoQM_Y-Th.1

Meeting ID: 761 7852 6297

Passcode: 8Djrv

7) Urmila Dhangar is inviting you to a scheduled Zoom meeting.

Topic: urmila dhangar's Personal Meeting Room 01/02/2022

Join Zoom Meeting

<https://us04web.zoom.us/j/4071907277?pwd=akJZSnB4SFkvT3o5VTg3RDM1Tmhqdz09>

Meeting ID: 407 190 7277

Passcode: 034091

8) Dr.Vidya A Karande is inviting you to a scheduled Zoom meeting.

Topic: T.Y B.Sc Microbiology

M.Sc I Microbiology

M.Sc II Microbiology

Certificate course 2022

Plant growth promoting Rhizobacteria

Time: Feb 3, 2022 11:00 AM Mumbai, Kolkata, New Delhi

Join Zoom Meeting

<https://us04web.zoom.us/j/77582092650?pwd=KWk52LUoWCEpMzs9v62OB6vAG1R7ph.1>

Meeting ID: 775 8209 2650

Passcode: ra8Y0d

9) Seema Jamge is inviting you to a scheduled Zoom meeting.

Topic: seema jamge's Zoom Meeting
Time: Feb 4, 2022 11:00 AM Mumbai, Kolkata, New Delhi

Join Zoom Meeting
[https://us04web.zoom.us/j/75003544431?pwd=t4 MTxukrBnBhvgr_eMTnmbJmIuoNM.1](https://us04web.zoom.us/j/75003544431?pwd=t4MTxukrBnBhvgr_eMTnmbJmIuoNM.1)

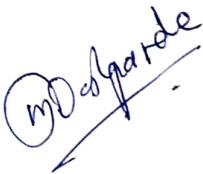
Meeting ID: 750 0354 4431
Passcode: axe3ha


10) Mangesh Deshpande is inviting you to a scheduled Zoom meeting.

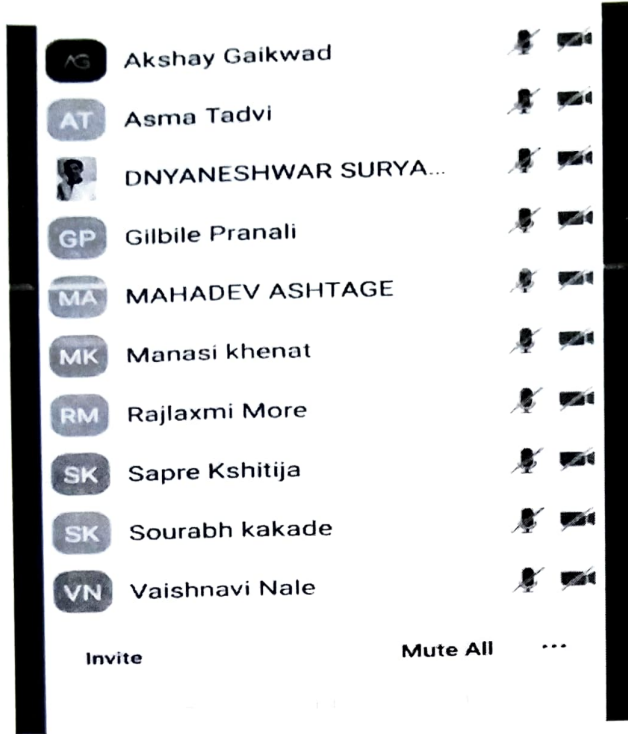
Topic: Certificate Course ,TYBSc, M.Sc I and M.Sc II Microbiology students .Topic :
Sustainable agriculture using biobased products.
Time: Feb 5, 2022 11:00 AM Mumbai, Kolkata, New Delhi

Join Zoom Meeting
https://us04web.zoom.us/j/73196451228?pwd=xSAHBEPiY_6cdQ4502poKnzF3zsEPS.1

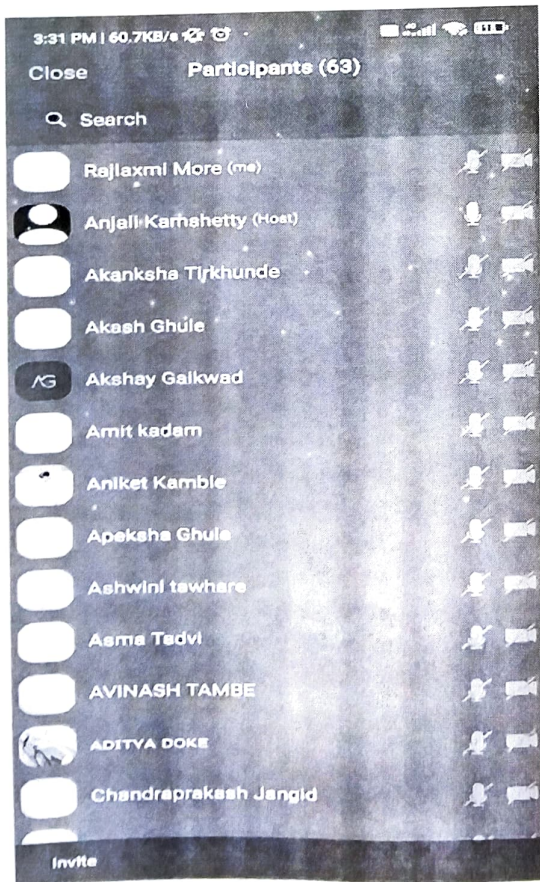
Meeting ID: 731 9645 1228
Passcode: 6et4Sf


Mangesh Deshpande


Head
Department of Microbiology
Annasaheb Mager Mahavidyalaya
Hadapsar, Pune - 411028



3) Ms/ Kamshetty A.O. 22/01/2022 3.00pm. (63)



4) Ms. Kale A. B. 22/01/2022 3.00 pm. (60)

Close		Participants (60)	
Search			
GP	Glibile Pranali (ms)		
	Ashwini Kale (ms)		
	Aditya Patil		
	Aishwarya Magar		
	Akanksha Tirkhunde		
	Akash Ghule		
	Akash Javelkar		
	Akashay Gaikwad		
	Aniket Kamble		
AG	Ankita Ghule		
BS	Bhaveah sadambar		
CP	Choudhari Pranav		
DS	Dhole Sonali		
DC	Dinesh choudhary		
	Diveker Omkar		
	DNYANESHWAR SURYAWA...		
D	Dnyaneshwari Kumbharker		
GM	Gaikwad Manali		
GP	Gauri Tawade		
	Gupta Priyanka		
JK	Jadhav Karishma		
JS	Jadhav Swati Dattatray		
JV	JADHAV VAISHNAVI		
JS	Jagtap Somnath		
JV	Jagtap Vaishnavi		
KS	Kalbhor soham		
KR	Kamble Rutuja		
KR	Karishma Rasal		
KJ	kiran jadhav		
	Kshirsagar Abhishek		
MK	Manasi khenat		
	MANDHARE ABHISHEK		
MM	Mansi Mahamire		
	Moundekar Aparna		
N	Nikita Kshirsagar		
	Nilesh Khupase		
	Omkar Kadam		
	Payal Gawari		
PR	Pradip Barkade		
PG	Pradnya gaikwad		
PD	Prema Desai		
	Puja.- Bahatonde		
RM	Ranjana Mahapatra		
RS	Rupnar shruti		
SM	Sanket Mhetre		
SK	Sapre Kehitija		
SR	Shendkar Reshma		
SB	Shivanjali Bhujbal		
	Shraddha Ghule		
SS	Shrushti Shendge		
S	Shruti shinde		
	Shubhangi kale		
	SIDDHESH .		
SA	Sudrik Aishwarya		
SS	Sushil Jagdev		
TK	Tejas Karhe		
VN	Vaishnavi Nate		
WM	Wadekar Mohana		
YA	Yadav Abhilasha		
	Yuvraj Gawande		

3) Ms. Borade U.B 29/01/2022 11.00 am. (99)

Close Participants (99)

Waiting(1)

TK Tejas Karhe Joining

Participants(98)

Search

uma borade (Host, mic)

1. Pratik Kalbhor

ABHJIT BORKAR

Aditya Patil

Aditya Undre

Akanksha Tirkhunde

Akash Ghule

Invite Mute All ...

Close Participants (99)

SM Sanket Mhetre

SU Sanket Undre

SK Sapre Kshitija

SB Shailesh Borawane

AB Shambhavi Chinchkar

SR Shendkar Reshma

SB Shivanjali Bhujbal

ST Shriraj Tamhane

SK Shubham Khedkar

shweta kadam

Solunke Supriya

Invite Mute All ...

Close Participants (99)

AB Rajlaxmi More

Raksha Patil

RM Ranjana Mahapatra

RK Ratnagol Kirti

RS Rupnar shruti

RG Rutuja Ghule

R Rutuja Kamble

SS Sangale Satish

SM Sanket Mhetre

SU Sanket Undre

SK Sapre Kshitija

Invite Mute All ...

Close Participants (99)

AB Niranjan Mhetre

NT Niranjan Tupe

Nitin Bolabattin

PA Pawar Apurva

PA Pawar Ashwinee

Payal Gawari

PB Pradip Barkade

PG Pradnya gaikwad

PZ Prajakta zore

P Prathamesh Borawake

PD Prema Desai

Invite Mute All ...

Close Participants (99)

GR Gaikwad Rutuja

QA Garud Asmita

AB Gauni Tawade

GA GAYATRI ATRE

GP Gilbile Pranali

Gupta Priyanka

JK Jadhav Kanishma

JS Jadhav Swati Dattatray

JV JADHAV VAISHNAVI

JT Jagtap Tanvi

JV Jagtap Vaishnavi

Invite Mute All ...

Close Participants (99)

KP Kiran Patil

LS Lolage Swarali Satish

MA MAHADEV ASHTAGE

MK Manasi khenat

mankar yogini

MM Mansi Mahamire

Moundekar Aparna

Murad Afsar

Nilesh Khupase

AB Niranjan Mhetre

NT Niranjan Tupe

Invite Mute All ...

4) Ms. Jagtap P.D. 31/01/2022 11.00 am (78)

Participants (75)	
Search	
PO	Poonam Jagtap (100%)
A	Aditya Undre
S	alshwarya magar
A	Akanksha Tirkhunde
A	Akash Ghule
A	Akshay Gaikwad
A	Aniket Kamble
A	Ankita Ghule
A	Ashwini tawhare
A	Asma Tadvi
B	Bhandari shruti
B	Bhosale Shubhankar
C	Choudhari Pratikeha
D	Dhole Sonali
D	Dnyaneshwari Kumbharkar
G	Gaikwad Manali
G	Gaikwad Pranali
G	Gaikwad Pratikeha
G	Gaikwad Rutuja
G	Garud Aemita
G	Gilbile Pranali
G	Gupta Priyanka
H	Harshada Ghule
H	Hingane Rutuja
J	Jadhav Karishma
J	Jadhav Kiran
J	Jadhav Swati Dattatray
J	Jagtap Mangesh
J	Jagtap Tanvi
J	Jagtap Vaishnavi
K	Kalal Nikita
K	Kalbhor soham
K	Kale preeti
K	Kamble Rutuja
K	Karishma Rasal
K	Kshirsagar Abhishek
L	Lolage Swarali Satish
M	MAHADEV ASHTAGE
M	mankar yogini
M	Mani Mahasire
N	Nawale priti
N	Neha ghule
N	Nikita Kshirsagar
N	Nilesh Khupase
P	Pawar Ashwinee
P	Pradnya gaikwad
P	Prajakta zore
P	Prathamesh Borawake
P	Priyanka Bano
P	Puja... Dahatonde
R	Rehul Nagawade
R	Rajaxmi More
R	Raksha Patil
R	Ranjana Mahapatra
R	Ratnagol Kiru
R	Rupnar shruti
S	Sanket Mhatre
S	Sanket Undre
S	Sapre Kshitija
S	Shalish Borawane
S	Shivanjali Bhujbal
S	Shrushti Shendge
S	Shubham Khedkar
S	shweta kadam
S	SIDDHESH .
S	Solunke Supriya
S	Sourabh kakade
S	Sudrik Alshwarya
S	Sushil Jagrdev
S	Tamhane Supriya
T	Tajna Karhe
V	Vaishnavi Nale
V	Verabshvini
V	Wadekar Mohana
V	Yuvraj Gawande

5) Ms. Dhargar U.S. 01/02/2022 11.00 am. (69)

Sl. No.	Participant (MS)	MS No.	MS Date
1	Aarushi Chhangar	1000000000	01/02/2022
2	AARUSHI CHHANGAR	1000000000	01/02/2022
3	AARUSHI CHHANGAR	1000000000	01/02/2022
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68	AARUSHI CHHANGAR	1000000000	01/02/2022
69	AARUSHI CHHANGAR	1000000000	01/02/2022

7) Dr. Karande V.A. 03/02/2022 11.00 am. (77)

Sl. No.	Name	Grade	Remarks
1	Abhishek Kulkarni	PGD	
2	Dr. Vidya A. Karande	PGD	
3	Abhishek Kulkarni	PGD	
4	Abhishek Kulkarni	PGD	
5	Abhishek Kulkarni	PGD	
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75	Abhishek Kulkarni	PGD	
76	Abhishek Kulkarni	PGD	
77	Abhishek Kulkarni	PGD	

8) Ms. Sherkar S.D. 04/02/2022 11.00a m. (76)

Close Participants (70)

Search

- BHवेश Sadambar
- soema jangre
- Akash Ghule
- Akshay Galkwad
- Amit kadam
- Aakita Ghule
- Ashwini tauhare
- Aama Tadvi
- ADITYA DOKE
- Choudhari Pratiksha
- Dhola Sonali
- Dinesh choudhary
- Divakar Onkar
- DNJANESHWAR SURYAWANSHI
- Galkwad manali
- Rajlaxmi More
- Raksha Butil
- Ranjana Mahapatra
- Ratnagol Kirti
- Rupnar shruti
- Rutuja Ghule
- Supra Kshitija
- Shailash Barawane
- Shivanjali Bhujbal
- Shirraj Tamhane
- Shubhankar Bhosale
- shweta kadam
- Solanka Supriya
- Somnath jagtap
- Sourabh kahade
- Sushil Jagtap
- Tamhane Supriya

- Rajlaxmi More
- Raksha Butil
- Ranjana Mahapatra
- Ratnagol Kirti
- Rupnar shruti
- Rutuja Ghule
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- Shubhankar Bhosale
- shweta kadam
- Solanka Supriya
- Somnath jagtap
- Sourabh kahade
- Sushil Jagtap
- Tamhane Supriya

SA	Sapre Rutuja			SA	Sapre Rutuja		
SB	Shalish Borawane				Karishma Rasal		
SB	Shivanjali Dhujbal				Kshirsagar Abhishek		
ST	Shriraj Tamhane			MA	MAHADEV ASHTAGE		
SB	Shubhankar Bhosale				MANDHARE ABHISHEK		
	shweta kadum			MM	Minal Meshram		
	Solunke Supriya				More Akash		
SJ	Somnath Jugtap			MA	Moundekar Aparna		
SK	Sourabh Kakade			N	Neha ghule		
SJ	Sushil Jagdeav			NK	Nihita Kshirsagar		
TS	Tamhane Supriya				Nilesh Khupase		
TK	Tejas Karhe			PA	Pawar Ashwince		
VS	Vaibhav shinde				Pagal Gauri		
V	Vetalashvini			PB	Pradip Barhade		
WM	Wadekar Mohana			PZ	Pranjata Zare		
JA	Yadav Abhilasha			P	Purva		
	Yunraj Gawande				Rahul Nagawade		
	Invite			RM	Ratilaxmi More		

9) Mr. Deshpande M.V. 05/02/2011 11.00 a.m. (72)

11:27 AM 4G

Close Participants (72)

Search

M	Mangesh Deshpande (Host, me)		
	Akanksha Tirkhunde		
	Akash Ghule		
	Akshay Gaikwad		
AT	Asma Tadvi		
AT	AVINASH TAMBE		
	ADITYA DOKE		
BS	Bhandari shruti		
BS	Bhavesh Sadambar		
	Bhosale Shubhankar		
CJ	Chandraprakash Jangid		

Invite Mute All

11:27 AM 4G

Close Participants (72)

GP	Gilbile Pranali		
	Gupta Priyanka		
JK	Jadhav Karishma		
JS	Jadhav Swati Dattatray		
JV	JADHAV VAISHNAVI		
JT	Jagtap Tanvi		
JV	Jagtap Vaishnavi		
KN	Kalal Nikita		
KS	Kalbhor soham		
KR	Kamble Rutuja		
	Karishma Rasal		
LS	Lolage Swarali Satish		

Invite Mute All

Close Participants (72)

- LS Lolage Swarali Satish
- MK Manasi khenat
- MANDHARE ABHISHEK
- MY mankar yogini
- MM Minal Meshram
- MA Moundekar Aparna
- MA Murad Afsar
- N Neha ghule
- NK Nikita Kshirsagar
- Nilesh Khupase
- PA Pawar Apurva
- PA Pawar Ashwinee

Invite

Mute All ...



Close Participants (72)

- PA Pawar Ashwinee
- Payal Gawari
- PZ Prajakta Zore
- P Pratiksha Choudhari
- Priyanka Bane
- Puja..- Dahatonde
- RM Rajlaxmi More
- RP Raksha Patil
- RM Ranjana Mahapatra
- RK Ratnagol Kirti
- RS Rupnar shruti
- Rutuja S. Kamble

Invite

Mute All ...



Close Participants (72)

- RS Rupnar shruti
- RS Rutuja S. Kamble
- RS Rutuja shinde
- SM Sanket Mhetre
- SK Sapre Kshitija
- SB Shailesh Borawane
- SB Shivanjali Bhujbal
- SR Shradha Ghule
- SK Shubhangi kale
- Solunke Supriya
- SJ Somnath jagtap
- SK Sourabh kakade

Invite

Mute All ...

Close Participants (68)

- SK Sapre Kshitija
- SB Shivanjali Bhujbal
- SR Shradha Ghule
- Solunke Supriya
- SJ Somnath jagtap
- SK Sourabh kakade
- SJ Sushil Jagdev
- TS Tamhane Supriya
- V Vetalaashvini
- YA Yadav Abhilasha
- YH Yogesh Hanumant Petkar
- YG Yuvraj Gawande

Invite

Mute All ...

M. Deshpande

M. Deshpande

Head
Department of Microbiology
Annasaheb Magar Mahavidyalaya
Hadapsar, Pune - 411028



P.D.E.A.'s
Annasaheb Magar College, Hadapsar, Pune 411028
Department of Microbiology
Certificate course 2021-22
Title : Bioinoculants for sustainable agriculture
Photographs

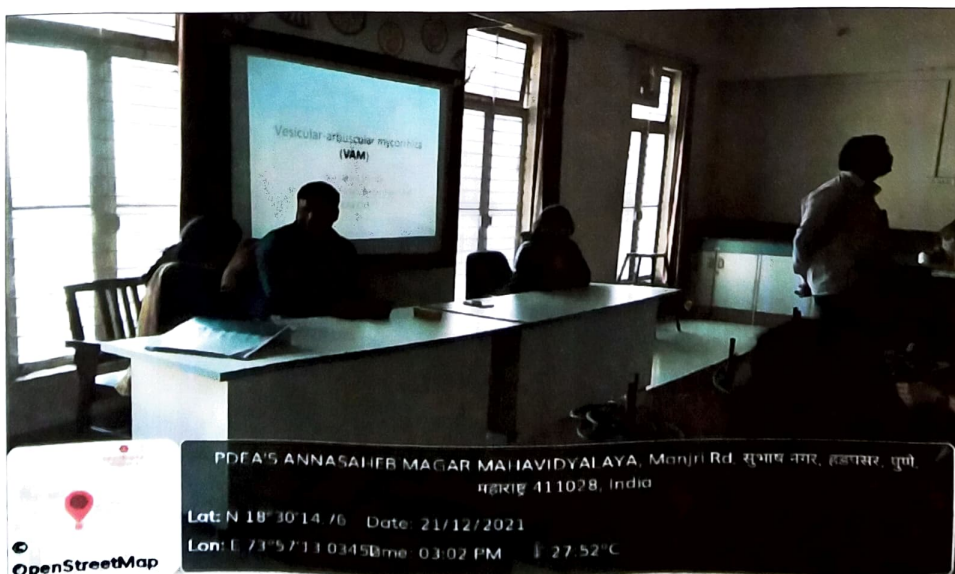
Inaugural function on 21/12/2021 at 10 a.m.

Welcome of the speaker : Mr. Suryakant Shinde. BAIF , Pune

By Hon. Principal : Dr. Shelke P.N.



Introduction of the Certificate Course :
By course Coordinator : Mr. Deshpande M.V.

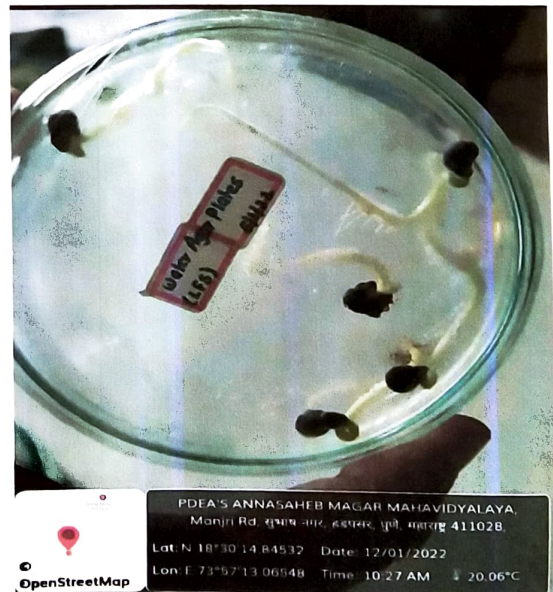
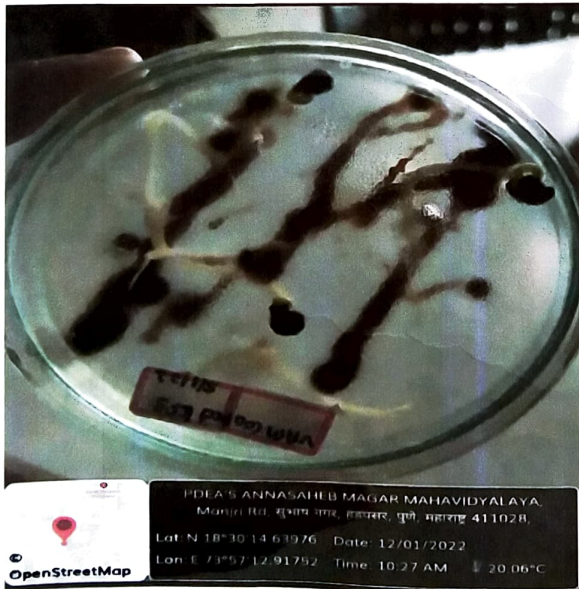


Participants : Venue Microbiology Laboratory

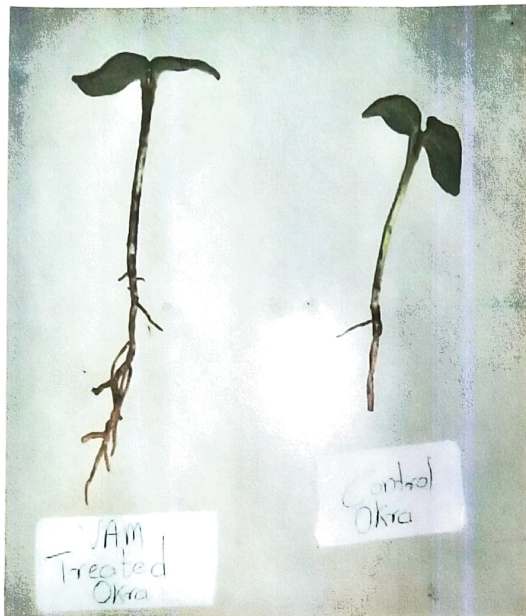


Practical course

Treatment of seeds with VAM culture and in vitro germination experiment



Pot culture assay



Making Lab scale VAM culture



Making Lab scale VAM culture



Pot Culture experiment



Pot Culture experiment



Groups of students and their teachers



Groups of students and their teachers



Groups of students and their teachers






P. D. E. A' S
Annasaheb Magar Mahavidyalaya,
Hadapsar, Pune - 411028.



CERTIFICATE OF PARTICIPATION

This certificate is awarded to Bhalerao Rohit Rajesh
for the participation in the Certificate Course on “Bioinoculants for sustainable
agriculture” from 21.12.2021 to 20.02.2022 of 30 lectures duration.


Course Coordinator
Mr. Mangesh Deshpande
Department of Microbiology
Annasaheb Magar Mahavidyalaya
Hadapsar, Pune - 411028


Dr. N. H. Patil
Department of Microbiology
Annasaheb Magar Mahavidyalaya
Hadapsar, Pune - 411028
Coordinator


Dr. R. P. Joshi
Coordinator


Dr. P. R. Mulay
Vice principal


Dr. P. N. Shelke
Principal

Annasaheb Magar Mahavidyalaya
Hadapsar, Pune - 411028

P.D.E.A.'s
Annasaheb Magar College, Hadapsar, Pune 411028
Department of Microbiology
Certificate Course 2021-22
Title : Bioinoculants for sustainable agriculture
Final Report

This year (2021-22), Microbiology department has conducted 30 hours Certificate Course on topics related to Bioinoculants which are useful for sustainable agricultural practices. Instead of using the common bioinoculants , emphasis was given on a new approach of using Vesicular;ar Arbuscular Mycorrhiza (VAM) as a bioinoculant.

Vesicular-arbuscular mycorrhiza (VAM) is a symbiotic association between particular fungi from Phycomycetes group and roots of angiosperm. The fungus colonizes the surface of the root as well as invades the root cortex forming a mycelial network and characteristic vesicles (bladder-like structures) and arbuscules (branched finger-like hyphae).

The fungus absorbs water and phosphates from the soil and passes it to the plant. It solubilises complex organic matter into simpler substances. It also provides resistance to root-borne pathogens and increases the tolerance of plant to salinity and drought. In this way, the mycorrhizae act as effective biofertilisers

This association is beneficial to both the partners. The fungus obtains shelter and surface for the growth while the plants gain nutrients absorbed by the VAM fungus. The fungus also kills the other pathogenic fungi by its competitive nature. Thus plants get protection from pathogenic fungi. Vesicular Arbuscular Mycorrhizae (VAM) is a fungus which increases soil fertility.

Farmers are not well aware of this type of association. So the aim of this course was to introduce the topic to the representatives (students) of younger generation , so that they will disseminate the knowledge and importance of VAM to farmers.

Majority of plant species are benefited from mycorrhizal fungi

- Urban vegetable crops in soil or trays: onion, garlic, carrots, potatoes, tomatoes, peppers, cucurbits, asparagus, herbs and lettuce.
- Annuals in planters or flower beds: salvia, ornamental grasses, canna, ferns, aloe, gerbera.

About the Certificate Course

For this course ,we invited one of the eminent personalities in this field, Mr. Suraykant Shinde from BAIF , Uruli kanchan, Pune , He is also a valuable alumnus of our department.

Inaugural key note address was given by Mr. Surykant Shinde on 21 December 2021 ,with the help of several slides of his own work on VAM. and stated the importance of VAM for sustainable agriculture . He also provided his VAM sample for the purpose of practical workshop. He explained various protocols for isolation and study of VAM at the Lab level , and field level also

Theoretical aspects of VAM and other bioinoculants was covered in two credits, by all the teachers from Microbiology Department. This was conducted from 21 January 2021 to 05 February 2022. The syllabus was uncovered in total ten (10) lecture by the teachers. Prof. .Deshpande M.V , Dr. Shinde S.R Dr. Khisti U.V, Ms. Waghmode M.S., Dhangar U.S., Jagtap P.D , Ms. Sherkar S.D, Dr. Karande V.A., Ms. Borade U.B. ,Ms.Kamshetti A.O. and Ms.Kale A.B conducted the lectures. HoD. Prof. Dr. Patil N.N. explained the types and uses of Bioinoculants and give stress on how to increase the use of such bioinoculants by our farmers.

Information on Bioinoculants particularly VAM was given on Zoom online platform using slides and photographs. The importance and use of bioinoculants for sustainable agriculture was emphasized through these lectures,. There was a good response from the participants.

. **Experiments** were designed by Ms. Waghmode M.S, in consultation with Mr. Shinde Surykant. The experimental work was carried out in batches with one teacher per batch. It was conducted for twenty (20) hours, from 21 December 2021 to 10 February 2022 in the laboratories of Microbiology Department. The experimental work was assisted by . Prof. .Deshpande M.V , Dr. Shinde S.R Dr. Khisti U.V, Ms. Waghmode M.S., Dhangar U.S., Jagtap P.D , Ms. Sherkar S.D, Dr. Karande V.A., Ms. Borade U.B. ,Ms.Kamshetti A.O. and Ms.Kale A.B. under the supervision of Prof. Dr. Patil N.N , Mr. Deshpande M.V and Ms.Waghmode M.S.

In the end an assessment test was conducted using google form, The questions were based on the topics and experiments covered in the course. 62 students from TYBSc , 45 Students from M.Sc. Part I and 47 students from M.Sc. Part II successfully completed this certificate course The total no of students who registered for the course was 154.

M. Deshpande
(Course Coordinator)

P. Kale
Head
Department of Microbiology
Annasaheb Magar Mahavidyalaya
Hadapsar, Pune - 411028



Pune District Education Association's
Annasaheb Magar Mahavidyalaya, Hadapsar, Pune-411028
Department of Microbiology
Certificate course (Year 2021-22)
"Bioinoculants for sustainable agriculture"
Class :- T.Y.B.Sc. Microbiology



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2	Bane Priyanka Jayprakash	9284413667	priyabane5@gmail.com	<i>Priyanka</i>
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25	Jangid Chandraprakash G.	7733936094	chandraprakash77.gj@gmail.com	<i>C. Jangid</i>
26	Kadam Amit R.	8698781071	yuvakadam0708@gmail.com	<i>Amit</i>
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30	Kale Latikesh Vitthal	8788541920	latikeshkale6951@gmail.com	<i>Latikesh</i>
31	Kamble rutuja santosh	9545531985	rutujakamble7147@gmail.com	<i>Rutuja</i>
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35	Khenat Manasi Jitendra	9823595353	khamanasi9@gmail.com	<i>Manasi</i>

SN	Name of the student	Mobile Number	Email Address	Sign
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41	Mandhare Abhishek Ashok	7057724787	abhimandhare2000@gmail.com	
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45	More Rajlaxmi Gajendra	8669757162	rajlaxmimore27@gmail.com	
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47	Patil Aditya D.	9881393365	ap439156@gmail.com	
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53	Suryawanshi Dnyaneshwar V.	8669552313	dnyanesh7509@gmail.com	
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56	Tawade Gauri Sudhakar	7888263200	gauritawade7@gmail.com	
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58	Thorat Yash <i>Shankar</i>	9834056214	yashuthorat1123@gmail.com	
59	Tirkhunde Akanksha Vikas	7218082214	akankshatirkhunde@gmail.com	
60	Undre Aditya Satyawar	9112797475	adityaundre1102@gmail.com	
61	Undre Sanket Rajendra	9975776888	sanketundre5436@gmail.com	

62. Zore Prajweta Pandurang 7666101855 Prajaktazore1021@gmail.com *Pere*

M. Deshpande

Deshpande M.V

Course - co-ordinator.

Pratik
Head

Department of Microbiology,
Annsaheb Magar Mahavidyalaya,
Hadapsar, Pune - 411028



SN	Name of the Students	21/12	12/12	3/1	5/1	16/1	18/1	4/2	2/2	19/2
34	Khedkar Shubham Ankush	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj
35	Khenat Manasi Jitendra	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj
36	Khupase Nilesh Uttam	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj
37	Kshirsagar Nikita Vinayak	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj
38	Kumbharkar Dnyaneshwari S.	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj
39	Lonkar Vishal Jalindar	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj
40	Mahamire Mansi Babasaheb	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj
41	Mandhare Abhishek Ashok	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj
42	Meshram Minal Ranjit	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj	manoj
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“Bioinoculants for sustainable agriculture”

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35	Kshirsagar Abhishek Maruti	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩									
36	Limbore Siddhesh Sukhdev	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩									
37	Lolaje Swarali Satish	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩									
38	Magar Aishwarya Jaywantarao	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩									
39	Mane Aniket Mahadev	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩									
40	Mankar Yogini Subhash	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩									
41	Mhetre Niranjan Vilas	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩									
42	More Akash Shivaji	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩									
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46	Tamhane Shriraj Sandip	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
47	Taware Gauri Balasahab	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
48	Vetal Ashwini Lubhan	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
49	Wadekar Mohana P.	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
50	Waghmode Pradip Babu	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
51	Zende Vivek Pravin	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

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