

(Kerala State Pollution Control Board Approved Laboratory)

Kumaranelloor Post, Mukkam, Calicut, Kerala - 673602 Ph : 9446671845, 9846333956 email : phytochrombioscience@gmail.com

19/06/2019

## CERTIFICATE

This is to certify that the thesis entitled "Isolation, identification and molecular characterization of keratin degrading bacteria from soil" is a bonafide record submitted by Ms. ARYA P, Department of Microbiology, EMEA Arts and Science College, Kondotty, for the award of degree of Master of Science in Microbiology is a work done by her during the period of study, under my direct supervision and guidance in our centre and that it has not previously formed the basis for the award of any degree or diploma or associate or fellowship or other similar title.

Mukkam 673 602 \*\*



# M S SWAMINATHAN RESEARCH FOUNDATION

## **Community Agrobiodiversity Centre**

Puthopryayal P.O., Kalpetta, Wayanad, Kerala 673 577 Tel: +91 4936 20 4477, 20 7019

Fax: +91 4936 20 7019 E-mail: office@mssrfcabcines.in www.mssrfcabcines.in

#### CERTIFICATE

This is to certify that dissertation work entitled "Isolation and characterization of probiotic organism from the gut of honey bee (Apis cerana indica) and screen its antimicrobial compatibility against selected enteric microorganisms" submitted for the course requirement of M.Sc. degree in Microbiology from EMEA College of Arts and Science, Kondotty, Malappuram, affiliated to the University of Calicut, embodies the work carried out by Nita Naurin under my guidance and supervision at Community Agrobiodiversity Centre of M.S. Swaminathan Research Foundation, Wayanad.

I, further certify that the dissertation work has been carried out by the candidate and the dissertation or part of it has not previously been formed the basis for the award of any degree or diploma.

One

Piace: Puthoorvayal

Date: 20.06.2019

Joseph John

Scientist



Kumaranelloor Post, Mukkam, Calicut, Kerala - 673602 Ph : 9446671845, 9846333956 email : phytochrombioscience@gmail.com

20/06/2019

## CERTIFICATE

This is to certify that the thesis entitled "Isolation and molecular characterization of potassium solubilizing biofilm forming bacteria on the surface of Trichoderma harzianum" is a bonafide record submitted by Ms. REZNA MOL T, Department of Microbiology, EMEA Arts and Science College, Kodotty for the award of degree of Master of Science in Microbiology is a work done by her during the period of study, under my direct supervision and guidance in our centre and that it has not previously formed the basis for the award of any degree or diploma or associate or fellowship or other similar title.

Mukkam 673 602 \*\*



Kumaranelloor Post, Mukkam, Calicut, Kerala - 673602 Ph: 9446671845, 9846333956 email: phytochrombioscience@gmail.com

20/06/2019

## **CERTIFICATE**

This is to certify that the thesis entitled "Isolation and screening of siderophore producing bacteria for the development of an active biocontrol product" is a bonafide record submitted by Ms. THASNI NP, Department of Microbiology, EMEA Arts and Science College, Kondotty for the award of degree of Master of Science in Microbiology is a work done by her during the period of study, under my direct supervision and guidance in our centre and that it has not previously formed the basis for the award of any degree or diploma or associate or fellowship or other similar title.

Mukkam 673 602 \*

Mukkam 673 602 \*



(Kerala State Pollution Control Board Approved Laboratory)

Kumaranelloor Post, Mukkam, Calicut, Kerala - 673602 Ph : 9446671845, 9846333956 email : phytochrombioscience@gmail.com

19/06/2019

## CERTIFICATE

This is to certify that the thesis entitled "Isolation, identification and molecular characterization of keratin degrading bacteria from soil" is a bonafide record submitted by Ms. ARYA P, Department of Microbiology, EMEA Arts and Science College, Kondotty, for the award of degree of Master of Science in Microbiology is a work done by her during the period of study, under my direct supervision and guidance in our centre and that it has not previously formed the basis for the award of any degree or diploma or associate or fellowship or other similar title.

Mukkam 673 602 \*\*



Kumaranelloor Post, Mukkam, Calicut, Kerala - 673602 Ph: 9446671845, 9846333956 email: phytochrombioscience@gmail.com

20/06/2019

#### **CERTIFICATE**

This is to certify that the thesis entitled "Development of a potential probiotic consortium on the basis of different biochemical properties" is a bonafide record submitted by Ms. NAFIYA CP, Department of Microbiology, EMEA Arts and Science College, Kondotty for the award of degree of Master of Science in Microbiology is a work done by her during the period of study, under my direct supervision and guidance in our centre and that it has not previously formed the basis for the award of any degree or diploma or associate or fellowship or other similar title.



Siljo Abraham Ph. D (Supervising Guide)



PRINCIPAL

BMEA COLLEGE OF ARTS

SCIENCE, KONDOTTY

MALAPPURAM DT. 673 638