A

On Job Training report

In Collaboration with

Peak Laboratories and Biofertilizer Unit, Jaysingpur.

And

PG Department of Microbiology

Vivekanand College, Kolhapur (Empowered Autonomous)

By

Shrutika Sambhaji Powar

M. Sc. Microbiology

Part I Semester II

Under the Guidance of

Dr. S. D. Mali

PG Department of Microbiology

Dissemination of Education for Knowledge, Science and Culture"
- Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR

(EMPOWERED AUTONOMOUS)

विवेकानंद कॉलेज

(स्वायत्त) कोल्हापूर

PG - Department of Microbiology

CERTIFICATE OF "ON JOB TRAINING"

This is to certify that Name of student_(Exam seat no. 836584) has satisfactorily carried out the required practical work prescribed by the BoS Department of Microbiology, Vivekanand College, Kolhapur (Empowered Autonomous) for M.Sc. - Part- I Semester II course in On Job Training (Sub code - OJT20MIC21) and this report represents his/her bonafide work in the year 2023-2024.

Place: Kolhapur

Date: 18/05/2024

Examiner

OJT In charge

HEAD
DEPARTMENT OF MICROBIOLOGY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

DECLARATION

I the undersigned hereby declare that the On Job Training Report in Collaboration with **Peak Laboratories and Biofertilizer Unit, Jaysingpur** and PG Department of Microbiology,Vivekanand College, Kolhapur (Empowered Autonomous) is an original work done by me under the guidance of Dr. S. D. Mali, PG Department of Microbiology, Vivekanand College, Kolhapur (Empowered Autonomous). The matter included in this report is not a reproduction from any other sources.

I also hereby declare that this project has not been submitted to any time to any other university or institution for the award of any degree or diploma.

Date: 18/05/2024

Place: Kolhapur

Shrutika Sambhaji Powar

Name of student

ACKNOWLEDGEMENT

At this juncture where the herculean task is nearing its pinnacle, science deems it a pleasure to look back and acknowledge efforts and support of all kith and kin that helped with zeal to turn a distant dream of an industrial training into reality.

We are extremely thankful to Dr. S. D. Mali, Assistant Professor, PG Department of Microbiology, Vivekanand College, Kolhapur (Empowered Autonomous), project guide for her valuable guidance and mentorship throughout this project work given to us during the study.

We are indeed grateful to Faculty Coordinator (OJT) Dr. G. K. Sontakke, PG Department of Microbiology, Vivekanand College, Kolhapur (Empowered Autonomous) for his kind co-operation and valuable support and we are also thankful to all the staff members of our department for their direct and indirect support.

We are thankful to Principal Dr. R. R. Kumbhar, for his kind co-operation and valuable support.

Also, we sincerely thank our parents for helping us in all aspects to complete the project work. Finally, we would like to appreciate our friends, colleagues for their direct and indirect contribution.

Date: 18/05/2024

Place: Kolhapur

Shrutika Sambhaji Powar

Name of student

INTERNSHIP UNDERTAKING

1. Student Name	Shrutika Sambhaji Pawar
2. Current Address	A/P Laxmi Nagar Abdullat. Tal, Shirol. Dis, Kolhapur.
3. Residence Address	A/P Laxmi Nagar Abdullat. Tal, Shirol. Dis, Kolhapur.
4. Email id	Shrutikapowar34@gmail.com
5. Mobile Nos.	9309141915 7758983478
6. Aadhar	850177604739
7. PAN	GUGPP1116N
8. Overall GPA	
9. Internship /Area (Company/Institute)	Peak Laboratories Jaysingpur. Tal, Shirol. Dis, Kolhapur.

I confirm that I agree with the terms, conditions, and requirements of the Internship Policy

Student Signature: Shrutika

Date: 18/05/2024

I confirm that the student has attended the internship orientation and has met all paperwork and process requirements to participate in the internship program, and has received approval from his/her mentor.

Sign of Department Faculty Coordinator

Date

Peak Laboratories
Registered Office: Peak Laboratory Unit, Udgaon-Wadi Road, Plot 129, Besides Chougule Ice Factory, Akiwate Industrial Estate, Jayingpur, Tal. Shirol Dist. Kolhapur, 416101, Maharashtra
UDYAM-MH-15-0111722 **GSTIN:** 27BBRPH4412G1ZO
Contact: 9146150117
Email: peaklab2021@gmail.com

Ref. No. PL/19/01/2024-01 **Date-19/01/2024**

CERTIFICATE OF INTERNSHIP

This is to certify that, Ms. Powar Sbrutika Sambhaji student of FY MSC, Department of Microbiology Vivekanand College kolhapur has Successfully completed the research training for 15 days for Seven hours (10. am to 5 pm) in the field of Agricultural microbiology, from 04/01/2024 to 19/01/2024 under the guidance of MS. A.R. Jagdale.

During the period of her research training program she had exposed to different processes and. also has observed the work that is done with very discipline. The candidate has fulfilled the prescribed requirement of the laboratory work and completed organized tasks with very sincerity and diligence.

For Peak Laboratories

Head of the department

Peak Laboratories

Proprietor
Authorized Signatory

Date: 19/01/2024
Place: Jaysingpur

About The Company

" PEAK LABORATORIES AND BIOFERTILIZER UNIT"

Peak Laboratories and Biofertilizer Pvt. Ltd. Is situated in MIDC area of Jayasingpur udagav rod near KPT, Jayasingpur. Peak Laboratories and Biofertilizer unit Eatablished in the year 2022. Peak Laboratories and Biofertilizer unit is one of the popular biofertilizer company in Shirol. Peak Laboratories and Biofertilizer unit is produces five different biofertilizer in powder and liquid form. By using microorganism and some fungus.

In this company microbiology lab is run by B.tech. Biotechnologist, which is an expert in Isolations, formulation, inoculum production and preservation.

As we know that an internship gives a student the opportunity for career exploration and development and to learn new skills. An internship can give you first hand industry experience . As a part of my achievement and to enhance my skill I had joined an internship program at Peak Laboratories and Biofertilizer unit Jayasingpur.

Introduction to Biofertilizer

Biofertilizers are substance that contains microbes, which helps in promoting , which helps in promoting the growth of plants and trees by increasing the supply of essential nutrients to help plants.

Biofertilizers may be Bacterial or fungal spores.

Bacterial Biofertilizer

- PSB
- KMB
- AZOTO
- ACETO
- RHIZO

Fungal Biofertilizer

- Trichoderma
- Pacilomyces
- Amphilomyces

❖ PSB

Phosphate Solubilizing Bacteria are beneficial bacteria capable of solubilizing inorganic phosphorous from insoluble compounds. P- solubilization ability of rhizosphere microorganisms is considered to be one of the most important traits associated with plant phosphate nutrition.

❖ KMB

Potassium Mobilizing Bacteria containing Biofertilizer contains bacteria that are capable of solubilizing inorganic Potassium from insoluble compounds and providing it for plant uptake. These microorganisms commonly known as potassium solubilizing bacteria or potassium dissolving bacteria.

❖ AZOTO

Azotobacterial biofertilizer that contains non-symbiotic Azotobacter bacteria which has the ability to fix atmospheric Nitrogen .

❖ ACETO

Acetobacter biofertilizer that contains Acetobacter bacteria which has ability to colonize the plant root and fixing atmospheric Nitrogen.

❖ RHIZO

Rhizobium is a biofertilizer. Biofertilizers are substances that contain microorganisms which when applied to the soil increase the nutrient content and enhance the plant growth. Rhizobium, present in the root nodules of the leguminous plants, add nitrogen to the soil which is supplied to the plants to enhance their growth.

Fungal Biofertilizer

❖ Trichoderma

Trichoderma spp. suppress the growth of plant pathogenic microorganisms and regulate the rate of plant growth. Recent works have shown that common plant disease such as root rot disease, damping off, wilt, fruit rot and other plant diseases can be controlled by Trichoderma spp.

❖ Pacilomyces

Paecilomyces spp. promotes the germination of seeds. Root Drenching – 4 ml per Liter water is recommended ,For Large Applications .Soil Application & Drechning 2 Liter Per Acre is used. Best for Domestic Purposes like home garden Kitchen Terrace Garden , Nursery & Agriculture Practices.

- Amphilomyces

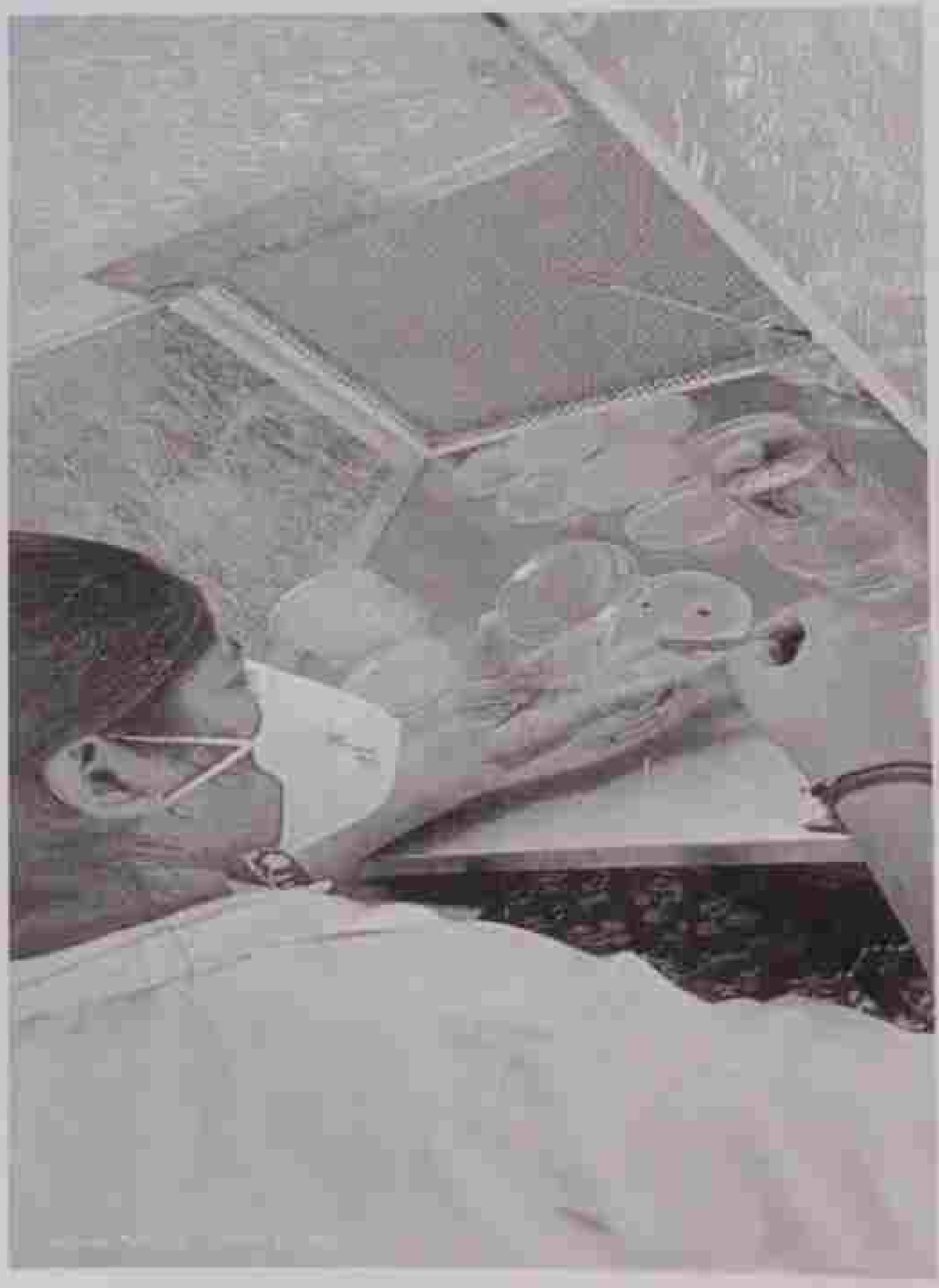
Ampelomyces quisqualis stain is a fungus for use as a fungicide. Its intended use is on vine to control powdery mildew (Uncinula necator) as part of an integrated control programme.

Microbiological lab

Equipment's:

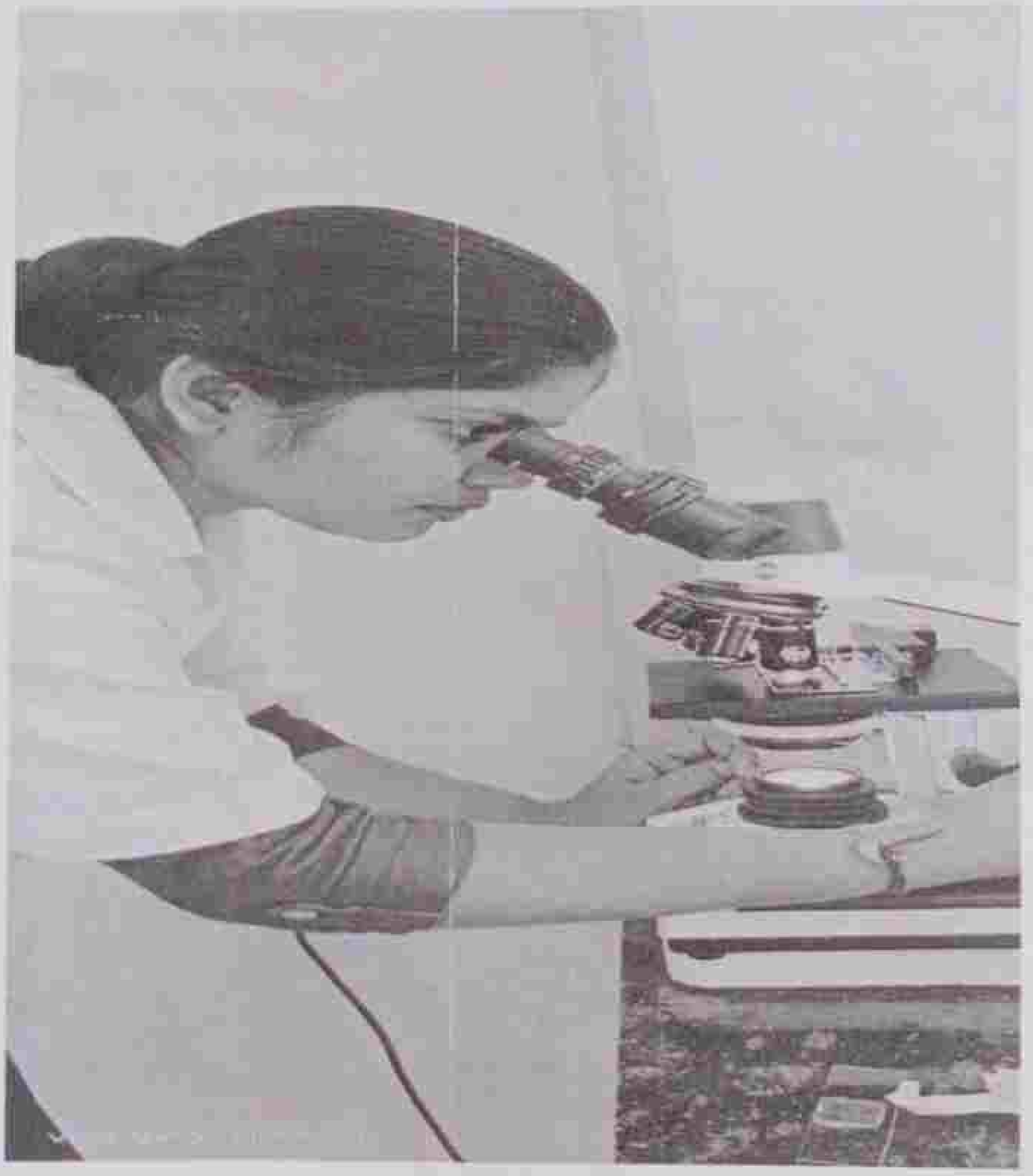
1. Laminar

In the laminar airflow aseptic work is carried out. Including Isolation, Culture inoculation, Streaking, Pouring etc.



2. Microscope

Compound microscope is used for observation of bacterial shape, Gram nature, motility and fungus branching and morphology



Working Lab

Equipment's :-

1.Autoclave

2.Incubater Shaker

Autoclave:-

Prepared media for bacteria and Fungus First autoclave, After that Proper cooling of the medium. then microbial culture is inoculate.

Incubator shaker:

Inoculated Flask place on shaker For 4-5 days. because For bacterial growth shaking and temperature required.

After completed 4-5 days then Liquid medium mixed with formulation.

Formulation media

1.Powder Formulation

In these Formulation talcum powder + Calcium carbonate is used

For 500ml liquid culture 1 kg talcum+ Calcium carbonate 150 gm is used and 1kg powder Biofertilizer Prepared.

2. Liquid Formulation

In the liquid culture Sodium molybdate and sodium chloride is used

For 500 ml liquid Sodium molybdate and sodium chloride liquid mixed and 1 lit. liquid Biofertilizer are prepared.

Acknowledgement

I am sincerely thankful to the managment of peak Laboratories and biofertilizer unit Jayasingpur for giving. Permission to perform training

I feel very thankful to Er. Ankita Jagadale (Head of the Peak laboratories) Mr. Parimal Udagave (Director of Peak Laboratories) For giving opportunity to perform intership and giving being a valuable information and always Source of inspiration for putting best efforts to training ensure the success of out My Training

Thank you