

SREE AYYAPPA COLLEGE

ERAMALLIKKARA, CHENGANNUR, ALAPPUZHA DISTRICT

Kerala

**(GOVT. AIDED COLLEGE AFFILIATED TO THE UNIVERSITY OF
KERALA)**



**DEPARTMENT OF BIOCHEMISTRY & INDUSTRIAL
MICROBIOLOGY**

REPORT OF

**CERTIFICATE COURSE-MUSHROOM CULTIVATION &
POST HARVESTING TECHNOLOGY (SDC 003)**

2019-20

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**Sree Ayyappa College, Eramallikkara,
Chengannur, Alappuzha- 689 109**

A meeting is scheduled on 01/11/2019 at 11.00 AM in Principal' chamber to discuss the skilled course organized by Department of Biochemistry & Industrial Microbiology for this academic year as per the DLMC meeting held on 31/10/2019 and the following decisions were made.

Minutes of the Meeting

It is decided to conduct a Skill based Certificate Course on Mushroom Cultivation and Post Harvesting Technology (SDC 003) during the month of December 2019 based on the discussion with Principal on 01/11/2019. The duration of the course will be 35 hours. Dr.Nitha.B, HOD, Biochemistry & Industrial Microbiology will be the Course Co-ordinator. Dr.Ganga.G, Assistant Professor in Microbiology & Dr. Rejiya.C.S, Assistant Professor, Biochemistry will help in Course design and implementation. The syllabus will be designed and submitted within 10 days. A Part of training and field visit on will be done with the technical support at Central Plantation Crops Research Institute (CPCRI), Kayakulam.

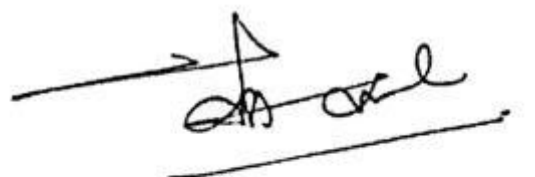
Members Present

Dr.K.S. Anil Kumar (Principal)

Dr.Nitha.B, HOD, Biochemistry & Industrial Microbiology

Dr.Ganga.G, Assistant Professor, Microbiology

Dr.Rejiya C.S, Assistant Professor, Biochemistry

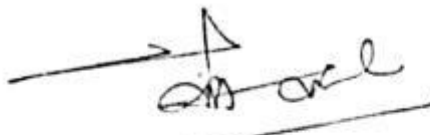


PRINCIPAL
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Sree Ayyappa College (T.D.B)
Eramallikkara - 689 109
Thiruvananthapuram, Chengannur
Alappuzha Dist, Kerala

**Sree Ayyappa College, Eramallikkara,
Chengannur, Alappuzha- 689 109**

NOTICE

Department of Biochemistry & Industrial Microbiology, Sree Ayyappa College is organizing a Skill Oriented Certificate Course having 35 hours Mushroom Cultivation & Post Harvesting Technology (SDC003) from 19/12/2019 onwards. Interested candidates are directed to contact Dr. Nitha.B, HOD, Department of Biochemistry & Industrial Microbiology for further details.



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Phone: 04792427615, sreeayyappacollege@gmail.com

DEPARTMENT OF BIOHEMISTRY & INDUSTRIAL MICROBIOLOGY

**CERTIFICATE COURSE IN MUSHROOM CULTIVATION & POST HARVESTING
TECHNOLOGY-SDC 003**

Mushroom cultivation can help to reduce vulnerability to poverty and strengthens livelihoods through the generation of a fast yielding and nutritious source of food and a reliable source of income. As it does not require access to land, the cultivation is viable and attractive. Mushroom cultivation is not only a source for nutritious protein-rich food; it can also contribute to the production of effective medicinal products. It is an eco-friendly agricultural practice in the efficient utilization of agricultural and industrial waste. It can also play a significant role in generating self-employment opportunity. Considering the significance of mushroom cultivation the department is offering a certificate course in mushroom cultivation for the under graduate students. In addition to theory classes the course is providing hands-on trainings, seminars, assignments and field visits.

Aim of the Course

- Enable the students to identify edible and poisonous mushrooms.
- Provide hands on training for the preparation of bed for mushroom cultivation and spawn production.
- Give the students exposure to the experiences of experts and functioning mushroom farms
- Help the students to learn a means of self-employment.

Duration of the Course: 35 Hours

COURSE ASSESSMENT

Assessment of students was carried out on the basis of internal evaluations which include attendance, assignments, viva, test papers and practical skill during training. Certificates will be issued to students on successful completion of the course.

**SKILL DEVELOPMENT CERTIFICATE COURSE ON MUSHROOM
CULTIVATION & POST HARVESTING TECHNOLOGY-SDC003
SYLLABUS CONTENT WITH TIME STRUCTURE**

Terminal Competency

After successful completion of training, the person will be able to: -
To produce different kind of mushrooms

Course code: MCPT01

Duration: 35 Hours

COURSE OBJECTIVES:

- Enable the students to identify edible and poisonous mushrooms
- Provide hands on training for the preparation of bed for mushroom cultivation and spawn production
- Give the students exposure to the experiences of experts and functioning mushroom farms
- Help the students to learn a means of self-employment and income generation

COURSE OUTCOME:

By successfully completing the course, students will be able to:

- Identify edible types of mushroom
- Gain the knowledge of cultivation of different types of edible mushrooms and spawn production
- Manage the diseases and pests of mushrooms
- Learn a means of self-employment and income generation

Detailed Syllabus:

<i>Practical</i>	Hours	Theory	Hours
Selection and Processing of straw for bed preparation	1	Knowledge of General Safety, health and hygiene Importance of Mushroom, scope, past, present status & future prospects.	2
Sterilization process practice	2	Pros & cons in Mushroom cultivation: why the Mushroom cultivation? Problems in mushroom cultivation & its remedies. Mushroom for health: ingredients in mushroom, i.e. Protein, Carbohydrate, Fiber, Fat, Vitamins, Minerals etc.	1
Preparation of beds for cultivation of various mushrooms and its maintenance	2		
Growing and Identification of viable Spawn	1		
		Types of Mushroom. Poisonous Mushroom. Cultivation of Paddy Straw Mushroom and ingredients used Oyster Mushroom Cultivation and ingredients used. Milky Mushroom Cultivation and ingredients used. Button Mushroom cultivation and ingredients used.	2 2 6
Post Harvesting care and processing Visit to Mushroom farms	4	Preservation of Mushroom. Economics of Mushroom cultivation	2
Training/Internship	10		15
Total Hours	20		15
Total Hours of the Course			35

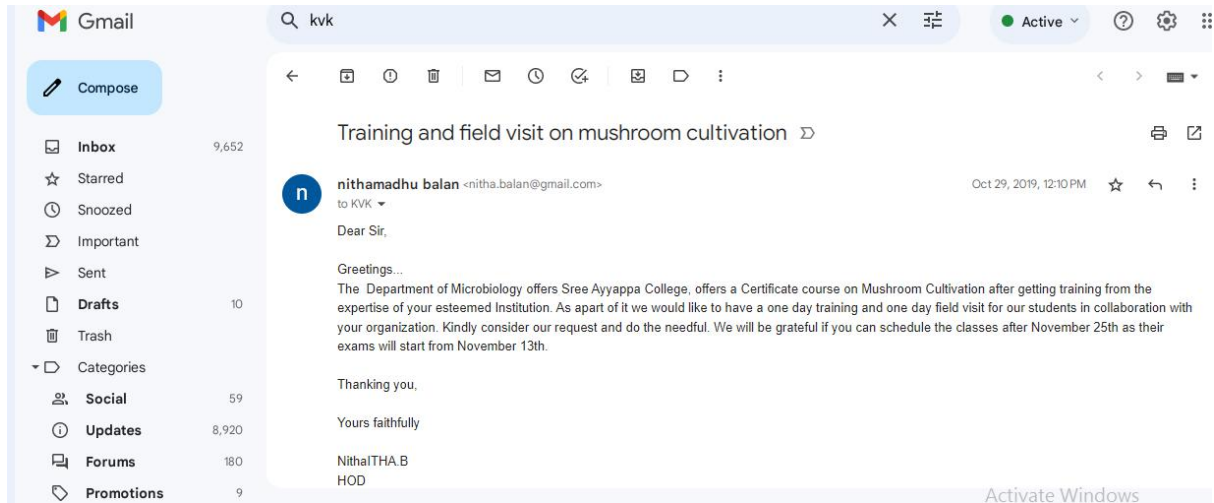
References

1. Marimuthu, T. et al. (1991). Oster Mushroom. Department of Plant Pathology. Tamil Nadu Agricultural University, Coimbatore.
2. Nita Bhal. (2000). Handbook on Mushrooms. 2nd ed. Vol. I and II. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi
3. Pandey R.K, S. K Ghosh, 1996. A Hand Book on Mushroom Cultivation. Emkey Publications.
4. Pathak, V. N. and Yadav, N. (1998). Mushroom Production and Processing Technology. Agrobios, Jodhpur.
5. Tewari Pankaj Kapoor, S. C. (1988). Mushroom Cultivation. Mittal Publication, New Delhi.
6. Tripathi, D.P. (2005) Mushroom Cultivation, Oxford & IBH Publishing Co. PVT.LTD, New Delhi.

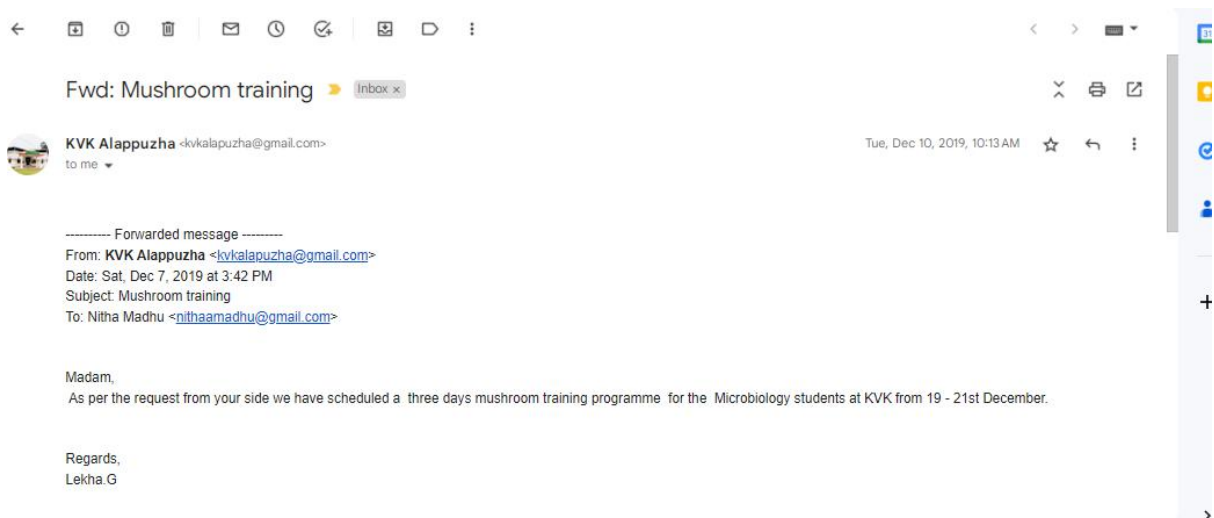
COURSE CO-ORDINATOR

Dr.Nitha.B, Asst professor & Head Biochemistry & Industrial Microbiology, Sree Ayyappa College, Eramallikkara

REQUEST TO CPCRI, KAYAMKULAM FOR TRAINING



PERMISSION MAIL FROM CPCRI, KAYAKULAM FOR TRAINING



Brochure of the workshop

ONE DAY WORKSHOP AND TRAINING ON EDIBLE MUSHROOM CULTIVATION FOR SELF EMPLOYMENT OF RURAL POPULATION

September 3rd 2019

ORGANIZED BY

DEPARTMENT OF BIOCHEMISTRY & INDUSTRIAL MICROBIOLOGY
SCIENCE CLUB & WOMENS STUDY UNIT

SREE AYYAPPA COLLEGE, ERAMALLIKKARA
CHENGANNUR, ALAPPUZHA - 689109
In association with
CENTRAL PLANTATION CROP RESEARCH INSTITUTE
KAYAMKULAM

PROGRAMME SCHEDULE

10.00 AM	: PRAYER
10.05-10.30	: INAGURAL FUNCTION
WELCOME SPEECH	: DR.NITHA.B. , CONVENER, HOD, BIOCHEMISTRY & INDUSTRIAL MICROBIOLOGY
INAGURATION	: DR.K.S. ANIL KUMAR , PRINCIPAL
FELICITATIONS	: PROF.K.C.PRAKASH , CONVENER, ICAC, DR. GANGA.G. , ASSISTANT PROFESSOR, MICROBIOLOGY DR.SANDEEP.S. , ASSISTANT PROFESSOR, CHEMISTRY
10.45 AM TO 12.30 PM	
TRAINING SESSION	: DR.LEKHA , SUBJECT MATTER SPECIALIST, PLANT PATHOLOGY CPORI KAYAMKULAM
VOTE OF THANKS	: DR.REJIYA.C.S. , ASSISTANT PROFESSOR, BIOCHEMISTRY

ORGANIZING COMMITTEE

CHAIRMAN: **Dr.K.S.Anil Kumar**, Principal

Convener: **Dr. Nitha.B.**

Members: **Dr.Ganga.G, Dr.Rejiya.C.S, Dr.Sandeep.S**

ABOUT THE WORKSHOP

The main objective of the workshop is to encourage the rural society to take up Mushroom cultivation as an enterprise through adoption of scientific Mushroom cultivation.

ADDRESS FOR COMMUNICATION

Dr. Nitha.B. Convener
Sree Ayyappa College, Eramallikkara, Phone: 0479 2427615,
9446247374, 8606247374

Brochure of the Course

SREE AYYAPPA COLLEGE, ERAMALLIKKARA

DEPARTMENT OF BIOCHEMISTRY AND INDUSTRIAL MICROBIOLOGY

SKILL COURSE ON MUSHROOM CULTIVATION AND POST HARVESTING TECHNOLOGY

For details contact
Dr. Nitha.B
H. O. D, Biochemistry and Industrial Microbiology


December 2019

**CERTIFICATE COURSE ON MUSHROOM CULTIVATION & POST
HARVESTING TECHNOLOGY-SDC003
2019- 2020**

Students list

SLNO	NAME
1	ABHIJITH R KUMAR
2	AMJITH R KUMAR
3	ARAVIND S
4	ASWATHY BALAKRISHNAN
5	SALINI S
6	SOUGANDH
7	SREELEKSHMI S
8	ABHIRAMI L R
9	AISWARYA. R
10	ALAN A N
11	AMRUHTHA KRISHNAN G
12	ANANTHA NARAYANAN V
13	ARYA NARAYANAN
14	DIVYA MOL
15	GAYATHRI K
16	GEETHU MURUGESHAN
17	KAVYA K
18	NANDANA G UNNITHAN
19	PARVATHY
20	PARVATHY CHANDRABABU
21	RAMADATH K
22	RESHMIKRISHNA
23	SAFNA A.S
24	SILPANJALI S
25	SNEHAPRIYAN P
26	SUNAINA NAIR S. S
27	AKSHAY MURALEEDHARAN
28	AKSHARA RAJU
29	ANJU S S

SAMPLE REGISTRATION FORM


SREE AYYAPPA COLLEGE, ERAMALLIKARA
CHENGANNUR, ALAPPUZHA-689 1019, Phone: 04792427615,
sreeayyapacollege@gmail.com

DEPARTMENT OF BIOCHEMISTRY & INDUSTRIAL MICROBIOLOGY
SKILL ORIENTED CERTIFICATE COURSE ON MUSHROOM CULTIVATION AND
POST HARVESTING TECHNOLOGY


REGISTRATION FORM

PERSONAL DETAILS
Name: Divya Moh
Gender: FEMALE DOB: 17-11-1998 Category: OBC
Father/guardian Name: K.K. KESAVAN

CONTACT DETAILS
Address for Correspondence: KANIPARAMPIL, EDAYARANMULA,
EDAYARANMULA, P.O. ARANMULA,
PATHANAMTHITTA, 589332.
Contact No (Res): _____ Mob: 9605883144
Email: divyam@kaniparambil125@gmail.com

ACADEMIC DETAILS
Name of the Institute/College: SREE AYYAPPA COLLEGE, ERAMALLIKARA
Name of the Course: BSc. Biochemistry and Industrial Microbiology Name of the University: KERALA
Marks obtained: _____ Maximum marks: _____
Overall Percentage: _____

Declaration: I do hereby declare that the information submitted above is correct and true to the best of my knowledge.

Signature of the Candidate:


Attendance

[illegible][illegible]

PHOTGRAPHS OF WORKSHOP



WORKSHOP ON MUSHROOM CULTIVATION IN ASSOCIATION WITH CPCRI

FIELD VISIT& TRAINING AT CPCRI, KAYAMKULAM



Practical sessions



MUSHROOM CULTIVATION AT COLLEGE



SUMMARY REPORT

The Department of Biochemistry & Industrial Microbiology organized a workshop on Mushroom Cultivation in collaboration with Central Plantation Crops Research Institute, IACR, Kayamkulam. Panchyath ward member Sr.Renjith inaugurated the programme. Dr.Lekha, Subject matter Specialist, Plant pathology, CPCRI handled the session on September 3rd 2019. After that workshop a proposal was submitted to CPCRI for conducting a certificate course on Mushroom cultivation and post harvesting technology. The certificate course on Mushroom Cultivation & Post harvesting technology started on 19/12/2019 with three day workshop cum field visit at CPCRI, Kayamkulam. The three day hands on training was conducted from 19/12/2019- 21/12/2019 at CPCRI ,Kayamkulam. During the training seminars were conducted on topics like importance of mushrooms, nutritional properties, spawn production and cultivation by Dr.Lekha, Subject matter Specialist, Plant pathology, CPCRI. After the training and field visit classes were conducted in college by faculties on different aspects of mushroom production. Practical sessions on sterilization, mushroom bed preparation, spawning, mushroom cultivation etc were conducted in college. Assessment of students was carried out on the basis of internal evaluations which include attendance, assignments, viva, test papers and practical skill during training. The classes were concluded by February 25th 2020. Exam for the course was conducted on 28th February 2020. Twenty nine students registered for the course and among that twenty four students completed the certificate course on Mushroom Cultivation.

OUT COME OF THE COURSE

After course completion students started a small scale mushroom production unit. They became familiar with all the aspects of mushroom production. After successful completion of the course students are skilled to start mushroom cultivation.

ASSESSMENT PROCEDURES

Question paper for the Exam

SREE AYYAPPA COLLEGE, ERAMALLIKKARA, CHENGANNUR,

ALAPPUZHA-689 109

**SKILL DEVELOPMENT CERTIFICATE COURSE ON MUSHROOM
CULTIVATION & POST HARVESTING TECHNOLOGY-SDC003**

Time: 3 hrs

Marks: 80

SECTION- A

I. Answer all questions in one word or two sentences. Each question carries one mark

1. What is blanching?
2. Write the scientific name of white button mushroom.
3. Name any one field mushroom.
4. Name any two poisonous mushrooms.
5. Give an example of medicinal mushroom
6. What is Spawn?
7. What is composting?
8. What is a substrate?
9. Give the name of any two edible mushrooms
10. What is the scientific name of milky mushroom or paddy straw mushroom?
(10 x 1= 10 marks)

SECTION- B

II. Answer any eight of the following; not to exceed one paragraph. Each question carries two marks.

11. What could be possible reason (s) for presence of contaminants in spawn/compost?
12. Narrate the harvesting of mushrooms.
13. Write a short note on field cultivation of mushroom.
14. Write a note on the nutritional value of mushrooms.
15. Write a note on freeze drying.
16. Comment on the medicinal value of mushrooms.
17. Give an account of poisonous mushrooms.
18. Write the systematic position of Agaricus.
19. Write a note on common Indian mushrooms.
20. Which are the bacterial diseases that affect mushrooms?
21. Write a note on pickling.
22. What are the advantages of mushroom cultivation?

(8X2=16marks)

SECTION C

III. Answer any six of the following; not to exceed 120 words. Each question carries four marks

23. Explain the Spawn preparation?
24. Draw and label different parts of Mushroom.
25. How would you differentiate between edible and poisonous mushrooms?
26. Write a short note on Food value of mushrooms.
25. What are the common diseases and pests found in mushrooms?
26. How mold infestation can be managed during Mushroom Cultivation?
27. Briefly explain the cultivation of white button mushroom.
28. Which are the steps involved in bed preparation.
29. Explain pre-treatment of substrate.
30. Write a note on foreign exchange from mushroom cultivation.
31. Draw labeled diagram of the life cycle of Mushroom.

(6X4=24 marks)

SECTION D

IV. Write an essay on any two of the following. Each question carries fifteen marks

32. Explain the distribution, structure and morphology of Agaricus.
33. What is the scientific name of Oyster mushroom? Discuss about the various steps in the cultivation of Oyster mushroom.
34. How mushrooms are stored? Explain the various steps in the processing of mushrooms.
35. Explain different substratum and their processing methods used in the cultivation of mushrooms.

(2X15=30 marks)

MARKLIST OF THE COURSE

SREE AYYAPPA COLLEGE, ERAMALLIKKARA, CHENGANNUR,

ALAPPUZHA-689 109

**SKILL DEVELOPMENT CERTIFICATE COURSE ON MUSHROOM
CULTIVATION & POST HARVESTING TECHNOLOGY-SDC003**

FINAL RESULT- 2019-20

SLNO	NAME	Training & Field visit	Exam	Practical	Total	Final result
1	ABHIJITH R KUMAR	5	52	15	72	Pass
2	AMJITH R KUMAR	5	50	15	70	Pass
3	ARAVIND S	5	57	15	75	Pass
4	ASWATHY BALAKRISHNAN	5	47	15	67	Pass
5	SALINI S	5	38	15	58	Pass
6	SOUGANDH	5	34	15	54	Pass
7	SREELEKSHMI S	5	62	15	82	Pass
8	ABHIRAMI L R	5	40	15	60	Pass
9	AISWARYA. R	5	41	15	61	Pass
10	ALAN A N	5	37	15	57	Pass
11	AMRUHTHA KRISHNAN G	5	31	15	51	Pass
12	ANANTHA NARAYANAN V	Ab	38	15	53	Fail
13	ARYA NARAYANAN	5	33	15	53	Pass
14	DIVYA MOL	5	46	15	66	Pass
15	GAYATHRI K	5	50	15	70	Pass
16	GEETHU MURUGESHAN	5	30	15	50	Pass
17	KAVYA K	5	39	15	59	Pass
18	NANDANA G UNNITHAN	5	40	15	60	Pass
19	PARVATHY	5	59	15	79	Pass
20	PARVATHY CHANDRABABU	5	32	15	52	Pass
21	RAMADATH K	5	35	15	55	Pass
22	RESHMIKRISHNA	5	31	15	51	Pass
23	SAFNA A.S	5	42	15	62	Pass
24	SILPANJALI S	5	45	15	65	Pass
25	SNEHAPRIYAN P	5	30	15	50	Pass
26	SUNAINA NAIR S. S	Ab	56	15	71	Fail
27	AKSHAY MURALEEDHARAN	Ab	Ab	15	15	Fail
28	AKSHARA RAJU	Ab	Ab	15	15	Fail
29	ANJU S S	Ab	Ab	15	15	Fail

Dr.Nitha.B

Course Co-ordinator



CERTIFICATE OF TRAINING & FIELD VISIT

 **भा.कृ.अ.प - कृषि विज्ञान केन्द्र - आलप्पुषा**
ICAR - KRISHI VIGYAN KENDRA -ALAPPUZHA
ICAR - CENTRAL PLANTATION CROPS RESEARCH INSTITUTE 
Regional Station, Kayamkulam, Krishnapuram-690 533, Kerala

CERTIFICATE

This is to certify that Mr./Ms./Ms. Sreelekshmi S, B.Sc Biochemistry & Industrial Microbiology, Sri Ayyappa College, Changanassery has attended the training programme on 'Mushroom - Cultivation Techniques' organized by the ICAR - Krishi Vigyan Kendra - Alappuzha, in collaboration with/funded by _____ on/from 19.12.2019 to 21.12.2019

21.12.2019
Kayamkulam



Head

 **भा.कृ.अ.प - कृषि विज्ञान केन्द्र - आलप्पुषा**
ICAR - KRISHI VIGYAN KENDRA -ALAPPUZHA
ICAR - CENTRAL PLANTATION CROPS RESEARCH INSTITUTE 
Regional Station, Kayamkulam, Krishnapuram-690 533, Kerala

CERTIFICATE

This is to certify that Mr./Ms./Ms. Parvathy, B.Sc Biochemistry & Industrial Microbiology, Sri Ayyappa College, Changanassery has attended the training programme on 'Mushroom - Cultivation Techniques' organized by the ICAR - Krishi Vigyan Kendra - Alappuzha, in collaboration with/funded by _____ on/from 19.12.2019 to 21.12.2019

21.12.2019
Kayamkulam



Head

Activate

CERTIFICATE OF COURSE COMPLETION



Dr. Nitha.B

Course Coordinator

[Signature]
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Alappuzha Dist, Kerala