Date: 02/03/2022

To.

The Principal

K. K. Wagh College of Agriculture,

Nashik

Subject Regarding permission for Certificate Course.....

Respected Sir,

On behalf of the Department of Plant Pathology, we humbly request permission to initiate a Certificate course titled **Mushroom Production Technology**. This course is scheduled from 21/03/2022 to 26/03/2022 and will involve approximately **33** final-year students. It is anticipated that this course will greatly benefit our students in enhancing their knowledge about advance techniques and practical skills in Production of Mushroom. We kindly ask for your approval for the implementation of this course.

Thanking You,

permissing granted

ans

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Yours faithfully

(Dr. H. V.Deshmukh)
Course Coordinator



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College Code;11135

AISHE Code: C-50690

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Certificate course in

'Mushroom Production Technology'

Academic Year 2021-22

Syllabus Committee

Sr	Name of teacher	Designation	Department	Role in course
1	Dr. H. V. Deshmukh	Assistant Professor	Plant Pathology	Course coordinator
2	Dr. P. R. Brahmane	Assistant Professor	Plant Pathology	Committee member
3	Prof. S. K. Ahirrao	Assistant Professor	Plant Pathology	Committee member
4	Miss S.D. Kharat	Technical Assitant	Plant Pathology	Committee member

Course Coordinator

K.K.Wagh College of Agriculture Saraswatinagar, Panchavati, Nashik



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Date:02/03/2022

Academic Year 2021-22 **Department of Plant Pathology** Minutes of the Board of Studies Meeting for the Short-Term Certificate Course

A meeting of the Board of Studies for the Short-term Certificate Course in 'Mushroom Production Technology' was convened on 3 March 2022, at 12:00 PM in the Department of Plant Pathology. The meeting was attended by the following Syllabus Design Committee members:

Sr no	Name of the expert	Designation	Sign
1	Dr. S. M. Hadole	Principal	· M
2	Dr. H. V. Deshmukh	Course Coordinator	Turk!
3	Dr. P. R. Brahmane	Member	
4	Prof. S. K. Ahirrao	Member	Brought
5	Miss S.D. Kharat	Member	Beharut

Minutes of Meeting

The Board of Studies convened a meeting on 3 March 2023, at 12:00 PM in the Department of Plant Pathology to address various aspects concerning the Short-Term Certificate Course in 'Mushroom Production Technology'. The meeting focused on the following key points:

1. Syllabus Formation: Members deliberated on developing a syllabus that emphasizes on

relevant knowledge and skills in Mushroom Production.

2. Dissemination of Work: Strategies for effectively teaching the morphology and types of Mushrooms. were discussed to aid students in the course.

3. Encouragement of Students: The meeting stressed the importance of offering guidance and motivation to students. They are aware of the identification of edible and poisonous Mushrooms. Students will be able produce spawn on their own. Learned the prospects and scope of mushroom cultivation in small scale industry.

4. Examination of Short-Term Course: The examination structure and assessment methods for the short-term course were reviewed. The board explored ways to ensure fair and comprehensive evaluations that accurately assess students'

The meeting concluded with a commitment to refine the course and its delivery methods to better meet the needs of students enrolled in the Certificate Course in 'Mushroom Production Technology'.

Course coordinator



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Department of Plant Pathology

Certificate course in

'Mushroom Production Technology'

Academic Year 2021-22

Syllabus Outcomes:

- Gain awareness of historical and current perspectives of Mushroom Production.
- Perform various methods of Harvesting & preservation of mushroom.
- Acquire knowledge on Study of different diseases and pests of mushroom and their management.
- Preparation of spawn & Cultivation of different types of mushroom.
- Explore methods for Isolation, identification, maintenance and storage of pure cultures of mushrooms.
- Examine the commercial aspects of Different recipies of mushroom.

Sr	Topic			
1	A Study on morphology of mushroom. Introduction to mushroom types	study the different parts of mushroom and their broad classification. different types of edible mushrooms and their important characters	03 hours	
2	Nutritional and medicinal importance of mushroom Isolation, identification, maintenance and storage of pure cultures of mushrooms	nutritional & medicinal importance of mushrooms. Identify the pure culture of different mushroom types. Also to study their maintenance and storage.	03 hours	
3	Preparation of spawn Cultivation of white button mushroom (Agaricus bisporus)	prepare master and commercial spawn. different steps involved in cultivation of button mushroom.	06 hours	
4	Cultivation of oyster mushroom (Pleurotus spp.) Cultivation of paddy straw mushroom (Volvariella spp.)	requirements and different stepsn involved in cultivation of oyster mushroom & paddy straw mushroom.	06 hours	
5	Harvesting & preservation of	stage and method of harvesting as well	06 hours	



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	mushrooms. Study of different diseases and pests of mushroom and their management.	as different preservation techniques. most common biotic causes which adversely affects the productivity and quality of mushrooms are parasitic and antagonistic fungi; bacteria; viruses; nematodes; mites and insect pests.	
6	Economics of mushroom cultivation and preparation of bankable project.	economical aspects involved in mushroom cultivation and to prepare the project profile for financial assistance.	06 hours
7	Different recipies of mushroom.	1. Mushroom salad 2. Mushroom and pea curry 3. Mushroom curry 4. Mushroom omllette 5. Mushroom bhaji/pakodas 6. Mushroom soup 7. Mushroom pulao 8. Mushroom samosa 9. Mushroom pickle	06 hours
Total	PROPERTY OF THE PROPERTY OF TH	· Alice Alice	36 hours

Course Coordinator



PRINCIPAL

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Date:05/03/2022

Student Notice

All the students of B. Sc. (Hons.) Agriculture final year are informed that for the academic year 2021-22 the Certificate Course on 'Mushroom Production Technology' is starting from 21/03/2022to 26/03/2022. For this certificate course students should submit their names to the Certificate Course Coordinator Assistant Dr. H. V. Deshmukh. up to 15/03/2022.

Duration: 36 Hrs. 21/03/2022to 26/03/2022 Time: Morning Session: 10.00 am to 1.00 pm Afternoon session: 2.00pm to 5.00 pm

Note: This course is free of cost to all students.

Course Coordinator

PRTPUINCIPAL
K.K.Wank Hege of Agriculture
Saraswatmagar, Panchavati, Mashik



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Date:

Department of Plant Pathology Certificate course in 'Mushroom Production Technology' Academic Year 2021-22

Enrolled Student List

SR NO	REGISTRATION	NAME OF STUDENT
	NO.	
1.	AKN-2019/064	Kalhapure Suyog Sanjay
2.	AKN-2019/065	Kawade Sanmeet Sachin
3.	AKN-2019/066	Kendre Siddheshwar Devidas
4.	AKN-2019/069	Kulkarni Disha Sunil
5.	AKN-2019/070	Kulkarni Ketan Pankaj
6.	AKN-2019/071	Labhade Pradip Sanjay
7. 1è	AKN-2019/075	Medhane Sandesh Nivrutti
8.	AKN-2019/076	Mehendale Anant Subhash
9.	AKN-2019/077	More Rutuja Dipak
10.	AKN-2019/079	Muntode Sushil Lahanbhau
11.	AKN-2019/088	Patil Aditya Raosaheb
12.	AKN-2019/090	Patil Prachi Rambhau
13.	AKN-2019/091	Patil Pramod Chhotu
14.	AKN-2019/092	Patil Rachana Sanjay
15.	AKN-2019/094	PatilVarunraje Narendra
16.	AKN-2019/095	Patole Dhiraj Shantaram
17.	AKN-2019/097	Pawar Prajwal Baban
18.	AKN-2019/098	Pharate Omkar Shahaji
19.	AKN-2019/100	Pisal Karan Jaywant
20.	AKN-2019/104	Shaikh Jabi Sharif



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21.	AKN-2019/105	Shaikh Majid Asif
22.	AKN-2019/107	Shinde Shubhangi Bhausaheb
23.	AKN-2019/108	Shisav Amol Satish
24.	AKN-2019/109	Sisodiya Mittal Viveksing
25.	AKN-2019/110	Solunke Kalpesh Gangadhar
26.	AKN-2019/114	Tarle Shriyog Subhash
27.	AKN-2019/115	Thakur Priyanka Nandkumar
28.	AKN-2019/116	Thombare Saurabh Uttam
29.	AKN-2019/121	Bankar Krishnakant Narayan
30.	AKN-2019/122	Chaudhari Amegha Madhav
31.	AKN-2019/124	Shelar Samruddhi Mahendra
32.	AKN-2019/125	Suryawanshi Divya Dnyaneshwar
33.	AKN-2019/126	Khairnar Lalit Kailas

Course Coordinator

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STUDENT REGISTRATION FORM

Academic Year: 2021-22 (Department of Plant Pathology)

CERTIFICATE COURSE

'Mushroom Production Technology'

For Department Use Only		
Registration No.: AKN 120191064 Student ID:		
Name of the Student: Kalhapuze Suyog	Sanjay	
Mother's Name: Kalhapure Marisha	Scrojay.	
Father's Name: Kalhapure \$ Scinjay Ken	1. Year: 1 st /2 nd /3 rd /4	1 th
E-Mail ID: Suyogkalhapure @ gmail:		
Address: Khadambe, Tal-Rahuei		
State: Maharashtra PIN Code: 4137.04	•••••	
Mobile No: 9130812136 Alternate contact number:	3 88.84.407.04	5
Gender: Male - Other		Religion:
Date of Birth: 30 05 200		
Educational Qualification (at the time of admission):		
HSC Other		
kalhak		
Signature of Student		
Place: Nashik.		



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Department of Plant Pathology

Certificate course in

'Mushroom Production Technology'

Academic Year 2021-22

Schedule of the course

Sr no	Topic	Description	Name of the teacher	Departmen
	A Study on morphology o mushroom. Introduction to mushroom types	study the different parts of mushroom and their broad classification, different types of edible mushrooms and their important characters	Dr. H. V.	Plant Pathology
3	Nutritional and medicina importance of mushroom Isolation, identification, maintenance and storage of pure cultures of mushrooms	nutritional & medicinal importance of mushrooms. Identify the pure culture of different mushroom types. Also to study their maintenance and storage.	Dr. P. R. Brahmane	Plant Pathology
4	Preparation of spawn Cultivation of white button mushroom (Agaricus bisporus)	button mushroom.	Prof. S. K. Ahirrao	Plant Pathology
5	Cultivation of oyster mushroom (Pleurotus spp.) Cultivation of paddy straw mushroom (Volvariella spp.)	cultivation of oyster mushroom & paddy straw mushroom.	Prof. S. K. Ahirrao	Plant Pathology
	Harvesting & preservation of mushrooms. Study of different diseases and pests of mushroom and their management.	stage and method of harvesting as well as different preservation techniques. most common biotic causes which adversely affects the productivity and quality of mushrooms are parasitic and antagonistic fungi; bacteria; viruses; nematodes; mites and insect pests.	Dr. P. R. Brahmane	Plant Pathology
1	Economics of mushroom cultivation and preparation of bankable project.	economical aspects involved in mushroom	Dr. H. V. Deshmukh	Plant Pathology
- 1	Different recipies of mushroom.	pea curry 3. Mushroom curry 4. Mushroom omllette 5. Mushroom bhaji/pakodas 6.	Dr. H. V. Deshmukh And Miss. S. D. Kharart	Plant Pathology

Course Coordinator



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Department of Plant Pathology

Certificate course in 'Mushroom Production Technology' Academic Year 2021-22

Time Table

Sr	D	Aller .	Time Ta	ble
no	Date		Гіте	Topic
1	21/03/2022	10.00 am-	03.00 pm -	A Study on morphology of mushroom. Introduction to mushroom types
2	22/03/2022	01.00 pm	05.00 pm	and oddenon to musinoom types
2	22/03/2022	10.00 am-	03.00 pm -	Nutritional and medicinal importance of
4		01.00 pm	05.00 pm	mushroom Isolation, identification, maintenance and
3	23/03/2022	10.00 am-	03.00 pm -	storage of pure cultures of mushrooms Preparation of spawn
40		01.00 pm	05.00 pm	Cultivation of white button mushroom (Agaricus bisporus)
4	24/03/2022	10.00 am-	03.00 pm -	Cultivation of oyster mushroom (Pleurotus
		01.00 pm	05.00 pm	spp.) Cultivation of paddy straw mushroom (Volvariella spp.)
5	25/03/2022	10.00 am-	03.00 pm -	Harvesting & preservation of mushrooms.
		01.00 pm	05.00 pm	Study of different diseases and pests of mushroom and their management.
6	26/03/2022	10.00 am-	03.00 pm -	Economics of mushroom cultivation and
		01.00 pm	05.00 pm	preparation of bankable project. Different recipies of mushroom.



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K K WAGH COLLEGE OF AGRICULTURE, NASHIK Department of Plant Pathology

Certificate course in 'Mushroom Production Technology'
Academic Year 2021-22

Sr no	Registration no	Name of students Date:	21/03/2022	War and the second	22/03/2022	-/55-1	23/03/2022		24/03/2022	5 7	25/03/202	22	26/03/2	022
		Time:	10.00-1.00	2.00-5.00	10.00-1.00	2.00-5.00	10.00-1.00	2.00-5.00	10.00-	2.00- 5.00	10.00-	2.00- 5.00	10.00-	2.00
1.	AKN-2019/064	Kalhapure Suyog Sanjay	Kaller	Kallon	Kaller	Kallan	Kalbas	Kall	Kaller		Kalha		Kalas	
2.	AKN-2019/065	Kawade Sanmeet Sachin	Hall	Hack	Kari	Hack	Hast	Harl	flace	Hall	Hall		Mark	
3.	AKN-2019/066	Kendre Siddheshwar Devidas	(ged) hashin		Hiddreshu		Reddhaller	- Sealle Have	48,970				Sidde	
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28.	AKN-2019/116	Thombare Saurabh Uttam	7	PX	12	200	15	EE.	TE	200	200	200	Dr.	1
29.	AKN-2019/121	Bankar Krishnakant Narayan	A	(B)	P	(A)	R	R	A	R	RO	2	10	4
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Course Coordinator

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K.K.M. - College of Agriculture
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Department of Plant Pathology

Certificate course in 'Mushroom Production Technology' Academic Year 2021-22

Examination Methodology

Sr no	Nature of exam	Marks
1	Written	30
2	Practical	20
3	Total	50

Reference:

- 1) TNAU Agritech Portal Nutrition. K. Ramamurthi, R. Geethalakshmi, Food: Nutritive Value; Health Benefits of Mushroom: Available from: http://agritech.tnau.ac.in/nutrition/nutri_health_mushroom.ht ml
- 2) Calorie Bee. Rajan Singh Jolly, Nutritional Facts and Uses of Edible Mushrooms [Updated 2017 October 27]: Available from: https://caloriebee.com/nutrition/All-About-MushroomsTypes-Facts-Tips-Uses-Recipes-Nutritional-And-HealthBenefits
- 3) Mushrooms.ca. Mushrooms and Vitamin D: Available from: https://www.mushrooms.ca/vitamin-d/
- 4) USDA, United States Department of Agriculture, Agricultural Research Service, National Nutrient Database for Standard Reference Legacy Release [Release 2018 April]:Available from: https://ndb.nal.usda.gov/ndb/foods/show/11260?fgcd=&manu =&format=Full&count=&max=25&offset=2600&sort=ndb&ord er=asc&glookup=&ds=&qp=&qa=&qn=&q=&ing=
- 5) Wikipedia, The Free Encyclopedia. Agaricus bisporus [edited 2018 November 8]: Available from: https://en.wikipedia.org/- wiki/Agaricus_bisporus
- 6) Wikipedia, The Free Encyclopedia. Mushroom [edited 2018 September 25]: Available from: https://en.wikipedia.org/wiki/Mushroom
- 7) ICAR Directorate of Mushroom Research, National Research Centre for Mushroom. R.D Rai, T.Arumuganathan, Post Harvest Technology of Mushrooms [Printed: 2008, 1000 Copies]: Available from: http://nrcmushroom.org/Bull PHT.pdf

Course Coordinator

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K.K.Wagh College of Agriculture

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Department of Plant Pathology

Certificate course in
'Mushroom Production Technology'
Academic Year 2021-22

Student Result

Sr. No.	Registration no	Name of the students	Theory marks (30)	Practical Marks (20)	Mark Out of Total 50
1.	AKN-2019/064	Kalhapure Suyog Sanjay	29	18	47
2.	AKN-2019/065	Kawade Sanmeet Sachin	22	77	39
3.	AKN-2019/066	Kendre Siddheshwar Devidas	29	20	49
4.	AKN-2019/069	Kulkarni Disha Sunil	23	18	41
5.	AKN-2019/070	Kulkarni Ketan Pankaj	25	17	42
6.	AKN-2019/071	Labhade Pradip Sanjay	23	16	39
7.	AKN-2019/075	Medhane Sandesh Nivrutti	25	16	32
8.	AKN-2019/076	Mehendale Anant Subhash	27	317	44
9.	AKN-2019/077	More Rutuja Dipak	27	18	45
10.	AKN-2019/079	Muntode Sushil Lahanbhau	27	17	44
11.	AKN-2019/088	Patil Aditya Raosaheb	26	17	43
12.	AKN-2019/090	Patil Prachi Rambhau	27	17	44
13.	AKN-2019/091	Patil Pramod Chhotu	25	18	43
14.	AKN-2019/092	Patil Rachana Sanjay	28	20	48
15.	AKN-2019/094	PatilVarunraje Narendra	21	16	37
16.	AKN-2019/095	Patole Dhiraj Shantaram	24	17	41
17.	AKN-2019/097	Pawar Prajwal Baban	25	8	43
18.	AKN-2019/098	Pharate Omkar Shahaji	25	19	44
19.	AKN-2019/100	Pisal Karan Jaywant	2	17	38
20.	AKN-2019/104	Shaikh Jabi Sharif	24	16	40
21.	AKN-2019/105	Shaikh Majid Asif	27	17	44
22.	AKN-2019/107	Shinde Shubhangi Bhausaheb	23	16	39
23.	AKN-2019/108	Shisav Amol Satish	2.5	18	43
24.	AKN-2019/109	Sisodiya Mittal Viveksing	25	18	43



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				177	A
	AKN-2019/110	Solunke Kalpesh Gangadhar	28	19	47
	AKN-2019/114	Tarle Shriyog Subhash	22	18	40
	AKN-2019/115	Thakur Priyanka Nandkumar	28	19	47
	AKN-2019/116	Thombare Saurabh Uttam	25	18	43
29.	AKN-2019/121	Bankar Krishnakant Narayan	29	20	49
	AKN-2019/122	Chaudhari Amegha Madhav	22	18	40
31.	AKN-2019/124	Shelar Samruddhi Mahendra	25	17	42
32.	AKN-2019/125	Suryawanshi Divya Dnyaneshwar	24	18	42
33.	AKN-2019/126	Khairnar Lalit Kailas	23	17	40



PRIN Cripcipal
K.K.Wagh College of Agriculture
Saraswatinagar, Panchavati, Nashik



Department of Plant Pathology
Certificate course in 'Mushroom Production Technology'
Academic Year 2021-22

Report

K. K. Wagh College of Agriculture, Nashik Department of Plant Pathology Certificate course in: Mushroom Production Technology Academic Year 2021-22

THEORY EXAMINATION

Class:	Final Year	Semester:	VIII
& Date:	28/03/2022	Time:	01:00 to 02:00 pm
bject:	Mushroom Production Technology	Marks:	30
ame of student:		Registration no:	

Q 1. Which Equipment is to sterilize culture med	dia by moist heat and steam under pressure.
Q 2. Which Equipmentis use to incubate mushroo	om cultures at required temperature
opini famp	2. Refrigerator
3. Autoclave	4 Incubator
Q 3. Which Equipment is toobserve morphologic	cal and microscopic characters of cultures
1. Autoclave	2. Incubator
3. Research microscope	4. Spirit lamp
Q 4. Which Equipment is to sterilize the enviro	onment in the isolation chamber and surfaces of different inoculation materi
	siment in the isolation chamber and surfaces of different inoculation materi
1. Spirit lamp	2. Refrigerator
3. Incubator	8-110
Q 5. Which Equipment is to maintain the acception	4. Autoclave
Q 5. Which Equipment is to maintain the aseptic 1. Autoclave	condition and for inoculation purpose.
3. Spirit lamp	2. Laminar air flow
Q 6. Which Equipment is to preserve the mushroo	4. Incubator
Incubator	
3. Cryogenic Freezing	2. Refrigerator
7 Any substrate or putrient combined:	4. Spirit lamp
1 College Paris	is used for cultivation of microorganisms is known as
1. Culture Medium	2. Refrigerator
	4. Incubator
2 8.by which method Cultures can be preserve fo	or one to three years by using this technique.
1. Willieral on technique	2. Demineralised water technique
3. freeze-drying and freezing	4. Cryogenic Freezing
pure mycelial growth grown on steri	ilized cereal grains / straw / saw dust.
Master Spawn	Commercial spawn
3. Spawn	4. Saw dust spawn
2 10. which is prepared by inoculating sterilized of	cereal grains/saw dust/ straw with pure culture
1. Master Spawn	2. Spawn
3. Volvariellaspp	4. Commercial spawn
2 11. which is prepared prepared by inoculating ste	erilized cereal grains/straw /saw dust with master spawn.
1. Master Spawii	2. Volvariellaspp
3. Spawn	4. Commercial spawn
2 12. Which spawn use for Agaricus and Pleurott	
Commercial spawn	2. Spawn
3. Grain spawn	4. Master Spawn
2 13. Which spawn use for Volvariellaspp	
Master Spawn Commercial spawn	2. Spawn
2 14. Saw dust spawn is use for	4. Straw spawn
1. Volvariellaspp	
3. Lentinulaspp	2. Spawn
	4. Commercial spawn
1. Greenish or blackish	in the spawn.
3. Spawn	2. Commercial spawn
Q 16. Qualities of good spawnGrains should be ful	4. Master Spawn
Commercial spawn	
i. Commerciai spawn	2. Volvariellaspp

3. mycelium	
	4. Spawn
white lutter	4. Spawn sires special technical skill for raising a successful crop
white button mushroom Button mushroom	2. Oyster mushroom
Q 18. is better	
Volvariellaspp	quires readymade food for its growth.
3. A. bisoprus	2. None of the above
Q 19. is defined	4. Pleurotus
Spawning Spawning	vial degradation of organic waste
3. Casing	2. Short Method
	4. Composting
Q 20. In this method the straw is composted wi 1. Short Method	th the help of inorganic fertilizers in 28 days.
	2. Medium Method
) 21	4. None of the above
means mixing of spawn in the	fully prepared compost
1. Casing	2. Spawning
- WICHIOU	
2.2. The process of covering the compost with	h a thin layer of soil or soil like material after the spawn run is known as
The state of the s	2. Casing
3. Short Method	4. Spawning
23. Maintain relative_humidity at about	Million between the control of the c
1. 40 to 60%	2. 50 to 90%
3. 80 to 90%	4. 60 to 80%
Q 24.Maintaintemperature at in the spa	awning room.
1. 25°C ± 1°C	2. 24°C ± 3°C
3. 20°C ± 1°C	4. 23°C ± 5°C
2.25. The oyster mushroom is also called as	
1. Dhingri	2. Both 1 & 2
Abalone	4. None of the above
2 26. ". It ranks among the important cu	altivated mushroom in the world.
1. First	2. Second
3. Third	4. Fourth
27. This group got the common name oyster	mushroom because of
the tongue shaped pileus	2. Both 1 & 2
 eccentric lateral stipe. 	4 .None of the above
2.28. The various methods of substrate pasteuri	ization are adopted for
1. Pleurotits cultivation	2. Steam pasteurization
3.Hot water treatment	4.Chemical pasteurization
29. In the substrate is exposed to steam	at 80 C temperature for one hour.
1. Steam pasteurization	Chemical pasteurization
Pleurotus cultivation	4. Hot water treatment
30. In, treatment, the substrate is kept i	
1 Steam pasteurization	2 Chemical pasteurization
3 Pleurotus cultivation	4 .Hot water treatment

J



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Certificate course in 'Mushroom Production Technology' Academic Year 2021-22 Exam Block Report

Class- Final Year Date- 28/03/2022

Subject: Theory Paper of 'Mushroom Production Technology' Course

Block no: 02

SR NO	REGISTRATION NO	NAME OF STUDENT	SIGN
1.	AKN-2019/064	Kalhapure Suyog Sanjay	1/ 1/ 0
2.	AKN-2019/065	Kawade Sanmeet Sachin	Kalhed
3.	AKN-2019/066	Kendre Siddheshwar Devidas	Giddehuer
4.	AKN-2019/069	Kulkarni Disha Sunil	Dis, Kul Karni
5.	AKN-2019/070	Kulkarni Ketan Pankaj	
6.	AKN-2019/071	Labhade Pradip Sanjay	Notes .
7.	AKN-2019/075	Medhane Sandesh Nivrutti	slabhash mailh aire
8.	AKN-2019/076	Mehendale Anant Subhash	
9.	AKN-2019/077	More Rutuja Dipak	Marant.
10.	AKN-2019/079	Muntode Sushil Lahanbhau	(Brose:
11.	AKN-2019/088	Patil Aditya Raosaheb	the state of
12.	AKN-2019/090	Patil Prachi Rambhau	BRUH
13.	AKN-2019/091	Patil Pramod Chhotu	000
14.	AKN-2019/092	Patil Rachana Sanjay	Radana
15.	AKN-2019/094	PatilVarunraje Narendra	Patilica
16.	AKN-2019/095	Patole Dhiraj Shantaram	phial
17.	AKN-2019/097	Pawar Prajwal Baban	Township
18.	AKN-2019/098	Pharate Omkar Shahaji	8 pharate
19.	AKN-2019/100	Pisal Karan Jaywant	Xp;cale
20.	AKN-2019/104	Shaikh Jabi Sharif	Re
21.	AKN-2019/105	Shaikh Majid Asif	Marid As



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College Code;11135

AISHE Code: C-50690

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22.	AKN-2019/107	Shinde Shubhangi Bhausaheb	Shindesty
23.	AKN-2019/108	Shisav Amol Satish	Thisau
24.	AKN-2019/109	Sisodiya Mittal Viveksing	Stort.
25.	AKN-2019/110	Solunke Kalpesh Gangadhar	Syrayer
26.	AKN-2019/114	Tarle Shriyog Subhash	-07
27.	AKN-2019/115	Thakur Priyanka Nandkumar	Que
28.	AKN-2019/116	Thombare Saurabh Uttam	\$15
29.	AKN-2019/121	Bankar Krishnakant Narayan	(E)
30.	AKN-2019/122	Chaudhari Amegha Madhav	Arcethe
31.	AKN-2019/124	Shelar Samruddhi Mahendra	Divina
32.	AKN-2019/125	Suryawanshi Divya Dnyaneshwar	lewing
33.	AKN-2019/126	Khairnar Lalit Kailas	- Cally

Total no of student:

No of student present: No of students absent:

Name and Sign of Jr. Supervisor

Name and Sign of Sr. Supervisor





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Department of Plant Pathology

Certificate course in
'Mushroom Production Technology'
Academic Year 2021-22

Exam Time Table

All enrolled students of the Certificate Course are hereby informed that for the academic year 2021-22, the Certificate Course on 'Mushroom Production Technology' has been completed. The examination for this certificate course is scheduled to be conducted on 28/03/2022. Therefore, all students are required to be present without exception.

Note: Time Table is as follow

Sr no	Date	Time	Certificate course subject
1	28/03/2022	01:00 to 02:00 pm	Theory exam: 'Mushroom
			Production Technology' course
2		02:00 to 03:00 pm	Practical Exam: 'Mushroom
Early Early	E7		Production Technology' course

Course Coordinator

Exam Incharge

FR IP In Ep al L K.K.Wagh College of Agriculture Saraswatinagar, Panchavati, Nashik



K. K. Wagh College of Agriculture, Nashik Department of Plant Pathology Certificate course in: Mushroom Production Technology Academic Year 2021-22



THEORY EXAMINATION

Class:	Final Year	Semester:	VIII
Day & Date:	28/03/2022	Time:	01:00 to 02:00 pm
Subject:	Mushroom Production Technology	Marks:	30
Name of student:	Kalbapure Suyog.S.	Registration no:	AKN-2019/64

Q-1. Which Equipment is to sterilize culture media 1	by maint heat and starry	
Q 2. Which Equipmentis use to incubate mushroom	oclave 3. Isolation chamber	4. Laminar air flow
1. Spirit lamp	2 Paginary	
3. Autoclave	2. Refrigerator	
	4—Incubator	
Q 3. Which Equipment is toobserve morphological a		met .
	2. Incubator	
3 Research microscope	4. Spirit lamp	The state of the s
and glass wares.	nent in the isolation chamber and surfaces of differen	t inoculation materials
Spirit lamp	2. Refrigerator	,1 <u>95-</u> 1
3. Incubator	4 Autoclava	
5. Which Equipment is to maintain the aseptic con	adition and for in a Lui	f f
1. Autoclave	idition and for inoculation purpose.	SERVICE TO
3. Spirit lamp	Laminar air flow 4. Incubator	1972
Q 6. Which Equipment is to preserve the mushroom	4. Incubator	
1. Incubator	cultures.	
3. Cryogenic Freezing	2. Refrigerator	Å*
Q 7. Any substrate or nutrient combination which is u	4. Spirit lamp	- 1
~1. Culture Medium	used for cultivation of microorganisms is known as	
3. Cryogenic Freezing	2. Refrigerator	1 1 2 1 2 1 2
O 8.by which method Cultures can be preserve 6	4. Incubator	
Q 8.by which method Cultures can be preserve for on Mineral oil technique	ne to three years by using this technique.	A SALE
3. freeze-drying and freezing	Demineralised water technique	966 Carrier 1
0 9 nure mycelial grouth grown on storilia	4. Cryogenic Freezing	
Q 9 pure mycelial growth grown on sterilized I. Master Spawn	ed cereal grains / straw / saw dust.	edito total in Superior
3 Spawn	2. Commercial spawn	
Q 10. which is prepared by inoculating sterilized cerea	4. Saw dust spawn	WF 2377
Master Spawn	al grains/saw dust/ straw with pure culture	The state of the s
3. Volvariellaspp	2. Spawn	100
1. Master Spawn	4. Commercial spawn	
1. Master Spawn	zed cereal grains/straw/saw dust with master spawn.	127
3. Spawn	2. Volvariellaspp	and 200
Q 12. Which spawn use for Agaricus and Pleurotus m	4. Commercial spawn	AND THE RESERVE TO THE PARTY OF
1. Commercial spawn		5245 (240)
3. Grain spawn	2. Spawn 4. Master Spawn	20
Q 13. Which spawn use for Volvariellaspp	4. Master Spawn	E P
1. Master Spawn	2. Spawn	
3. Commercial spawn		10
Q 14. Saw dust spawn is use for	4. Straw spawn	The state of
1. Volvariellaspp	2 5	The state of the s
A. Lentinulaspp	2. Spawn 4. Commercial spawn	Manager
Q 15. Growth should be free from any spot in the	4. Commercial spawn	- 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
Greenish or blackish		
3. Spawn	2. Commercial spawn	AV-57
Q 16. Qualities of good spawnGrains should be fully co	4. Master Spawn	- Security
Commercial spawn	Svered with	15.
Commercial spawn	2. Volvariellaspp	en S
	- Property of the second of th	All Control

3. mycelium	4. Spawn
	es special technical skill for raising a successful crop
white button mushroom	2. Oyster mushroom
3. Button mushroom	4. Mushroom
	uires readymade food for its growth.
1. Volvariellaspp	2. None of the above
A. bisoprus	4. Pleurotus
Q 19. is defined as indefinite microbia	
1. Spawning	2. Short Method
3. Casing	4. Composting
Q 20. In this method the straw is composted with	the help of inorganic fertilizers in 28 days.
Short Method	2. Medium Method
اسجي Long method	4. None of the above
Q21 means mixing of spawn in the f	ully prepared compost
1. Casing	Spawning -2. Spawning
3. Short Method	4 Composting
Q 22. The process of covering the compost with	a thin layer of soil or soil like material after the spawn run is known as
1. Composting	-2. Casing
3. Short Method	4. Spawning
23. Maintain relative_humidity at about	4. Spawning
1. 40 to 60%	2. 50 to 90%
3. 80 to 90%	4. 60 to 80%
Q 24.Maintaintemperature at in the spaw	vning room.
1. 25°C ± 1°C	
$3-20^{\circ}C \pm 1^{\circ}C$	2. 24°C ± 3°C
25. The oyster mushroom is also called as	4. 23°C ± 5°C
1. Dhingri	2 2 2 4 4 4 4
3. Abalone	-2. Both 1 & 2
	4. None of the above
1. First	ivated mushroom in the world.
3. Third	2. Second
Q27. This group got the common name oyster m	4. Fourth
1. the tongue shaped pileus	
3. eccentric lateral stipe.	2. Both 1 & 2
	4 .None of the above
Q 28. The various methods of substrate pasteurized. Pleurotits cultivation	
	2. Steam pasteurization
3.Hot water treatment	4.Chemical pasteurization
3.Hot water treatment 29. In the substrate is exposed to steam a	at 80 C temperature for one hour.
3.Hot water treatment 29. In the substrate is exposed to steam a 1. Steam pasteurization	at 80 C temperature for one hour.
3.Hot water treatment 29. In the substrate is exposed to steam a 1. Steam pasteurization 3. Pleurotus cultivation	tt 80 C temperature for one hour. 2. Chemical pasteurization 4. Hot water treatment
3.Hot water treatment 29. In the substrate is exposed to steam a 1. Steam pasteurization 3. Pleurotus cultivation	tt 80 C temperature for one hour. 2. Chemical pasteurization 4. Hot water treatment
3.Hot water treatment Q 29. In the substrate is exposed to steam a 1. Steam pasteurization 3. Pleurotus cultivation	tt 80 C temperature for one hour. 2. Chemical pasteurization 4. Hot water treatment



K. K. Wagh Education Society's K. K. Wagh College of Agriculture,

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Department of Plant Pathology

Certificate course in 'Mushroom Production Technology' Academic Year 2021-22

Report

K.K.Wagh Education Society's K.K.WaghCollege of Agriculture, Saraswatinagar, Nashikwhich provide education in agriculture at U.G. level students. College has to decide introduce new Certificate Course in 'Mushroom Production Technology'. Total 35 students are enrolled from department of Plant Pathology. Due to this certificate course in 'Mushroom Production Technology' Students get more knowledge of different type of mushroom, Perform various methods of Harvesting & preservation of mushroom, Acquire knowledge on Study of different diseases and pests of mushroom and their management.

Course outcome

- 1. Gain awareness of historical and current perspectives of Mushroom Production.
- 2. Perform various methods of Harvesting & preservation of mushroom.
- 3. Acquire knowledge on Study of different diseases and pests of mushroom and their management.
- 4. Preparation of spawn & Cultivation of different types of mushroom.
- 5. Explore methods for Isolation, identification, maintenance and storage of pure cultures of mushrooms.
- 6. Examine the commercial aspects of Different recipies of mushroom.

Students are able to understand advance methods of Harvesting & preservation of mushroom and its application in Agriculture. It helps in improve their Isolation, identification, maintenance and storage of pure cultures of mushrooms skills and build self-confidence. Student get understand several factors which affect the mushroom production specially biotic and abiotic. This will help to improve their Problem solving skill. Students understand that different diseases and pests of mushroom and their management. Promises to be an effective alternative tool against various biotic and abiotic stresses; which has also emerged as an environment-friendly and climate resilient approach. This course also helps to motivate students to improve their entrepreneurship skill. In academic year 2021-22 Thirty Five students are enrolled for this certificate course. Course structure had been divided into theory



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and theory practical. Theory has 30 marks while theory practical has 20 marks weightage examination has been conducted for total 50 marks. Duration for this certificate course is 21/03/2022 to 26/03/2022(Total 36 hrs.). The students who successfully completed the certificate course were given a certificate as appreciation by the college.

Course coordinator is Dr. H. V. Deshmukh and member for this certificate course are, Dr. P.R. Brahmane, Prof. S.K. Ahirrao and Miss S. D. Kharat.

Course Coordinator

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PRINCIPAL

K.K. Wash Gollege of Agriculture
Sam Panchavari Mashik





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