

**Department of Botany**  
**Certificate Course in Fruits, Vegetable Processing & Mushroom**  
**Cultivation**

**Report 2020-21**

**INDEX**

<b>Sr. No.</b>	<b>Particular</b>	<b>Page No.</b>
1	Permission Letter	2
2	About the Course	3
3	Poster	4
4	Syllabus	5-7
5	Programme Schedule	8
6	Notice	9
7	List of Students Participation	10
8	Marks Bifurcation	11
9	Attendance Report	12
10	Students Grade Sheet	13
11	Sample Certificates	14-15
12	Summary Report	16
13	Photo	17

Date: 21/12/2020

To,

The Principal

Sonopant Dandekar Arts, V.S. Apte Commerce and

M.H. Mehta Science College,

Palghar.

**Subject: Proposal for Organizing Online Course in Certificate Course in Fruits, Vegetable Processing & Mushroom Cultivation**

Name of the Course: Certificate Course in Fruits, Vegetable Processing & Mushroom Cultivation

Organizer: Department of Botany

Proposed Day & Dates – Monday, 21<sup>st</sup> December, 2020

Objectives –

- To provide a comprehensive understanding of the fundamental principles of fruits and vegetables processing.
- To equip students with knowledge and hands-on skills in various processing techniques.
- To teach the importance of quality control and maintain nutritional value and ensure food safety.

Course Co-coordinator: Asso. Prof. B. N. Jaiswal

Proposed Venue: Botany Main Lab

*B.N. Jaiswal*

Proposed By

Prof. B. N. Jaiswal

Head, Department of Botany

*Approved*  
*K. L. Mehta*



Sonopant Dandekar Shikshan Mandali's

# **SONOPANT DANDEKAR ARTS, V.S. APTE COMMERCE AND M.H. MEHTA SCIENCE COLLEGE, PALGHAR**

Palghar, Dist. – Palghar, Pin – 401 404, E – Mail: sdsmcollege@yahoo.com

## **DEPARTMENT OF BOTANY**

Fruits, Vegetable Processing & Mushroom Cultivation

### **Background:**

Fruits and Vegetables Processing is designed to equip participants with the essential knowledge and skills required to in the food processing industry. Participants will gain hands-on experience through practical lab sessions ensuring the application of theoretical concepts in real-world scenarios. This course is ideal for individuals seeking to enhance their expertise in food processing, including current professionals in the industry, entrepreneurs, and those pursuing careers in food science and technology.

### **About Department**

The Department of Botany started in 2006 for UG students. For aspirants of higher students, I plant science like plant genetics, Molecular biology, plant biotechnology, plant physiology, plant pathology, plant taxonomy and plant ecology, etc. The department having the botanical garden depository herbarium and Practical lab

### **Course Aim & Objectives**

- To provide a comprehensive understanding of the fundamental principles of fruits and vegetables processing.
- To equip students with knowledge and hands-on skills in various processing techniques.
- To teach the importance of quality control and maintain nutritional value and ensure food safety.

### **Course Outcomes:**

- Food processing combines raw food ingredients to produce marketable food products.
- Such products can be easily prepared and served.
- This helps to create new employment opportunities for youth.
- This empowers rural communities with entrepreneurial skills through the production and sale of mushroom and other processed food products like Jam, Jelly and Pickles of different fruits.
- Become familiar with practical Processed Food preparation techniques.\

### **Duration**

- Total hours- 36 hrs.
- Lecture and practical work – 36 hours
- Attendance- 75% of attendance is compulsory

### **Eligibility and Fees:**

- UG & PG students
- Fees- Rs 1000/-
- Duration – 36 hours

### **Faculty**

- Prof. B.N. Jaiswal
- Asst. Prof. Asmita P. Raut
- Asst. Prof. Dakshata Patil
- Asst. Prof. Rudrakshi Raut





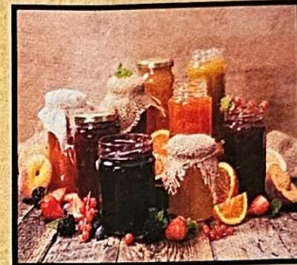
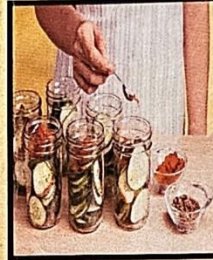
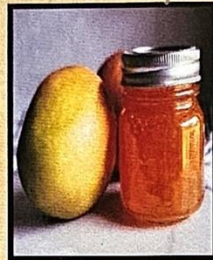
Sonopant Dandekar Shikshan Mandali's  
Sonopant Dandekar Arts, V.S. Apte Commerce &  
M.H. Mehta Science College Palghar,  
Kharekuran Rd. Palghar, Dist. Palghar, 401 404.

## Certificate Course on : Fruits, Vegetable Processing & Mushroom Cultivation

By Department of Botany

### AIM:

Food processing combines raw food ingredients to produce marketable food products that can be easily prepared and served by the consumer. This helps to create new employment opportunities for youth and to empower rural communities with entrepreneurial skills through the production and sale of mushroom.



### APPLICATIONS & CAREER PROSPECTS:

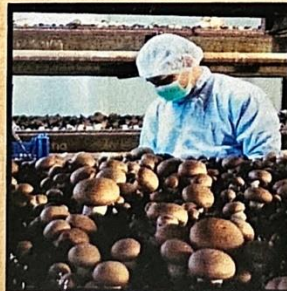
1. Cash & Profit products
2. Low investment Startup Business
3. Career in Food industry
4. Rich Market Value of Mushrooms
5. Organic Processing
6. Contribution to Livelyhood

### Registration/ Enquiry:

Dept. of Botany,  
Sonopant  
Dandekar  
College, Palghar.

Email:  
sdsmbotanydept@  
gmail.com

Mob. No.  
9730842821



### SYLLABUS MODULES:

1. Preparation of JAM from fruits
2. Preparation of JELLY from fruits
3. Preparation of PICKLES from fruits
4. Cultivation of Mushrooms

COURSE DURATION: 3 months  
COURSE FEES: 1000/-



Sonopant Dandekar Shikshan Mandali's  
**SONOPANT DANDEKAR ARTS, V.S. APTE  
COMMERCE AND  
M.H. MEHTA SCIENCE COLLEGE, PALGHAR**

Palghar, Dist. – Palghar, Pin – 401 404, E – Mail: sdscollege@yahoo.com

**DEPARTMENT OF BOTANY**

Fruits, Vegetable Processing & Mushroom Cultivation

**SYLLABUS**

**DETAILED SYLLABUS –**

**Chapter -1**

**PREPARATION OF JAM:**

- Definition of Preservative
- Types of Preservatives
- Commonly used in Fruits
- Selection of fruits
- Preparation, Production and Preservative
- Difference in between Jam and Jelly
- Theory of jell formation, failure and remedies in Jam making
- End point determination in preparation of high sugar product.
- Identify the consistency for Jam.

**Chapter- 2**

**PREPARATION OF JAM:**

- Definition of Preservative
- Types of Preservatives
- Commonly used in Fruits
- Selection of fruits
- Preparation, Production and Preservative
- Difference in between Jam and Jelly
- Theory of jell formation, failure and remedies in Jam making
- End point determination in preparation of high sugar product.
- Identify the consistency for Jam.

**Chapter- 3**

**1. PREPARATION OF PICKLE:**

• **Introduction**

The preservation of food in common salt or vinegar is known as pickling. Pickles are usually made from a mixture of vegetables and fruit.

They are eaten as a savoury, spicy accompaniment to a meal. Various kinds of pickles are made in India in large quantities both from fruits and vegetables.

In Indian pickles, mustard oil, rapeseed oil, and sesame oil are generally used.

- **Preservation**

Preservatives commonly used in making mango pickle are salt, oil and Vinegar. It is one of the most ancient methods of preserving fruits and vegetables.

- **Precautions**

Always take firm mature fruit and tender vegetable.

Use good quality spices and oil.

Do not add concentrated vinegar.

## Chapter- 4

Mushroom Cultivation:

- Phase I composting
- Phase II composting or pasteurization
- Spawning and growth
- Casing
- Pinning
- Cropping

### CULTIVATION OF MUSHROOM:

Phase	Time span	Temperature	Process(procedure)
<b>1. Phase I composting</b>	6–14 days	--	Regulate water and NH <sub>3</sub> content through microbial action.  Add fertilizer / additives
<b>2. Phase II composting or pasteurization</b>	7–18 days via composting method, ~2 hours for pasteurization (heat sterilization)	--	Reduce number of potentially harmful microbes through further composting, or apply heat sterilization.  Remove unwanted NH <sub>3</sub> .
<b>3. Spawning and growth</b>	14–21 days	24 to 27 °C (75 to 80 °F); must be above 23 °C (74 °F); for rapid growth.  Must be below 27 to 29 °C (80 to 85 °F) to avoid	Add starter culture.  Allow mycelium to grow through substrate and form a colony.  Depends on substrate dimensions and composition.



		damaging mycelia	Finished when mycelium has propagated through entire substrate layer
<b>4. Casing</b>	13–20 days	--	Promote the formation of primordia, or mushroom pins. Add a top covering or dressing to the colonized substrate. Fertilizing with nitrogen increases yields. Induces pinning
<b>5. Pinning</b>	18–21 days	--	Earliest formation of recognizable mushrooms from mycelium. Adjusting temperature, humidity and CO <sub>2</sub> will also affect the number of pins, and mushroom size
<b>6. Cropping</b>	Repeated over 7- to 10-day cycles	--	Harvest

## PROGRAMME SCHEDULE

<b>Day</b>	<b>Date</b>	<b>Topic</b>	<b>Session</b>
1	09.01.2021	Definition of Preservative Types of Preservatives Commonly used in Fruits Selection of fruits	3Hours
2	10.01.2021	Preparation, Production and Preservative Difference in between Jam and Jelly Theory of jell formation, failure and remedies in Jam making	3Hours
3	16.01.2021	End point determination in preparation of high sugar product. Identify the consistency for Jam.	3Hours
4	17.01.2021	Definition of Preservative Types of Preservatives Commonly used in Fruits Selection of fruits Preparation, Production and Preservative	3Hours
5	23.01.2021	Difference in between Jam and Jelly Theory of jell formation, failure and remedies in Jam making End point determination in preparation of high sugar product.	3Hours
6	24.01.2021	Introduction to pickling	3Hours
7	30.01.2021	Preservation Precautions	3Hours
8	31.01.2021	Phase I composting Phase II composting or pasteurization	4Hours
9	1.02.2021	Spawning and growth Casing	4Hours
10	7.02.2021	Pinning Cropping	4Hours
11	14.02.2021	Assessment	3Hours



Sonopant Dandekar Shikshan Mandali's



**SONOPANT DANDEKAR ARTS, V. S. APTE COMMERCE  
AND M. H. MEHTA SCIENCE COLLEGE**

Tal. Palghar, Dist. Palghar, Pin - 401 404.

Code.: (02525) 252163, Prin : 252317 • Resi.: 252316

website : [www.sdscollege.com](http://www.sdscollege.com) • Email: [sdscollege@yahoo.com](mailto:sdscollege@yahoo.com)

(NAAC Reaccredited 'B' Grade)

Date- 24-12-20

## NOTICE

### DEPARTMENT OF BOTANY

All the Student of UG and PG Botany is hereby informed that department of botany is arranging a certificate course on “**Fruits, Vegetable Processing & Mushroom Cultivation**” in Botany Lab from Monday, 09-01-2021.

The fee for above course is **RS. 1000/-**

After successful Completion of the Course and Examination, Participants will get Certificate from College, for more details kindly contact Department of Botany.

**Venue – Botany Lab, SDSM College**

**Prof. B.N. Jaiswal**

(Head Dept. of Botany)

# STUDENTS ENROLMENT LIST

## List of Students:

Sr. No.	Name of Students	Class
1	Vedika K. Valvi	T. Y.BSc.
2	Roshani S. Padvale	T. Y.BSc.
3	Lalita S. Bhoir	T. Y.BSc.
4	Supriya V. Gavali	M.SC
5	Darshana Maule	M.SC
6	Aditya Raut	F. Y. BSc
7	Laxmi A. Singh	S. Y. BSc
8	Hardik Patil	S. Y. BSc
9	Yuvraj N. Kamadi	S. Y. BSc
10	Jay C. Chamare	S. Y. BSc
11	Anjali A. Yadavi	T. Y.BSc
12	Utkarsha K. Mhatre	S. Y. BSc
13	Isha Thakur	S. Y. BSc
14	Gaurangi P. Katwate	T. Y.BSc.
15	Madhu G. Kale	T. Y.BSc.
16	Pradip K. Kuvare	S. Y. BSc
17	Bhushan Patil	S. Y. BSc
18	Samrudhi Shenera	S. Y. BSc
19	Surabhi Rane	S. Y. BSc
20	Sandesh Kom	S. Y. BSc
21	Rutvi Pawade	S. Y. BSc
22	Ekta Pawade	S. Y. BSc
23	Karishma Baswat	S. Y. BSc
24	Janhavi Pilankar	S. Y. BSc
25	Roshani Ghute	S. Y. BSc
26	Mayur Gavali	S. Y. BSc

## **MARKS BIFURCATION OF CERTIFICATE COURSE**

1. Online MCQS - 25 Marks (25 questions 1 Mark each)
2. Assignment work - 25 Marks

## **GRADING SYSTEM**

The breakdown of the grading system used in CBCS:

A<sup>+</sup>: 50 (Outstanding)

A: 45 (Excellent)

B<sup>+</sup>: 40 (Very good)

B: 35 (Good)

C<sup>+</sup>: 30 (Above average)

C: 25 (average)

E: 20 (Pass)

F: Below 20 (Fail)

## ATTENDANCE REPORT

	A	B	C	D	E	F	G	H	I	J	K	L	M
<b>Certificate Course in Fruits, Vegetable Processing &amp; Mushroom Cultivation 2020-21</b>													
<b>Student Attendance Sheet</b>													
Sr. No.	Name of Student	9.1.2021	10.1.2021	16.1.2021	17.1.2021	23.1.2021	24.1.2021	30.1.2021	31.1.2021	1.2.2021	7.2.2021	14.2.2021	
1	Vedika K. Valvi	A	P	P	P	P	A	P	P	P	P	P	
2	Roshani S. Padvale	P	P	P	P	P	P	P	P	P	P	A	
3	Lalita S. Bhoir	P	P	P	P	P	P	P	P	P	P	P	
4	Supriya V. Gavali	P	P	P	P	P	P	P	P	P	P	P	
5	Darshana Maule	P	P	P	P	P	A	P	P	P	P	P	
6	Aditya Raut	P	P	P	P	P	A	P	P	P	P	P	
7	Laxmi A. Singh	P	P	P	P	P	P	P	P	P	P	P	
8	Hardik Patil	P	P	P	P	P	P	P	P	P	P	P	
9	Yuvraj N. Kamadi	P	A	P	P	P	P	P	P	P	P	P	
10	Jay C. Chamare	P	P	P	P	P	P	P	P	P	P	P	
11	Anjali A. Yadavi	P	P	P	P	P	P	P	P	P	P	P	
12	Utkarsha K. Mhatre	P	P	A	P	P	P	P	P	P	P	P	
13	Isha Thakur	P	P	P	P	P	P	A	P	P	P	P	
14	Gaurangi P. Katwate	P	P	P	P	P	P	P	P	P	P	P	
15	Madhu G. Kale	P	A	P	P	P	P	P	P	P	P	P	
16	Pradip K. Kuvare	P	P	P	P	P	P	P	P	P	P	P	
17	Bhushan Patil	P	P	P	P	P	P	P	P	P	P	P	
18	Samrudhi Shenera	P	P	P	P	P	P	P	P	P	P	P	
19	Surabhi Rane	P	P	A	P	P	P	P	P	P	P	P	
20	Sandesh Kom	P	P	P	P	P	P	P	P	P	P	P	
21	Rutvi Pawade	P	P	P	P	P	P	P	A	P	P	P	
22	Ekta Pawade	P	P	P	P	A	P	P	P	P	P	P	
23	Karishma Baswat	P	P	P	P	P	P	P	P	P	P	P	
24	Janhavi Pilankar	P	A	P	P	P	P	P	P	P	P	P	
25	Roshani Ghute	P	P	P	P	P	P	P	P	P	P	P	
26	Mayur Gavali	A	P	P	P	P	P	P	P	P	P	P	



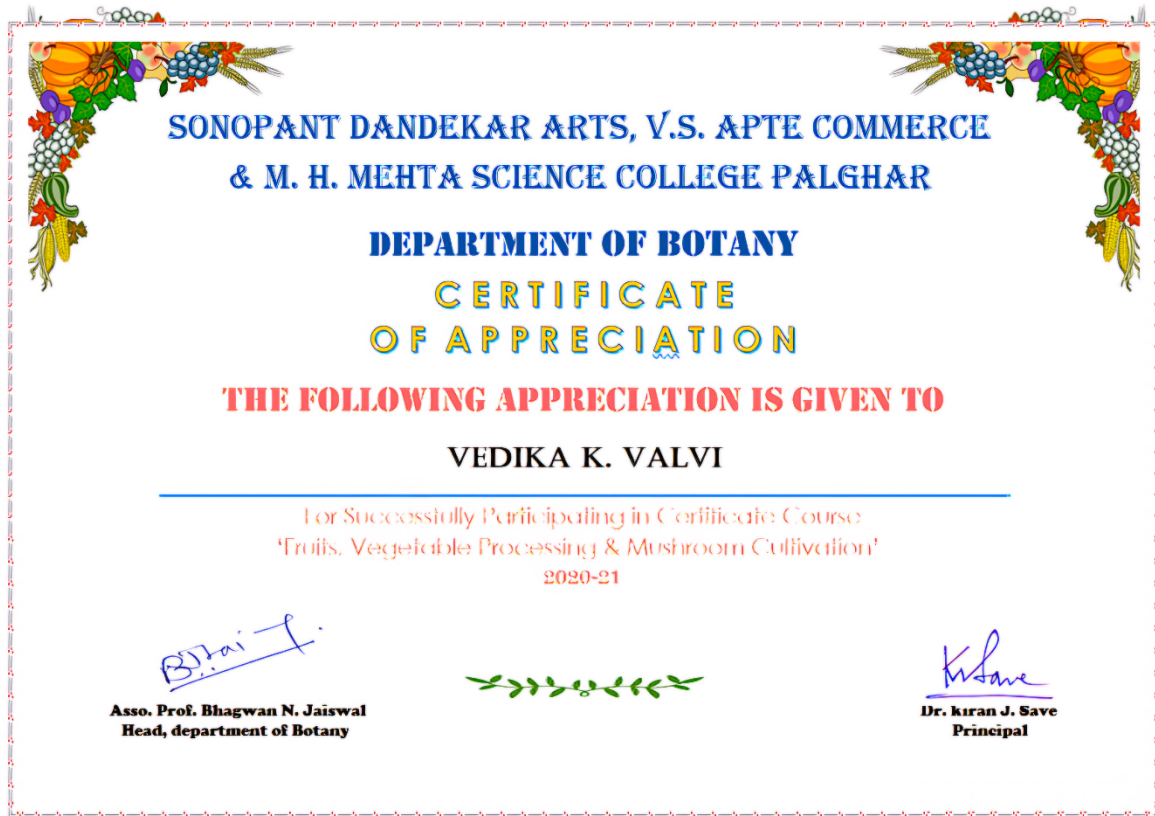
## STUDENTS GRADE SHEET

Sr. No.	Name of Student	Class	Asign.	MCQs	Total	Grade
1	Vedika K. Valvi	T. Y.BSc.	16	17	33	C+
2	Roshani S. Padvale	T. Y.BSc.	19	22	41	B+
3	Lalita S. Bhoir	T. Y.BSc.	23	23	46	A
4	Supriya V. Gavali	M.SC	24	24	48	A
5	Darshana Maule	M.SC	21	21	42	B+
6	Aditya Raut	F. Y. BSc	19	19	38	B
7	Laxmi A. Singh	S. Y. BSc	15	15	30	C+
8	Hardik Patil	S. Y. BSc	17	22	39	B
9	Yuvraj N. Kamadi	S. Y. BSc	24	23	47	A
10	Jay C. Chamare	S. Y. BSc	21	24	45	A
11	Anjali A. Yadav	T. Y.BSc	20	21	41	B+
12	Utkarsha K. Mhatre	S. Y. BSc	15	20	35	B
13	Isha Thakur	S. Y. BSc	17	16	33	C+
14	Gaurangi P. Katwate	T. Y.BSc.	22	19	41	B+
15	Madhu G. Kale	T. Y.BSc.	23	24	47	A
16	Pradip K. Kuvare	F. Y BSc	24	21	45	A
17	Bhushan Patil	S. Y. BSc	21	20	41	B+
18	Samrudhi Shenera	S. Y. BSc	20	15	35	B
19	Surabhi Rane	S. Y. BSc	16	17	33	C+
20	Sandesh Kom	S. Y. BSc	19	21	41	B+
21	Rutvi Pawade	S. Y. BSc	23	20	43	B+
22	Ekta Pawade	S. Y. BSc	24	16	40	B+
23	Karishma Baswat	S. Y. BSc	21	19	40	B+
24	Janhavi Pilankar	S. Y. BSc	19	24	43	B+
25	Roshani Ghute	S. Y. BSc	15	21	36	B
26	Mayur Gavali	S. Y. BSc	16	20	36	B

*B. J. Rai*

**Signature of the Course Convener**

# SAMPLE CERTIFICATES



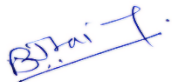
SONOPANT DANDEKAR ARTS, V.S. APTE COMMERCE  
& M. H. MEHTA SCIENCE COLLEGE PALGHAR

**DEPARTMENT OF BOTANY**  
**CERTIFICATE**  
**OF APPRECIATION**

**THE FOLLOWING APPRECIATION IS GIVEN TO**

**LALITA S. BHOIR**

For Successfully Participating in Certificate Course  
'Fruits, Vegetable Processing & Mushroom Cultivation'  
2020-21



**Asso. Prof. Bhagwan N. Jaiswal**  
Head, department of Botany



**Dr. Kiran J. Save**  
Principal

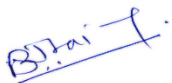
SONOPANT DANDEKAR ARTS, V.S. APTE COMMERCE  
& M. H. MEHTA SCIENCE COLLEGE PALGHAR

**DEPARTMENT OF BOTANY**  
**CERTIFICATE**  
**OF APPRECIATION**

**THE FOLLOWING APPRECIATION IS GIVEN TO**

**PRADIP K. KUVARE**

For Successfully Participating in Certificate Course  
'Fruits, Vegetable Processing & Mushroom Cultivation'  
2020-21



**Asso. Prof. Bhagwan N. Jaiswal**  
Head, department of Botany



**Dr. Kiran J. Save**  
Principal

## Summary Report

The certificate Course in Fruits, Vegetable Processing & Mushroom Cultivation was provided by the Botany Department of Sonopant Dandekar Arts College V.S. Apte Commerce College & M.H. Mehta Science College, Palghar for BSc & MSc students of Life Science college. 26 students registered and successfully completed the course. The course was conducted during the months of Jan 2020-21. The course was executed online and offline mode followed by traditional teaching method. Active participation obtained from the students in theory as well as in practical sessions.

### Course Structure:

**Duration:** 36 hours

**Format:** Lectures, discussions, Test

**Date of commencement:** 09-01-2021

**Date of completion:** 14-02-2021



