

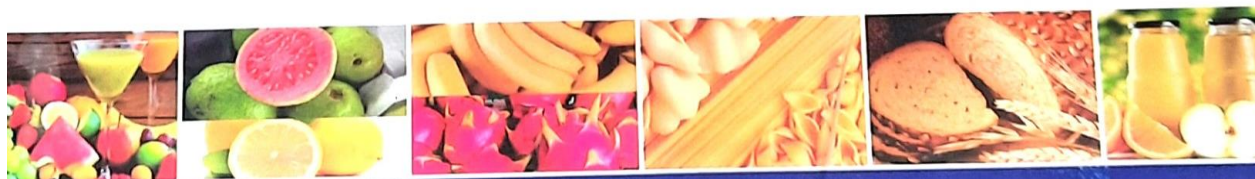
6.4 SELF-STUDY REPORT FOR THE DOCTORAL DEGREE Ph.D. (FOOD PROCESSING TECHNOLOGY) PROGRAMME (2018-19 to 2022-23)

Submitted to

Accreditation Board

Indian Council of Agricultural Research

New Delhi



College of Food Technology
Vasantrao Naik Marathwada Krishi Vidyapeeth
Parbhani - 431 402 (M.S.)

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6.4 SELF-STUDY REPORT FOR THE DOCTORAL DEGREE Ph.D (FOOD PROCESSING TECHNOLOGY) PROGRAMME

6.4.1. Brief History of the Ph.D. Programme

The College of Food Technology is one of the unique and premier constitutes college which was established in May 1976 of this University to fulfill the academic and practical aspirations of the people of Maharashtra and offering Doctoral degree programme Ph.D. (Food Technology) of three years duration since 2013. (Annexure-1: Letter describing permission for establish of UG and PG College). The nomenclature and curricula design as per the NCG recommendation upto 2021-22. As per the BSMA, the nomenclature of Ph.D. degree has been now changed to Ph.D. (Food Processing Technology) in 2022-2023.

Objectives

- 1) To assess the holistic ways for efficient utilization of resources or agri produce by owing their seasonal seasonal availability, perishability and variability.
- 2) To learn the innovative novel technologies and advancement in food processing
- 3) To render food technologist with an intellectually more skill oriented human resources
- 4) To disseminate the innovative and viable technologies for food and allied industries
- 5) To boost up and enhance the confidence of post graduates to become entrepreneur or establish start up in the field of food technology.

Accomplishment

- Revamping of post of post graduate programme in whole food technology throughout the country
- Imparting in-depth and comprehensive knowledge of the food technology and also arming the students with management skills and professional attitude.
- Development of human resources to cater the need of food processing industry, government, corporate sector and research organization in India and abroad.
- Exposure to the faculty to emphasize the need of innovation and mechanism to ensure the quality and excellence in the mandatory activity i.e. teaching, research and extension.
- More than 100 recommendations for development of various technologies for food product development.
- Serve as centre point for food entrepreneurship development in the region.

- Collaboration with State Government for planning and implementation of different programme.

Ph.D. (Food Technology) upto 2021-22 as per National Core Group

1. **Qualification** : M. Tech (Food Technology) from Agricultural University.
2. **Admission** : Entrance exam is conducted by MCAER, Pune. Selection is done on merit basis considering 70% scheme to Entrance Examination and 30% CGPA.

Intake capacity : 5 No. (Including ICAR Quota)

4. **Distribution of credits** :

Major	15 credits
Minor	8 credits
Supporting	5 credits
Seminar	2 credits
Research	45 credits
Total credits:	75 credits

PhD. (Food Processing Technology) from 2022-23 as per BSMA

Major	12 credits
Minor	6 credits
Supporting	5 credits
Seminar	2 credits
Research	75 credits
Total credits:	100 credits

6.4.2. Faculty Strength

The academic and supporting staff approved for Under Graduate Programme of B. Tech. (Food Technology) is used for Ph.D. teaching, research and extension. The faculty strength of the Degree Programme is given cadre-wise, both sanctioned and in-place as below.

Faculty strength**Table-1: Faculty strength of College of Food Technology at present in position**

Sr. No.	Post	Sanctioned	Faculty In place	Vacant	Faculty recommended by ICAR/UGC/VCI/ other regulatory bodies	Deviation (%)
1	Associate Dean and Principal	1	1	-	-	--
2	Professor	2	1	1	05	50
3	Associate Professor*	10	7*	3	10	30
4	Assistant Professor	7	3	4	23	57
Total		20	12	8	48	40

*In addition to above, Dr. V.D. Surve, Associate Professor from V.D. College of Agri-Biotechnology, Latur had been deputed to College of Food Technology, VNMKV Parbhani working as Head, conducting the Ph.D. courses of Department of Food Business Management.

b) Research staff

The faculty of food technology also involved the following research staff from AICRP and Network project ICAR New Delhi for completion of curricula of Ph.D. (Food Processing Technology) degree programme.

Table 2: Research staff involved in Ph.D. teaching

Sr. No.	Name of employee	Designation	Qualification
1	Dr. Vijaya Pawar	Principle scientist AICRP	M.Tech, Ph.D (Food Technology)
2	Dr. Pravin Ghatge	Scientist	M.Tech, Ph.D (Food Technology)

c) Adjunct faculty

The faculties from other constituted colleges from VNMKV help to complete the curricula of Ph.D. (Food Processing Technology) degree programme.

Table 3: Faculty from other constituted colleges of VNMKV

Sr. No.	Course No.	Semester	Name	Department
2	FST-623	VI (Ph.D.)	Dr. Santosh Phulari	In-charge computer cell VNMKV

College regularly organizes lecture series by experts and guest faculty to fulfil academic aspirations for various programmes.



Glimpses of Lecture Series by Experts and Guest faculty

6.4.3 Technical and Supporting Staff

The position of technical and supporting staff of degree programme are tabulated showing sanctioned, in position and vacancy staff.

Table-4: Position of ministerial staff

Sr. No.	Post	Sanctioned	In position	Vacant
1.	Section Officer	1	1	-
2.	Senior Clerk	2	2	-
3.	Junior Clerk	6	2	4
4.	Steno	1	-	1
5.	Sweeper	2	-	2
6.	Watchmen	3	1	2
7.	Peon	2	1	1
8.	Lab Peon	3	-	3
9.	Mazdoor	5	1	4
Total		25	8	17

Technical Staff

The list of technical and supporting staff is given as follows;

Table-5: Position of technical staff

Sr. No.	Post	Sanctioned	In position	Vacant
1	Senior Research Assistant	6	1	5
2	Field Assistant (T-I)	1	1	-
3	Boiler Assistant	1	-	1
4	Senior Mechanic	1	-	1
Total		9	2	7

Supporting Staff**Table-6: Position of supporting staff**

Sr. No.	Post	In position
Deputation		
1	Book Bearer (Laxman Dhage)	1
2	Mazdoor	1
Over and above		
1	Electrician	1
2	Nursery Assistant	1
Total		4

Table-7: Ministerial Staff on contract basis

Sr. No.	Name of Staff	Post
1	Mr. Narwade S. K.	Computer Operator
2	Mr. Jadhav M. L.	Computer Operator
3	Mrs. Patil S. R.	Computer Operator
4	Mr. Parsode G.K.	Driver
5	Mr. Tondge D. M.	Office Assistant
6	Mr. Ayachit N. B.	Office Assistant
7	Mr. Pulgurle S. A.	Mazdoor
8	Mrs. Deshmukh G.V.	Laboratory Assistant
9	Mr. Bansode S.N.	Mazdoor
10	Mrs. Kale P.S.	Mazdoor
11	Mr. Pawar K.P.	Wiremen
12	Mrs. Parsode M.G.	Mazdoor
13	Mrs. Bansode S.	Mazdoor

14	Mr. Maske A.B.	College Watchmen
15	Mr. Shinde L.T.	College Watchmen
16	Mr. Dure A.R.	Mazdoor
Garden Cum Maintenance staff		
1	Mr. Shinde D. B.	Mazdoor
2	Mrs. Shinde R.G.	Mazdoor
3	Mrs. Shinde M.M.	Mazdoor
4	Mrs. Bhandare L.S.	Mazdoor
5	Mrs. Karekar N.B.	Mazdoor
6	Mr. Mohite M.S.	Mazdoor
Hostel Staff (Shishir, Devgiri and Purva)		
1	Mr. Raner N.B.	Mali
2	Mr. Revanwar B.R.	Mazdoor
3	Mr. Shaikh Naseer Shaikh Meera	Watchmen
4	Mr. Dure A.R.	Mazdoor
5	Mr. Kale K.A.	Watchmen
6	Mr. Shinde P.P.	Hostel Watchmen
7	Mr. Bansode N. G.	Mazdoor
8	Mr. Ambhure D. S.	Mazdoor
9	Mr. Raner G.D.	Mazdoor
10	Mr. Shinde K.K.	Mazdoor
11	Mrs. Binde R.S.	Mazdoor
12	Mr. Shaikh Md. Rasool Sk. Burhan	Watchmen
13	Mr. Shaikh Javed Shaikh Nabi	Watchmen
14	Mr. Ambhore D.S.	Watchmen
15	Mr. Shinde K.S.	Mazdoor

6.4.4. Classrooms and Laboratories

Department wise Ph.D laboratories and equipment housed in individual laboratory in the college along with any other research unit are presented as follows:

Table 8: Classrooms in the college

Sr. No.	Classrooms	Quantity (No.)	Space (Sq. ft)	Capacity
1	Ph.D. Classroom in Dept. of Food Engineering	1	576	20
2	Ph.D. Classroom in Dept. of Food Business Management	1	624	20
3	Ph.D. Classroom in Dept. of Food Chemistry and Nutrition	1	390	20

Considering high capacity of classrooms and laboratories 1 batch is conducted for all theory and practical.

Laboratories in the college**Table-9. Laboratories in the college**

Sr. No.	Laboratory
1	Ph.D. Laboratory of Dept. of Food Chemistry and Nutrition
2	Ph.D. Laboratory of Dept. of Food Microbiology and Safety
3	Ph.D. Laboratory of Food Process Technology
4	Ph.D. Laboratory of Food Engineering
5	Niche Area Laboratory
6	Arid Legumes Research Laboratory

Department of Food Process Technology

Food Process Technology is a major department of Food Technology equipment with sufficient laboratories for carrying out experiments pertaining to fruits and vegetables preservation and processing, cereal processing, legumes processing, animal product technology and number of experiments pertaining to preservation and quality evaluation of different food products.

Table-10: Laboratories of Department of Food Process Technology

Sr. No.	Name of the Laboratory	Length	Breadth	Area
		(m)	(m)	(Sq.m)
1	Laboratory No. 2 (Quality Control Laboratory)	9.8	6.5	64
2	Laboratory No. 3	9.85	6.5	64
3	Laboratory No. 5 (Fruit and Vegetable Laboratory)	6.5	4.9	32
4	Laboratory No. 4	9.85	4.8	48
5	Laboratory No. 8	9.8	6.5	64
6	Instrumentation Room	3.4	3.3	11

Department of Food Engineering

Department of Food Engineering fulfils the aspiration for inculcating engineering skills amongst the students. It is well equipped with different equipment's, models and laboratories.

Table-11: Laboratory of Food Engineering

Sr. No.	Name of the Laboratory	Length	Breadth	Area
		(m)	(m)	(Sq.m)
1	Food Engineering Laboratory No. 3	9	7.1	64

Department of Food Chemistry and Nutrition

Department of Food Chemistry and Nutrition is operative and fulfilled with enough laboratories, equipment and expert faculty to carry out research and practical work.

Table-12: Laboratories of Department of Food Chemistry and Nutrition

Sr. No.	Name of the Laboratory	Length	Breadth	Area
		(m)	(m)	(Sq.m)
1	Laboratory No. 1 (Analytical Laboratory)	14.40	10.70	154
2	Instrumentation Room	10.75	7.22	76
3	Sophisticated Instrument Laboratory	7.10	3.55	25

Department of Food Microbiology and Safety

Department of Food Microbiology and Safety is equipped with sufficient equipment and laboratories for learning, understanding and research pertaining to food safety and microbiology.

Table-13: Laboratories of Department of Food Microbiology and Safety

Sr. No.	Name of the Laboratory	Length	Breadth	Area
		(m)	(m)	(Sq.m)
1	Food Safety Laboratory	7.50	7.10	53
2	PG Laboratory	8.96	7.05	63
3	Inoculation Chamber	4.80	3.42	16

Niche Area and analytical Laboratory

The College of Food Technology is having State-of-Art Laboratory (Niche Area Laboratory and analytical facilities) which is equipped with high end sophisticated equipment and machineries.

Table-14: Niche Area and analytical Laboratory

Sr. No.	Name of the Laboratory	Length	Breadth	Area
		(m)	(m)	(sq.m)
1.	Niche Area Laboratory	20	6.4	128
1.	Analytical lab under Common Incubation Centre	3.5	5	17.5

Recently in 2023-24 sophisticated analytical equipment lab is established under Common Incubation Centre, under PMFME MOFPI, New Delhi.

Arid Legumes Research Laboratory

The laboratory established under AICRP is extensively used for PG and Ph.D. research purpose.

Table-15: Arid Legumes Research Laboratory

Sr. No.	Name of the Laboratory	Length	Breadth	Area
		(m)	(m)	(Sq.m)
1	Laboratory No. 1 (Analytical Laboratory)	14.40	10.70	154

Equipment available in College of Food Technology, VNMKV, Parbhani**Table-16: Equipment available in College of Food Technology**

Sr. No.	Name of equipment
1	Bernoulli's Theorem Apparatus
2	BOD Incubator
3	Bomb Calorimeter
4	Cryogenic Centrifuge Unit
5	Cryogenic Mixer Mill
6	Digital Colony Counter
7	Digital Turbidity Meter
8	Digital Water Bath
9	Freeze Drier
10	HPLC High-Performance Liquid Chromatography
11	Infra-Red Digestion Unit
12	Infra-Red Moisture Meter
13	Infra-Red Steam Distillation Unit
14	Lab Scale Fermenter
15	Metacentric Height Apparatus
16	Micro-Kjeldahl Steam Distillation Unit
17	Modified Atmospheric Chamber
18	Orbital Shaking Incubator
19	Phase Contrast Fluorescent Microscope
20	Refrigerated Centrifuge
21	Reynolds No. Apparatus
22	Spray Drier
23	Texturometer (TPA)
24	Ultrasonic Auto mixer
25	UVS Double Beam Spectrophotometer
26	UVS Single Beam Spectrophotometer
27	Vacuum Concentrator
28	Cold Storage
29	3D Printer
30	Fiber analyzer
31	Vacuum oven
32	Sensitive balance sartorius

33	Water activity meter with moisture meter
34	Rotary evaporator
35	Digital hand-held pH meter
36	Brix-acidity meter
37	Salt meter
38	Frying oil monitor
39	Portable refracto polarimeter
40	Deep freezer
41	Dehumidifier
42	Environmental control chamber
43	Digital thermo hygrometer
44	Digital micrometer



Quality Control Laboratory



Analytical Laboratory

6.4.5. Conduct of Practical and Hands-on-Training

Ph.D. (Food Technology) programme includes Practical in curricula enriching students with Practical skills. Moreover, subjects like Food Analysis and Microbiology are given special attention to make student acquaint with the practical skills.

It is also compulsory for the students to subject their dissertation for programmes which include vigorous research activities thereby strengthening the practical skills in students.



Ph.D. Laboratory

6.4.6. Supervision of students in PhD programmes

Number of students supervised by Faculty in Ph.D. programme is presented as follows:

Table-17: Number of Students supervised for Ph.D. Programme

Name of guide	Designation	No. of students supervised in Ph. D programme				
		2018-19	2019-20	2020-21	2021-22	2022-23
Dr. R.B. Kshirsagar	Professor, College of Food Technology, VNMKV, Parbhani	1	1	1	1	1
Dr. A.R. Sawate	Professor, College of Food Technology, VNMKV, Parbhani	2	1	---	---	---
Prof. D.R. More	Associate Professor, College of Food Technology, VNMKV, Parbhani	1	1	1	1	---
Prof. H.W. Deshpande	Associate Professor, College of Food Technology, VNMKV, Parbhani	1	1	1	1	1
Dr. V.S. Pawar	Associate Professor, College of Food Technology, VNMKV, Parbhani	---	1	1	1	1
Dr. K.S. Gadhe	Associate Professor, College of Food Technology, VNMKV, Parbhani	1	---	1	1	1
Dr. B. S. Agarkar	Associate Professor, College of Food Technology, VNMKV, Parbhani	---	---	---	1	---
Dr. V.D. Surve	Associate Professor, College of Food Technology, VNMKV, Parbhani	---	---	---	---	1
Total		6	5	5	5	5

Table-18: Number of qualified faculty in relation to intake of Ph.D. students

Ph.D.		
No. of Students	No. of Guide	Ratio (Students: Guide)
5	5	1:1

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)**Mechanism of feedback**

- College has well defined feedback mechanism of different stakeholders i.e., students, parents, industries, employers and farmers.
- Suggestions/complaint box is placed near ADP office so that students can unanimously give their feedback to the authorities regarding availability of infrastructure and any other thing to be creating academic atmosphere.
- Regular students-parents meet along with advisors of the students are organized to take feedback from the parents.
- The college is regularly arranging the lecture series and alumini meet of pass out successful alumini students
- Employees are encouraged to give their feedback during monthly meetings conducted by the authorities.
- Farmers and other stakeholders like women self-help group, youth entrepreneur etc. give their suggestions and also get the advice from the food technologist or experts through the individual visits and also official correspondence.
- **The feedback obtained is enclosed in annexure-IV for necessary perusal.**

Table 19: Records of student's feedback during last five year

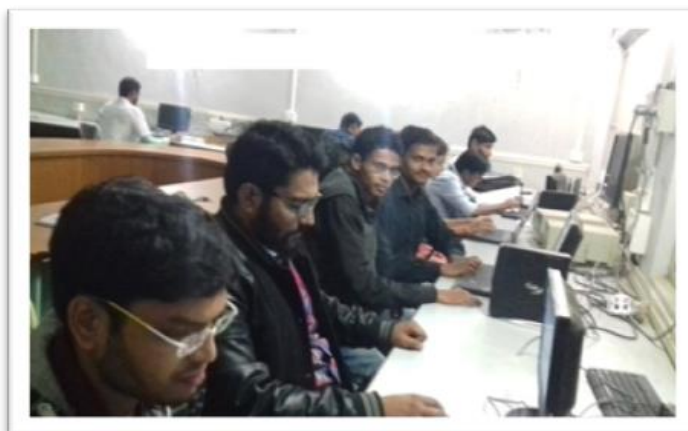
Sr. No.	Name	Mode of communication	Date	Concern	Action taken
1	Thorat P.P	Letter	03/02/2019	RO to be repaired	RO repaired
2	Mane R.P	Social media	05/03/2019	Solar not working	Checked and fault detected
3	Lolge R.M.	Discussion	10/12/2020	Suggested that departments should have wider net connectivity	Wi-Fi router was installed in department
4	Gaikwad G.P	Discussion	11/01/2023	Replacement of existing pipeline system in hostel	New pipeline system was installed to avoid leakage

6.4.8. Student intake and attrition in the programme for last five years**Ph.D. (Food Tech)****Table-20: Student intake and attrition in the Ph.D. programme for last five years**

Sr. No.	Year	Actual student admitted in last five years	Students Attrition	% Attrition
1.	2018-19	07 (With in-service-02)	01	14.2
2.	2019-20	05	01	20.00
3.	2020-21	05	00	00
4.	2021-22	05	00	00
5.	2022-23	05	00	00

6.4.9. ICT Application in Curricula Delivery

The use of ICT application is an integral part of teaching course curricula by using power point presentation, interactive boards, practical by using concerned software programme. Similarly the student ABC (Academic Bank of Credits), Digilocker system and creation of USID are also extensively used in educational system.



The College of Food Technology, Vasantao Naik Marathwada Krishi Vidyapeeth, Parbhani has established two smart class rooms with audio-video system able them to inculcate the concept of “Show me and I understand” for better comprehensive understanding of students. The innovative and effective use of ICT technology results in transforming the way teachers “teaching” and effective student “learning” in this college. One seminar hall has been equipped with LED projector with sound system and one interactive projector. The smart class rooms tools i.e. audio-visual aids reveals to be more appealing for the students. This ICT methods of teaching and learning help in turn to make students able to good communicators for resolving their difficulty at place.

The smart class room is well equipped with various required tools such as Desktop and Laptop are well equipped with educational and research software in language lab, Document Camera/Visualize, Interactive White Board, Interactive Projector, LCD Projector, Digital Camera, Big Interactive LED/LCD Panels, Multimedia Pens/Stylus, Wireless Microphone for Convenience, Digital Podium, Software program for language lab etc.

Certificate

I, **Prof. Dr. R.B. Kshirsagar**, Dean, College of Food Technology, VNMKV, **Parbhani** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.



Dean
College of Food Technology
VNMKV, Parbhani