



Activities and Achievements

GENESIS:

The Department of Post Harvest Technology (PHT) was established during 2004 under ASPEE College of Horticulture, NAU, Navsari. The department teaches undergraduate courses in Horticulture and offers post graduate programs supported by well-trained faculties. At present two years M.Sc. and three years Ph.D. degree programmes are running in the Department of Post Harvest Technology. These degree programmes are formulated for developing competent Human Resource for which significant job opportunities exist in this country. With the advancement in production technology, the high yield / area of crops lead to large amount of marketable surplus of food grains, fruits and vegetables and crop residues, demanding appropriate post harvest handling, processing, preservation, storage, marketing and utilization. The development of food processing industries to preserve the perishable agricultural produce will not only improve economic and nutritional status of our population but also it may help in employment generation in rural as well as urban areas of the country. This can be achieved by linking production and post-harvest technology in a synergistic way. For this purpose, the department is equipped with excellent Fruit and Vegetable Processing Units for pilot scale testing of technologies, providing in-plant training and imparting community canning service to the students, farmers and entrepreneurs.

ACADEMIC ACTIVITIES:

List of Courses offered by the Department for under Graduate Programme (As per 5th Dean's Committee)

| B.Sc. (Hons.) Horticulture | | | | | |
|--|------|-------------|---|----------------|--|
| S.N. | Sem. | Course Code | Title | Credit hrs. | Faculty |
| 1. | I | PHT-1.1 | Fundamentals of Food & Nutrition | 2 (1+1) | Dr. J. M. Mayani |
| 2. | I | BSC-1.3 | Introductory Microbiology | 2 (1+1) | Dr. H. G. Suthar |
| 3. | I | SSC 1.1 | Information and Communication Technology | 2 (1+1) | Dr. F. M. Sahu (Practical) |
| 4. | V | PHT-5.2 | Postharvest Management of Horticultural Crops | 3 (2+1) | Dr. A. K. Senapati/ Dr. F. M. Sahu |
| 5. | VI | PHT-6.3 | Processing of Horticultural Crops | 3 (1+2) | Dr. A. K. Senapati |
| Sub-Total | | | | 11(5+6) | |
| B.Sc. (Hons.) Forestry and B.FSc. (Hons.) Fisheries | | | | | |
| 6. | I | BSH-1.1 | Information and Communication Technology (Forestry) | 2(1+1) | Dr. F. M. Sahu / Dr. A. K. Senapati |
| 7. | II | BSH-2.5 | Basic mathematics (Forestry) | 2(2+0) | Dr. F. M. Sahu |
| 8. | II | FENG-204 | Refrigeration and Equipment Engineering (Aquaculture Engineering, BFSc) | 3(2+1) | Dr. P. S. Pandit |
| 9. | II | FPT-201 | Fish Freezing Technology (Aquaculture Engineering, BFSc) | 2(1+1) | Dr. P. S. Pandit |

| | | | | | |
|---|------|----------------|--|-------------------|---|
| 10. | II | FPT-202 | Fish Packaging Technology (Fish Processing Technology, B.FSc.) | 2(1+1) | Dr. P. S. Pandit |
| 11. | II | FPT-204 | Fish Canning Technology (Fish Processing Technology, B.FSc.) | 3(2+1) | Dr. P. S. Pandit |
| 12. | VIII | BSH -8.11 | Agricultural Informatics (Forestry) | 2(1+1) | Dr. A. K. Senapati/ Dr. F. M. Sahu |
| Sub-Total | | | | 16 (10+6) | |
| STUDENT READY-I: Experiential Learning Programme (ELP) | | | | | |
| 13. | VII | HWE-7.3 | Post harvest handling and value addition in Horticultural Crops | 10 (0+10) | |
| | | HWE-7.3.1 | Preparation and evaluation of processed products | 6 (0+6) | Dr. N. V. Patel Dr. A. K. Senapati Dr. F. M. Sahu |
| | | HWE-7.3.2 | Packaging and Marketing of processed products | 4 (0+4) | Dr. P. S. Pandit |
| STUDENT READY-II: Rural Horticultural Work Experience (RHWE) | | | | | |
| 14. | VIII | HWE-8.1 | Visit to progressive farmer's field and NGO | 2 (0+2) | Dr. P.S. Pandit Dr. H.P. Shah Dr. A.K. Pandey |
| 15. | VIII | RHWE-8.2 | Educational Tour | 2 (0+2) | Dr. A.K. Leua Dr. A.K. Senapati Dr. Tulsi D. Gurjar Dr. P. K. Chaudhari |
| 16. | VIII | RHWE-8.6 | University farms (NAU) and private horticultural field visit of South Gujarat region | 4 (0+4) | Dr. P.S. Pandit Dr. H.P. Shah Dr. A.K. Pandey |
| Sub-Total Student Ready | | | | 8 (0+8) | |
| Grand Total | | | | 35 (15+20) | |

**List of Courses offered by the Department for Post Graduate Programme
(As per BSMA Committee)**

| M.Sc. Horticulture- Post Harvest Management | | | | | |
|--|------|-------------|--|-------------|--|
| S.N. | Sem. | Course Code | Title | Credit hrs. | Faculty |
| 1. | Odd | PHM-501* | Post Harvest Management of Horticultural Produce | 3 (2+1) | Dr. N. V. Patel |
| 2. | Even | PHM-502* | Post harvest Physiology and Biochemistry of Perishables | 3 (2+1) | Dr. J. M. Mayani |
| 3. | Odd | PHM-503 | Packaging and Storage of Fresh Horticultural Produce | 2(1+1) | Dr. P. S. Pandit |
| 4. | Even | PHM-504 | Packaging and Storage of Processed Horticultural Produce | 2 (1+1) | Dr. A.K. Senapati & Dr. N. V. Patel |
| 5. | Odd | PHM-505* | Principles and Methods of Fruit and Vegetable Preservation | 3 (2+1) | Dr. Dev Raj |
| 6. | Even | PHM-506 | Laboratory Techniques in Post Harvest Management | 3 (1+2) | Dr. H.G. Suthar & Dr. F. M. Sahu |
| 7. | Odd | PHM-507* | Processing of Horticultural Produce | 4 (2+2) | Dr. A.K. Senapati |
| 8. | Even | PHM-508 | Quality Assurance, Safety and | 3 (2+1) | Dr. P. S. Pandit |

| | | | | | |
|--------------------------------------|--------------|-----------|---|--------------|-------------------------------------|
| | | | Sensory Evaluation of Fresh and Processed Horticultural Produce | | |
| 9. | Odd | PHM-509 | Functional Foods from Horticultural Produce | 2 (2+0) | Dr. J. M. Mayani |
| 10. | Even | PHM-510 | Marketing and Entrepreneurship in Post Harvest Horticulture | 2 (1+1) | Dr. A.K. Senapati & Dr. N. V. Patel |
| 11. | Odd | PHT-591 | Master's Seminar | 1 (0+1) | PG Guide |
| 12. | Even/ Odd | PHT-599 | Master's Research (Major Subject) | 30(0+30) | PG Guide |
| 13. | Even | VSC-514 | Post Harvest Management of Vegetable Crops | 3 (2+1) | Dr. N. V. Patel |
| 14. | Even | PSMA-506* | Processing of Plantation Crops, Spices, Medicinal and Aromatic Plants | 3 (2+1) | Dr. N. V. Patel |
| 15. | Odd | ABM-518 | Food technology and processing management | 2 (2+0) | Dr. N. V. Patel |
| 16. | Even | PHT-502 | Fundamentals principles of fruits and vegetables | 2 (1+1) | Dr. A.K. Senapati |
| 17. | Odd | PHT-503 | Laboratory Analysis and Quality Assurance Techniques of Fresh & Processed Horticultural Produce | 2 (1+1) | Dr. H.G. Suthar |
| 18. | Even | PHT-504 | Sensory Analysis of Fresh and Processed Horticultural Product | 2 (1+1) | Dr. P. S. Pandit |
| 19. | Odd | PHT-505 | Pre harvest practices affecting Post harvest life of perishable horticultural produce. | 2 (2+0) | Dr. A.K. Senapati |
| 20. | Odd | PHT-509 | Packaging of perishable horticulture produce | 2 (1+1) | Dr. P. S. Pandit |
| 21. | Even | PGS-503 | Intellectual property and its management in Agriculture (ACH) | 1 (1+0) | Dr. A.K. Senapati |
| 22. | Even | PGS-503 | Intellectual property and its management in Agriculture (College of Forestry) | 1 (1+0) | Dr. A.K. Senapati |
| 23. | Even | MICRO-503 | Microbial Genetics (Agriculture) | 3 (2+1) | Dr. H. G. Suthar |
| 24. | Odd | MICRO-591 | Master's Seminar (Agriculture) | 1 (1+0) | Dr. H. G. Suthar |
| *Compulsory | | | | Total | 58 (25+33) |
| COMPULSORY NON-CREDIT COURSES | | | | | |
| | Even | PHT-512* | In-Plant Training | NC | Dr. Dev Raj |

| Ph.D. Horticulture- Post Harvest Management | | | | | |
|--|------|-------------|--|-------------|-------------------------------------|
| S.N. | Sem. | Course Code | Title | Credit hrs. | Faculty |
| 1. | Odd | PHM-601** | Ripening and Senescence of Fruits and Vegetables | 2 (1+1) | Dr. N. V. Patel |
| 2. | Even | PHM-602** | Recent Trends in Food Preservation | 2 (1+1) | Dr. Dev Raj |
| 3. | Odd | PHM-603 | Management and Utilization of Horticultural Processing Waste | 3 (3+0) | Dr. H.G. Suthar |
| 4. | Even | PHM-604** | Supply Chain Management of Perishables | 2 (2+0) | Dr. P. S. Pandit |
| 5. | Odd | PHM-605 | Export Oriented Horticulture | 1 (1+0) | Dr. J. M. Mayani |
| 6. | Even | PHM-606 | Food Additives | 2 (1+1) | Dr. A.K. Senapati & Dr. N. V. Patel |
| 7. | Odd | PHM-607 | Advances in Processing of Plantation, Spices, Medicinal and | 3 (3+0) | Dr. N. V. Patel & Dr. A.K. Senapati |

| | | | | | |
|---------------------|--------------|----------|--|--------------------|------------------|
| | | | Aromatic Plants | | |
| 8. | Even | PHM-608 | Value Addition in Ornamental Crops | 2 (1+1) | Dr. J. M. Mayani |
| 9. | Even/ Odd | PHT-691 | Doctoral Seminar- I | 1 (0+1) | PG Guide |
| 10. | Even/ Odd | PHT-692 | Doctoral Seminar- II | 1 (0+1) | PG Guide |
| 11. | Even/ Odd | PHT-699 | Doctor's Research (Major Subject) | 75 (0+75) | PG Guide |
| 12. | Even | FSC- 604 | Advanced Lab. Techniques | 3 (1+2) | Dr. H. G. Suthar |
| 13. | Even | VSC- 608 | Advanced Lab. Techniques for Vegetable crops | 3 (1 + 2) | Dr. H. G. Suthar |
| **Compulsory | | | Total | 100 (15+85) | |

Practical Manuals Published

| Sr. No. | Course No. | Title of the Course | Academic Year |
|---------|------------|---|----------------------------|
| 1. | PHT 2.1 | Fundamentals Food Science and Technology | 2012-13 & 2014-15 |
| 2. | PHT 1.1 | Fundamentals Food and Nutrition | 2017-18 |
| 3. | PHT 5.2 | Post Harvest Management of Horticultural Crops | 2010-11, 2013-14 & 2015-16 |
| 4. | PHT 6.3 | Processing of Horticultural Crops | 2017-18 |
| 5. | BSC 1.3 | Introductory Microbiology | 2017-18 |
| 6. | FENG-204 | Refrigeration and Equipment Engineering | 2019-20 |
| 7. | FPT-201 | Fish Freezing Technology | 2019-20 |
| 8. | FPT-202 | Fish Packaging Technology | 2019-20 |
| 9. | FPT-301 | Fish Canning Technology | 2019-20 |
| 10. | PHT 5.2 | Post Harvest Management of Horticultural Crops (As per 5 th Dean's Committee) | 2021-22 |
| 11. | PHT 6.3 | Processing of Horticultural Crops (As per 5 th Dean's Committee) | 2021-22 |

Activities under ELP

OBJECTIVES:-

1. To impart orientation for project formulation to establish processing plant.
2. To impart training on processing and value addition for development of entrepreneurship skills in students for self employment.
3. To train the students for quality evaluation of the processed products.
4. To work out economics and breakeven point of processed products.

| Model Name: HWE 7.3 - Post harvest handling and value addition in Horticultural Crops | | |
|---|----------|------------------------|
| Year | Students | Revenue Generated (Rs) |
| 2011-12 | 10 | - |
| 2012-13 | 10 | - |
| 2013-14 | 11 | 89225 |

| | | |
|---------|----|--------|
| 2014-15 | 18 | 297255 |
| 2015-16 | 22 | 412355 |
| 2016-17 | 16 | 448930 |
| 2017-18 | 29 | 574085 |
| 2018-19 | 19 | 428148 |
| 2019-20 | 18 | 360726 |
| 2020-21 | 25 | 100210 |
| 2021-22 | 43 | 93110 |
| 2022-23 | 44 | 296895 |
| 2023-24 | 42 | 350190 |



Tomato ketchup processing

Mango nectar processing

Banana wafers

ELP 2021-22



Aloe vera processing

Mushroom drying

Mango squash

ELP 2022-23



Drumstick/Moringa leaves drying

Guava nectar

Karonda pickle preparation

ELP 2023-24

**Number of students awarded degree since commencement of
PG programme in the Department**

| M.Sc. Horticulture/M.Tech (PHTPE) | Ph. D. Horticulture |
|--|---------------------|
| 66 (M.Sc.) + 5 (M. Tech PHTPE) = 71 | 16 |

**Year wise PG student admitted and awarded degree since commencement of
PG programme in the Department**

| Year | M.Sc. Horticulture (PHT) | | Ph. D. Horticulture (PHT) | | M.Tech. (PHTPE) | |
|--------------|--------------------------|------------------|---------------------------|-----------|-----------------|-----------|
| | Admitted | Awarded | Admitted | Awarded | Admitted | Awarded |
| 2004 | 04 | | | | | |
| 2005 | 00 | | | | | |
| 2006 | 05 | 02 | 1 | | | |
| 2007 | 06 | 02 | 1 | | | |
| 2008 | 03 | 04 | 1 | | | |
| 2009 | 04 | 07 | 2 | 2 | | |
| 2010 | 01 | 03 | 0 | 0 | | |
| 2011 | 03 | 04 | 1 | 1 | | |
| 2012 | 01 | 01 | 2 | 1 | 2 | |
| 2013 | 06 | 03 | 0 | 1 | 3 | |
| 2014 | 04 | 01 | 2 | 0 | | 1 |
| 2015 | 04 | 06 | 1 | 0 | | 4 |
| 2016 | 02 | 04 | 1 | 2 | | |
| 2017 | 03 | 04 | 1 | 2 | | |
| 2018 | 05 | 02 | 2 | 1 | | |
| 2019 | 03 | 03 | 0 | 1 | | |
| 2020 | 05 | 05 | 1 | 0 | | |
| 2021 | 07 | 03 | 0 | 4 | | |
| 2022 | 08 | 05 | 0 | 0 | | |
| 2023 | 06 | 07 | 2 | 01 | | |
| 2024 | In Process | 08 (expected) | In Process | - | | |
| Total | 80 | 74 | 18 | 16 | 05 | 05 |

PG students enrolled in Doctoral Programme (2021-22, 2022-23 and 2023-24)

| S.N. | Reg. No. | Name of Student | Title of the Research Programme | Major Guide | Year of enrollment |
|------|------------|--------------------------|--|-------------|--------------------|
| 1 | 1020223005 | Mandalik Ganesh Bheemrao | Standardization of protocols for preparation of nutraceuticals from noni (<i>Morinda citrifolia</i> L.) juice | Dr. Dev Raj | 2023 |
| 2. | 1020223010 | Sangamesh | Preparation of Innovative Value added Products from Mango (cv. Kesar) and its Waste Utilization | Dr. Dev Raj | 2023 |

PG students enrolled in Master Programme (2022-23 and 2023-24)

| Sr. No. | Registration No. | Name of Student | Title of the research programme | Major Guide | Year of enrollment |
|---------|------------------|--|---|--------------------|--------------------|
| 1. | 2020222002 | Koradiya Niraleeben Nileshbhai (4 th Sem.) | Utilization of bottle gourd (<i>Lagenaria siceraria</i> L.) for preparation of value added products | Dr. Dev Raj | 2022 |
| 2. | 2020222012 | Patel Unnatiben Sureshbhai (4 th Sem.) | Development and quality evaluation of pumpkin flour based biscuit | Dr. A. K. Senapati | 2022 |
| 3. | 2020222023 | Virani Jenish Pravinbhai (4 th Sem.) | Standardization of technology for preparation of freeze dried jackfruit slices | Dr. A. K. Senapati | 2022 |
| 4. | 2020222025 | Zala Harshvardhan Takhatsinh (4 th Sem.) | Standardization of process for preparation of dried chips from Elephant foot yam (<i>Amorphophallus paeoniifolius</i>) | Dr. N. V. Patel | 2022 |
| 5. | 2020222019 | Thakarya Devyaniben Zinabhai (4 th Sem.) | Standardization of blended jam using red dragon fruit (<i>Hylocereus polyrhizus weber</i> (Britton & Rose)) and red guava (<i>Psidium guajava</i> L.) | Dr. S. L. Sangani | 2022 |
| 6. | 2020222024 | Trivedi Yashkumar (4 th Sem.) | Utilization of green banana (<i>Musa paradisiaca</i> L.) flour for preparation of sugar substituted cookies | Dr. P. S. Pandit | 2022 |
| 7. | 2020222032 | Siraparapu Dhana Lakshmi (4 th Sem.) ICAR Student | Drying of dragon fruit (<i>Hylocereus undatus</i>) pulp into powder by using spray dryer | Dr. J. M. Mayani | 2022 |
| 8. | 2020222031 | Rajamegan R. (4 th Sem.) ICAR Student | Optimization of extraction process and characterization of pectin from Kesar mango peel | Dr. P. S. Pandit | 2022 |
| 9. | 2020223007 | Chaudhary Bharatkumar Gajabhai (2 nd Sem.) | Development of extruded products by using elephant foot yam powder. | Dr. N. V. Patel | 2023 |
| 10. | 2020223017 | Movaliya Krinal Bhupatbhai (2 nd Sem.) | Studies on preparation of Dragon fruit and guava blended nectar | Dr. S. L. Sangani | 2023 |
| 11. | 2020223018 | Nila B Nair (2 nd Sem.) ICAR Student | Utilization of greater yam for preparation of noodles | Dr. N. V. Patel | 2023 |
| 12. | 2020223020 | Panchal Yash Dipeshbhai (2 nd Sem.) | Production, extraction and characterization of microbial pigments using dragon fruit plant waste | Dr J. M. Mayani | 2023 |
| 13. | 2020223026 | Patel Ranil Rajeshbhai (2 nd Sem.) | Standardization of formulation for preparation of fruit bar from dragon fruit and guava | Dr. S. L. Sangani | 2023 |
| 14. | 2020223028 | Ramani Ishan Manojbhai (2 nd Sem.) | Standardization of protocol for preparation of carbonated sapota beverage | Dr Dev Raj | 2023 |

Post Graduate Students who have cleared NET in the Discipline of Post Harvest Technology

| Sr. No. | Name | Year |
|---------|---|------|
| 1. | Chirag S. Desai (04-00011-2004) (Horticulture) | 2010 |
| 2. | Jilen M. Mayani (04-0265-2006)(Horticulture) | 2010 |
| 3. | Patel NiketakumariBhikhubhai (04-0376-2007) (Horticulture) | 2010 |
| 4. | Arbat Shakti Sahebrao(04-0361-2007) (Horticulture) | 2011 |
| 5. | SanganiSandeepkumar L. (04-0383-2007) (Horticulture) | 2011 |
| 6. | Nazaneen N. Shaikh (04-1343-2012) (Fruit Science) | 2015 |
| 7. | VaghashiyaJaysukhbhai M.(1020215013) (Vegetable Science) | 2016 |
| 8. | Chethan Prasad HP (2020213007) (PHT)- SRF | 2016 |
| 9. | Tanveer Ahmad Qadeer Ahmad (1020214015) (Fruit Science) | 2016 |
| 10. | Bhatt Zalakben K. (2020217004) (Vegetable Science) | 2019 |
| 11. | Raghavendra H. R. (2020217028) (PHT)-SRF | 2019 |
| 12. | Naik Poojaben Rajeshbhai (1020218008) (Vegetable Science) | 2021 |
| 13. | Mehul Maganbhai Gohil (1020220006) (Fruit Science) | 2021 |
| 14. | Vasantha S V (Reg. No. : 2020221042) in Vegetable Science | 2023 |

Medalist Students of the Department



| Sr. No. | Name of student | Year |
|---|---|------|
| ASPEE Foundation Gold Plated Silver Medal M. Sc. Horticulture | | |
| 1. | Patel NiketakumariBhikhubhai (M.Sc) | 2011 |
| 2. | NazaneenNazeerahammad Shaikh (M. Sc) | 2015 |
| 3. | LavanyaTehsildar(2020214019 -M.Sc. PHT) | 2017 |
| 4. | Madhusudan R. (2020216014 MSc. PHT) | 2019 |
| Kalptaru Gold plated silver medal for quality research work related to Banana pseudostem in the subject of PHT | | |
| 1. | Raghavendra H. R (2020217028-M.Sc.) | 2021 |
| 2. | Sushmitha M. B. (2020218046 M.Sc.) | 2022 |
| Best thesis award (Gold medal) on the basis of rating of the thesis (January 2019) | | |
| 1. | LavanyaTehsildar (2020214019 -M.Sc.) | 2019 |
| ASPEE Foundation Gold Plated Silver Medal for Ph. D. Horticulture | | |
| 1. | Arbat Shakti Sahebrao (Ph.D.) | 2014 |



Ms. LavanyaTehsildar (2020214019 -M.Sc.)
Recipient of Vice-chancellor Gold medal for best thesis
14th annual convocation (January 2019)



Raghavendra H. R (2020217028-M.Sc.)
Kalptaru Gold plated silver medal for quality research work related to Banana pseudostem in the subject of PHT from Chancellor
(16th annual convocation of NAU Navsari (9th

| | |
|--|--|
| | February 2021) |
|  |  |
| <p>Madhusudan R. (2020216014 MSc. PHT)</p> <p>Recipient of ASPEE Foundation Gold plated silver medal for securing highest OGPA and quality of research work in PHT from Chancellor (15th Annual Convocation of the NAU, Navsari (19th December 2019)</p> | <p>Sushmitha M. B. (2020218046 M.Sc.)</p> <p>Recipient of Kalptaru Gold plated silver medal for quality research work related to Banana pseudostem in the subject of PHT from Vice chancellor (17th Annual Convocation of NAU Navsari 8th February, 2022)</p> |

| SN | Name of Student | Name of Medal | Year |
|----|--|--|---------|
| 1 | Naik Poojaben Rajeshbhai, reg No 1020218008 Ph.D. (Horti.) in PHT | “ASPEE Foundation Gold Plated Silver Medal” for M.Sc. (Horti.) Flori. L. A. or PHT | 2022-23 |

| | |
|---|--|
|  |  |
| Naik Poojaben Rajeshbhai 18 th Annual Convocation Date : 04/03/2023 | |

Exposure Visits of PG Students

| | |
|----------------------|----------------------|
| Photo Add caption | Photo Add caption |
|----------------------|----------------------|

RESEARCH ACTIVITIES

Focus Areas

- ❖ Development of cool chain, low cost storage, handling and packaging techniques.
- ❖ Exploration of plant extracts in extension of storage life of fruits and vegetables.
- ❖ Development of processes for the preparation of instant and extruded food products.
- ❖ Development of technology for processing and value addition of wild fruits.
- ❖ Preparation of natural flavonoids, antioxidants, bio-colours and health foods.
- ❖ Research on fungal toxins occurrence and remedies in cereals, fruits, nuts and their products (e.g. patulin, aflatoxin, rubratoxin, fumonisin, ochratoxinetc).
- ❖ Development of convenient and functional processed products by incorporation of milk, milk products, oat, linseed, soybean, sunflower seed into fruit and vegetable products.
- ❖ Development and evaluation of natural Colour from fruits and vegetables
- ❖ Establishment of HACCP protocols for different food commodities for TQM
- ❖ New convenience value added food products from wastes of fruit and vegetable industry.
- ❖ Technology for the preparation of health oriented appetizer, nectar, jam, squash, chutney, leather, toffee, instant powder etc.
- ❖ Screening of tomato varieties & hybrids for the preparation of juice, puree, paste, ketchup & canning.
- ❖ Technology for preparation of low calorie health drinks from fruits & vegetables.
- ❖ Technology for the preparation of dehydration of fruits and vegetables.
- ❖ Osmo-canning technology for suitable fruits and vegetables.
- ❖ Development of fruit juice based carbonated beverages.
- ❖ Development of technology for extraction of pectin & essence from mango waste. Utilization of mango peel for conversion of edible products.
- ❖ Development of protocol for extension of storage life of cut flower crops.
- ❖ To provide community canning services to the university employees and nearby farmers.

Research Schemes in Operation

| SN | Title of Research Project | Year of Commencement & Budget Head | PI & Co-PI | Funding Agency |
|----|---|------------------------------------|-------------|-------------------------|
| 1 | Centre of Excellence on Post Harvest Technology | 2004-05 B.H.-12935 | Dr. Dev Raj | Govt. of Gujarat (Plan) |
| 2 | Strengthening of P.G. Programme of Post Harvest Technology & Process Engineering (Phase-II) | 2010-11 B.H.-12244 | Dr. Dev Raj | Govt. of Gujarat (Plan) |
| 3 | Establishment of Fruits and Vegetable Packaging Research Station Including Seeds | 2009-10 B.H.-12940 | Dr. Dev Raj | Govt. of Gujarat (Plan) |

Objectives of scheme

1. Center of Excellence on Post Harvest Technology (BH: 12935)

Objectives:

- a) To conduct basic and applied research in the area of handling, preservation, storage and processing of major horticultural crops.
- b) To impart education on post harvest technology.
- c) Testing of the developed technologies on commercial scale.
- d) Training of the entrepreneurs.
- e) Technology transfer to farmers and industries.
- f) To provide advisory and consultancy services to agro processing industries.

2. Strengthening of P.G. Programme of Post Harvest Technology & Process Engineering (Phase-II) (BH: 12244)- (now P.G. Programme on PHT of Horticultural Crops)

Objectives:

- a) To establish PG faculty of Post Harvest Technology & Process Engineering
- b) Diversification and upgradation to Post Harvest Technology & Process Engineering education research and extension

3. Establishment of Fruits and Vegetable Packaging Research Station Including Seeds (BH: 12940)

Objectives:

- a) To conduct applied research work on the subject of post harvest packaging, storage and transportation of fruits and vegetables as well as seed.
- b) To popularize the methods and techniques of post harvest handling of fruits and vegetables as well as seed to avoid post harvest losses as per client specific requirement,
- c) To provide all the basic facilities of Pack House on rental basis to the farmers, merchants, processors and Exporters.
- d) To provide advisory and consultancy services to fresh supply chain and processing to industries for the export.

EXTERNALLY FUNDED PROJECTS

- ❖ Processing and value addition of Horticultural Produce under National Agricultural Higher Education Project under CAAST (ICAR)
- ❖ Performance evaluation of Conveyor type Hot Water System for Biter Gourd




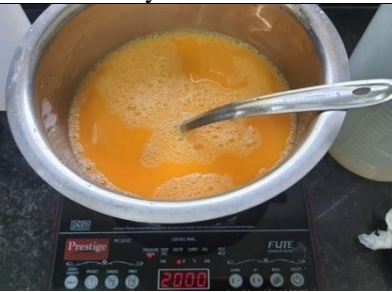
: Research Recommendations:

Year : 2022-23 (19th AGRESO)

| S.N. | Title of Experiment and Recommendation | Name of PI / Co-PI/ Associate |
|------|--|---|
| 1 | <p>Title: Standardization of method for extraction of passion fruits (<i>Passiflora edulis</i>) juice.</p> <p>Recommendation Processors and entrepreneurs are recommended to extract passion juice by treating scooped pulpy seeds with combination of 0.05% pectinase and 0.05% cellulose for 2 hours to get higher juice recovery. The juice after extraction must be filtered, pasteurized (96°C), packed in glass bottles followed by processing (96±1°C) for 30 min. The packed juice has storage stability for 6 months at ambient temperature.</p> | <p>Dr. Dev Raj Dr. N. V. Patel Dr. A. K. Senapati</p> |
| 2 | <p>Title: Development of value added blended spiced squash using passion (<i>Passiflora edulis</i>) and bael (<i>Aegle marmelos</i> L.) fruits</p> <p>Recommendation It is recommended to the processors, and entrepreneurs that passion and bael fruits pulp can be blended for preparation of spiced squash using 25 per cent pulp (5:20 pulp proportion of passion:bael fruits) by maintaining with 45 °Brix TSS and 1 per cent acidity along with spices and salts. The potassium meta-bisulphite @ 700 ppm should be added at the end of thermal processing (96 ± 1 °C for 15 minutes) followed by hot filling in PET bottles. The blended spiced squash can be stored up to 9 months at ambient temperature.</p> | <p>Dr. N. V. Patel Dr. Dev Raj Dr. A. K. Senapati</p> |









Photograph with caption

Recommendation-1

| | | |
|--|---|---|
|  |  |  |
| 1. Passion Fruits | 2. Scooping of pulp and seeds | 3. Enzyme treatments |
|  |  |  |
| 4. Juice and Seed separation | 5. Filtration | 6. Pre-heating |
|  |  | |
| 7. Pasteurization | 8. Storage (Passion fruit juice) | |
| Plate 1. Process steps for preparation of passion fruit juice | | |

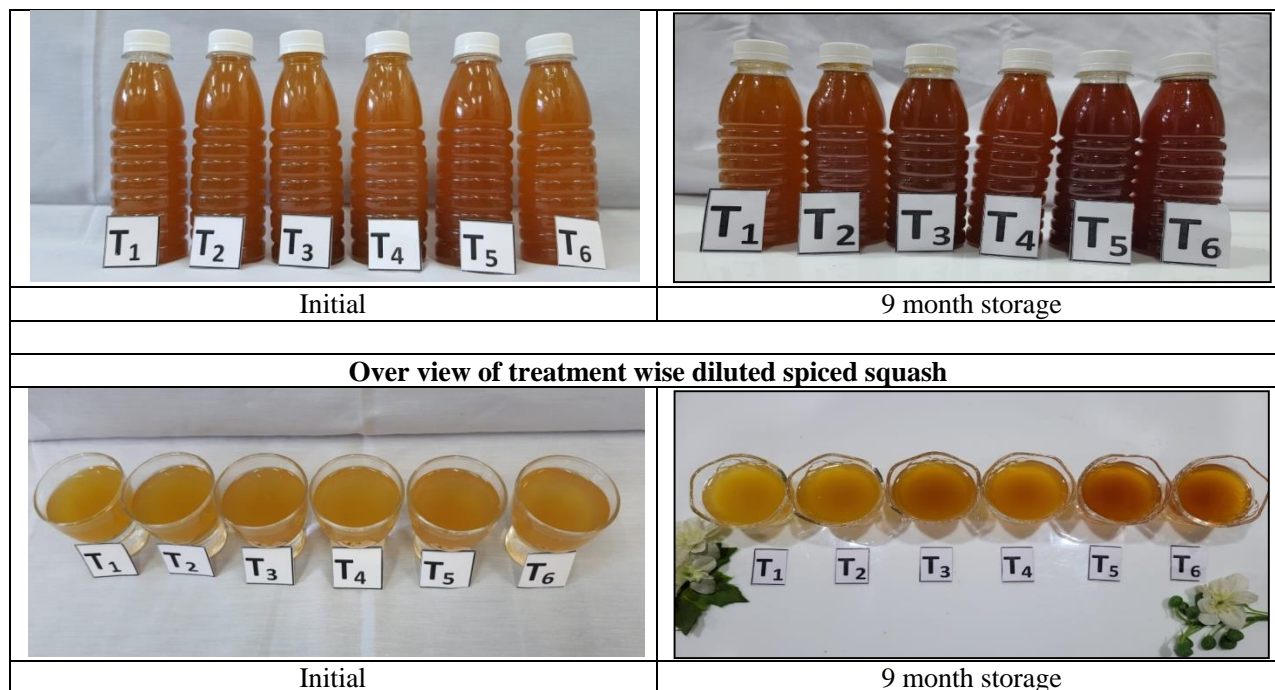
Recommendation-2

Methodology:

| | | | |
|---|---|--|---|
|  |  |  |  |
| 1. Passion fruits | 2. Bael fruits | 3. Passion fruit pulp | 4. Bael fruit pulp |
|  |  |  |  |
| 5. Sugar syrup with spices | 6. Mixing of pulp | 7. Bottle filling | 8. Spiced squash |
| Plate 2. Process steps for preparation of spiced squash | | | |

Experimental Result:

Over view of treatment wise spiced squash



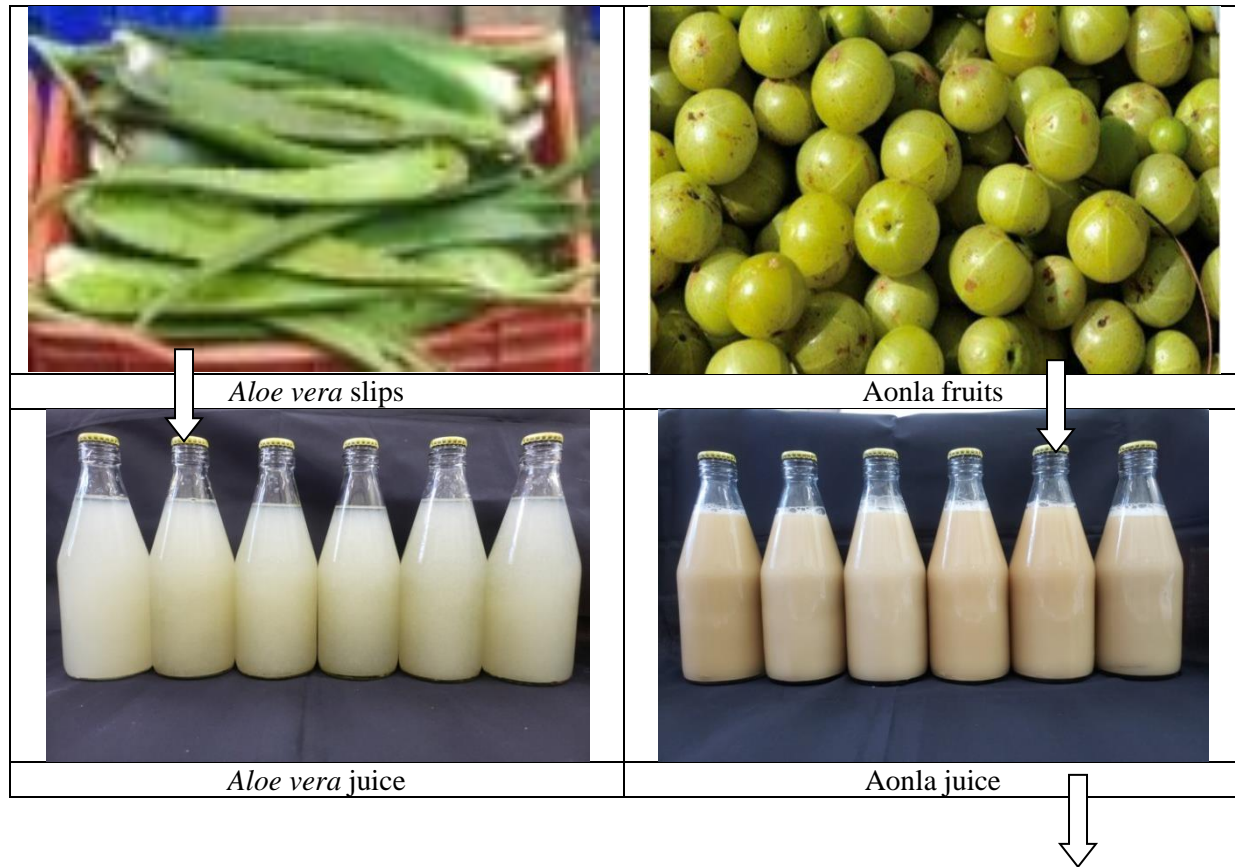
Year : 2023-24 (20th AGRESCO)

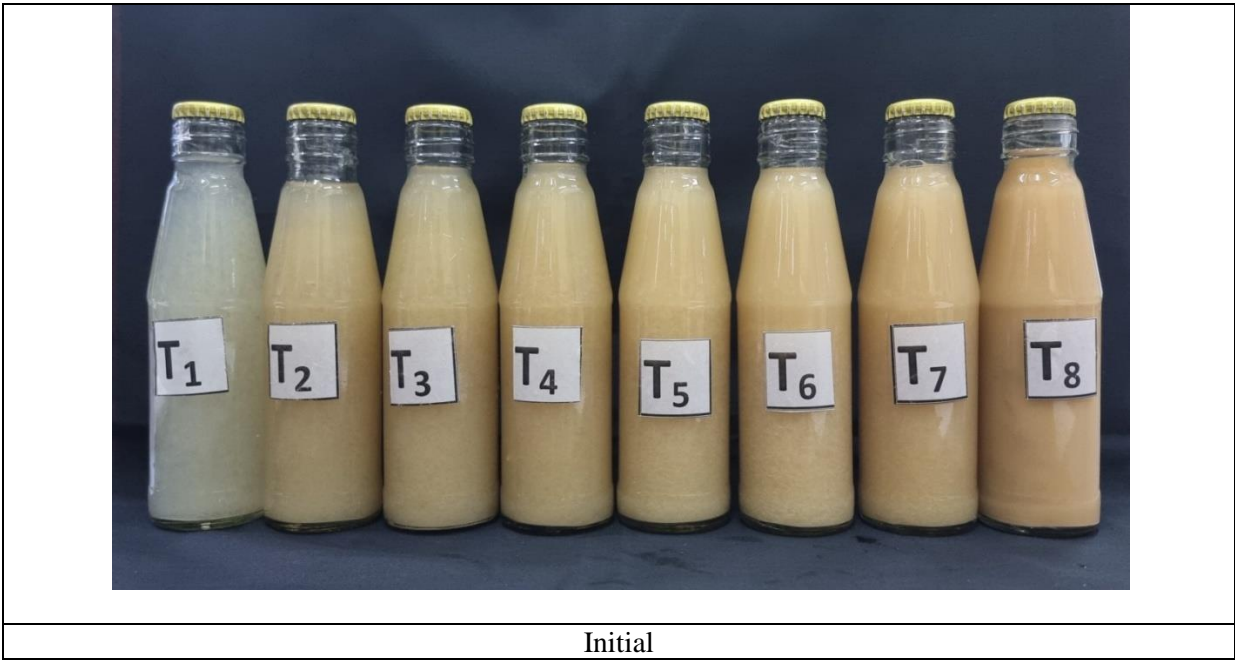
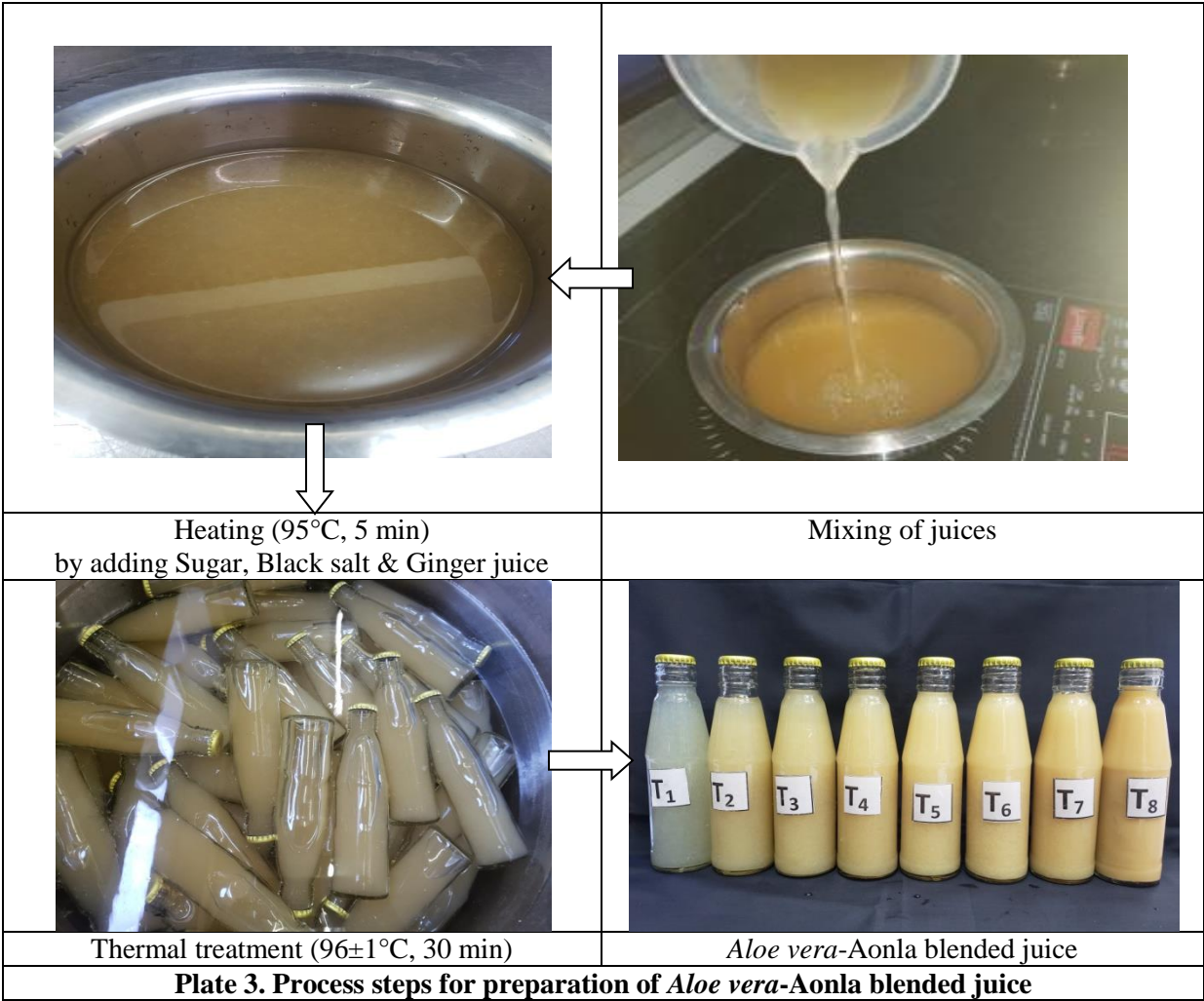
| S.N. | Title of Experiment and Recommendation | Name of PI / Co-PI/ Associate |
|------|---|--|
| 1 | <p>Title: Standardization of process technology for the preparation of Aloe vera and Aonla blended juice</p> <p>Recommendation</p> <p>Processors and entrepreneurs associated with juice processing are recommended to produce blended juice with 75:25 proportion of Aloe vera :aonla juice by maintaining 12 °Brix TSS along with black salt 3 g and ginger juice 3 ml per liter blended juice. The blended juice must be heated (95±1°C for 5 minutes) and packed in glass bottles followed by thermal processing (95±1°C) for 30 minutes. The packed juice has storage stability for 8 months at ambient temperature</p> | <p>Dr. Dev Raj Dr. N. V. Patel Dr. A. K. Senapati Dr. H. G. Suthar</p> |
| 2 | <p>Title: Standardization of suitable treatments for preparation of osmo-air dehydrated mango (<i>Mangifera indica</i> L.) slices</p> <p>Recommendation</p> <p>Processors and entrepreneurs are recommended to prepared osmo-air dehydrated mango slices from mango fruits after 6th day of harvesting by giving overnight osmotic dip treatment to 1.5±2cm thick slices with osmotic solution (sugar syrup) of 60°Brix at 40°C followed by air drying till moisture content of 15±0.4%. The osmo-air dehydrated mango slices prepared by this technique possess lower NEB along with higher beta-carotene and overall acceptability score. The osmo-air dehydrated mango slices had storage stability of six months in 380-gauge PP bags at ambient temperature</p> | <p>Dr. Dev Raj Dr. Y. N. Tandel Dr. J. M. Mayani</p> |
| 3 | <p>Title: Standardization of formulation for preparation of fruit bar from sapota pulp</p> <p>Recommendation</p> <p>Processors and entrepreneurs are recommended to adopt technology developed by Navsari Agricultural University forpreparation of Sapota fruit bar by mixing 60% Sapota pulp and 40% sugarcane juice with 100 ppm potassium metabisulphite (KMS) along with 0.5% pectin followed by open pan heat concentration upto 40°Brix TSS and then pouring and spreading 10mm thick layer of mixture on SS trays and drying in cabinet air dryer at</p> | <p>Dr. Dev Raj Dr. A. K. Senapati Dr. N. V. Patel Dr. F. M. Sahu</p> |

| | | |
|---|---|--|
| | 60°C till final moisture of 16±0.5%. Sapota fruit bar pieces (2.5x2.5x0.6 cm) packed in 380gauge HDPE bags possesses lower non-enzymatic browning, higher iron content and overall acceptability and remains shelf stable up to 9 months at ambient temperature storage | |
| 4 | <p>Title: Studies on quality of thermally processed Oyster Mushroom during storage</p> <p>Recommendation</p> <p>Farmers, processors, and entrepreneurs are recommended to preserve the oyster mushroom in rust freetin can by following process steps like; mushroomcleaning, blanching, filling with solution containing 2 % NaCl and 0.05 % citric acidin tin can, exhausting, seaming, retorting at 121°C for 35 min and cooling. The canned oyster mushroom can be stored and utilized up to 6 months</p> | <p>Dr. H. G. Suthar</p> <p>Dr. Dev Raj</p> <p>Dr. A. K. Senapati</p> |

Photograph with caption

Recommendation-1







8 Months of storage

Plate 4. Over view of treatment wise *Aloe vera*-Aonla blended juice

Recommendation-2



Fresh Mangoes After Harvesting (Initial day)

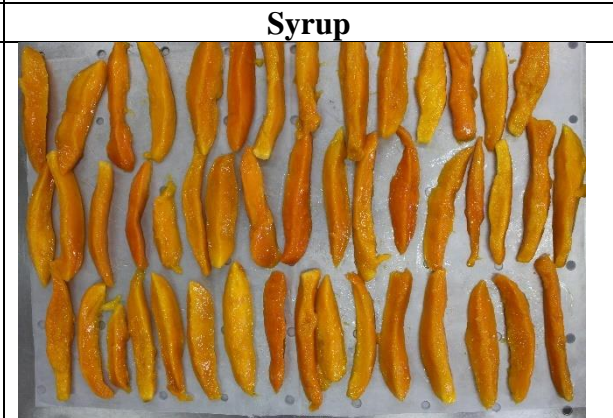


Initial day



6th Day





Packing of the Osmo-air dehydrated mango slices
Steps used for preparation of Osmo-air dehydrated mango slices)

Recommendation 3

| | | |
|---|--|---|
|  |  |  |
| <p>Ripen Sapota</p> | <p>Sapota Pulp</p> | <p>Sugarcane Juice</p> |
|  |  |  |
| <p>Heating of mixed sapota pulp and sugarcane juice</p> | <p>Inside view of dryer</p> | <p>Drying of pulp in Tray dryer at 60°C</p> |
|  |  |  |
| <p>Preparation of bar</p> | <p>Dried pieces of bar</p> | <p>380 G HDPE packed bar</p> |
| <p>Fig. 1: Process Steps for preparation of bar from sapota pulp and sugarcane juice</p> | | |

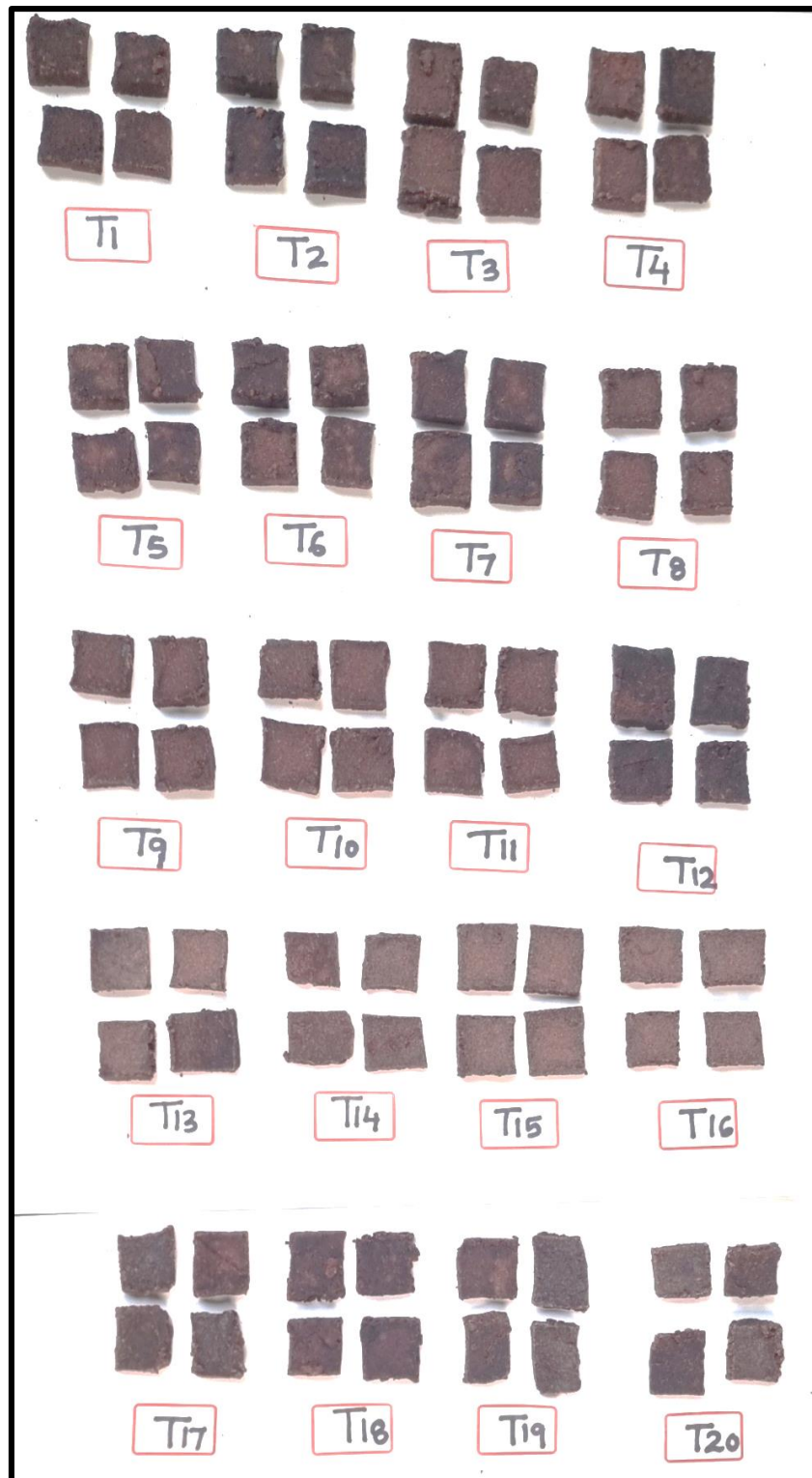


Fig 2. Treatments overview of the sapota fruit bar

Recommendation 4



Figure 1: (1) Oyster mushroom, (2) Blanching (3) Water drain from blanched oyster mushroom (4) Weighing (5) Oyster mushroom bottles (6) filling in containers (7) Seaming (8) Retorting (9) Cooling.

Our Products

PHT 2022-23

| S.N. | Planting material/ Processed products | Crop and Cultivar | Quantity (No. of bottles/packets) |
|------|---------------------------------------|-------------------|--------------------------------------|
| 1. | Mango nectar (200 ml) | - | 2516 |
| 2. | Guava nectar (200 ml) | - | 6968 |
| 3. | Pineapple nectar (200 ml) | - | 2388 |
| 4. | Orange nectar (200 ml) | - | 1594 |
| 5. | Pineapple squash (750 ml) | - | 262 |
| 6. | Guava squash (750 ml) | - | 279 |
| 7. | Mango squash (750 ml) | - | 160 |
| 8. | Orange squash (750 ml) | - | 93 |
| 9. | Noni juice (200 ml) | - | 56 |
| 10. | Mix Pasta (200 g) | - | 274 |
| 11. | Mango pulp (Bottle-1 kg) | - | 69 |
| 12. | Tutti fruiti (200 g) | - | 48 |
| 13. | Aonla juice (500 ml) | - | 196 |
| 14. | Mango pickles (250 g) | - | 52 |
| 15. | Mango pickles (500 g) | - | 12 |
| 16. | Mix fruit jam (500 g) | - | 46 |
| 17. | Kasuri Methi (30 g) | - | 35 |
| 18. | Tomato ketchup (500 g) | - | 17 |
| 19. | Banana wafers (200 g) | - | 150 |
| 20. | Mix vegetable pickles (250 g) | - | 17 |
| 21. | Mix vegetable pickles (500 g) | - | 10 |
| 22. | Aloe vera juice (500 ml) | - | 6 |
| 23. | Tomato Chutney (250 g) | - | 16 |
| 24. | Tomato Chutney (500 g) | - | 2 |
| 25. | Aonla Candy (100 g) | - | 56 |

Photograph :



Mango nectar







Guava nectar



Orange nectar



Pineapple nectar

| | |
|---|--|
|  |  |
| Aloe vera juice | Noni juice |
|  |  |
| Kasuri Methi | Guava squash |
| PHT : Processed products | |

EXTENSION ACTIVITIES

1. Farmers Training (2022-24)

| S.N. | Date | Place | Name of activity | Name of Faculty | Number of farmers Participate |
|------|--------------------------|---|--|--------------------------------|----------------------------------|
| 1 | 24/05/2022 | PHTC, ACH, NAU | 1 day training on 'mango processing' organized by Dept. of PHT | Dr. J. M. Mayani | 21 |
| 1 | 04/06/2022 | Anavil wadi, Kaliyawadi, Navsari | 1 day training on 'Fruit beverages' organized by Dept. of PHT & Anavil Sanskar Trust, Navsari | Dr. Dev Raj Dr. N. V. Patel | 44 (Farm women & Home makers) |
| 2 | 29/06/2022 | JAU, Junagadh | 2 days training on 'Mango Nectar, squash, pulp, aam papad Preparation' organized by IARI and JAU, Junagadh | Dr. Dev Raj | 60 (Farm women & Home makers) |
| 3 | 21/03/2023 to 23/03/2023 | Dept. Of PHT (association with Omkar Sewa Sansthan, Teh.-Gauriganj, Dist.-Amethi, UP) | 3 days training on 'Post Harvest Management, Processing and Value addition in Fruits and Vegetables' | PHT Faculties | 25 (farmers from Amethi, UP) |
| 4 | 27/03/2023 to 31/03/2023 | Dept. Of PHT (collaboration with Dist. Implementation Unit, Smart | 5 days training on 'Post Harvest Technologies for value addition of Fruits and Vegetables' | PHT Faculties | 20 (farmers from Nandurbar, MH) |

| | | | | | |
|---|-------------------------|--|---|---------------|------------------------|
| | | Project, Nandurbar, MH and association with Agrivision, Gujarat) | | | |
| 5 | September 20 – 22, 2023 | PHTC, ACH, NAU | Farmers Training on Post Harvest Management, Processing and Value Addition of Fruits and Vegetables | PHT Faculties | 25 progressive farmers |
| 6 | December 11 – 13, 2023 | PHTC, ACH, NAU and State Horticulture Mission, Department of Horticulture, Govt. of Gujarat, Gandhinagar | Horticulture Officers Training on Preservation and Value Addition of Fruits and Vegetables | PHT Faculties | 25 Hort Officers |
| 7 | Feb 6 – 8, 2024 | PHTC, ACH, NAU and State Horticulture Mission, Department of Horticulture, Govt. of Gujarat, Gandhinagar | Horticulture Officers Training on Processing and Value Addition of Hort Produce | PHT Faculties | 25 Hort Officers |

Photographs :



Training on “Fruit beverages” at Avavil wadi, Navsari on 04/06/2022



Training on “Mango Nectar, squash, pulp, aam papad Preparation” at JAU, Junagadh on 29/06/2022



Farmers training on 'Post Harvest Management, Processing and Value addition in Fruits and Vegetables' at Department of Post Harvest Technology, ACH, NAU from 21-23/03/2023



Latitude: 20.9244816
Longitude: 72.907237
Elevation: 36.385100 m
Accuracy: 23.6 m
Time: 03-28-2023 15:09
Note: साईट अनॉलरड डेटा प्रदान करेगा।



4167
05412
345 m
223 09.53
इ-अवधारणें प्रविष्टिगत व अभ्यास (दीर्घ अवधारी कृषी विद्यापीठ (पुणवत राज्या)

Farmers training on 'Post Harvest Technologies for value addition of Fruits and Vegetables' at Department of Post Harvest Technology, ACH, NAU from 27-31/03/2023

2. RAWE Programme

| Sr. No. | Date | No. of Days | Subject | No. of Students | Vanue | Organised by |
|---------|------------------------|---------------------|--|-----------------|-------|---|
| 1 | During April-May 20234 | 1 day single visits | 8 th sem RHWE-8.1 Visit to progressive farmer's field and NGO | 68 | | Dr. A. I. Patel Dr. P. P. Bhalerao Dr. P. D. Solanki Dr. Nilam V. Patel |

| | | | | | | |
|---|------------------------|---------------------|--|----|--|---|
| 2 | During April-May 20234 | 1 day single visits | 8 th sem RHWE-8.3 University farms (JAU) and private horticultural field visit of Saurashtra region | 68 | | Dr. K. P. Suthar Dr. F. M. Sahu Dr. Himani B. Patel |
| 3 | During April-May 20234 | 1 day single visits | 8 th sem RHWE-8.4 University farms (AAU) and private horticultural field visit of Middle Gujarat region | 68 | | Dr. F. M. Sahu Dr. K. P. Suthar Dr. Himani B. Patel |
| 4 | During April-May 20234 | 1 day single visits | 8 th sem RHWE-8.5 University farms (SDAU) and private horticultural field visit of North Gujarat region | 68 | | Dr. Himani B. Patel Dr. K. P. Suthar Dr. F. M. Sahu |
| 5 | During April-May 20234 | 1 day single visits | 8 th sem RHWE-8.6 University farms (NAU) and private horticultural field visit of South Gujarat region | 68 | | Dr. A. I. Patel Dr. P. P. Bhalerao Dr. P. D. Solanki Dr. Nilam V. Patel |

Photograph :



KVK, Waghai Dt.: 06/05/2023



Bhadarpada farm Dt.: 06/05/2023



3. Lecture delivered to farmers training

| Sr. No. | Date | No. of beneficiary | Subject | Vanue | Training organised by | Name of Faculty |
|---------|------------|--------------------|---|----------------------------------|---|-----------------|
| 1 | 26/05/2022 | 30 | Value addition in Fruits and Vegetables | SSK, NAU, Navsari | ATMA Project Amreli | Dr. N.V.Patel |
| 2 | 16/06/2022 | 36 | Post Harvest Management in Fruits and Vegetables | FTC, Navsari | FTC, Navsari | Dr. N.V.Patel |
| 3 | 27/3/2023 | 20 | Technologies for Jam and Jelly from fruits | PHTC, ACH, NAU | PHTC, ACH, NAU | Dr. H.G. Suthar |
| 4 | 01/07/2022 | 31 | Post Harvest Management of Fruits and Vegetables | FTC, Navsari | Deputy Director Agriculture (Training), Navsari | Dr.N.V.Patel |
| 5 | 05/07/2022 | 24 | Value addition in Fruits and Vegetables | FTC, Navsari | Deputy Director Agriculture (Training), Navsari | Dr.N.V.Patel |
| 6 | 23/08/2022 | 43 | Value addition in sapota | Swami Vivekana nd Hall, ACH, NAU | Dept. of Fruit Science, ACH, NAU | Dr.J.M.Mayani |
| 6 | 02/09/2022 | 28 | Value addition in coconut | Kodinar | ACHF, NAU | Dr.J.M.Mayani |
| 7 | 04/01/2023 | 30 | Post Harvest Management in Fruits and Vegetables | FTC, Navsari | FTC, Navsari | Dr. N.V.Patel |
| 8 | 08/02/2023 | 27 | PHM and Value addition in Horticultural crops | FTC, Navsari | FTC, Navsari | Dr. N.V.Patel |
| 9 | 21/03/2023 | 25 | Importance of PHM, Processing & value addition in Fruits and Vegetables | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. Dev Raj |
| 10 | 21/03/2023 | 25 | Banana wafers | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. N.V.Patel |

| | | | | | | |
|----|------------|----|---|----------------|------------------------|--------------------|
| 11 | 21/03/2023 | 25 | Post Harvest Management & ripening of Banana | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. P. S. Pandit |
| 12 | 22/03/2023 | 25 | Water melon candy | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. Dev Raj |
| 13 | 22/03/2023 | 25 | Fruit juice beverages | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. A. K. Senapati |
| 14 | 23/03/2023 | 25 | Utilization of banana peel for value addition | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. A. K. Senapati |
| 15 | 27/03/2023 | 9 | Status of PHT | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. P. S. Pandit |
| 16 | 27/03/2023 | 9 | Techniques of PHM | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. Dev Raj |
| 17 | 27/03/2023 | 9 | Utilization of banana pseudostem | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. J. M. Mayani |
| 18 | 28/03/2023 | 9 | Jam and jelly | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. H. G. Suthar |
| 19 | 28/03/2023 | 9 | RTS and Squash | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. F. M. Sahu |
| 20 | 28/03/2023 | 9 | Candies and preserves | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. Niketa Patel |
| 21 | 28/03/2023 | 9 | Vegetable chutneys | PHTC, ACH, NAU | Dept. of PHT, ACH, NAU | Dr. N. V. Patel |

Photograph :



Lecture delivered during farmers training at FTC, Navsari



Lecture delivered during farmers training at SSK, NAU, Navsari

4. Exhibition

| Sr. No. | Date | No. of days | Event | Vanue | Name of faculty |
|---------|---------------|-------------|--------------------------------------|------------------------------|------------------|
| 1 | 30/04/2022 | 1 | Krishi-mela 2022 | KVK, Navsari | Dr.N.V.Patel |
| 2 | 29-30/06/2022 | 2 | National level seminar on Statistics | Int. Exam Hall, NAU, Navsari | Dr. A.K.Senapati |

| | | | | | |
|---|---------------|---|--|----------------------------------|--------------------------------|
| | | | | | Dr. F.M.Sahu Dr.H.G.Suthar |
| 3 | 27-30/09/2022 | 4 | Exhibition-cum-sale under ELP on 'Horticulture for Health and Happiness' | ACHF, NAU, Navsari | PHT Faculties |
| 4 | 13-15/10/2022 | 3 | National seminar organized by College of Forestry, NAU, Navsari | Central Exam. Hall, NAU, Navsari | PHT Faculties |
| 5 | 23-24/11/2022 | 2 | VCs conference | VIP guest house, NAU | Dr. Dev Raj Dr. N. V. Patel |
| 6 | 7-9/12/2022 | 3 | 'Winter Bloom' Exhibition | Floriculture Nursery, ACHF, NAU | PHT Faculties |
| 7 | 24-25/12/2022 | 2 | National seminar organized by College of Forestry & KVK, NAU, Navsari | Central Exam. Hall, NAU, Navsari | PHT Faculties |

Photograph:



Stall exhibition during National level seminar on Statistics at NAU Dt. 29-30/06/2022



Exhibition-cum-sale under ELP at ACHF, NAU Date : 27/09/2022



Stall exhibition during VCs Conference at VIP Guest house, NAU Dt. 23-24/11/2022

TRANSFER OF TECHNOLOGY (ToT)

Visit of PHTC by students/ farmers/ officers/ entrepreneurs (2022-23)

| Sr. No. | Category | No. of Visitors | Value | Remark |
|---------|------------------|-----------------|-------|--------|
| 1 | Dignitaries/VIPs | 37 | PHTC | - |
| 2 | Entrepreneurs | - | - | - |
| 3 | Officers | 31 | PHTC | - |
| 4 | Students | 448 | PHTC | - |
| 5 | Farmers | 139 | PHTC | - |
| | TOTAL | 655 | | |

Photograph :



Visit of PHTC by RHWE students



Visit of PHTC by farmers

TRANSFER OF TECHNOLOGY (ToT)

| | | |
|---|---|---|
|  |  |  |
| Interaction with farmers in <i>KrishiMahotsava</i> an on/off-campus Training | | |
| Diagnostic visit at farmers' field | Training at Farmers' Field | On Farm interaction with farmers |

Infrastructure Available

Department

Department has excellent facilities for Teaching, Research & Development and Extension pertaining to Post Harvest Technology of Horticultural crops. Department of Post Harvest Technology has following facilities for Teaching, Research & Development and Extension:

- Food Product R&D Laboratory
- Quality Control Laboratory
- Food Microbiology Laboratory
- Sensory Laboratory
- Post Harvest Physiology and Packaging Laboratory
- Post Harvest Engineering laboratory
- UG Laboratory
- Computer Net-Working Laboratory
- Seminar / conference Room well equipped with e- teaching aids

FACILITIES AVAILABLE IN LABORATORIES

| | | |
|------------------------|-----------------------|----------------------------|
| Autoclave | Blade Mixer | Blanching Tank |
| BOD Incubator | BOD Portable Meter | Bomb Calorimeter |
| Box Compression Tester | Box Drop Tester | Bulk Density Meter |
| Colorimeter | Colony Counter | Deep Freezers |
| Digital pH Meter | Digital Refractometer | Digital Vernier Caliper |
| Double Seamer | Extruder | Fermenter |
| Filter Press | Flanger Hand | Freeze Dryer (lyophilizer) |

| | | |
|--------------------------------|-------------------------------------|--------------------------------------|
| Gas Analyser | Homogenizer | Hot Air Oven |
| Hot water Treatment Plant | Hydraulic Juice Press | Ice Flaking Machine |
| Incubator Shaker | Infrared Dryer | Infrared Moisture Balance |
| Kjeldal Distillation Apparatus | Laminar Air Flow | Mechanical Dehydrator |
| Microscope with Camera | Microwave Oven | Moisture Analyser |
| Multiparameter Meter | N ₂ Estimation Apparatus | Online Data Logger |
| PE gauge Meter | Pulveriser | Reformer |
| Refrigerated Centrifuge | Rheometer | Rotary Flat Can Body |
| Shrink wrapped Machine | Size Grader | Spectrophotometer |
| Texture Analyser | Vacuum Dryer | Vacuum Packaging Unit |
| Vibration Testing Machine | Water activity Meter | Water Vapour Transmission Rate Meter |
| Waxing Machine | Weighing Balance | Weight Grader |
| PCR - Thermo cycler | Electrophoresis Unit | Emulsifier |
| Flame Photometer | Mini-centrifuge | Magnetic stirrer |
| Tintometer | Hot Twin Screw Extruder | Laboratory Spray Dryer |
| Carbonation Unit | Micro-encapsulation Unit | Multi parameter Tester |
| Ice cream making unit | Fluidized bed dryer | |

ADDITIONAL EXCELLENCE INFRASTRUCTURE

- **Centre of Excellence on Post Harvest Technology**
- **Mango and Tomato Processing Plant having capacity of 500 kg per 8 hours**
- **Onion Dehydration Plant having capacity of 2 tonnes per 8hours**
- **Juice Processing Line having capacity of 50 litre per hour**
- **Banana Processing Plant**
- **Low Temperature Storage Structure having 20Tcapacity**
- **Pre-Cooling Unit having 2.5Tcapacity**
- **Fruit Ripening Chambers having 6Tcapacity**
- **Controlled Atmosphere Storage Unit having 3Tcapacity**
- **R.O. Water filtration Unit having 1200 L/h capacity**
- **Freeze Drying Unit**
- **Heavy duty Spray Dryers**
- **Packaging Infrastructure**
- **Generator with Power backup facility**

| S.N. | Infrastructure or Facilities available | Area/No. |
|-------------|---|-----------------|
| 1 | Processing laboratory | 1 |
| 2 | Analytical Laboratory | 1 |
| 3 | Packaging Laboratory | 1 |
| 4 | Sensory Laboratory | 1 |
| 5 | Food Microbiology Laboratory | 1 |
| 6 | Conference hall | 1 |
| 7 | Mango Processing Plant | 1 |
| 8 | Dehydration Plant | 1 |

Photographs of Infrastructure



Processing laboratory



Analytical Laboratory



Packaging Laboratory



Sensory Laboratory



Food Microbiology Laboratory



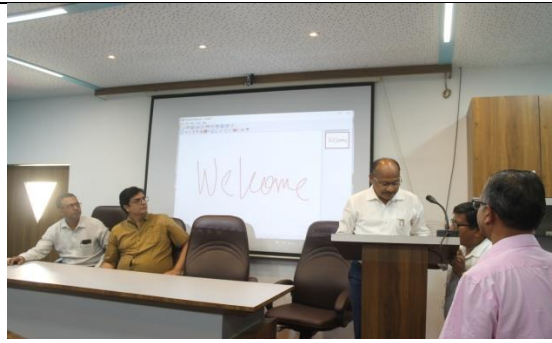
Conference hall



Mango Processing Plant



Dehydration Plant



e-class room (smart class) with 48 seating capacity

Dignitaries Visit: Glimpses

Information regarding visit of Hon'ble Vice Chancellor / Dignitaries during last year 2023-24

Year : 2022-23

| Sr. No. | VIPs/ Guests | Designation and Address | Date of Visit |
|---------|------------------------|--|---------------|
| 1. | Dr. Z.P.Patel | Vice Chancellor, NAU, Navsari | 19/04/2022 |
| 2. | Dr C. K Narayana | Head PHT, ICAR, IHR, Bengaluru | 23/04/2022 |
| 3. | Dr Ram Asrey | Principal Scientist , Deptt of FS and PHT, IARI, New Delhi | 28/04/2022 |
| 4. | Dr Dalamu | Sr Scientist, CPRI, Shimla | 28/04/2022 |
| 5. | Dr Aparna Veluru, | Scientist, CPCRI, Kasargod | 28/04/2022 |
| 6. | Dr Poonam Kashyap | Sr Scientist, IIFSR, Meerut | 28/04/2022 |
| 7. | Dr DV Swami, | Principal Scientist , PHTRS, Dr YSRHU, AP | 28/04/2022 |
| 8. | D. Dinesh Kumar | Principal Scientist, ICAR, CISH, Lukhnow | 29/04/2022 |
| 9. | Dr Sain Das, | Ex-Director, IIM, New Delhi | 29/04/2022 |
| 10. | Dr E Karuna | Principal Scientist and Head, PHTRS, Dr YSRHU, AP | 29/04/2022 |
| 11. | Dr. Bharatsinh Parmar | Ex. Member of Parliament, Gen. Sec. BJP, Gujarat (Bharuch) | 05/08/2022 |
| 12. | Dr. Ramsinh Rathva | TRIFED, Chairman, MP | 01/09/2022 |
| 13. | Dr. Sudha Mysore | CEO, Agrinnovate India Ltd., New Delhi | 05/09/2022 |
| 14. | Dr. Srinivasan | Director, NIPB, New Delhi | 23/09/2022 |
| 15. | Dr. Anil D. Ahuja | Professor & Principal Science, ICAR-IARI, New Delhi | 23/09/2022 |
| 16. | Dr. Mukesh Benwal | ICAR-CIAH, Bikaner | 23/09/2022 |
| 17. | Dr. Aruna Tyagi | ICAR-IARI, New Delhi | 23/09/2022 |
| 18. | Dr. Archana Singh | ICAR-IARI, New Delhi | 23/09/2022 |
| 19. | Dr. Ramavtar Sharma | ICAR-CAZRI, Jodhpur | 23/09/2022 |
| 20. | Dr. V. I. Benagi | Vice Chancellor, UAS Dharwad, Karnataka | 15/11/2022 |
| 21. | Dr. V. K. Garande | Professor of Horticulture, ZARS, Pune | 17/11/22 |
| 22. | Shri Sita Ra Jat | IAS, Govt. of Rajasthan | 22/11/22 |
| 23. | Dr. Dinesh Kumar | Ex. ADH (FFC), ICAR Secretary BAUA, NASC, New Delhi | 22/11/22 |
| 24. | Dr. Inder Dev | DEE, Dr.Y.S.Parmar Uni. Of Horti and Forestry, Nauni, Solan, HP | 25/11/22 |
| 25. | Dr. Vannirajan | Dean, (APM), TNAU, Coimbtore | 25/11/22 |
| 26. | Dr. Indra Mani | Vice Chancellor, VNMKU, Parbhani, Maharashtra | 25/11/22 |
| 27. | Dr. T. Janakiram | Vice Chancellor, Dr.YSRHU, West Godavari, (A.P.) | 25/11/22 |
| 28. | Dr. Z. P. Patel | Vice Chancellor, NAU, Navsari | 09/12/22 |
| 29. | Dr. D. D. Pandey | Principal (Rtd.) DIM, P.G.College, Ambedkar Nagar, U.P. | 26/12/22 |
| 30. | Dr Z P Patel | Hon. VC, NAU Navsari | 29/12/2022 |
| 31. | Mr. Kiranbhai L. Patel | Jt. MD., ASPEE Agricultural Research and Development Foundation. | 29/12/2022 |
| 32. | Dr. A. S. Rajput | Regional Director, RONF, Nagpur, MH | 30/12/22 |

Photographs :



Dr. Z. P. Patel Hon'ble VC, NAU : Inauguration of Smart class Dt.: 19/04/2022



PRT team for Accreditation Dt.: 23/04/2022



Dr. Sudha Mysore, CEO, Agrinnovate India Ltd., New Delhi visited PHTC Date: 05-09-2022



**Dr. Z. P. Patel, Hon'ble VC, NAU and Mr. Kiranbhai L. Patel, Jt. MD., ASPEE Agril R & D Foundation
Dt.: 29/12/2022**
