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F.No. 1(58) / 2018 / PHET / 33-W

Coordinator's Report

2017-18

XXXIII WORKSHOP of AICRP on PHET

(23–25 January 2018)

held at

JAU, Junagadh

Compiled and Edited by

Dr. R. K. Gupta
Dr. R.K. Vishwakarma
Dr. V.Chandrasekar
Er. Suman Pandey

ICAR-AICRP on Post-Harvest Engineering and Technology
ICAR-CIPHET, LUDHIANA - 141 004

1. AICRP ON POST-HARVEST ENGINEERING AND TECHNOLOGY

Background

The All India Coordinated Research Project on Post-harvest Technology was launched by the Indian Council of Agricultural Research, Department of Agricultural Research & Education, Ministry of Agriculture, Government of India, in September 1972 with R&D Centres at 10 locations. Coordinating Cell of the Project was established in the Division of Agricultural Engineering at Indian Agricultural Research Institute, New Delhi. The Co-ordinating Cell of the Project was shifted to CIAE Bhopal in February 1976. With the establishment of the Central Institute of Post-harvest Engineering & Technology at Ludhiana, the Coordinating Cell was further shifted from CIAE Bhopal to CIPHET Ludhiana in December 1989. The project is renamed again in 2015 as "All India Coordinated Research Project on Post-Harvest Engineering and Technology" (AICRP on PHET). The Project is currently operating from 30 centres covering majority of states and the agro-climatic zones of India.

OBJECTIVES

The Project aims to develop location and crop specific post-harvest technologies (tool, gadgets, and machinery, equipment and process protocols) for better utilization of agricultural produce and by-products and to minimize quantitative and qualitative post-harvest losses. These technologies assure better economic returns to the farmers from their marketable surpluses and by-products and generate employment, make available primary processed food in production catchments and thereby improvements in quality of life and overall economic development.

THE SPECIFIC OBJECTIVES OF THE PROJECT

- To study the prevailing post-harvests practices and identify unit operations, equipment and their components that need improvement or substitution, adequacy and inadequacy of the prevailing practices.
- To develop and adopt farm level cleaners, graders and dryers for cereals, pulses, oilseeds, plantation crops, tubers, other field crops, livestock produce and fish. To develop simple processes, low cost equipment and pilot plants for farm/village level processing of food grains, oilseeds and other crops for rural consumption, as well as selling value added products to semi-urban and urban areas for better economic returns. To develop simple processes and equipment

farm/village level for better economic utilization of bio-wastes and by-products as food/feed/fuel etc. for increasing profitability of the commodity and income of the farmer.

- To undertake studies on techno-economic feasibility and economic viability of on farm/village level processing industries and other enterprises.
- To field evaluate laboratory proven technologies and carry out operational research trials on the developed technologies for villages to identify technical, managerial and social constraints and take remedial measures before releasing for popularization.
- To facilitate creating of post-harvest technology consciousness and transfer of proven technologies in selected villages and monitoring its effects on economics and social development.
- To generate income and employment in rural areas through adoption of proven technologies and equipment through establishing agro-processing centres.

MANDATE OF THE PROJECT

- To develop location and crop/commodity specific post-harvest technologies for minimization of quantitative and qualitative losses to produce in agriculture and allied sectors.
- To adapt and develop improved post-harvest processes and equipments for value addition to food grains and other produce at rural threshold for higher income and generation of rural employment.
- To develop processes and equipment for economic utilization on bio-wastes and byproducts.
- To conduct operational research and multi-location trials on developed technologies to identify technical, financial, managerial and social constraints for better market acceptability to technologies.
- To establish need based Agro-Processing Centres (APC) and Crop Processing Training cum Incubation Centres (CPTIC)
- To assess, refine and transfer proven technologies.

2. LIST OF COOPERATING CENTRES OF AICRP ON PHET AT 2017-2018

The list of cooperating centres are presented in this section.

STATE AND CENTRAL AGRICULTURAL UNIVERSITIES

1. College of Agricultural Engineering
   Dr. Punjabrao Deshmukh Krishi Vidyapeeth,
   Akola (Maharashtra)
2. Regional Agricultural Research Station, **Anakapalle**
   Acharya N.G. Ranga Agri. University Andhra Pradesh)
3. University of Agricultural Sciences,
   Bangalore (Karnataka)
4. College of Agriculture,
   Acharya N.G. Ranga Agri. University,
   Bapatla (Andhra Pradesh)
5. College of Agricultural Engineering,
   Orissa University of Agri. & Technology,
   Bhubaneshwar (Orissa)
6. Tamil Nadu Veterinary and Animal Sciences University,
   Chennai (Tamil Nadu)
7. College of Agricultural Engineering,
   Tamil Nadu Agricultural University,
   Coimbatore (Tamil Nadu)
8. College of Agricultural Engineering
   CCS Haryana Agricultural University
   Hisar (Haryana)
9. Central Agricultural University
   Imphal (Sikkim)
10. College of Agricultural Engineering,
    Jawaharlal Nehru Krishi Viswa Vidyalaya,
    Jabalpur (Madhya Pradesh)
11. College of Agriculture,
    Assam Agricultural University,
    Jorhat (Assam)
12. College of Agricultural Engineering,
    Junagadh Agricultural University,
    Junagadh (Gujarat)
13. Assam Agricultural University
    Khanapara (Assam)
14. Indian Institute of Technology,
    Kharagpur (West Bengal)
15. Regional Sugarcane & Jaggery Research Station,
    Kolhapur (Maharashtra)
16. College of Agricultural Engineering,
    Punjab Agricultural University,
    Ludhiana (Punjab)

17. Karnataka Veterinary, AH & Fishery Science University
Mangalore (Karnataka)
18. Maharashtra Animal and Fisheries Science University
Mumbai (UP)
19. College of Agricultural Engineering,
Dr. Rajendra Central Agricultural University,
Pusa (Bihar)
20. College of Agricultural Engineering and Technology
University of Agricultural Sciences, **Raichur** (Karnataka)
21. Indira Gandhi Krishi Vishwa Vidyalaya,
Raipur (Chhattisgarh)
22. Birsa Agricultural University,
Ranchi (Jharkhand)
23. College of Horticulture
Dr. Y.S. Parmar University of Horticulture and Forestry,
Nauni, **Solan** (Himanchal Pradesh)
24. Sher-e-Kashmir University of Agri. Sciences and Technology,
Srinagar (Jammu & Kashmir)
25. Kerala Agricultural University
KCAET, **Tavanur** (Kerala)
26. College of Technology & Agri. Engg.,
Maharana Pratap Agricultural University,
Udaipur (Rajasthan)

ICAR INSTITUTES

27. ICAR-Vivekanand Parvartiya Krishi Anusandhanshala,
Almora (Uttaranchal)
28. **ICAR-**Central Island Agricultural Research Institute (CIARI)
Port Blair Centre (A & N Islands) **(New voluntary centre approved in 2017).**
29. ICAR-Central Plantation Crops Research Institute,
Kasargod (Kerala)
30. ICAR-Indian Institute of Sugarcane Research
Lucknow - 226 002 (U.P.)
31. ICAR-Central Tuber Crops Research Institute (ICAR),
Thiruvananthapuram (Kerala)

3. TECHNOLOGY DEVELOPMENT AND OUTREACH ACTIVITIES

In this section, post-harvest tool/equipment/structures, process protocol and products, technology developed/refined/transferred/adopted,technology outreach activities by the centers are presented.

a. Post-harvest tool/equipment/structures (2017-18)

Akola Centre, PDKV

1. Onion Grading machine
2. Onion Loading-unloading device
3. Vegetable Slicer

Anakapalle Centre, RARS

1. Vibro siever for granular jiggery.
2. Pre-heater for juice
3. Evaporator for juice concentration

Bangalore Centre, UAS

1. Pongamia Decorticator (250 kg/h).
2. Improved double stage Tamarind Dehuller (1000 kg/h).
3. Tamarind Deseeder with better deseeding efficiency.

Bapatla Centre, ANGRAU

1. Microprocessor controlled On-farm aeration bin
2. Chilly calyx removal machine

Coimbatore Centre, TNAU

1. Dust Proof turmeric polisher
2. Farm level dal mill for black gram and green gram

Imphal Centre, CAU

1. Bamboo Shoot peeling machine

Jorhat Centre, AAU

1. Bamboo Shoot Grating machine
2. *Chunga Chaol* making machine

Junagadh Centre, JAU

1. Solar dryer (100 kg ground nut pod).
2. Onion curing system.

Kasargod Centre, ICAR-CPCRI

1. Coconut shell removing machine (Double)
2. Improved coconut dehusker
3. Self-loading arecanut deshelling machine with dust collection system

Khanapara Centre, AAU

1. Improved solar drier with battery back-up.
2. Low cost liquid smoke production plant.

Kharagpur Centre, IIT

1. Semi-continuous refractance window (RW) dryer

Lucknow Centre, ICAR-IISR

1. Device for boosting the furnace efficiency
2. Pump for transferring of hot molten jaggery from concentrating pan to cooling pan
3. value added spicy jaggery

Ludhiana Centre, PAU

1. Percussion based gadget for quality management of stored grains and their milled products.

Pusa Centre, RAU

1. Continuous type ohmic heating unit for liquid foods.

Raipur Centre, IGKVV

1. *Chironji* decorticator
2. Hydraulic assisted tamarind briquetting machine

Ranchi Centre, BAU

1. Technology on "Veggie Fresh"

Solan Centre, YSPUH&F

1. Hand held mechanical apple seed peeler, corer cum slicer
2. Pilot Plant for Osmotic dehydration

Srinagar Centre, SKUAS&T

1. Hand operated walnut crackers
2. Power operated walnut cracker

Tavanur centre, KAU

1. Batch type rotary cocoa dryer
2. User friendly tool for toddy palm fruit

b. Process Protocol and Products (2017-18)

PDKV AKOLA

1. Herbal tablets for management of store grain pest of pulses

Anakapalle Centre, RARS

1. Protocol for application of edible coatings over jaggery cubes to improve its shelf-life.
2. Process technology for the preparation of jaggery rasgulla, jaggery based extruded products and pineapple leather.

Bangalore Centre, UAS

1. Process protocols for preparation of Alcoholic (alcohol: 6.5-7.0%) Fermented Beverage from banana pseudo-stem core juice.
2. Process protocol for the preparation of Non-alcoholic Fermented, Probiotic Beverage from banana pseudo-stem core juice.
3. Technology for preparing *Low Fat Butter Spread* blended with whey protein

Coimbatore Centre, TNAU

1. Technology for storage of turmeric

Imphal Centre, CAU

1.Bromelain production from pineapple wastes
2.Pineapple RTS, Jelly, Jam and osmo-dehydrated rings

Kasargod Centre, ICAR-CPCRI

1. Coconut haustorium based extrudate
2. Coconut milk residue based rusk

Khanapara Centre, AAU

1. Solar dried meat balls.
2. Meat *Jalebi*.

Kharagpur Centre, IIT

1. Continuous N_2 gas purging for preparation of pure silicon from rice husk ash
2. Mango leather using Refractance Window (RW) drying.

Ludhiana Centre, PAU

1. Two-in-One Model trap with 2 mm and 3 mm size perforations for Khapra beetle in rice.

Mumbai centre, MAFSU

1. Low cost processing technology for the preparation of chicken liver powder and chicken liver chews under these project pilot trials on preparation of liver powder.

Raichur Centre, UAS

1. Protocol for drying and milling processes for *Asthma* plant
2. Protocol for identification of aged rice using colour metric method

Raipur Centre, IGKVV

1. Process technology for starch production from tikhur rhizomes (*Curcuma angustifolia* L.)
2. Process technology for optimum recovery of essential oil from patchouli (*Pogostemoncablin benth*.)

Solan Centre, YSPUH&F

1. Process protocols for cosmetic products (soap, cream, scrub, massage oil) from apricot
2. Process protocol for microencapsulation of aloe Vera powder
3. Process protocol apple choco shots and apple pie with honey and cinnamon
4. Process protocol ginger powder based appetizing tablets (gingoli), cookies and ladoo
5. Process protocol beverages from the hypertonic solution
6. Process for isolation of kiwi fruit enzyme

Srinagar Centre, SKUAS&T

1. Drying protocol for walnut kernels
2. Gluten free Water chestnut Biscuits
3. Gluten free Water chestnut Muffins
4. Low GI Water chestnut snacks

Trivandrum Centre, ICAR-CTCRI

1. Cassava stem based particle boards using modified starches viz., oxidized and succinylated starch
2. Thermoplastic sheet from modified cassava starches with glycerol as plasticizing agent.
3. Sago using dry starch in combination with wet starch and pre-gelatinized starch.

c. Technology transferred / adopted in 2017-18

Akola Centre, PDKV

Sr. no	Name of technology transferred / adopted	No of units	Address of farmers/ entrepreneurs/ manufacturers
Technologies Transferred			
1.	1. PKV Mini dal mill (3 hp) 2. PDKV Chickpea pod stripper 3. PKV Mini dal mill (5 hp) 4. PKV Mini dal mill (Integrated) 5. PKV Mini dal mill (1 hp) 6. PKV Mini dal mill (Lab model)	06	M/s Maa Durga Plastic Products, MIDC, Phase III, Akola Mob. 9422163183
2.	1. PKV Mini dal mill (5 hp) 2. PKV Mini dal mill (Integrated) 3. PKV Mini dal mill (1 hp) 4. PKV Mini dal mill (Lab model) 5. PDKV Turmeric washer 6. PDKV Vegetable slicer	06	M/s Shri Jalaram Engineering Works MIDC, D-5, Phase II, Akola Mob. 9422163388
3.	1.PKV Mini dal mill (5 hp) 2.PKV Waste fired dryer 3.PKV Cleaner grader 4.PKV Screw polisher	04	M/s Prajakta Agro Machinery, U-44, MIDC No. 4, Akola Mob. 9975610677
4.	1.PDKV Continuous hot air puffing machine	01	M/s Techno Engineering, Plot No. C-159, Waluj, MIDC Industrial Area, Waluj, Aurangabad – 431 136 Mob. 9225311140
5.	1. PKV Mini dal mill (3 hp) 2. PKV Screw polisher 3. PKV Mini dal mill (5 hp) 4. PKV Mini dal mill (Integrated)	04	M/s Kamdhenu Agro Machinery, Plot No. 6, Near Hiwari Nagar, Power House, and Wathoda Road, Nagpur Mob. 9422112216, 9371574303
6.	1. PKV Mini dal mill (3 hp)	01	M/s Anil Agros, 23-3-3, Narravari Street, Satyanaryanapuram, Vijaywada (A.P.)
7.	1. PKV Mini dal mill (3 hp) 2. PKV Mini dal mill (5 hp)	02	M/s Vishwakarma Engineering Works, MIDC, Phase 4, Plot No. M-173, Akola Mob. 8806441969

8.	1.PKV Mini dal mill (3 hp) 2.PKV Screw polisher 3.PKV Mini dal mill (5 hp) 4.PKV Mini dal mill (Integrated) 5.PKV Cleaner grader	05	M/s Pranita Industries, Plot No. M-105, Phase 4, MIDC, Akola, Mob. 9665237678
9.	1. PKV Mini dal mill (3 hp) 2. PKV Screw polisher 3. PKV Mini dal mill (5 hp) 4. PKV Mini dal mill (Integrated) 5. PKV Waste fired dryer 6. PKV Cleaner grader 7. PKV Mini dal mill (1 hp) 8. PKV Mini dal mill (Lab SS model)	08	M/s Laxmikant Trading Company, c/o Maheshwari Udyog, A-19, Old MIDC, Latur, Mob. 9545617350
10.	1. PKV Mini dal mill (3 hp)	01	M/s INDOSAW Industrial Products Pvt. Ltd. P.O. Box No. 42, OSAW Complex, Jagadhri Road, Ambala Cantt – 133 001 (HR) Mb. 08814936888

Coimbatore Centre, TNAU

Sr. no	Name of technology transferred / adopted	No of units	Address of farmers/ entrepreneurs/ manufacturers
1	Compost Pelletizer	1	Bio-Gen Fertilizer India Pvt Ltd, Salem

Kasargod Centre, ICAR-CPCRI

Sr. no	Name of technology transferred/adopted	No of units	Address of farmers/ entrepreneurs/ manufacturers with date of technology transfer
1.	Virgin coconut oil by hot process	4	• Mr. Shridhar Mallaiah, #377, Adhyayana School Road, Vidyashankar Nagar, Mysore • Kalpatheertha Coconut Producer Company Ltd, 414, 2nd Cross, 2nd Main, Vidyanagar Extension, Chikkanayakanahalli, Tumkur, Karnataka • C. Nandihally Coconut Producer's Federation, C. Nandihally, Chelur Hobli, Tumkur • Madhura Agro Process Pvt Ltd,2A,Tapovan Complex Karadimadai Road Coimbatore
2.	Coconut chips	7	• Mr Zakaria C H, Chakkanniyil House, Kadavathur Post, Kannur, Kerala. • M/s Crisco, Old No. 61, New No. 12, Othavadai Street, Nammalwarpet, Chennai • Mr Abdul Rasheed .P.K., Kotheriyil House, Kakkadampuram, Kuttoor North Post, Malappuram, Kerala. • Smt. Lisha .M. M, Bappatta Meethal, Urath, Kuttiadi P.O, Kozhikode, Kerala. • Mr Haridasan Potty, Karanenmeni Illam, Eraviperoor Post, Thiruvalla, Pathanamthitta – 685542, Kerala. • Ms. Nithy Cesil, A2, Harrington Court, Harrington Road, Chetpet, Chennai • Madhura Agro Process Pvt Ltd, 2A, Tapovan Complex, Karadimadai Road, Kuppanur Post, Coimbatore – 641010, Tamilnadu
3.	Coconut vinegar	1	• Mr Ramesan Pilathottathil, KCW 22/121, Kedaram, Devagiri Collage Road, Medical Collage PO, Calicut, Pin – 673008, Kerala.
4.	Mature coconut water based value added products	5	• Perambra Coconut Producer Company, 2nd Floor, Alankar Arcade, Perambra, P.O. Kozhikode, Kerala. • Mr. Nijo Raju Mathew, Niravath Nijo Villa, Kumbazha Post, Pathanamthitta, Kerala. • M/s Crisco, Old No. 61, New No. 12, Othavadai Street, Nammalwarpet, Chennai • Mr Abdul Rasheed .P.K., Kotheriyil House, Kakkadampuram, Kuttoor North Post, Malappuram, Kerala. • Mr. Shridhar Mallaiah, #377, Adhyayana School Road, Vidyashankar Nagar, Mysore
5.	Coconut deshelling machine	1	• M/s Deepika Agro Products, No- 4&5, Electronics and Electrical Industrial Area, Pudu Road, Suramangalam, Salem – 636005, Tamil Nadu, India
6.	Design and drawing of VCO cooker	1	• Sri. M. Nachimuthu, M/s N.M.Engineering Indusstries, 2/388-B3, Irugur Road, Krishna Gounder Nagar, Iswarya Garden, Chinniyampalayam, Coimbatore

7	Preservation of carbonated tender coconut water	4	• Mr. S. Chidambaranathan, 5/2-B, Asokar Street, Vellalore, Coimbatore, Tamil Nadu • Sreevidya Shaju, Panangadan House, Anandapuram, Gramaveedhi Road, Thrissur • Sachin U, S Nivas, Vidyanagar Post, Near NGO Office, Kasaragod, Kerala • A. Rajagopalan, Shivasailam, Ram nagar II street, Poonkunnam, Thrissur, Kerala
8	Frozen coconut delicacy (Ice-cream)	2	• M/s Hangyo Ice Cream Private Limited, #52 Heroor Village, Brahmavar, Udupi. • Madhura Agro Process Pvt Ltd, Kuppanur Post, Coimbatore

Kolhapur Centre, RS&JRS

Sr. no	Name of technology transferred / adopted	No of units	Address of farmers/ entrepreneurs/ manufacturers
1	Liquid Jaggery Production Technology	04	• Shri.Chandrakant Nemgonda Patil, Halondi Tal- Hatkanangale, Dist. Kolhapur • Shri. Manikrao Mane(Brand : Sanika Kakavi), Karad Tal- Karad , Dist. Satara • Shri.Vishwajit Vishnu Patil, Belwale Tal- Kagal, Dist. Kolhapur • Shri. Mohan Uttam Kadam, Giroli Tal- Panhala, Dist. Kolhapur
2	Organic Jaggery Production Technology	07	• Dr. Prasad Patil, Vikaswadi Tal- Karveeer, Dist. Kolhapur • Shri. Vijay Rajaram Mane, Akanksha, Karmveer nagar, Ashta, Dist. Sangli • Shri. Dnyneshwar Namdeo Bhagat, Pimplagaon du. Tal- Igatpuri, Dist. Nasik • Shri. Mahesh Jotiram Patil, Helgaon Tal-Karad Dist. Satara • Shri.Ajit Modekar, Kagal Tal- Kagal, Dist. Kolhapur • Shri. Satish Onkar Patil, Shrikrishna Colony, Satane Mala, Malegaon, Dist.Nasik • Annadata Naisargik Shetimal, Utpadak Mandal,Nej, Dist. Kolhapur
3	Improved jaggery processing plant	04	• Shri.Sharad Sarjerao Pawar, Aahirwadi Tal- Walwa, Dist. Sangali • Shri.Rajendra Suryawanshi, Bawada Tal- Indapune Dist. Pune • Shri.Abhijit Mane, Rahimatpur Tal- Koregaon, Dist. Satara • Shri.Shailendra Mrugendra Kore, Ashta Tal- Walwa, Dist. Sangali
4	Jaggery based finger and little millet cookies	01	• Janai Biscuit Utpadak, C/o- Sau. Sonali Dhanaji Powar, House No. 2217, E ward, Pinjar Galli Kasaba Bawada, Kolhapur.

Lucknow Centre, IISR

Sr. No	Name of technology transferred / adopted	No of units	Address of farmers/ entrepreneurs/ manufacturers
1.	IISR 3 pan jaggery unit	01	KVK, Piprakothi, Bihar

Raipur Centre, IGKVV

Sr. No	Name of technology transferred / adopted	No of units	Address of farmers/ entrepreneurs/ manufacturers
1.	Mechanization of *tikhur* starch extraction	12	• Binjam Mahila Swashayata Samooha, Binjam, Dantewada • Social action for Agro-state Society, Patnar, Darbha • Tatirara Krishak Mandali, Garma, Kondagaon • Lalaguda Mahila Krishak Samooha, Lalaguda (Bastanar) • Danteshwari Mahila Swashayata Samooha, Gumiyapal • Asti Mahila Swashayata Samooha, Aparpara Mohalai • Aalekh Mahila Swashayata Samooha, NayaparaMohalai • Joti Mahila Swashayata Samooha, Kurandi (Bastar) • Jamuna Mahila Swashayata Samooha, Jiragaon, Khalepara • Jagruti Mahila Swashayata Samooha, Jiragaon, Khalepara • Vaishnavi Durga Mahila Swashayata Samooha, Kurandi (Bastar) • Shivgham Mahila Swashayata Samooha, Narharpur, Kanker

Srinagar Centre, SKUAS&T

Sr. no	Name of technology transferred / adopted	No of units	Address of farmers/ entrepreneurs/ manufacturers
01	Hand Operated walnut cracker	02	• M/s Dara Agro Processing centre, Dara Harwan Srinagar Kashmir and M/s Dry Fruits Ganderbal Kashmir.

Trivandrum Centre, ICAR-CTCRI

S. No	Name of technology transferred / adopted	No of units	Address of farmers/ entrepreneurs/ manufacturers
1	Technology for the production of fried snack foods	02	• Mr. Santhosh, M/s Home Foods Pvt. Ltd.,Alappuzha • Mr Pradeep, Prakrithi Foods, Kannur
2	Jackfruit –Cassava Gluten Free Pasta	01	• Mr. Subash Koroth, M/s Artocarpus Foods Pvt. Ltd, Plot No. F, Kinfra Park, Kannur

d.Technology Outreach Activities

Akola Centre, PDKV

Name of technology	Demonstrations	Number of participants
PDKV mini dal mill, cleaner-grader, screw polisher	1/4/2017	20
PDKV onion grading machine and loading-unloading device	27/7/2017	200
PDKV v onion grading machine and loading-unloading device	10/8/2017	178
PDKV mini dal mill, cleaner-grader, screw polisher	1/8/2017	40
PDKV onion grading machine and loading-unloading device	7/9/2017	80
PDKV mini dal mill, cleaner-grader, screw polisher	7/9/2017	80
PDKV mini dal mill, cleaner-grader, screw polisher	18/9/2017	47
PDKV mini dal mill, cleaner-grader, screw polisher	21/11/2017	16

- **Kisan mela-2017**

a. Organized Technology and Machinery Mela on 16th February, 2017, Total participants – 650
b. Shivar Pheri during 20-22 Oct., 2017, Total participants – 1500
c. Employment and self-employment generation mela, Total participants – 250
d. State Level Agri. Exhibition-Krishi Vasant at APMC, Akola during 27-28 January, 2017, Total participants- 1800

Almora Centre, ICAR-VPKAS

Name of technology	Number (Trainings/ demonstrations)	Total participants
Post-harvest engineering technologies	41	2011

- **Kisan mela-2017;** 22nd March 2017 Total participants 721 farmers

Anakapalle Centre, RARS

Name of technology	Number (Trainings/ demonstrations)	Number of participants (No.)
Demonstration of mechanized planting using sugarcane bud chip planter at chuchukonda village, unagapakamandal, Visakhapatnamm on 11.01.2017	1	30
Training programme on "Quality jaggery making and its value addition, preparation of value added Products" at a) tatiparti village, East Godavari on 22.02.2017, b) chandavaram village, West Godavari on 23.02.2017 and c) perumallepalli village, Chittoor on 27.02.2017.	3	58
Demonstration of juice filtration system procured from M/s AB Engineers, Ludhiana on 18-03-2017	1	20
Demonstration on value addition of jaggery at AICRP on PHET, RARS, Anakapallito the officers and MPEO's of Horticulture department, Visakhapatnam on 21-07-2017.	1	30

Demonstration on preparation of edible fortified paper sweet using semi-mechanized Pootharekulu machine to the entrepreneurs and farmers of vempally on 04-08-2017	1	20
Demonstration trail on extraction of sugarcane juice from the single node sugarcane seedlings on 3-roller and 4 roller crushers on 01-09-2017	1	12
Demonstration on value addition of jaggery at AICRP on PHET, RARS, Anakapallito the RAWEP students on 27-10-2017.	1	40
Demonstration of sugarcane juice filtration unit to the entrepreneurs from Guntur at AICRP on PHET, RARS, Anakapalli on 27-10-2017.	1	08
Demonstration of sugarcane juice filtration unit and value addition of jaggery to the progressive farmers of Bee keeping welfare society, ponnuru at AICRP on PHET, RARS, Anakapalli on 09-11-2017.	1	07
Demonstration of quality jaggery making and value addition of jaggery to the students of Agricultural B.Sc., Rajamahendravaram at AICRP on PHET, RARS, and Anakapalli on 18-11-2017.	1	40

Bangalore Centre, UAS

S. No.	Name of Technology	Number (Trainings/ demonstrations)	Number of participants
1	Value Addition of Jackfruit at Agro-processing centre, AICRP on PHET, UAS, GKVK, Bengaluru (10.3.2017)	1	30
2	Processing and value addition of small millets at UAS Bangalore (14.3.2017)	1	30
3	Cultivation, Utilization and Value addition of Small millets at UAS, Bangalore. (21-22 March 2017)	1	.35
4	Value addition of Small Millets at UAS, Bangalore (7-8 September 2017)	35	35
5	Cultivation and Utilization of Small Millets at UAS, Bangalore (21-22 Sep. 17)	1	35
6	Cultivation and Utilization of Small Millets at UAS, Bangalore (14-15 December 2017)	1	35

- **KisanMela-2017**

S. No.	Activity
1	*National Trade Fair* on **"Organics and Millets-2017"** from 28-30 April 2017 held at Tripuravasini Palace Grounds, Bengaluru by Govt of Karnataka
2	**World Food India- 2017** exhibited Millet value added products under Karnataka Pavilion held at New Delhi during 3-5 Nov 2017.

3	PHT Gadgets in the **Krishi Mela-2017** held at **UAS, GKVK, Bangalore** from 16-19 November 2017.
4	Scheme exhibited PHT Gadgets in the **Krishi Mela-2017** held at **VC Farm Mandya** from 29-30th, November. (Dr. V. Palanimuthu and Dr. M. B. Darshan

Coimbatore Centre, TNAU

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Demonstration of Agro processing equipment during machine mela	10	400
Demonstration of Agro processing equipment at APC, Kannur Pudur	5	50
Demonstration of Technology for the production of ready to eat milky mushroom curry at APC, Vadavalli	1	25
Demonstration of Agro processing equipment during AED staff training	6	30

Imphal Centre, CAU

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Pineapple value added products like RTS, Jelly, Jam and osmo dehydrated rings	1. SinamKom Village, Imphal East, Manipur 2. Keisangthong Village, Imphal West 3. Khousabung, Churachandpur, Manipur 4. Angtha Village, Imphal East, Manipur	140

Jorhat Centre, AAU

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Improved jaggery making	7	120

- Kisan mela-2017; no of participants :350
- Farmers Fair at SRS, Buralikson on 23 November, 2017, No of participants: 600
- International Agri-Horti Expo – 2017, at Khanapara, Guwahati, No. of participants: 1500

Junagadh Centre, JAU

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Manual and power operated sapota cleaner	1. NAU, Navsari and Vedchha co-operative society, Vedchha, Ta. & Dist. Navsari. 2. Fruit Research Station, JAU, Mangrol.	125 110

Kasargod Centre, ICAR-CPCRI

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Processing and value addition technologies of coconut	Training – 10 Demonstrations - 11	407 1061

- **Kisan mela-2017**;Coconut Day Celebration on 22.09.2017 – 200

Khanapara Centre, AAU

Name of Technology	Number (Trainings/ demonstrations)	Number of participants
Training programme on "Production Processing and marketing on meat and meat products" for entrepreneurs and meat processors during 27-31 March 2017.	1	30

- **Kisan mela-2017 o**rganized jointly with AAU, Jorhat Centre (350 participants).

Kolhapur Centre, RS&JRS

Name of Technology	Number (Trainings/ demonstrations)	Number of participants
Jaggery production process by modern technology (26.10.2017)	1	-
Status and Prospectus of Jaggery Industry in Maharashtra		
Demonstration on scientific processing of solid, liquid and powder jaggery (24-28 March 2017)	1	366

- **Kisan mela-2017: No. of participants:- 126**

Lucknow Centre, IISR

Name of technology	Number(Trainings/demonstrations)	Number of participants
Quality jaggery making	04	400
Moulding frame technology	10	900
Value added jaggery	01	03

- **Kisan mela-2017;** no of participants 400

Ludhiana Centre, PAU

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Establishment of agro processing complexes	Trainings – 4 Demonstrations – 02	73 500
Honey heating cum filtration system and Electric-cum-battery heated honey uncapping knife	Trainings – 4 Demonstrations – 8	75 55
Fruits and Vegetable Washing machine	Demonstrations- 4	68
Production of probiotic juice from guava, kinnow & mango	Demonstrations -1	12
Extraction of pectin from kinnow peel using pilot plant	Demonstrations- 1	22

- **Kisan mela-2017;** no of participants (2500 approx.)

Mangalore Centre, KVA&FSU

Name of technology	Number (Trainings/demonstrations)	Number of participants
Preparation of Fish, Prawn Pickle and Fryums	Three days training program in collaboration with ICAR-Krishi Vigyan Kendra-UAHS Brahmavara Centre in Udupi, during 13th to 15th March 2017.	45
Fish Processing and Value Addition	Three days training program in collaboration with Department of Fisheries, Government of Karnataka, National Fisheries Development Board, Hyderabad to Fisher women's of Dakshin Kannada District during 25th to 28th of October 2017.	30

Mumbai Centre, MAFSU

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Model Retail Outlet for Production of Hygienic Chicken Meat	One day training programme on **(KISAN MELA)**on9th February 2017	118

Pusa, RAU

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Different post harvest equipment/machinery/process technology for primary processing and value addition	24	1005

- **Kisan mela-2017**

AICRP on PHET participated in Kisan Mela 2017 held on 03 to 05.12.2017**.** Technology and Machinery Demonstration Mela for AICRP on PHT organized twice on 10.03.2017 and 03-05.12.2017 including demonstrations to 1200 farmers.

Raichur Centre, UAS

Name of the Technology	Number (Trainings/ demonstrations)	Number of participants
Processing of pulses (PKV mini dhal mill)	12	480
Operation and maintenance of agro processing machinery (Millet dehusker, chilli pulverisers, mini rice mill etc)	07	210
Processing of millets and preparation of millet based bakery products	04	55
Processing and value addition of agri-horticulture produce	02	45

Raipur Centre, IGKVV

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Processing and Value addition of millets	(i) 28-29 December, 2016 – Kanker (ii) 5-6 January, 2017 –Gariyaband (iii) 12-13 January, 2017 –Dhamtari (iv) 03-04 February, 2017 – Raipur	48 54 59 39
Processing and Value addition of *chironji*	(v) 21- 22 March, 2017 - Kanker	55

- **Kisan mela-2017**

Event/Mela	Number of participants
National level KisanMela 2017, 27–31 January, 2017 at IGKV, Raipur.	1000
Technology Demonstration Mela 2017, 10 February, 2017.	10000
Post-harvest technology and machines demonstration to ***Panchyat Rajya*** representative of state under ***Hamar Chhattisgarh*** programme	1500

Ranchi Centre, BAU

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Dal milling	1	21

Solan Centre, YSPUH&F

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Mechanical coring of apples for value addition	1	30-35
Drying of mushrooms	1	25
Osmotic dehydration of temperate fruits	3	25
Demonstration on extraction of oil from apricot seeds	2	40

- **Kisan mela**

Technology and Machinery Demonstration KisanMela during 10 Feb, 2017 by AICRP on PHET (Solan Centre) at Dilman, District Sirmour (HP). About 150 farmers participated.

Srinagar Centre, SKUAS&T

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Processing and Value addition of Horticultural Crops	03	40
Processing and Value addition of Apricot, Seabuck thorn and vegetables	10	415

- **Kisan mela-2017,** No of participants: **300-400**
  Technology and Machinery Demonstration Mela was organized by AICRP on PHET center AICRP on PET, Division of Agriculture Engineering at main campus SKUAST (K), Shalimar on 10th February, 2017.

Trivandrum Centre, CTCRI

Name of technology	Number (Trainings/ demonstrations)	Number of participants
Value addition and entrepreneurship development in tuber crops	35	962
Technology and machinery demonstration mela 2018	1	500

Tavanur centre, KAU

Name of technology	Number (Trainings/ demonstrations)	Number of participants
EDP in food processing	7	133

- **Kisan mela-2017;** No of participants: 650-700

Karshika Engineering Mela- 2017" was jointly organized by AICRP on PHET and Farm Implements & Machinery of Tavanur Centre on 10th February 2017 at Selvam Auditorium, Vadakkencherry, Palakkad district.

4. OVERALL SALIENT ACHIEVEMENT FOR THE YEAR 2017-18

Overall salient achievements such as pilot plants and value chain, agro processing centers/ processing units established, awards and recognitions, patents, success stories, publications and others are briefly compiled and presented here.

a. Agro Processing Centers/ Processing Units Established by PHET Centers during 2017-18

S. No.	Name of the Centres	Address of APC established	Total (Nos)
1	PDKV Akola	Ku. Rani Ware, Shri Sant Gajanan Maharaj Agro Processing Centre, Pathardi, Dist. Ahmadnagar	02
		Shri Maharudra Shetkari Swayam-sahayata Bachat Gat, Agro Processing Centre, Pimparkhed, Tq. Ghansawangi, Dist. Jalna	
2	Anakapalle Centre, RARS	Regional Agricultural Research Station, Anakapalli-531 001 (A.P.) Visakhapatnam	01
3	Imphal Centre, CAU	Agro processing cum demonstration unit, Central Agricultural University, Iroisemba, Imphal	01
4	Lucknow Centre, IISR	Jaggery processing cum training unit, KVK, Piprakothi	01
5	Ludhiana Centre, PAU	S Harsimran Singh, S/o S Jarnail Singh,Balapritam Flour Mill, Kila Raipur Road, Dehlon	05
		Gurmeet Kaur, W/o Gurpreet Singh, Saran Flour Mill, Vill. Kabbarvacha, Distt. Ferozepur	
		S. Kuldeep Singh, Karan Flour Mill, V.P.O Bhila, Teh. Ludhiana West Distt. Ludhiana	
		S. Amrinder Punia, UPJ Farm Products, Gaddowal, Lakhowal, Punjab	
		S. Babbu Singh, S/O S. Laxman Singh, Village Sardulewala, Mansa-Sirsa Road, Distt. Mansa	
6	Raichur Centre, UAS	Organic millet processing unit, Raichur District Organic Federation, Sindhanoor, Dist. Raichur	01
7	Ranchi Centre, BAU	Farmers facilitation centre, Village:-Sikidari Block:-Angarah, Ranchi	01
8	Solan Centre, YSPUH&F	Ginger and Garlic processing Poorva, Poorva Foods, Kasauli, Distt Solan	01
9	Srinagar Centre, SKUAS&T	M/s Gulmarag Honey, Tangmarg Baramulla	03
		M/s Ladakhi Foods Pvt. Ltd, Wakha Kargil (J&K)	
		M/s Fruitin Agro, Industrial Estates Lssipora Pulwama.	

b. Awards/Recognition

Akola Centre, PDKV

1. Best paper presentation award. A.M. Charpe and P.A. Borkar. Containing post harvest pathogen Geotrichum candidum the cause of sour rot of Nagpur mandarins. National Symposium on Challenges and Opportunities: management of plant diseseases under weather change organized by Dept. of Plant Pathology, JNKVV, Jabalpur and Indian Phytopathological Society Central Zone, JNKVV, Jabalpur during 14-15 Dec., 2017.

Anakapalle Centre, RARS

1. P.V.K. Jagannadha Rao, Principal Scientist has been selected by research editors of International publisher "Rufacimento International", New Delhi for inclusion of his bio-graphical note in the 'Asia Pacific Who's Who (Vol.XVI) on 14-09-2017.

Bangalore Centre, UAS

1. Darshan, M.B. recieved **"IEI Young Engineers Award"** by The Institution of Engineers (India) during "30th National Convention of Agricultural Engineers" organized at Pantnagar, Uttarkhand on 27th February, 2017.
2. Best oral presentation award. Suresha, K.B., Ramya, K.G. and Jayaprakasha, H.M. Development of foxtail millet malted dairy food. Presented in the National Conference on "Advances in Food Science and Technology - Current trends and Future Perspectives (AFST-2017)" Organized by Department of Food Technology, Eternal University, Himachal Pradesh from 24-25 March, 2017.
3. Best poster presentation award. Prem Santhi Y. and V. Palanimuthu. Accelerated ageing of paddy by dry steaming technique and its ffect on milling, physico-chemical and textural characteristics of milled rice. Presented in the *KSTA National Conference on Science and Technology Education* organized by KSTA & UAS, Raichur, India, July 21-22, 2017.

Chennai Centre, TNVASU

1. Best oral presentation award. Utilization of buffalo trachea for optimal extraction of collagen and its identification by FT-IR spectroscopy" Paper presented by Sundaresan, G.V. Govind, V. Appa Rao and R. N. Babu. XV Annual Conference of Indian Association of Veterinary Public Health Specialists and National Symposium on Intersectoral Approaches to Combat Zoonoses, Strategies and Challenges" held from 11.10.2017 to 13.10. 2017 at Tirupathi.
2. Cost effective utilization of poultry and cruciferous material to develop a shelf stable pet food" by Brindha, N and V. Appa Rao.
3. Sensory characteristics and proximate composition of barbecued pork prepared from low value meat by Bilifang Daimary, V. Appa Rao and R. Narendra Babu.
4. Physico-chemical properties of value added barbecued pork by Bilifang Daimary, V. Appa Rao R. Narendra Babu, G. Balakrishnan, R. Ramani and J.K. Ashwini Durga
5. Influence of vacuum packaging on physico-chemical quality of value added carabeef nuggets on chiller storage" by Vasanthi, C., K. Dushyanthan, V. Appa Rao, R. Narendra Babu, A. Serma Saravana Pandian, S.Ezhilvelan and R.Ramani.
6. A comparison of proximate composition of fresh and cooked duck meat" by Nandhini Devi, T., R.Ramani, , V. Appa Rao, R. Narendra Babu, and T.G. Prabhavati
7. A survey on status of sheep slaughter in four meat zones of Tamil Nadu by T. Selvan, N. Babu, V. Appa Rao, T.M.A. Senthil Kumar, Robinson J.J. Abraham and A. Muthukumar.

Ludhiana Centre, PAU

1. Best Poster Award. M S Alam "Effect of thermal and chemical treatments on textural property of minimally processed mango" in National Symposium INNOHORT-2017 at GBPAUT, Pantnagar.
2. Best Poster Award. M S Alam Received 1st prize for "Colour analysis of minimally processed mango under different treatments"in International conference ABCD-2017 at CCSU, Meerut.

Mumbai centre, MAFSU

1. **Dr. D.P. Kshirsagar (Scientist)** received **Innovative Young Scientist Award** by Human Service foundation in Agricultural Exposition **Krushithon** on 23rd November 2017 held at Nashik, Maharashtra

Raipur Centre, IGKVV

1. Best paper presentation award on "Processing of aloin free aloe vera gel: Approach of dehydration for production of aloe vera powder" A. Kalne, S. Patel, P. K. Joshi, A.K. Geda, N.K. Mishra and P.S. Pisalkar and D. Khokhar. National Conference on "Agro-processing based entrepreneurship development for sustainable livelihood" at Dr. Panjabrao Deshmukh KrishiVidyapeeth, Akola (MS) held during 22-23 February, 2017
2. Excellent paper presentation award on "Drying characteristics of gum *karaya*grits" P. S. Pisalkar in National Symposium on Recent Trend in Biopolymers held at ICAR-Indian Institute of natural resins and Gums, Ranchi held during 17-18 February, 2017.
3. First prize awarded, A. Kalne, National level essay competition on "Role of post-harvest processing in national development and innovative ideas for augmenting rural prosperity" A. Kalne. Organized by Dept. OfAgril. Process Engg & AICRP on PHET at DR. PDKV, Akola during 10 October, 2017.
4. Consolation award. E.K. Kuruba, National level essay competition on "Role of post-harvest processing in national development and innovative ideas for augmenting rural prosperity". Organized by Dept. of Agril. Process Engg. & AICRP on PHET at DR. PDKV, Akola during 10 October, 2017.
5. Excellence in Teaching Award, Chandrahas Sahu, International conference on global research initiative for sustainable agriculture and allied sciences (GRISAAS-2017), MPUAT, Udaipur (Rajasthan) during 02-04 December, 2017.
6. Excellence in Communication Award, Amit Kumar Sinha, International conference on global research initiative for sustainable agriculture and allied sciences (GRISAAS-2017), MPUAT, Udaipur (Rajasthan) during 02-04 December, 2017.
7. Young Scientist Award, Eresh Kumar Kuruba, International conference on global research initiative for sustainable agriculture and allied sciences (GRISAAS-2017), MPUAT, Udaipur (Rajasthan) during 02-04 December, 2017.

Solan Centre, YSPUH&F

1. Best poster award: Sharma A, Vaidya D, Chauhan N and Sharma B. 2017. Impact on the quality characteristics of apricot oil at different extraction stages. 20th Punjab Science Congress. 7-9th February, 2017, IET, Bhaddal, Technical Campus, Ropar Punjab, India.

c. Patents

Hisar Centre, HAU

- Paddle operated aonla pricking machine.
- Maize sheller (Paddle operated).

Kasargod Centre, ICAR-CPCRI

- Patents granted (during 2017-18): "Coconut Chips Slicer (Patent No. 285418 dated 19.07.2017)

Mumbai centre, MAFSU

- Patents filed: Extraction of Chondroitin sulphate from buffalo cartilage, Application No. 201721004162/MUM/2017 dated 06/02/2017.

Tavanur centre, KAU

- Jackfruit corer cum peeler
- Power operated continuous cocoa pod breaker

d. Success story

Akola Centre, PDKV

1. Success story of entrepreneur Shri Mahesh Aadhe, Sarvoday Agro Processing Centre, Keliveli, Tq. Akot, Dist. Akola published in Krishi Patrika (ISSN No. 2347-3312), Nov., 2017.
2. Krishi Prakriya Kendra YASHOGATHA. No. Booklet/Dr. PDKV/PUB/475/March, 2017.
3. Agro Processing Centres Success Stories. No. Booklet/Dr. PDKV/PUB/476/March, 2017.

Srinagar Centre, SKUAS&T

1.M/s Gulmarg Honey, Tangmarg Baramulla
2.M/s Ladakhi Foods, Wakha Kargil.

Trivandrum Centre, CTCRI

1. Startup venture for the value added products from cassava at Kannur and one unit is due to start in March 2018 at Trichur.

e. Publications (Papers in referred Journals)

Akola Centre, PDKV

1. P.A. Borkar, R.P. Murumkar, S.N. Gunjkar and M.R. Rajput (2017). Effect of machine and process parameters on peeling efficiency of potatoes. PKV Research Journal July-Dec. 2017.
2. P.A. Borkar, R.P. Murumkar, S.N. Gunjkar and M.R. Rajput (2017). Development and performance evaluation of low cost potato peeler Green Farming-an Int. J. Jan-Feb. 2018.
3. R.P. Murumkar, P.A. Borkar, A.R. Dorkar, V.N. Mate, P.K. Rathod, B.M. Bhalerao (2017). Studies on storage and shelf life enhancement of onions Green Farming-an Int. J. Jan-Feb. 2018.
4. A.M. Charpe, P.A. Borkar and M.N. Ingole (2017). Management of post harvest sour rot of Nagpur Mandarin incited by Geotrichum candidum. Journal of Plant Disease Sciences. 12(1):23-28.
5. A.M. Charpe, P.A. Borkar and M.N. Ingole (2017). Management of post harvest Trichoderma fruit rot of Nagpur Mandarins. J. Plant Disease Sci. 12(2).
6. B.M. Bhalerao and P.A. Borkar (2017). Plant as a natural source for synthesis of silver nanoparticles- A review. International Journal of Chemical Studies. 5(6): 98-104.

Anakapalle Centre, RARS

1. P.V.K. Jagannadha Rao and P Sreedevi (2017). Quality Jaggery- An option for non-traditional sugarcane growing areas. Indian Farming. 67(2): 41-44.
2. P.V.K. Jagannadha Rao, M. Das and S.K. Das (2017). Effect of anti-caking agents on moisture sorption isotherms of palmyra-palm jaggery granules. Int. J. Process. Post-Harvest technol. 8(2):
3. P.V.K. Jagannadha Rao and P Sreedevi (2017). Performance feasibility and economic viability of sugarcane budchip seedling planter in Andhra Pradesh. J. Sugarcane Res.
4. P. Sreedevi, P.Srinivasa Rao and P. Lalitha Kameswari (2017). Effect of high pressure processing on enzyme inactivation & microbial destruction of sugarcane juice. Int. J. Cur. Microbiol. App. Sci. 6(9).

Bangalore Centre, UAS

1. D. Akash, N. Earanna and S. Subramanya (2017). Mushroom diversity in the BiligiriRangana Hills of Karnataka (India). J. Appl. and Nat. Sci. 9 (3): 1381-1387.
2. Satishkumar, T. Farheen, S. Subramanya and K. Geetha (2017). Foxtail millet (Satariaitalica) instant puliogare mix. Agri. Update. 12: 343-346.
3. H.N. Roja, K.B. Munishamanna, R. Veena and V. Palanimuthu (2017). Solid state fermentation of tomato pomace waste by different lactic acid bacteria and yeast strains for quality and nutritional improvement. Agri. Update. 12: 347-356.
4. B. Kalpana, K.G. Ramya, S.V. Suresha and Arvind Rani (2017). Evaluation of quality characteristics of bread from horsegram. Agri. Update. 12: 431-435.
5. K.B. Munishamanna, K.B. Suresha, R. Veena and S. Subramanya. (2017). Solid state fermentation of mango peel and mango seed wastes by different yeast and lactic acid bacteria for nutritional improvement. Intl. J. Food. Ferment. Technol. 7(1): 1-8.
6. N.L Naveena, S. Subramanya., S. Setty and V. Palanimuthu, (2017). Grain storage losses in the traditional tribal settlements of Biligirirangana Hills, Karnataka, India. J. Asia-Pacific Entomol.20: 678–685.

7. H.N. Roja, R. Veena, M.B. Darshan, K.B. Munishamanna, and V. Palanimuthu (2017). Development of nutrient enriched animal feed from tomato pomace waste under solid state fermentation, Agri Update. 12 (7): 2020-2030.
8. T. Farheen, K.G. Satishkumar, S. Ramya, S. Subramanya and K. Geetha (2017). Development of instant idli mix from proso millet (*Panicummiliaceum*), Agri. Update. 12 (3): 605-609.
9. S. Puranik., K.B. Munishamanna and V.C. Suvarna (2018). Optimization of sugar concentration and fermentation temperature for the preparation of fermented beverage from banana pseudo-stem core. (Accepted) J. of Multilogic Sci. 7 (25).

Bapatla Centre, ANGRAU

1. Rekha G, GopalaSwamy SVS and Sandeep Raja D. (2017). Morphological and biochemical basis of tolerance to bruchid, *Caryedonserratus* Olivier in groundnut pods. J. Entomol. Zoology Stu. 5(3): 373-376

Chennai Centre, TNVASU

1. Thamizhannal.M, V. Appa Rao, S. Satheesh Raja, S. Arul, P. Thanigaivel (2017). Physico chemical properties of chicken meat stored in ecofriendly packaging materials. Int. J. Agric. Env. Biotechnol. 2(1): 53-59.
2. Wilfred Ruban S., R. Narendra Babu, Robinson J.J. Abraham, V. Appa Rao, K. Porteen and P. Raja (2017). Coagulase Gene polymorphism in Staphylococcus aureus isolated from chicken and pork marketed in retail outlets in chennai. Int. J. Livestock Res. 7(6)192-196.
3. Wilfred Ruban S, R. Narendra Babu, Robinson J.J. Abraham, T.M.A. Senthilkumar, P. Kumaraswamy, V. Appa Rao and K. Porteen (2017). Prevalence of panton valentine leukocidin (pvl) gene in methicillin resistant staphylococcus aureus isolated from market samples of chicken meat. Int. J. Cur. Microbiol. Appl. Sci. 6(4): 1-8.
4. Pooja K, V. Appa Rao, Robinson J.J. Abraham and B. Dhanalakshmi (2017). Effect of pediocin NCDC252 as cell free supernatant produced from *Pediococus acidilactici* NCDC252 with EDTA on total viable count and sensory evaluation of chicken carcasses stored at refrigeration temperature. Int. J Cur. Microbiol. App. Sci. 6(7):.
5. Ramakrishnan C, R. Narendra Babu, V. Appa Rao, Robinson J.J. Abraham, and S. Wilfred Ruban (2017). Effect of different storage conditions on quality characteristics of chicken carcass. J Environ. Bio. Sci. 31(1): 89-91.
6. Vasanthi C, K. Dushyanthan, V. Appa Rao, R. Narendra Babu, R. Ramani and Robinson J.J. Abraham (2017). Effect of packaging methods on storage and sensory quality of variety meats incorporated Carabeef loaves at chiller storage. J. Environ. Bio. Sci. 31(1): 51-58
7. Jayanthi R, V. Appa Rao, Robinson J.J.Abraham, C.Valli and R.Ramani (2017). Development of functional chicken nuggets with guava powder and potassium chloride. Ind. Vet. J. 94(10): 18-21.
8. Nandini DT, R. Ramani, R. Narendra Babu, V. Appa Rao, J. Ramesh and Robinson J.J. Abraham (2017). Effect of cooking on cholesterol and proximate composition on breast and thigh muscle of Chicken and Quail meat. Int. J. Cur. Microbiol. Appl. Sci.
9. Dhishonin, SM, R. Narendra Babu, R. Ramani, K. Porteen, V. Appa Rao, Robinson J.J. Abraham, R. Jayanthi and V. Govind (2017). A Survey of Disease Conditions in Sheep and Goats Slaughtered at Coimbatore District Slaughter House, Tamil Nadu, India. Int. J. Cur. Microbiol. App. Sci.

10. Karthik, J., Robinson J.J. Abraham, V. Appa Rao, M. Parthiban and R. Narendra Babu (2017). A Survey on Preferred Slaughter Age of Goats in Tamil Nadu, India. Int. J. Cur. Microbiol. App. Sci.
11. Karthik, B., Robinson. J. J. Abraham, R. Narendra Babu and V. Appa Rao (2017). A study on eating quality and nutritional characteristics of emu and chicken tikka. Ind. J. Poultry Sci. 51(3):317-322.
12. Jayanthi, R., V. Appa Rao, Robinson J.J. Abraham, R.Narendra Babu, and S.Ezhilvelan (2017). Effect of Potassium Chloride on Functional Chicken Meat Nuggets. Bull Environ, Pharma Life Sci. 6:(9) 7-10.

Coimbatore Centre, TNAU

1. Vidya, T. Pandiarajan., R. Pandiselvam., D. Amirtham., R.Balakrishnan., R.Haseena and M.Nishashree.(2017). Effect of ethylene concentration and exposure time on physiochemical quality and color value of Sapota fruit (*ManilkaraZapaota*). *Asian J chem.* 29(59): 70-974.
2. Arunprasathvenugopal, Aarthy Viswanath and S. Ganapathy. (2017).A Review on Importance of On-farm Precooling in handling of Fruits andVegetables, *Trends in Biosci.* 10(3): 968-970.
3. Arunprasath. V, AarthyViswanath and S. Ganapathy, 2017, Development ofNight Time On-Farm Ventilated Potato Storage System in Nilgiri Hills ofSouthern India, *Int. J of Process and Post Harvest Tech.*,8 (1) : 37-43
4. S.P. Rajkumar, ArunPrasathVenugopal, AarthyViswanath and N.Varadharaju. (2017). Effect of Air Velocity and Pre Treatment on Drying Characteristics of Tomato Slices During Solar Tunnel Drying, *Int J of Cur Microbio and Appl Sci.* 6(6):pp. 573-580.
5. SivaShankar.V, Venkatachalam Thirupathi and ArunPrasathVenugopal. 2017. Development of On Farm Ventilated Storage System for AggregatumOnion. *Int J of Cur Microbio and Appl Sci*. 6(6) : 1354-1361
6. M. Vidhya, N. Varadharaju, Z. John Kennedy, D. Amirtham and D. Manohar Jesudas.2017. *Escherichia coli* Inactivation in Distilled Water Samples by Ultrasound Technology. International Journal of Current Microbiology and Applied Sciences.8 (7): 1182-1186.
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8. Krishnakumar. P, R. Kailappan, R. Pandiselvam, V. Thirupathi and C. Indu Rani.2017. Engineering properties, thin layer and deep bed sun drying kinetics of cluster beans (Cyamopsistetragonoloba L.) Green Farming, 8(3): May-June: 743-748.

Imphal Centre, CAU

1. Sarangi P.K, Singh Ng.J,.and Singh T.A (2016) Extraction of Bromelain from pineapple wastes. CAU Research Newsletter. 7(1): 14-15.
2. Sarangi P K**,** Singh J Ng and Singh TA (2017) Perspectives of Pineapple Wastes for Generation of Value Added Products. *Journal of Advanced Microbiology.* 3(1): 27-33.
3. Singh N.J, Sarangi P.K**,** Singh T.A and Jekendra. Y (2015) Development and performance evaluation of Ginger washer cum peeler for small farmers if NEH region of India. CAU Research Newsletter. 6(2): 8-9.

Jorhat Centre, AAU

1. Borah, A., Hazarika, K., (2017). Simulation and validation of a suitable model for thin layer drying of ginger rhizomes in an induced draft dryer. International Journal of Green Energy. https://doi.org/10.1080/15435075.2017.1369418.
2. Borah, A., Sethi, L.N. ,Sarkar, S. and Hazarika, K (2017). Energy utilization efficiency and entrepreneurial potential of a solar-biomass integrated drying system. Journal of Agricultural Engineering. 54(2)

Junagadh Centre, JAU

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f. Publications (Reports/Books/Bulletins, etc.)

Akola Centre, PDKV

1. Post Harvest Processing Machineries and Equipments (English) No. Booklet/Dr. PDKV/ PUB/ 497/Sept. 2017
2. Kapni Paschyat Prakriya Yantre va Upkarne (Marathi) No. Booklet/ Dr. PDKV/ PUB/ 498/ Sept. 2017
3. Research Digest No. Booklet/Dr. PDKV/PUB/499/Sept. 2017
4. Manufacturing Drawing of PDKV Chickpea pod stripper. No. Booklet/Dr. PDKV/ PUB/ 505/ Nov. 2017.
5. Manufacturing Drawing of Integrated PKV Mini Dal Mill (3 hp). No. Booklet/Dr. PDKV/ PUB/506/ Nov. 2017
6. Manufacturing Drawing of PKV Mini Dal Mill (5 hp) No. Booklet/Dr. PDKV/PUB/507/ Nov.2017
7. Manufacturing Drawing of PKV Mini Dal Mill (Laboratory SS Working Model). No. Booklet/Dr. PDKV/PUB/508/ Nov.2017
8. Manufacturing Drawing of PKV Mini Dal Mill (1 hp). No. Booklet/Dr. PDKV/PUB/509/ Nov.2017.
9. Manufacturing Drawing of PDKV Turmeric Slicer. No. Booklet/Dr. PDKV/PUB/510/ Nov.2017
10. Krishi Prakriya Kendra YASHOGATHA. No. Booklet/Dr. PDKV/PUB/475/March, 2017
11. Agro Processing Centres Success Stories. No. Booklet/Dr. PDKV/PUB/476/March,2017)

Almora Centre, VPKAS

1. Sher Singh; Shyam Nath; KushagaraJoshi; Pandey, B.M.; SalejSood; Bisht, J.K. and Pattanayak, A. 2017. Mandua/Madira Hetu Vivek Millet Thresherenv Pearler. ICAR-VPKAS ExtensionLeaflet (101/2017).
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Bapatla Centre, ANGRAU

1. Diabetes Diet Facts (*Vari.. no worry.. diabetes diet fact.-Glycemic Index*) – D Sandeep Raja, SVS GopalaSwamy, S Vishnu Vardhan, B John Wesley- February-2017
2. Sand layer technology for pulses storage (*Aparalanilvakuisukaporarakshana*) - SVS GopalaSwamy, D Sandeep Raja, S Vishnu Vardhan, B John Wesley- February-2017
3. Integrated Management Practices in Food Grain Storage (*Ahaaradhanyalanilvalosamagrayaajamaanyam)*- December 2017

Coimbatore Centre, TNAU

1. Pamphlet on "Agricultural processing equipment" in Tamil on behalf of Machinery Mela. 2017.

Jorhat Centre, AAU

1. S. Sharma and A. Borah. Candy from citrus peel (A bilingual bulletin on utilization of peel for candy making, Published by D.R. (Agri), AAU, Jorhat-785013).
2. D.D. Singha .Liquid jiggery in Assamese and English

Kasargod Centre, ICAR-CPCRI

1. Manikantan, M.R. and Chowdappa, P. 2017. Product diversification in Plantation Crops. Today & Tomorrow's Printers and Publishers, New Delhi. pp. 301.

Trivandrum Centre, ICAR-CTCRI

1. Harvest and post harvest equipments in tuber crops.
2. Protein and fibre enriched functional foods and cassava fried chips.
3. Tea time snack foods and desserts.
4. Fried snack foods from cassava.
5. Value added products from sweet potato.

6.Extruded snack foods from cassava.

g. Adaptive Trials, Popularization and Transfer of Technology/Process

Almora Centre, VPKAS

- Adaptive trials on Soy processing plant, CIAE hand maize sheller, PKV mini Dal mill, Vivek millet thresher-cum-pearler

Pusa Centre, RAU

- Adaptive trial of sugarcane jaggery/khandsari processing technology.

Raipur Centre, IGKVV

- Demonstration of process technology for starch production from *tikhur* rhizomes (*Curcuma angustifolia* L.)
- Demonstration of process technology for optimum recovery of essential oil from patchouli (*PogostemoncablinBenth*.)
- Demonstration of power operated maize dehusker cum sheller developed by AICRP on PHET , Udaipur at Farmers field
- Demonstration of custard apple pulper (PDKV, Akola)
- Demonstration of hand operated double screen grain cleaner (CIAE, Bhopal)

5. CENTRE-WISE BRIEF PROGRESS

Individual Centre wise progresses are briefly compiled and presented here.

1. Akola Centre, PDKV

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	06	05
2.	Technical	09	02
3.	Administrative	01	01
4.	Supporting	02	02

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per 12 plan EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	403.00	266.50	298.76
2.	Recurring	105.52	41.84	48.51
3.	Non-recurring	89.00	40.00	23.45
4	**Total**	**598.02**	**348.34**	**370.72**

(A) **On-going projects**

Sl. No.	Title of the projects	Start Date	Likely Date of completion
1.	Development and Evaluation Ajwain and Fennel Seed Extractor	April, 2016	March, 2019
2.	Value chain on pulses	August, 2016	March, 2019
3.	Development of technology for milling of lathyurs	April, 2017	March, 2019
4.	Development of hurda extraction machine for tender sorghum	April, 2017	March, 2019
5.	Development of UV-Assisted Treatment Device for Post Harvest Decay Control in Fruits	April, 2017	March, 2019

(B) **On-going Activities**

a. Establishment of Agro Processing Centre
b. Training and Demonstrations of Post Harvest Processing Machineries

(iii) **New Projects Proposed (Title only)**

a. Development of wet chilli cum tomato seed extractor
b. Development of continuous type multigrain roasting machine
c. Development of magnetic seed treater
d. Enhancement of versatility of ajwain and fennel seed extractor

(iv) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Developed onion grading machine
b. Developed loading-unloading device for onions
c. Developed herbal tablets for management of stored grain pests
d. Established Agro Processing Centres at two entrepreneurs
e. Signed MOU with 10 manufacturers for manufacturing 11 machines developed by Centre
f. No. of units sold by Authorized manufacturers – 75
g. Publications: Research Papers – 05, Other Scientific Publications – 10 and Technical Publications – 11 (Booklet – 9, Leaflet-2, Audio DVD-2).

2. Almora Centre, VPKAS

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	03	00
2.	Technical	04	00
3.	Administrative	01	00
4.	Supporting	00	00

(ii) Financial Detail

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per EFC) for 12th plan (2012-2017)	Fund released, Rs. in Lakh (during 12th Plan)	Fund Utilized, Rs. in lakh (ICAR only) (during 12th Plan)
1.	Salary	0	0	0
2.	Recurring	58.94	23.44	23.93107
3.	Non-recurring	50.00	12.00	13.48925
4	**Total**	**108.94**	**35.44**	**37.42032**

(A) List of ongoing projects

S. N.	Title of Sub-project	Date of Start	Likely Date of Completion
1.	Design, development and evaluation of pedal operated chaff cutter suitable for hilly areas	Apr 2016	Mar 2018
2.	Design, development and evaluation of light weight wheat thresher suitable for hilly areas	Apr 2016	Mar 2018
3.	Value chain on small millets (finger millet &barnyard millet)	Apr 2016	Mar 2018
4.	Design, development and evaluation of engine operated pine needle bailer for pine forests	Apr 2017	Sep 2018

(B) List of projects to be proposed in the current workshop

1. Development and evaluation of light weight multi fruit-cum-vegetable grader for size and shape in hilly areas

(C) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Light weight wheat thresher of about 80 kg/h threshing capacity for small and marginal farmers of hilly areas.
b. Pedal operated chaff cutter with 135 rpm (on load with single blade).
c. Technology and Machinery Demonstration Mela' was organized under AICRP on PHET on March 22, 2017.

3. Anakapalle Centre, RARS

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	02	02
2.	Technical	03	03
3.	Administrative		
4.	Supporting		

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	191.28	167.95	133.57051
2.	Recurring	53.37	34.97	51.40384
3	Non-recurring	58.5	47.5	55.21149
4.	**Total**	**303.15**	**250.42**	**240.18521**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely Date of completion
1.	Consortium mode project work on "Development of mechanized system for the production of export oriented solid and free flowing jaggery granules".	April, 2015	March, 2018
2.	Value chain in jaggery	April 2016	March, 2019
3.	Development of process technology to prepare value added products from sugarcane bagasse.	April, 2017	March, 2020
4.	Effect of edible coatings on shelf-life of jaggery	April, 2017	March 2020

(B) On-going Activities

a. Demonstrations and training programmes to the farmers of Andhra Pradesh on "quality jaggery making in the form of cubes, liquid and granular without using chemical clarificants".

(iv) New Projects Proposed (Title only) :

a. Effect of blanching and organic clarificants on quality of cane juice and jaggery.
b. Design and development of thermal biomass gasifier system for quality jaggery preparation.
c. Design and development of low cost sugarcane stripper

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop (3-4 Bullets)

a. Designed and fabricated the machinery for the establishment of automatic jaggery plant at AICRP on PHET, RARS, and Anakapalli.
b. Standardized the process technology for the preparation of sugarcane juice jellies, jaggery rasgulla, and jaggery-pineapple leather.
c. Technology and Machinery Demonstration Mela on Farm Mechanization and Post-harvest Technology at Regional Agricultural Research Station, Anakapalle on 10-02-2017
d. MOU with M/s Haritha Co-operative Society and Sahaja Aaharam, Seetharamapuram, Kondagangupudi mandal, S. Kota, Vizianagaram for the transfer of technology on "organic jaggery making".

4. **Bangalore Centre, UAS**

(i) Manpower Detail

Sl.No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	8	6 + 1 on contract
2.	Technical	10	3 + 2 on contract
3.	Administrative	1	1 on contract
4.	Supporting	0	0

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh ICAR+State
1.	Salary	606.00	432.50	586.28587
2.	Recurring	112.13	47.88	41.05629
3.	Non-recurring	132.00	47.38	60.92449
4	**Total**	**849.63**	**527.76**	688.24263 **(516.18179)**

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely Date of completion
1.	Value Chain on Tamarind: a) Development of High Capacity tamarind Dehuller b) Development of Modified Tamarind Deseeder	Apr 2016	Mar 2019
2.	Development of Quality Fermented Beverages from Banana Pseudo Stem and Centre Core	Apr 2016	Mar 2018
3.	Development of Low Fat, High Protein Butter Spreads as Health Food Using Fat and Protein Nano-particles	Apr 2016	Mar 2018
4.	Development of Pongamia Decorticator	Apr 2016	Dec 2018
5.	Exploiting Oilseed Cakes as Sources of Nutritional and Functional Proteins for Food Industry Use	Apr 2017	Mar 2019
6.	Developing Active Packaging System for Small Millet Rice and Its Products to Prevent Insect Infestation and Development of Rancidity	Apr 2017	Mar 2019
7.	Development of a Dehuller for Brown Top Millet (*Urochloa ramose*)	Apr 2017	Mar 2019
8.	Development of Health Beverage from *Simaroubagluca* Leaves	Apr 2017	Mar 2019

(B) On-going Activities

a. ORP: Establishment of Agro-Processing Centres, Training &Demonstration of Technologies - Overseeing running of 12 APCs established earlier in different districts; any technical deficiencies are attended.
b. Commercial Testing and Evaluation of agricultural implements /machinery and agro-processing equipment as part of Farm Machinery Testing Centre (GoI).
c. Mass multiplying the ELEVEN Agro-Processing Equipments developed over the years by the Scheme under a separate 'Revolving Fund' and generating income.
d. ICAR-FCI Project on *Study on Determining Storage Losses of Food Grains in FCI and CWC Warehouses*

(iii) New Projects Proposed

a. Development of Probiotic Drink / Beverage from Foxtail Millet
b. Development of Dairy Based Health Drink Enriched with Encapsulated Nutrients and Health Supplements
c. Development of Enzymatically Hydrolysed Millet Malt Drink
d. Hermetic Storage of Small Millets Rice for Management of Insects
e. Extraction and Utilization of Nutraceutical Components Like Protein and Fibre from Flaxseeds for Utilization in Food Products
f. Encapsulation of Bioactive Compounds from Bio-Waste for Nutraceutical Applications

(iv) Salient achievements of the centre for the period between 32nd and 33rd Workshop

a. Pongamia Decorticator of 250 kg/h capacity.
b. Improved prototype Tamarind Dehuller of capacity of about 1000 kg/h.
c. New proto type Tamarind deseeder with better deseeding efficiency
d. Process protocols for preparation of fermented (alcohol: 6.5-7.0%) beverage and non-alcoholic probiotic juice from banana pseudo-stem core juice.
e. Technology for preparing butter spread blended with whey protein having acceptable spreadability as of regular butter by micro fluidization technique.

5. Bapatla Centre, ANGRAU

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	3	3
2.	Technical	5	1
3.	Administrative	1	-
4.	Supporting	-	-

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. (as per 12 plan EFC)	Fund released, Rs. In lakhs	Fund Utilized, Rs in lakh
1.	Salary	236.50	157.50	17.957698
2.	Recurring	55.79	31.67	9.110424
3.	Non-recurring	40.00	25.00	29.97073
4.	**Total**	**332.29**	**214.17**	**251.40755**

(iii)Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	Design and Development of Microprocessor Controlled On-Farm Aeration Bins for Safe Storage of Paddy	01.04.2016	31.03.2018
2.	Study on Determining Storage Losses of Food Grains in FCI, CWC and SWC Warehouses and to Recommend Norms for Storage Losses in Efficient Warehouse Management	01.07.2014	31.03.2017
3.	A Value Chain on Chillies Processing	01.04.2016	31.03.2018
4.	Value Chain Grain Storage along with Drying System developed for Paddy	01.04.2016	31.03.2018

(B) On-going Activities

a. Fabrication of on-farm aeration bin.
b. Laboratory testing of Mechanical dried Chilli Packing cum compaction machine.
c. Testing of chilly calyx removal machine is under progress.
d. Storage studies of various commodities under FCI project was done.

(iv) New Projects Proposed (Title only)

Nil

(v) Salient achievements of the centre for the period between 32nd and 33rd Workshop

a. Fabrication of microprocessor controlled on-farm aeration bin.

6. Bhubaneswar Centre, OUAT

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	06	06
2.	Technical	09	04
3.	Administrative	01	01
4.	Supporting	02	01

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per EFC) for 12th plan (2012-2017)	Fund released, Rs. in Lakh (during 12th Plan)	Fund Utilized, Rs. in lakh ICAR+State
1.	Salary	493.53	370.15	321.11
2.	Recurring	46.53	34.90	22.57
3.	Non-recurring	66.67	50.00	49.93
4	**Total**	**606.73**	**455.05**	**393.61**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	Development of suitable packaging method and storage cabinet for transportation and its shelf life enhancement of paddy straw mushroom	0.1.04.2016	March 2018
2.	Value chain on jackfruit	0.1.04.2016	March 2018
3.	Design and development of a 3 MT capacity Reversible Air Flow Flat Bed Dryer.	0.1.04.2016	March 2018
4.	Application of ozone and ultraviolet radiation for shelf life extension of sugarcane juice	0.1.04.2016	March 2019
5.	Application of silica nano-particles for management of rice weevil and pulse beetle	0.1.04.2016	March 2019
6	ICAR-FCI study on determining storage loss in food grains in FCI and CWC warehouses	01.01.2014	Dec 2017

B. On-going Activities

a. Feasibility testing, performance evaluation and popularization of the prototypes developed.
b. Establishment of Agro-Processing Center, Training and Demonstration of Technologies

(iv) New Projects Proposed (Title only)

a. Production and storage of cashew-nut butter and design of a low cost machine for small scale entrepreneurs
b. Development of food quality diagnostic tool using Smart-phone and Paper based colorimetric sensor
c. Development of a tamarind pulp concentrator of capacity 30 kg per batch

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Technology for shelf life extension and transportation of paddy straw mushroom.
b. Tender jackfruit corer-cum-slicer
c. Ozone and UV-C treatment set-up for sugarcane juice

7. Chennai Centre, TNVASU

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	3	3
2.	Technical	5	4
3.	Administrative	1	1
4.	Supporting	1	1

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per 12 plan EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	259.10	202.10	126.26
2.	Recurring	81.20	24.10	15.83
3.	Non-recurring	146.00	41.00	19.82
4	**Total**	**486.30**	**267.20**	**161.91**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	Extraction of collagen from animal byproducts	01.04.2015	31.12.2017
2.	Extraction of chondroitin sulphate from animal byproducts	01.04.2015	31.12.2017
3.	Mobile flaying cradle for flaying of food animals	01.04.2016	30.09.2017
4.	Adoptive trial of the Solar Drier Developed by the Raichur Centre to dry offals and Meat	01.04.2016	31.03.2018
5.	Preparation of feather meal and biopolymers from chicken feathers by microbial degradation	01.04.2017	31.03.2019
6.	Preparation of bioactive substances from animal byproducts	01.04.2017	31.03.2019
7.	Development of pig restrainer to facilitate stunning	01.04.2017	31.03.2019

(B) On-going Activities

a. The centre organized a Kisan Mela on 11.02.2017 at the Agricultural Technology Information Centre of Tamil Nadu Veterinary and Animal Sciences University at Kattupakkam, A total of about 80 progressive farmers participated in the programme.

(iv) New Projects Proposed (Title only)

a. Development of Combined Meat Mincer and Bowl Chopper

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. The collagen extracted from chicken skin was characterized.
b. Collagen sheets were prepared from the collagen extracted from chicken skin
c. Chondroitin sulphate extracted from trachea and ear of beef carcasses was characterized.
d. Utility of the solar dryer developed by the University of Agricultural Sciences, Raichur to dry meat and offals was established, and the duration of drying was standardized.
e. The superiority of the microbial quality of carcasses flayed on the flaying cradle developed by the centre has been established.

8. Coimbatore Centre, TNAU

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	8	8
2.	Technical	10	10
3.	Administrative	1	1
4.	Supporting	4	4

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in Lakh	Fund released, Rs. in Lakh	Fund Utilized Rs. in lakh
1.	Salary	783.00	545.00	630.26
2.	Recurring	109.53	47.53	44.67
3.	Non-recurring	140.00	34.00	21.49
4.	**Total**	**1032.53**	**626.53**	**696.42**

(iii) Project Detail

A. On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	*Consortium Project* -Development of efficient supply chain for *aggregatum* onion	01.04.2015	31.03.2018
2.	*Consortium Project* -Development of integrated dal milling system for black gram and green gram	01.04.2015	31.03.2018
3.	Mission mode - Value chain on turmeric processing	01.04.2015	31.03.2018
4.	Controlled atmosphere storage of pulses	01.04.2016	31.03.2018
5.	Design and development of turmeric processor using superheated steam for simultaneous boiling, drying, and polishing:	01.04.2017	31.03.2019
6.	Development of a portable non-destructive device to grade banana based on dielectric properties	01.04.2017	31.03.2019
7.	Design of on Farm Ventilation Storage System for Potato	01.04.2017	31.03.2019
8.	Pulsed Electric field Processing of Fruit Juice	01.04.2017	31.03.2019
9.	Development of electrostatic spray coating machine for edible coating of fruits using the natural plant extracts	01.04.2017	31.03.2019

(iv) New Projects Proposed (Title only)

1. Ultrasound assisted enzymatic aqueous extraction of turmeric leaf essential oil
2. Identification and standardization of techniques for enhancing carrot shelf life

(v) Salient achievements of the centre for the period between 31st and 32nd workshop

a. No. of technologies developed : 3
b. No .of Technology commercialized, and Technologies Ready for commercialization : 2
c. Patents filed : 1
d. Publications : Articles in journals : 12, Articles in Seminars/Symposiums: 15, Popular Articles: 2
e. Trainings / Seminars conducted: 2

9. Hisar Centre, HAU

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	3	2
2.	Technical	4	3
3.	Administrative	1	1
4.	Supporting	-	-

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	235.10	163.10	135.87
2.	Recurring	65.09	22.39	15.12
3.	Non-recurring	52.00	20.00	21.31
4	**Total**	**352.19**	**205.49**	**172.30**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	Establishment of pack house for carrots, aonla and ber	April, 2015	December, 2017
2.	Design and development of carrot twigs plucker and utilization of carrot twigs for food, feed and fuel	April, 2015	December, 2017
3.	Establishment of complete value chain of carrot and radish (Primary Processing)	April, 2015	December, 2017
4.	Development of efficient supply chain for aggregatum/ kharif onion	April, 2015	December, 2017
5.	Study on determining storage losses of food grains in FCI and CWC warehouse	2013	June, 2017
6.	Development of acoustic system to determine juice content in kinnows	Apr 16	March 2018
7.	Preparation and utilization of nano-formulations to impart rat repellent property to poly woven bags	Apr 17	March 2019

(B) On-going Activities

a. Formation of FPC (Farmers' Producer Company)
b. Establishment of Agro Processing Center (one), Village Adoption (one village)

(iv) New Projects Proposed (Title only)

a. LEDs system for shelf life enhancement of the mushroom
b. Development of mobile based application for the grading of Kinnow fruits

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Value chains of carrots established in Mundka and Bahabalpur, Farmers attached to KVKs
b. Patent (design) for Paddle operated aonla pricking machine
c. Patent for maize sheller (Paddle operated) applied
d. Establishment of pilot plant to produce extruded products (kurkure type)

10. Imphal Centre, CAU

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	3	2
2.	Technical	3	2
3.	Administrative	1	1
4.	Supporting	1	1

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	193.00	161.00	171.35845
2.	Recurring	53.17	30.70	23.60854
3.	Non-recurring	50.00	23.77	21.95010
4	**Total**	**296.17**	**215.47**	**216.91712**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	Development and performance evaluation of Bamboo Shoot Peeling machine	April 2016	March 2018
2.	Development and performance evaluation of *Citrus macroptera* peeling machine	April 2016	March 2018
3.	Development of value chain for pineapple for the North-eastern Region of India	April 2016	March 2018
4.	Extraction of bromelain from pineapple waste for muscle food tenderisation	April 2016	March 2018
5.	Development and performance evaluation of Makhana (*Euryle ferox* Salisb) Harvester	April 2017	March 2018
6.	Evaluation of long term stability of *Chak-hao* based instant complementary food	April 2017	March 2018

(B) On-going Activities

a. Trainings and Demonstrations to farmers of different parts of Manipur.
b. Establishment of APC, trainings and Demonstrations

(iv) New Projects Proposed (Title only)

a. Development and performance evaluation of antimicrobial mineralized agar-based nanocomposite films as potential ecofriendly food packaging technology
b. Production of Functional Fermented soybean using *Bacillus* culture associated with *hawaijar*- a traditional fermented soybean food of Manipur.
c. Development of *curcumin* capsule dietary supplements from turmeric

(v) Salient achievements of the centre for the period between 31st and 32nd workshop

a. Prototype bamboo shoot peeling machine
b. Prototype Makhana harvester
c. Process protocol for processing of pineapple towards production of RTS, Jam, squash and osmo-dehydtrated rings.
d. Trained No. of framers of different parts of Manipur in pineapple processing in domestic scale.
e. Pineapple wastes are explored for extraction of bromelain enzyme.

12. Jorhat Centre, AAU

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	8	5
2.	Technical	9	4
3.	Administrative	1	1
4.	Supporting	2	2

(ii) Financial Detail (12th Plan)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh as per EFC	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	333.85	262.00	352.78
2.	Recurring	85.45	28.35	18.31
3.	Non-recurring	95.00	16.50	10.58
4.	**Total**	**514.30**	**306.85**	**381.67**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	Design and Development of a Bamboo Shoot Grating machine	Apr 2016	March 2018
2.	Design and development of a seed storage structure for green gram and glutinous paddy for high moisture environment	Apr 2016	March 2018
3.	Management of Coleopteran storage grain insect-pests by plant leaf extracts	May 2015	March 2017
4.	Study on determining storage losses of food grains in FCI and CWC warehouses	2013	June 2017
5.	Design and development of a *Chunga Chaol* making machine	Apr 2017	March 2019
6.	Increasing shelf life of foxtail orchid during transportation, storage and marketing through chemical treatments and improved packaging intervention	Apr 2017	March 2019

(iv) New Projects Proposed (Title only)

a. Management of *Sitophilus oryzae* and *Callosobruchus chinensis* through the combination of food odour and visual stimuli
b. Production of value added jaggery using wood apple
c. Studies on development of almost ready to use traditional food (snack) items of Assam.
d. Development of power operated traditional rice pounding machine

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. APC's established in 4 different districts running successfully under project supervision.
b. A bamboo shoot grating machine designed and fabrication completed. Initial testing done successfully. Capacity: 2 shoot/min.
c. A *Chunga Chaol* (bamboo stalk cooked rice) making machine was fabricated. Initial successful carried out. Each batch comprises of eight bamboo stalks. Capacity: 4 kg/batch. Cost of prototype machine Rs.24, 700/-.

13. Junagadh Centre, JAU

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	6	5
2.	Technical	7	6
3.	Administrative	1	1
4.	Supporting	2	0

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	263.27	257.82	270.41
2.	Recurring	18.55	20.00	19.98
3.	Non-recurring	25.00	29.00	24.37
4	**Total**	**306.82**	**306.82**	**314.76**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	Value Chain on groundnut: Design and development of on-farm solar assisted dryer for drying of groundnut pods	April 2016	March 2019
2.	Value Chain on groundnut: To study the effect of different packing materials against Groundnut Bruchid (*Caryedonserratus Olivier*) during storage	April 2016	March 2019
3.	Forced air curing of onion.	April 2017	March 2019
4.	Testing of ozonization against storage insect pest of wheat	April 2017	March 2019

(B) On-going Activities

a. Strengthening of Agro Processing Centres.
b. Operational research project on Agro Processing Centres.

(iv) New Projects Proposed (Title only)

a. Low temperature grinding of spices.
b. Pectinase enzyme extraction from banana peels using *A. terreus* fungi.
c. Design and development of grain treater for enzymatic pre-treatment to pigeon pea grains.
d. Development of high protein extruded product using defatted peanut flour.

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Developed and fabricated solar dryer.
b. Developed and fabricated onion curing system.
c. Organized Kishan Mela.
d. Demonstrated manual operated sapota cleaner and power operated sapota cleaner.

14. Kasargod Centre, ICAR-CPCRI

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	6	6
2.	Technical	2	2
3.	Administrative	-	-
4.	Supporting	1	1

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	-	-	-
2.	Recurring	64.72	28.87	23.40
3.	Non-recurring	40.00	12.00	7.02
4	**Total**	**104.72**	**40.87**	**30.42**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	Development of coconut milk powder using low investment foam mat drying and ready to cook kheer mix	1.4.2017	31.3.2019
2.	Development of tender coconut trimming machine and preservation protocol for trimmed tender coconut	1.4.2017	31.3.2019

(B) On-going Activities

a. Training and demonstration of AICRP-PHET, ICAR-CPCRI developed technologies

(iv) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Extrudates from coconut haustorium has been developed and evaluated.
b. Coconut milk residue based rusk has been formulated and characterized.
c. Eight different processing and value addition technologies have been transferred to 25 entrepreneurs.
d. One patent granted on “Coconut Chips Slicer (Patent No.285418 dated 19.07.2017)”.
e. 21 training and demonstration programmes were organized on different subjects of postharvest processing and value addition technologies of coconut to 1468 stakeholders.

15. Khanapara Centre, AAU

(i) Manpower Detail

Sl. No.	Categories	Nos.	Filled positions	To be filled up
1	Scientific	4	4	0
2.	Technical	3	1	2
3.	Administrative	1	1	0
4.	Supporting	--	--	--

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per 12 plan EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	197.00	102.00	120.62
2.	Recurring	83.50	28.90	24.73
3.	Non-recurring	101.00	13.00	8.64
4	**Total**	**381.50**	**143.90**	**153.99**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	Development of a Low Cost Liquid Smoke Production Plant	Apr. 2016	March, 2018
2.	Isolation of bioactive peptides having iron binding and anti-hypertensive activities from slaughterhouse blood for possible pharmaceutical / nutraceutical applications	Apr. 2016	March, 2018
3.	Improvement of slaughter techniques by using suspension technology.	Apr. 2017	March, 2019
4.	Utilization of slaughter house by-products for production of high value cheaper pet (Dog) food. (Adopted from Chennai Centre)	Apr. 2017	March, 2019

(iv) New Projects Proposed (Title only)

a. Development of a Foot Paddle Operated Meat Mincer.
b. Mobile pork cutting, display cum selling table to extend the shelf-life and quality of fresh pork in open regular market.
c. Development of liquid keratin protein from poultry slaughter house feathers for animal feeding.
d. Development of A Poultry Processing Cum By-Product Collection Unit

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop:

a. Technology for preparation of solar dried meat balls with a storage life of six Months under ambient temperature has been developed.
b. An innovative meat snack "*Meat Jalebi*" has been developed.
c. Training programme on "Production Processing and marketing on meat and meat products" for entrepreneurs and meat processors was organized *w.e.f* 27th to 31st March 2017.

16. Kharagpur Centre, IIT

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	6	5
2.	Technical	5	5
3.	Administrative	0	0
4.	Supporting	0	0

(ii) Financial Detail

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per 12 plan EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	128.30	107.34	72.32
2.	Recurring	42.20	34.58	63.99
3.	Non-recurring	33.65	24.77	31.29
4	**Total**	**204.15**	**166.69**	**167.60**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	Development of Silicon Compounds from Rice Husk	1-4-2015	31-3-2018
2.	Development of refractance window (RW) drying for production of intermediate moisture mango leather	1-4-2015	31-3-2018
3.	Development and Evaluation of Low Cost Frequency Based Sensor for Non-destructive Inspection of Food Spoilage	1-4-2016	31-3-2018
4.	Development of Microwave-Vacuum Drying/Radio Frequency drying for production of jackfruit leather	1-4-2016	31-3-2018
5.	A value chain on potato processing	1-4-2016	31-3-2018
6.	Automation of crack detection and grading of eggs	1-4-2017	31-3-2019

(B) On-going Activities

a. Development of vacuum chamber and algorithm to detect cracks on egg

(iv) New Projects Proposed (Title only)

a. Continuous automated mango sorting and cutting machine
b. Development of Continuous Refractance Window (RW) dryer
c. Development of Process Technology for the Production of Herbal Dahi Using Local Medicinal Crops (Thankuni and Gulancha)
d. Development of Jackfruit Seed Extraction Machine from the Bulb

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Setup to generate frequency and detection of change in frequency showing spoilage of paneer.
b. Fabrication of the accelerated conditioning machine for the potatoes taken out from cold storage.
c. Crack detection of eggs shell by image processing and vacuum application.

17. Kolhapur Centre, RS&JRS

(i) Manpower Detail :

Sl. No.	Categories	Sanctioned positions (nos.)	Filled positions (nos.)
1.	Scientific	2	2
2.	Technical	1	-
3.	Administrative	-	--
4.	Supporting	2	-

(ii) Financial Details :

Sr. No.	Budget Head	Budget Estimate[Rs. in Lakh (as per EFC) for 12th Plan	Fund released (Rs. in Lakh during 12th Plan)	Fund Utilized(Rs. in Lakh) ICAR+ State (during 12th Plan)
1	Salary	118.06	131.05	177.19 (132.89)
2	Recurring	29.27	22.64	20.79 (15.59)
3	Non Recurring	33.33	25.00	*8.11 (6.08)
4	**Total**	**180.66**	**178.69**	**206.09(154.56)**

(iii) Projects Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	Utilization of small millets in preparation of jaggery based cookies.	December 2016	January, 2018
2.	Value addition of jaggery with Indian spices and herbs (Lucknow centre).	December 2016	January, 2018
3.	Enrichment of granular jaggery with carotenes and beta carotenes for dietary allowances (Ankapalle centre).	December 2016	January, 2018
4.	Mechanization of stirring and filling operations in hot jaggery processing.	April 2017	March 2020
5.	Testing and modification of "Honey Heating Cum Filtration machine" for liquid jaggery processing.	April 2017	March 2019
6.	Power operated jaggery moulding machine (IISR, Lucknow centre)	April 2017	March 2018

(iv) New Projects Proposed (Title only)

Nil

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Demonstration conducted on scientific production of solid and liquid jaggery during 24/03/2016 to 28/03/2016, at Jaggery Pilot Plant of AICRP on PHET, RS&JRS, Kolhapur.

18. Lucknow Centre, ICAR-IISR

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	02	01
2.	Technical	02	01
3.	Administrative	-	-
4.	Supporting	01	-

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	-	-	-
2.	Recurring	73.90	31.30	25.07
3.	Non-recurring	33.25	16.00	14.86
4	**Total**	**107.15**	**47.30**	**39.93**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely date of completion
1.	Development of a semi-automatic jaggery manufacturing plant.	April, 2014	March 2017
2.	Development of sugarcane juice extractor for house hold use	January, 2016	December, 2018
3.	Development of jaggery gems using liquid nitrogen	January, 2016	December, 2018
4.	Study on determining storage losses in food grains in FCI and CWC warehouses and to recommend norms for storage losses in efficient warehouse	January 2013	December, 2017

(B) On-going Activities

a. Training and demonstration of quality jaggery making.
b. Installation of IISR model tree pan jaggery unit
c. Production and sale of jaggery, vinegar and juice from Ikshu hub

(iv) New Projects Proposed (Title only)

a. Evaluation of liquid jaggery technology and granular jaggery technology at IISR, Lucknow

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Installation of jaggery unit at KVK, Piprakothi, Motihari, Bihar
b. Development of molten jaggery pumping device.
c. Sugarcane juice extractor for household purpose.

19. Ludhiana Centre, PAU

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	6	6
2.	Technical	8	8
3.	Administrative	1	1
4.	Supporting	3	3

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate Rs. in Lakhs	Fund released, Rs.in Lakhs	Fund Utilized, Rs. in Lakhs
1.	Salary	743.00	551.00	699.43
2.	Recurring	107.14	33.42	47.15
3.	Non-recurring	59.00	30.00	34.76
4	**Total**	**909.14**	**614.42**	**781.34**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely Date of completion
1.	Development and evaluation of percussion based gadget for quality management of stored grains and their milled products	2014	Dec, 2017
2.	Establishment of complete value chain of carrot and radish (Primary processing)	2015	Dec, 2018
3.	Studies on TNAU developed mechanical exclusion devices against Khapra beetle in stored wheat and rice.	2016	Dec, 2018
4.	Development of low cost machine vision system for grading of citrus fruits.	April 2016	Dec, 2018
5.	ICAR-FCI Project- Study on storage losses of food grains	2013	March 2017
6.	Process development for dietary fibre extraction from fruit and vegetables by- products, its characterization and utilization in food	April 2017	March 2019

(B) On-going Activities

a. Establishment of Agro Processing Centre, training and demonstration of technologies.
b. Development and commercialization of developed equipments and technologies for honey extraction.
c. Technology for production of probiotic/synbiotic juice from guava, kinnow and mango.
d. Protocol and pilot plant for extraction of pectin from kinnow peel/waste.

(iv) New Projects Proposed (Title only)

a. Development of an automated MTS prototype and its evaluation for shelf life enhancement of Kinnow and guava juices
b. Production of food bio-colour from agricultural waste /by-product.
c. Studies on integrated quality management of moong against pulse beetle stored for grain and seed purposes.

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Five new agro processing complexes were established by the farmers under our guidance. Popularization of Agro processing complexes by giving T.V. Talk (Door darshan)/ Radio talk (4), Farmers camps/field days/Farmers' fairs (10), Training courses (6), Lectures in various training programmes (115), Guidance to farmers (95).
b. 8 training programmes at PAU and KVK' of PAU were conducted on working know-how of developed honey heating-cum filtration system, fruits and vegetable washing machine, production of probiotic juices and Agro processing complexes benefiting 146 beekeepers/ farmers/ entrepreneurs. The licensee of honey-heating-cum filtration system (AB Engineers) sold 10 units.
c. The developed pilot plant for extraction of pectin from kinnow peel was evaluated for its economic feasibility.
d. The developed percussion based machine was optimized for its operational parameters for quality management of stored Bengal gram and its milled product (Besan).
e. The washer-cum-de-hairer and sorter in the primary processing line has been made and its establishment in different farms of Hisar is in pipeline. The shelf life of whole carrot and radish can be extended to 63 and 49 days respectively when treated with 1.5 ml Salicylic acid (SA) and stored under refrigerated conditions.
f. The prototype of machine vision based kinnow grading system has been designed and the mechanical components have been developed.
g. Two-in-One Model trap with 2 mm and 3 mm size perforations were found to be highly effective against Khapra beetle for rice.

20. Mangalore Centre, KVA&FSU

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	03	03
2.	Technical	03	03
3.	Administrative	01	01
4.	Supporting	01	01

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget Head	Budget Estimate Rs. in lakh (as per EFC)	Fund Released Rs. in Lakh	Fund Utilized Rs. in Lakh	
				100 %	75 %
1.	Salary	210.95	141.95	166.31	124.73
2.	Recurring	81.35	30.03	29.82	22.36
3.	Non-recurring	47.00	34.00	34.11	25.59
4.	**Total**	**339.30**	**205.98**	**230.24**	**172.68**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start date	Likely date of completion
1.	Development of small scale Fish Meat Picking unit and its performance evaluation	April 2016	March 2018
2.	Production of Fish Oil Concentrate Rich in Omega-3 Fatty Acids.	April 2016	March 2018
3.	Design and development of microprocessor controlled aspirated heat processor for the production of ready to eat fishery products.	April 2017	March 2019
4.	Design and development of pedal operated fish de-scaling cum slicing Machine.	April 2017	March 2019
5.	Utilization of filleting waste or skeletal frames as a source of essential minerals.	April 2017	March 2019

(iv) New Projects Proposed (Title only)

Nil

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

Nil

21. Mumbai centre, MAFSU

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	3	2
2.	Technical	3	3
3.	Administrative	1	1
4.	Supporting	1	1

(ii) Financial Detail

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (2017-18)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	214.00	99.00	87.21
2.	Recurring	81.80	27.90	24.02
3.	Non-recurring	101.00	26.30	22.94
4.	**Total**	**396.80**	**153.20**	**134.17**

(iii)Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely Date of completion
1.	Use of Electron Beam processing for shelf life extension of meat products	April 2017	March 2019
2.	Development of low cost processing technology for the preparation of chicken liver powder and chicken liver chews	April 2017	March 2019
3.	Development and Establishment of model retail outlet for hygienic Sheep/ Goat meat production	April 2017	March 2019

(B) On-going Activities

All the New project sanctioned in 32nd workshop has been initiated and pilot trials of the experiments are in progress

(iv) New Projects Proposed (Title only)

a. Clinical Evaluation of porcine skin graft for treatment of open wound in small animals

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Patents filed: Extraction of Chondroitin sulphate from buffalo cartilage (Application No. 201721004162/MUM/2017).
b. Audio/Video CD Preservation on Handling Techniques for Porcine Skin for Production of Biological Bandages is designed.

22. Pusa Centre, RAU

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	3	2
2.	Technical	5	1
3.	Administrative	1	0
4.	Supporting	1	1

(ii) Financial Detail

Sl. No.	Budget head	Budget Estimate, Rs. In lakh(2017-18)	Fund released, Rs. In lakh	Fund Utilized, Rs. In lakh
1.	Salary	184.75	127.75	161.12
2.	Recurring+HRD	62.27	19.97	12.34
3.	Non-recurring	25.00	21.30	5.48
4.	**Total**	**272.02**	**169.02**	**178.94**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely Date of completion
1.	Design and development of continuous type ohmic heating system for liquid and particulate foods	April, 2016	March, 2018
2.	Development of value chain on Litchi including procurement and evaluation of litchi peeling machine	April, 2016	July, 2018
3.	Development of value chain on Maize	April, 2016	March, 2018
4.	Studies on quantitative storage losses in food grains	Nov, 2014	June, 2018

(B) On-going Activities

a. Training and Demonstration under APC
b. Adaptive trials of different machines/equipment developed by other centers of AICRP on PHET

(iv) New Projects Proposed (Title only)

a. Adaptive trial of sugarcane jaggery/khandsari processing technology developed by other centers of AICRP on PHET.

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Litchi peeling machine supplied by CIPHET, Abohar was repaired and tested.
b. Value chain research was completed for another variety of maize.
c. Demonstration of different post harvest equipments/machines under APC and *Kisan Goshthis* were held for different beneficiaries (954) including students from school, farmers, and others.
d. AICRP on PHET participated in KisanMela 2017 held on 03 to 05.12.2017. Technology and Machinery Demonstration Mela for AICRP on PHT was also organized twice on 10.03.2017 and 03-05.12.2017 including live demonstrations witnessed by about 500 farmers.

23. Raichur Centre, UAS

(i) Manpower Detail

Sl. No.	Categories	Sanctioned Posts, nos.	Filled Posts, nos.
1.	Scientific	3	3
2.	Technical	6	6
3.	Administrative	1	1
Total		**10**	**10**

(ii) Financial Details (12th Plan only)

Sl. No.	Budget Head	Budget Estimate, Rs. in lakh (as per 12 Plan EFC)	Fund Released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	220.25	177.58	175.47
2.	Recurring	83.92	27.98	29.93
3.	Non-recurring	55.00	37.30	32.46
4.	**Total**	**359.17**	**242.86**	**237.86**

(iii) Project Details

(A) On-going projects

Sl. No.	Title of the projects	Date of start	Likely date of completion
1.	Isolation and characterization of bioactive compounds from Euphorbia *hirta* (*Asthama* plant) Linn. using supercritical fluid extraction technology	Apr. 2016	March, 2018
2.	Development of amylose sensor for assessing ageing of rice	Apr. 2017	March, 2019
3.	Development of grain analogues using by-products of rice and dhal mill	Apr. 2017	March, 2019

(B) On-going Activities

a. Establishment of agro processing centres/ processing units
b. Value chain on pulses
c. Development of Light Emission Diode System for Inactivation of Food Pathogens

(iv) New Projects Proposed (Title only)

a. Development of carbon dioxide fumigation technology for bulk storage of food grains
b. Radiofrequency treatment for low-moisture foods to enhance shelf life & microbiological safety
c. Development of microbial fuel cells (MFCs) for the generation of electricity using food wastes
d. Standardization of enzymatic pretreatment for milling of pulses grown in North Karnataka
e. Extraction of antifungal antibiotics produced by *Azotobacter* species for food preservation

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Standardized drying and milling process of *Asthama* plant
b. Optimized the operational parameters of super critical fluid extraction of asthma plant
c. Developed pH based chart for assessing the ageing of rice
d. Preliminary experiments on cyclic volta-metry have been completed
e. Analysed the proximate and mineral composition of rice broken from different rice industries
f. Design and developed die for cold extrusion of rice analogues is
g. Developed a prototype of LED (blue light) chamber for exposing the foods to blue LED
h. Established one organic millet processing unit in Sindhanoor Taluk of Raichur District
i. Established dhal processing unit in Kalaburgi District

24. Raipur Centre, IGKVV

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	5	2
2.	Technical	5	3
3.	Administrative	1	-
4.	Supporting	-	-

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	263.35	212.35	226.67
2.	Recurring	82.74	32.34	23.44
3.	Non-recurring	59.00	35.15	24.94
4.	**Total**	**405.09**	**279.84**	**275.05**
5.	TSP	0.00	5.00	3.98
6.	**Total**	**405.09**	**284.84**	**279.03**

(iii) Project Detail

(A) On-going projects

S. No.	Title of the projects	Start Date	Likely Date of completion
1.	Development of process technology for optimum recovery of essential oil from patchouli (Pogostemoncablin Benth.)	April, 2014	March, 2017
2.	Design and Development of Chironji (*Buchanania lanzan*) decorticator and study the shelf life of Chironji on various modes	April, 2014	March, 2018
3.	Development of process technology for the production of Bixin (sindoor powder) from annatto sindori fruit (*Bixa orellana*), its value addition and commercialization.	April, 2015	March, 2018
4	Evaluation and improvement of existing farm level grain storage structures of different parts of Chhattisgarh	April, 2016	March, 2018
5.	Value chain on kodo rice/ragi.	April, 2016	March, 2018
6.	Design and development of a cottage level (50-100kg/hr capacity) rice puffing machine and evaluation of potential varieties of paddy grown in Chhattisgarh	April, 2017	March, 2019
7.	Development of technology for milling of lathyrus (In collaboration with PHET, Akola centre)	April, 2017	March, 2019

(B) On-going Activities

a. Study for determination on storage losses of food grains (ICAR-FCI) project.
b. Performance evaluation and popularization of prototypes developed at other PHT centres and other R & D institutions. (Maize sheller, MPUAT-Udaipur, Custard apple pulper, PDKV-Akola, Hand operated double screen grain cleaner, CIAE-Bhopal).
c. Establishment of agro processing centre, training and demonstration of technologies

(iv) New Projects Proposed (Title only)

a. Development of process technology for value addition of lotus rhizome/steam.
b. Evaluation of potential/important paddy varieties of Chhattisgarh for the production of value added products: puffed and flaked rice

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Demonstration of processing machines and technologies to the Panchayat Representative of state under Hamar Chhattisgarh programme.
b. Promotion and popularization of mechanized method of extraction of starch from tikhur rhizome. Support for 38 SHGs has been obtained from the state government for establishment of tikhur starch extraction unit to empower 500 tribal farm families for collection/cultivation and processing of tikhur rhizomes under SRLM.
c. Demonstration and promotion of MPUAT-Maize sheller, , PDKV- Custard apple pulper, CIAE-Hand operated double screen grain cleaner, Chironji decorticator and Hydraulic tamarind briquetting machines.
d. Five trainings organized in the remote area of state for processing & value addition of millets and chironji.
e. Completed storage loss study on storage losses of food grains (ICAR-FCI) and data submitted to PC unit.

25. Ranchi Centre, BAU

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	3	-
2.	Technical	3	Nil
3.	Administrative	1	Nil
4.	Supporting	1	1

(ii) Financial Detail (12th Plan)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (2012-2017)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	174.25	93.25	38.43
2.	Recurring	54.84	22.74	8.05
3.	Non-recurring	50.00	32.00	3.97
4	**Total**	**279.09**	**147.99**	**50.45**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely Date of completion
1.	Modified Atmosphere Storage of Important Fruits And Vegetables of Jharkhand State.	April, 2014	March 2018
2.	Design and development of green pea depodder machine	April, 2017	March 2019

(B) On-going Activities

a. Study on determination storage losses of food grains in FCI and CWC warehouse and to recommend norms for storage losses in efficient warehouse management
b. Performance evaluation of pea depodder machine developed by Jabalpur centre.
c. Training, demonstration and establishment of Agro processing centre.

(iv) New Projects Proposed (Title only)

Nil

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Technology of Modified Atmosphere Storage of Important Fruits and Vegetables of Jharkhand State (Veggie Fresh) has been standardized and ready for the release.
b. One APC has been established at village Sikidari block Angarah, district Ranchi.

26. Solan Centre, YSPUH&F

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	4	4
2.	Technical	4	4
3.	Administrative	1	1
4.	Supporting	1	1

(ii) Financial Detail (12th Plan)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per 12 plan EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. In lakh
1.	Salary	276.10	276.10	277.1565
2.	Recurring	26.66	26.66	30.04716
3.	Non-recurring	52.00	52.00	53.01366
4.	TA	6.28	6.28	1.9159
5.	**Total**	**361.04**	**361.04**	**362.1332**

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely Date of completion
1	Value chain on ginger	April 2014	March 2018
2.	Process development for functional foods from *Aloe vera*	April 2016	March 2018
3.	Standardization & optimization of technology for preparation of value added products from apricot kernel oil and press cake	April 2016	March 2018
4.	Development of complete value chain of apple: postharvest practices, processing and utilization	April 2016	March 2018
5.	Pilot scale production and Immobilization of bacterial thermo stable amylase for processing of fruit juice	April 2016	March 2018

(B) On-going Activities

a. Adaptive trial on dehydration of fruits and vegetables: preparation of sand pear candy and pilot scale testing of apricot, plum and kiwi drying.

(iv) New Projects Proposed (Title only):

Development and utilization of composite flour for value addition

(v) Salient achievements of the centre for the period between 31st and 32nd workshop

a. Designing and fabrication of refined osmotic dehydration pilot plant
b. Optimized of formulation for development of ginger powder based appetizing tablets (gingoli), cookies and peda (Indian sweet).
c. Optimized formulation for the development of cinnamon honey based apple choco shots and apple pie.
d. Optimized technology for development of apricot oil based cream, scrub, massage oil and soap.
e. Characterized sweet and bitter aloe Vera leaves their encapsulation and clinical testing for further adaptability

27. Srinagar Centre, SKUAS&T

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	03	03
2.	Technical	04	04

(ii) Financial Detail (12th Plan)

Sl. No.	Budget head	Budget Estimate from 2012-2017	Fund released	Fund Utilized
1.	Salary	220.95	161.95	87.50
2.	Recurring	81.45	32.95	36.16
3.	Non-recurring	63.00	33.00	33.00
4.	**Total**	**365.40**	**227.90**	**156.66**

(iii) Project Detail

(A) On-going projects

S. No.	Title of the projects	Start Date	Likely Date of completion
01	Development of value chain for shelled walnuts	2016	March, 2019
02	Evaluation and optimization of water chestnut processing techniques for value added products	2016	March, 2018

(B) On-going Activities

a. Food Corporation of India sponsored project "Study on determining storage losses of food grains in FCI and CWC warehouses and to recommend norms for storage losses in efficient warehouse management".
b. Establishment of Agro-processing Centers Trainings and demonstrations

(iv) New Projects Proposed (Title only)

a. Development and Evaluation of Viberope type harvester for walnuts.
b. Development and evaluation of hand and power operated apple peelers.
c. Utilization of Barley for the Development of Iron Fortified Extruded Snacks.
d. Application of microwave heating for expansion of protein and fat based extruded pellets

(v) Salient achievements

a. Continuous chain for in shelled walnuts has been developed.
b. Pre conditioning process for walnut cracking has been optimized for thin shelled, medium shelled and hard shelled walnuts.
c. Evaluation of hand and power operated walnut crackers developed by centre has been done.
d. Drying process for walnuts kernels has been standardized
e. Pre conditioning process for water chestnut decortication has been standardized
f. Developed low GI water chestnut snacks, Gluten free water chestnut biscuits and muffins.
g. Two training programme have been conducted for 11 days wherein 455 unemployed youth/farmwomen were trained.
h. Transferred technology to M/s Ladakhi Foods Pvt Ltd. Wakha, Kargil for preparation of Gluten free barley based bakery products and low GI barley based extruded snacks.

28. Trivandrum Centre, ICAR-CTCRI

(i) Manpower Detail

Sl. No.	Categories	Sanctioned positions, nos.	Filled positions, nos.
1.	Scientific	5	2
2.	Technical	6	3
3.	Administrative	1	1

(ii) Financial Detail (12th Plan only)

Sl. No.	Budget head	Budget Estimate, Rs. in lakh (as per 12 plan EFC)	Fund released, Rs. in Lakh	Fund Utilized, Rs. in lakh
1.	Salary	-	-	-
2.	Recurring	33.20	24.40	24.68
3.	Non-recurring	26.00	17.00	11.07
4.	**Total**	**59.20**	**41.00**	**35.75**

(iii) Project Detail

(A) On-going projects

S. No	Title of the projects	Start Date	Likely completion
1.	Development of Thermoplastic Cassava Starch Composites based Biodegradable Films and Foam type Packaging Products	Apr 2013	March 2018
2	Development of particle board from cassava stem and starch factory waste by utilising cassava starch as binder	Apr 2014	March 2018
3	Ultrasound assisted extraction & characterization of cassava starch	Apr 2017	March 2019
4	Development of functional sago and sago wafers using dry cassava starch based composite flours	Apr 2017	March 2019

(B) On-going Activities

a. Preparation of thermoplastic sheets from modified cassava starch.

(iv) New Projects Proposed (Title only)

a. Development of a wet cassava pressing machine for the production of high quality cassava flour

(v) Salient achievements of the centre for the period between 31st and 32nd workshop

a. Ultrasonication treatment increased the starch recovery by about 8-12%
b. Sago made from blends of dry and wet cassava starch produced better quality sago than that of the pre-gelatinized starch added blends.
c. Developed particle boards from cassava stem using modified starch and stem/coir pith blend using synthetic resins
d. Thermoplastic sheets developed using modified starch.
e. Trainings were organized on value addition and entrepreneurship developments in tuber crops.

29. Tavanur centre, KAU

(i) Manpower Detail

Sl. No.	**Categories**	**Sanctioned positions, nos.**	**Filled positions, nos.**
1.	Scientific	3	3
2.	Technical	4	4
3.	Administrative	1	0
4.	Supporting	0	0

(ii) Financial Detail (12th Plan only)

Sl. No.	**Budget head**	**Budget Estimate, Rs. in lakh (as per EFC)**	**Fund released, Rs. in Lakh**	**Fund Utilized, Rs. in lakh**
1.	Salary	249.85	198.85	165.28
2.	Recurring	64.43	25.03	22.06
3.	Non-recurring	35.00	21.00	10.54
4.	**Total**	**349.28**	**244.88**	**197.88**

(iii) Project Detail

(A) On-going projects

Sl. No.	**Title of the projects**	**Start Date**	**Likely Date of completion**
1.	Development of a user friendly tool for pulp/seed separation from toddy pal fruit	April, 2017	March, 2019
2.	Development and evaluation of batch type rotary cocoa dryer	April, 2017	March, 2019

(B) On-going Activities

a. Establishment of Agro Processing Centre, training and demonstration of technologies

(iv) New Projects Proposed (Title only)

a. Process optimization of a Pulsed electric field and microwave assisted extraction system for nutmeg mace *(Myristica fragrans)* essential oil.

(v) Salient achievements of the centre for the period between 32nd and 33rd workshop

a. Women friendly multipurpose seed extractor for ash gourd, cucumber and pumpkin
b. Jackfruit corer cum peeler for faster peeling, coring and cutting of jackfruit.
c. Continuous cocoa pod breaker for faster pod breaking of cocoa
d. Process protocol for canning of tender jackfruit which could extend the shelf life about six months.
e. Process protocol for vacuum drying of ripened deseeded jackfruit bulbs.
f. Microencapsulated papaya leaf extract
g. Process protocol for a health mix with banana, rice, ragi flour and sugar
h. Development of Process protocol for canning of "*Varikka*" variety of tender jackfruit
i. Optimized process parameters for vacuum drying of ripe jackfruit bulb (*Artocarpus heterophyllus* L.).

30. Udaipur Centre, MPUAT

(i) Manpower Detail

Not received from the centre

(ii) Financial Detail

Not received from the centre

(iii) Project Detail

(A) On-going projects

Sl. No.	Title of the projects	Start Date	Likely Date of completion
1.	Development of modern garlic processing centre for augmenting rural prosperity	Aug, 2015	March 2018
2.	Development of modern processing plant for under-utilized fruits	April,2016	March 2019

(B) Ongoing activities

a. Establishment of agro processing centre.
b. Trainings and demonstrations of developed technologies.
c. Study on determining storage losses in food grains in FCI and CWC warehouses and to recommend norms for storage losses in efficient warehouse management.

(iv) New Projects Proposed (Title only)

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ICAR- CENTRAL INSTITUTE OF POST HARVEST ENGINEERING AND TECHNOLOGY, LUDHIANA - 141 004

PROGRAMME FOR THE 33rd WORKSHOP OF AICRP on PHET

Date: 23-25 January 2018

Venue : Junagadh Agricultural University, Junagadh

23-01-2018 Tuesday

09:00 – 09:45	**:**	**Registration**
09:45-11:00	**:**	**INAUGURAL SESSION**
09:45 – 09:55	:	Welcome Address –Dr. R. K. Gupta, Director& I/C PC PHET, ICAR-CIPHET
09:55 – 10:05	:	Opening Remarks – Dr. Kanchan K. Singh, ADG (FE)
10:05 – 10:10	:	Opening Remarks – Dr. S. N. Jha, ADG (PE)
10:10 – 10:20	:	Coordinator's Report- Dr. R. K. Gupta, Director ICAR-CIPHET & I/c PC (PHET)
10:20 – 10:30	:	Presidential Address – Dr. K. Alagusundaram, DDG (Engg), ICAR
10:30 – 10:45	:	Address of the Chief Guest, (Yet to be confirmed)
10:45 – 10:55	:	Release of Publications *(By Chief Guest and* other dignitaries*)*
10:55 – 11:00	:	Vote of thanks - Dr. R.K. Vishwakarma, Pr. Scientist, PC Unit, PHET
Rapporteurs	:	Dr. Devina Vaidya, PI, YSPUH&F, Solan Dr. U.K. Nidoni, Research Engineer, UAS, Raichur
11:00 – 11:15	:	**Tea**
TECHNICAL SESSION – I : 11:15-13:30		**Presentation of New Projects Proposals (RPP-I)** (**Centres:** Akola, Almora, Bangalore, Bapatla, Bhubaneswar, Coimbatore, Hisar)
Chairman	:	Dr. K. Alagusundaram, DDG (Engg), ICAR, New Delhi
Co-chairpersons	:	Dr. Kanchan K. Singh, ADG (FE), ICAR, New Delhi Dr. S. N. Jha, ADG (PE), ICAR, New Delhi
Expert Invitees	:	Dr. B. Ranganna, Dr. Suresh Prasad and Dr. V.K. Sehgal
Coordinator	:	Dr. R. K. Gupta, Director, ICAR-CIPHET& I/c PC (PHET)
Rapporteurs	:	Dr. M. S. Alam, Research Engineer, PAU Ludhiana Dr. N.G. Joy Kumar Singh, RE, CAU, Imphal
13:30-14:30	**:**	**Lunch**

14:30-18:30	**:**	**Presentation of New Projects Proposals (RPP-I) Continued** **(Centres:** Imphal, Jabalpur, Jorhat, Junagadh, Kasargod, Kharagpur, Ludhiana, Pusa, Raipur, Ranchi, Solan, Srinagar, Tavanur, Trivandrum, and Udaipur**)**
Rapporteurs	:	Dr. P.A. Borkar, Research Engineer, PDKV, Akola Dr. V. Palanimuthu, RE, UAS Bangalore

24-01-2018 Wednesday

9:30-11:00	:	**Presentation of New Projects Proposals (RPP-I) Continued (Centres:** Chennai, Khanapara, Mangalore, Mumbai, Raichur**)**
Chairman	:	Dr. K. Alagusundaram, DDG (Engg), ICAR, New Delhi
Co-chairpersons	:	Dr. Kanchan K. Singh, ADG (FE), ICAR, New Delhi Dr. S. N. Jha, ADG (PE), ICAR, New Delhi
Expert Invitees	:	Dr. B. Ranganna, Dr. Suresh Prasad and Dr. V.K. Sehgal
Coordinator	:	Dr. R. K. Gupta, Director, ICAR-CIPHET & I/c PC PHET)
Rapporteurs	:	Dr. R. J. Zende, PI, MAFSU, Mumbai Dr. M. Hazarika, PI, AAU, Khanapara
Jaggery & Khandsari		**(Centres:** Anakapalle, Kolhapur, Lucknow**)**
Rapporteurs	:	Dr. Dilip Kumar, RE, ICAR-IISR Lucknow Dr. PVK Jagannadha Rao, RE, Anakapalle Centre

11:00-13:30 **Workshop and National Steering Committee Meeting of**

FCI sponsored project on Study on determining storage losses in food grains in FCI and CWC warehouses and to recommend norms for storage losses in efficient warehouse management

Chairpersons	:	Dr. K. Alagusundaram, DDG (Engg), ICAR, New Delhi
	:	Dr. C. L. Ram, ED FCI, New Delhi
Co-chairpersons	:	Dr. Kanchan K. Singh, ADG (FE), ICAR, New Delhi Dr. S. N. Jha, ADG (PE), ICAR, New Delhi Sh. A.S.S. Ramarao, GM Stocks
Coordinator	:	Dr. R. K. Gupta, Director CIPHET & I/c PC (PHET)
Rapporteurs	:	Dr. D.K. Sharma, Research Engineer, HAU, Hisar Dr. Sher Singh, Almora
10.30– 10.35	:	Welcome–I/c PC (PHET)
10:35 – 11.15	:	Progress Report presentation – I/c (PC PHET)
11.15 – 11:45	:	Progress of Data entry and finalize of data analysis by Dr. R.K. Vishwakarma
11.45 – 12.00	:	Experience sharing by PIs of cooperating centres

12.00 – 12.30	:	Views/Remarks of FCI/CWC officials
12.30 – 12.45	:	Remarks of Chair and Co-chairpersons
12.45 – 13.00	:	Vote of Thanks – Dr. R.K. Vishwakarma, Sr. Scientist & Co-PI ICAR-FCI Project

13:30-14:30 : Lunch

TECHNICAL SESSION – II: **Presentation of Progress Reports** –Jaggery &Khandsari

14:30-16:00 *(Centres: Anakapalle, Kolhapur, Lucknow)*

Chairman	:	Dr. K. Alagusundaram, DDG (Engg), ICAR, New Delhi
Co-chairpersons	:	Dr. Kanchan K. Singh, ADG (FE), ICAR, New Delhi Dr. S. N. Jha, ADG (PE), ICAR, New Delhi
Expert Invitees	:	Dr. B. Ranganna, Dr. Suresh Prasad and Dr. V.K. Sehgal
Coordinator	:	Dr. R. K. Gupta, Director, ICAR-CIPHET & I/c PC (PHET)
Rapporteurs	:	Dr. B.G. Gaikwad, RS&JRS, Kolhapur Centre Dr. PVK Jagannadha Rao, RE, Anakapalle Centre

Livestock Produce : (Centres: Chennai, Khanapara, Mangalore,Mumbai, Raichur)

Chairman	:	Dr. K. Alagusundaram, DDG (Engg), ICAR, New Delhi
Co-chairpersons	:	Dr. Kanchan K. Singh, ADG (FE), ICAR, New Delhi Dr. S. N. Jha, ADG (PE), ICAR, New Delhi
Expert Invitees	:	Dr. B. Ranganna, Dr. Suresh Prasad and Dr. V.K. Sehgal
Coordinator	:	Dr. R. K. Gupta, Director, ICAR-CIPHET & I/c PC (PHET)
Rapporteurs	:	Dr. Dr. B. John Wesley, RE ANGRAU Bapatla Centre Dr. C.V. Raju, PI, KVA&FSU, Mangalore Centre

TECHNICAL SESSION –II: **Presentation of Progress Reports Continue**
16:00-18:30 (**Centres:** Akola, Almora, Bangalore, Bapatla, Ranchi Bhubaneswar, Coimbatore, Hisar, Imphal, Jabalpur, Jorhat, Junagadh, Kasargod,)

Chairman	:	Dr. K. Alagusundaram, DDG (Engg), ICAR, New Delhi
Co-chairpersons	:	Dr. Kanchan K. Singh, ADG (FE), ICAR, New Delhi Dr. S. N. Jha, ADG (PE), ICAR, New Delhi
Expert Invitees	:	Dr. B. Ranganna, Dr. Suresh Prasad and Dr. V.K. Sehgal
Coordinator	*:*	*Dr. R. K. Gupta, Director, ICAR-CIPHET & I/c PC (PHET)*
Rapporteurs	:	Dr. M.S. Sajeev, RE, CTCRI, Trivandrum Centre Dr. Syed Zameer, SKUAS&T, Srinagar Centre

25-01-2018 Thursday

TECHNICAL SESSION – II:		**Presentation of Progress Reports continue**
09:30-13.00	:	(**Centres:** Kharagpur, Ludhiana, Pusa, Raipur,Solan, Srinagar, Tavanur, Trivandrum, and Udaipur**)**
Chairman	*:*	*Dr. K. Alagusundaram, DDG (Engg), ICAR, New Delhi*
Co-chairpersons	:	Dr. Kanchan K. Singh, ADG (FE), ICAR, New Delhi Dr. S. N. Jha, ADG (PE), ICAR, New Delhi
Expert Invitees	:	Dr. B. Ranganna, Dr. Suresh Prasad and Dr. V.K. Sehgal
Coordinator	:	Dr. R. K. Gupta, Director, ICAR-CIPHET & I/c PC
Rapporteurs	:	Dr. M. R. Manikantan, RE, CPCRI, Kasargod Centre Dr. M.K. Panda, RE, OUAT, Bhubaneswar Centre

13.00 – 14.00 : Lunch

14.00-16.30 Concluding and Business Session for AICRP on PHET

Chairman	:	Dr. K. Alagusundaram, DDG (Engg), ICAR, New Delhi
Co-chairpersons	:	Dr. Kanchan K. Singh, ADG (FE), ICAR, New Delhi Dr. S. N. Jha, ADG (PE), ICAR, New Delhi
Expert Invitees	:	Dr. B. Ranganna, Dr. Suresh Prasad and Dr. V.K. Sehgal
Coordinator	*:*	*Dr. R. K. Gupta, Director CIPHET & I/c PC (PHET)*
Rapporteurs	:	Dr. D.N. Yadav, PS, PC PHET Unit, ICAR-CIPHET Ludhiana Dr. Syed Zameer, PI, SKUAST, Srinagar Dr. V. Chandrasekar, Scientist, PC PHET Unit, ICAR-CIPHET,

(In this Session, Research Engineers/PI of the centres will discuss the salient features of the functioning of their centres, and administrative / technical problems, if any. Besides, recommendations of different sessions will be read out by the Rapporteurs and comments invited. This will be followed by concluding remarks of chairpersons).

Vote of thanks : by the Host Institute