

List of Accepted Papers for oral presentation in 55th ISAE Annual Convention 2021 Scheduled during 23th-25th November 2021 at Patna

Processing Dairy and food Engineering

THEME I: AGRICULTURAL CROPS PROCESSING

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|-------------------|---|---|---|
| PDFE/ACP/ 001 | Coloured Wheat: Evaluation of Engineering Properties, Debranning Characteristics and Anthocyanin Recovery | Nitin Kumar*, Praveen Saini, Sunil Kumar and Arun Kumar Attkan Department of Processing and Food Engineering, CCS Haryana Agricultural University, Hisar *Email: nitin@hau.ac.in | Technical Session-I; Date: 24/11/2021; Time: 9:00-11:00 h |
| PDFE/ACP/ 002 | Photo-induced Modifications in Functional Properties of Wheat (<i>Triticum Aestivum</i>) Albumin Protein | Amit Kumar*1 and Pavuluri Srinivasa Rao2 1Research Scholar, Agricultural and Food Engineering Department, 2Professor, Agricultural and Food Engineering Department, Indian Institute of Technology Kharagpur, West Bengal *Email :amitkumar.fpe@gmail.com | |
| PDFE/ACP/ 003 | Engineering properties and anatomical characteristics of prominent Indian rice cultivars *Roaf Ahmad Parray1 Satish Devram Lande2 Indra Mani3 Anand Shivashampar4 | Division of Agricultural Engineering, ICAR-IARI, New Delhi-12 *Corresponding author (email: rouf.engg@gmail.com) | |
| PDFE/ACP/ 004 | Development of Gas Fired Portable Maize (Zea Mays) Roaster-Cum-B | Rupam Sinha1*, Anupam Amitabh2, Aman Kumar1 and Shagolsheem Mukta Singh1 1M.Tech Student, College of Agricultural Engineering, Dr. RPCAU, Pusa, Samastipur, Bihar, 2Department of Processing and Food Engineering, SRI, Dr. RPCAU, Pusa, Bihar *Email: debasina225@gmail.com | |
| PDFE/ACP/ 005 | Development of Portable Corn Roaster-Cum-Boiler | Dinesh Thokchom, Vishal Kumar*Devendra Kumar, Anupam Amitabh , Department of Processing and Food Engineering, CAE, DRPCAU, Pusa *Email: vihal.cae@gmail.com | |

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| PDFE/ACP/ 006 | Study of Physico-Chemical properties of different nitrogenous fertilizers for design of sensor based flow control system | Dr.Satish D Lande, Dr. Indra Mani, Dr. Roaf A. Parry, Dr. Rajeev Kumar and Er. Ram Kishor Kurmi Division of Agricultural Engineering, ICAR-IARI, New Delhi-110012 Email-satishiari@gmail.com |
| PDFE/ ACP/ 007 | Performance Analysis of Low Cost Popping Machine | Jitendra Kumar ^{1*} , Vidhya Bhushan Jha ² , Satish Kumar ³ and Vinay Kumar ⁴ ¹ Assistant Professor, ² Dean, Dr. Kalam Agricultural College Kishanganj (Bihar) ³ Assistant Professor, Bihar Agricultural College, Sabour, Bhagalpur (Bihar) ; ⁴ Subject matter Specialist, Krishi Vigyan Kendra Bokaro, BAU Ranchi, (Jharkhand)- 834006 *Email : jitendra.kumarc@gmail.com |
| PDFE/ACP/ 008 | Extraction Optimization of Phenolic Compounds from Pigeon Pea by-Products | Deepika Goswami*, Mridula D. and Manju Bala Food Grains and Oilseeds Processing Division, ICAR- Central Institute of Post harvest Engineering and Technology, Ludhiana – 141 004, Punjab, India * Email: Deepika.Goswami@icar.gov.in |
| PDFE/ACP/ 009 | Engineering and Physico-Chemical Properties of Groundnut | Surjeet Kaur, Gagandeep Kaur and Ramandeep Singh Department of Processing and Food Engineering Punjab Agricultural University, Ludhiana. |
| PDFE/ ACP/ 010 | Evaluation of Quality Attributes of Biscuits Using Wheat, Sorghum and Groundnut Blend Flour | Devendra Kumar* and Rohit Kumar Maurya, Dr. Bhim Rao Ambedkar College of Agricultural Engineering and Technology, Etawah (U.P.) India. *Email: devendrachaturvedi2008@gmail.com |
| PDFE/ ACP/ 011 | Optimization of Process Variables of Extruded Food From Maize, Finger Millet and Bengal Gram by Response Surface Methodology | Kumari Namrata ^{1*} , Akanksha Raman ² and Dr. P.D Sharma ³ ¹ Assistant Professor, ² M. Tech. student, ³ Professor, Department of Processing and Food Process Engineering, Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar-848125 *Email: namrata.cae2005@gmail.com |
| PDFE/MT/ 012 | Design Consideration of Mechanized System for Making <i>Hawaijar</i> -a Traditional Fermented Food of North-East India | Th. Bidyalakshmi Devi ^{1*} , K. Bembem ¹ , Surya Tushir ¹ and Ng. Joykumar Singh ² ¹ ICAR-CIPHET, Ludhiana, Punjab; ² CoFT, CAU, Imphal *Email- bidyala@gmail.com |
| PDFE/ACP/ 013 | Development of Pearler Suitable for Quinoa Processing | S.K. Aleksha Kudos* and S.Balasubramanian ICAR-CIAE Regional Centre, Coimbatore *Email: a.a_sona@yahoo.in |
| PDFE/ VAPM/ 014 | Development and Evaluation of Biscuits from Jowar and Jaggery | Jagannadha Rao. P.V.K., Sreedevi. P., Navaneetha Y., Kiranmayi. K. and Bharathalakshmi. M. All India Coordinated Research Project on Post Harvest Engineering & Technology, Regional Agricultural Research Station, Anakapalle, Acharya NG Ranga Agricultural University, Andhra Pradesh, India |

Technical Session-I; Date: 24/11/2021; Time: 9:00-11:00 h

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| PDFE/ACP/ 015 | Soybean Processing and Value Addition | Sagar M. Chavan*1, N. K. Jain2, N. Wadhawan2 and Vishal kumar3 1Assistant Professor, DUPCAET, Jalgaon, 2Professor, CDFT, MPUAT, Udaipur, 3Assistant Professor, DRPCA, Pusa. *Email: sagarchavan363@gmail.com | Technical Session-I; Date: 24/11/2021; Time: 9:00-11:00 h |
| PDFE/ACP/ 016 | Modelling of Barriers of Northern Indian SMEs in Food Processing Industry: An ISM approach | Kaushal Kumar*, R.B. Gautam and M.K. Pandey ANDUAT, Ayodhya 224229 (U.P.) *Email:kkumar_nduat@rediffmail.com | |
| PDFE/ACP/ 017 | Importance of Technology for Income Generation | Kamble K.J., Kad V.P. and Salve Vilas Dept. of Agricultural Process Engineering, Dr. ASCAET, MPKV, Rahuri | |
| PDFE/ACP/ 018 | Osmo-Air Dehydration of <i>Agaricus Bisporus</i> Mushroom | Birendra Kr. Mehta*1, Maya Kumari2 and Amrit Kr. Jha3 1Scientist, 2Scientist, 3Scientist and Head Krishi Vigyan Kendra, Birsa Agricultural University, Jirwabari, Sahibganj (Jharkhand), *E-mail: bkmehtactae@gmail.com | |

THEME II: HORTICULTURAL CROPS PROCESSING

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
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| PDFE/HCP/ 001 | Development of a Mechanical Rotary Dryer for Turmeric | S. Ganapathy ¹ , R. Arulmar ² , V. Arun Prasath ³ and M. Balakrishnan ⁴ ¹ Professor, ² Assistant Professor, ⁴ Associate Professor, Department of Food Process Engineering, Agricultural Engineering College and Research Institute, Tamilnadu Agricultural University, Coimbatore – 641 003. ³ Assistant Professor, Indian Institute of Technology, Roorkee | Technical Session-II; Date: 24/11/2021; Time: 11:15-13:30 h |
| PDFE/HCP/ 002 | Development of a Dust Free Turmeric Polisher | R. Arulmari ¹ , S. Ganapathy ² , S. Parveen ¹ and I.P. Sudagar ¹ ¹ Assistant Professors, ² Professor, Department of Food Process Engineering, Agricultural Engineering College and Research Institute, Tamilnadu Agricultural University, Coimbatore – 641 003 | |
| PDFE/HCP/ 003 | Development of HAU Green Detopping Machine for Carrot | Sunil Kumar*, AK Attkan, Anil Panghal and Ravi Gupta AICRP on PHET Centre, CCS Haryana Agricultural University, Haryana *Email: sksaroha@hau.ac.in | |
| PDFE/HCP/ 004 | Physical and Mechanical Properties of Carrot for its Harvesting and Storage Processes | Vinod Kumar, Vijaya Rani, Mukesh Jain Department of Farm Machinery & Power Engineering, COAE&T, CCS HAU, Hisar | |
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| PDFE/HCP/ 005 | Preservation of Tomato by Edible Coating | Ambuza Roy and Anindita Karmakar* Department of Post Harvest Engineering, Faculty of Agricultural Engineering Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia, West Bengal, India *Email: karmakar.ani@gmail.com | Technical Session-II; Date: 24/11/2021; Time: 11:15-13:30 h |
| PDFE/ HCP/ 006 | Drying of Moringa leaves for Powder Production | Neema Kumari*1 and Pratibha Sharma2 1Ex- B.Tech Student, 2Professor, Department of Processing and Food Engineering, College of Agricultural Engineering, DRPCA, PUSA (Samastipur) *Email :neemajaiswal7@gmail.c | |
| PDFE/HCP/ 007 | Studies on Respiration Rate of Moringa (PKM-1) at Different Storage Temperatures | G Amuthaselvi1 , N.Varadharaju2, S.Ganapathy3 and P. Rajkumar4 1 Assistant Professor, 2 Former Dean, 3Professor, 4Professor and Head, Department of Food Process Engineering, Agricultural Engineering College & Research Institute, Tamil Nadu Agricultural University, Coimbatore-641 003 | |
| PDFE/HCP/ 008 | Effect of Continuous Microwave Drying of Moringa (<i>Moringa Oleifera</i>) Leaves on Retention of Ascorbic Acid and Drying Time | A K Sharma* and P B Moradiya, Department of Food Engineering, College of Food Processing Technology and Bioenergy, Anand Agricultural University, Anand, Gujarat, India *Email: eraksharma@gmail.com | |
| PDFE/HCP/ 009 | Design, Development and Evaluation of Tender Coconut Trimming Machine | R. Pandiselvam*, M. R. Manikantan, A.C. Mathew, and P.P. Shameena Beegum, Physiology, Biochemistry and Post-Harvest Technology Division, ICAR –Central Plantation Crops Research Institute, Kasaragod-671 124, Kerala, India *Email:anbupandi1989@yahoo.co.in | |
| PDFE/HCP/ 010 | Effect of Non-Conventional Osmotic Agents on Drying Kinetics and Product Quality of Coconut Chips | M. Pravitha*1, M.R. Manikantan 2, V. Ajesh Kumar 3, Shameena Beegum 2, R. Pandiselvam 21Agro Produce Processing Division, ICAR-CIAE, Bhopal, 2Physiology, Biochemistry and Post Harvest Technology Division, ICAR- Central Plantation Crops Research Institute (CPCRI), Kudlu. P.O, Kasaragod, India, 3Centre of Excellence on Soybean Processing and Utilization, ICAR-CIAE, Bhopal *Email: pravithamp22@gmail.com | |
| PDFE/HCP/ 011 | Post Harvest Management of Palmyrah Fruit (<i>Borassus Flabellifer</i> L.): Present Status and Scope | P. C. Vengaiah ^{1*} ; S. Kaleemullah ² , M. Madhava ³ , A. Mani ³ , B. Sreekanth ⁴ 1Scientist, Horticultural Research Station, Dr. YSR Horticultural University, Pandirimamidi - 533288, 2Principal Scientist, PHETC, RARS, Acharya NG Ranga Agricultural University, Tirupati - 517502, 3Professor, Dr.NTR College of Agricultural Engineering, Acharya NG Ranga Agricultural University, Bapatla – 522101, 4Associate Professor, Agriculture College, Acharya NG Ranga Agricultural University, Bapatla - 522101, India *E-mail: pcvengaiah@gmail.com | |

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| PDFE/HCP/ 012 | Prevention of Enzymatic Browning of Fresh-Cut Lotus Root Slices | Reena Kumari*1, P. K. Omre2, and Amit Kumar3 1,2Department of Post-Harvest Process & Food Engineering, GBPUAT, Pantnagar, Uttarakhand-263145, 3Division of Agricultural Engineering, ICAR- IARI, New Delhi-110012 *Email: reenarock189@gmail.com | Technical Session-II; Date: 24/11/2021; Time: 11:15-13:30 h |
| PDFE/HCP/ 013 | Drying Characteristics of Fresh-Cut Lotus Root Slices | Reena Kumari*1, P. K. Omre2, and Amit Kumar3 1,2Department of Post-Harvest Process & Food Engineering, GBPUAT, Pantnagar, Uttarakhand-263145, 3Division of Agricultural Engineering, ICAR- IARI, New Delhi-110012 *Email: reenarock189@gmail.com | |
| PDFE/HCP/ 014 | Performance Evaluation of Vertical Feed Cashew Apple Slicer | Dr. Ravindra Naik1* and Dr. D. Balasubramanian2 1Principal Scientist (AS & PE) ICAR CIAE RC, Coimbatore, 2Principal Scientist (AS & PE), ICARDirectorate of Cashew Research, Puttur- Dakshina Kannada, Karnataka *Email: naikravindra@gmail.com | |
| PDFE/HCP/ 015 | Mass Transport Parameters During Osmotic Dehydration of Cashew Apple Slices | V.A. Salve1, S.B. Swami2, Y.P. Khandetod3, P.U.Shahare4 and J. S. Dhekale5 1Ph.D Scholar, Department of Agricultural Process Engineering, 2Professor, Department of Agricultural Process Engineering, 3Associate Dean, 4 Professor and Head, Dept. of FMP and5Professor of Statistics Dr. BSKKV, Dapoli -415712, Dist – Ratnagiri. | |
| PDFE/HCP/ 016 | Effect of Thermal Processing on Antioxidant activity, Color, Microbial and Sensory Quality of Clarified Wood apple Juice | Harsh P. Sharma*, Anurag Nema, Ameer Ravani, S. H. Akbari College of Food Processing Technology and Bio-energy, Anand Agricultural University, Anand 388110 Gujarat, India *Email: harshsharma1983@gmail.com | |
| PDFE/HCP/ 017 | Physical Properties of Bael (<i>Aegel marmelos</i> L.) | Department of Processing and Food Engineering, COAE&T, CCSHAU, Hisar, Haryana, 2 PhD Scholar, Department of Food Science and Technology, COA, GBPUAT, Pantnagar, Uttarakhand, 3M.Tech. (Department of Agricultural and Food Engineering, IIT Kharagpur, West Bengal) *Email- grover.rs86@gmail.com | |
| PDFE/HCP/ 018 | Standardization of Drying Technology of Bael Fruit Pulp and its Application | S. H. Akbari and S. V. Anadani College of Food Processing Technology and Bio-energy, Anand Agricultural University, Anand 388110 Gujarat, India | |
| PDFE/HCP/ 019 | Development of a Custard Apple Harvester | Panchal Purnima M., Bariya Manoj G., Navneet Kumar College of Agricultural Engineering and Post Harvest Technology, CAU, Sikkim College of Agricultural Engineering and Technology, AAU, Godhra | |

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| PDFE/HCP/ 020 | Simulation of Air Flow Pattern, Transient Temperature Profile and Moisture Migration During Mixed Mode Solar Drying of Pineapple Slices | Poonam Rani ¹ , P. P. Tripathy ^{2*} ¹ Research Scholar, ² Associate Professor Agricultural and Food Engineering Department Indian Institute of Technology Kharagpur, West Bengal, India *Email: poonam.fpe@gmail.com ; punam@agfe.iitkgp.ac.in | Technical Session-II; Date: 24/11/2021; Time: 11:15-13:30 h |
| PDFE/HCP/ 021 | Development of Trimming Knife Type Banana Sucker Paring Equipment | Ravindra Naik ¹ , T Senthikumar ² and V. Kumar ³ ¹ Principal Scientist (AS & PE), ICAR CIAE RC, Coimbatore, ² Principal Scientist (FM & P Power), ICAR CIAE RC, Coimbatore, and ³ Principal Scientist, (Hort), ICAR-NRC, Banana, Trichy *Email: naikravindra@gmail.com | |
| PDFE/HCP/ 022 | Utilization of Jakfruit Waste: a Review | Kalse S.B.1, Swami S. B.2, Sawant A. A.1 ¹ Department of Agricultural Process Engineering, College of Agricultural Engineering and Technology, Dr. BSKKV, Dapoli, ² Department of Post-Harvest Engineering, Post Graduate Institute of Post-Harvest Management, Killa-Roha, Dr. Dr. BSKKV *Email: sandeep.kalse@gmail.com | |
| PDFE/HCP/ 023 | Preservation of Jamun Juice: A Review | Vimochana Rao P*, Madhava M, Sreedevi P and Sandeep Raja D Acharya NG Ranga Agricultural University, Andhra Pradesh *Email: vimochan1132@gmail.com | |
| PDFE/HCP/ 024 | Optimum Extraction of Betacyanin From Red Dragon Fruit(Hylocerus Polyrhizus) Peel | Zigma Sahoo* ¹ , N.K. Dhamsaniya ² and Sanjaya K Dash ³ * ¹ Senior Research Fellow, College of Agriculture Engineering and Technology, OUAT, Bhubaneswar, ² Principal, Polytechnic in Agro Processing, JAU, Junagadh, ³ Dean, College of Agriculture Engineering and Technology, OUAT, Bhubaneswar, Odisha *E mail: zigmasahoo1994@gmail.com | |
| PDFE/HCP/ 025 | Effect of Pretreatment on Dimensional Properties of Water Chestnut | F.G. Sayyad ^{1*} , S.H. Akbari ² , D.K. Vyas ³ and M.M.Trivedi ¹ ¹ Polytechnic in Agricultural Engineering, ² College of Food Processing Technology and Bio-energy, ³ CAE&T, Anand Agricultural University, Gujarat, India * Email: faridape@aau.in | |
| PDFE/HCP/ 026 | Effect of Cultivar, Size, and Shape on Drying Characteristics and Properties of Cassava Chips Under Solar Drying for High Quality Cassava Flour (HQCF) Production | T. Krishnakumar*, M.S. Sajeev and C. Pradeepika ¹ Section of Crop Utilization, ICAR-Central Tuber Crops Research Institute (CTCRI), Sreehariyam, Thiruvananthapuram, Kerala, India – 695 017. *Email: krishnakumar.t@icar.gov.in | |

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| PDFE/HCP/ 027 | Development of Oyster Mushroom Slices Through Dehydration | Anindita Karmakar*1, Amit Kumar Bar2 and Prabhas Sahoo2 1 Assistant professor, Department of Post Harvest Engineering, 2 Students, Faculty of Agricultural Engineering, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur-741252 *E-mail: karmakar.ani@gmail.com | Technical Session-II; Date: 24/11/2021; Time: 11:15-13:30 h |
| PDFE/HCP/ 028 | Design and Development of Single Drum Watermelon Pulper | Vishal Kumar1*, Sanjay Kumar Jain2, Sagar Madhukar Chavan3, S. S. Lakhawat4 1Department of Processing and Food Engineering, CAE, DRPCA, Pusa; 2, 3 Department of Processing and Food Engineering, CTAE, MPUAT, Udaipur; 4Rajasathan College of Agriculture, MPUAT, Udaipur *E.mail: vishal.cae@gmail.com | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| PDFE/HCP/ 029 | Development of Postharvest Treatment Machine for Fruits and Vegetables | Subir Kumar Chakraborty Agro Produce Processing Division, ICAR- Central Institute of Agricultural Engineering, Bhopal Email:subir8275@gmail.com | |
| PDFE/HCP/ 030 | Development of Cleaner for Multiplier Onion | Dawn C.P. Ambrose Central Institute of Agril.Engg., Regional Centre, Coimbatore-7, T.N. | |
| PDFE/HCP/ 031 | Testing and Evaluation of Dry Garlic Clove Peeler | Vijay K. Singh1*, Sunil Kumar1, Nitin Kumar1 Department of Processing and Food Engineering COAE&T, CCSHAU, Hisar *E mail: vijurss@gmail.com | |
| PDFE/HCP/ 032 | Effect of Osmo-Convective Dehydration on Rehydration Characteristics and Browning of Cauliflower | Mohan Kumar Sinha1, Jitendra Kumar2* and Sanoj Kumar3 1Assistant Professor, Bhola Paswan Shashtri Agricultural College Purnea (Bihar); 2Dr. Kalam Agricultural College Kishanganj (Bihar); 3Assistant Professor, Bihar Agricultural College, Sabour, Bhagalpur (Bihar) – 813210 *Email: jitendra.kumarc@gmail.com | |
| PDFE/HCP/ 033 | Impact of Processing Techniques on Quality of Cauliflower (<i>Brassica Oleracea</i>) Pickle | S. N. Singh1*, H. B. Sanchavat1, R. G. Burbade1, M. V. Savaliya2 and N. R.Gangadiya2 1Assistant Professor, College of Agricultural Engineering & Technology, NAU, Dediapada, 2B. Tech. (Agril.Engg.) Students, College of Agricultural Engineering & Technology, NAU, Dediapada *E-mail: snsingh@nau.in | |

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| PDFE/HCP/ 034 | Effect of Edible Coatings on the Shelf Life and Quality Parameters of Bitter Gourd | Shabanam Kumari1*, Sanjaya K. Dash2, Kalpana Rayaguru3 Department of Agricultural Processing and Food Engineering, Orissa University of Agriculture and Technology, Bhubaneswar, Odisha 751003, India. *Email: shabnamsingh212@gmail.com | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| PDFE/HCP/ 035 | Indirect Mode Solar Air Drying of Stevia Rebaudiana Leaves | Prakash Kumar1*, P. P. Tripathy2 1Research Scholar, 2Associate Professor, Agricultural and Food Engineering Department, Indian Institute of Technology Kharagpur, West Bengal, India *Email: prakashkumar@iitkgp.ac.in | |
| PDFE/HCP/ 036 | Development of Mathematical Models for Variation of Sennoside Content in Senna Leaves Under Different Drying Methods and Storage Conditions | Raghuraj Singh, Satyanshu Kumar, Tushar Dhanani and Jinal Patel ICAR-Directorate of Medicinal and Aromatic Plants Research, Boriavi-387 310, Anand, Gujarat | |
| PDFE/HCP/ 037 | Thin Layer Drying Characteristics of Basil (Ocimum Gratissimum L.) Leaves | R. G. Burbade1, S.N. Singh2 and J. H. Tarsariya3 1&2Assistant Professor, 3 M. Tech students Deptt.of Processing and Food Engineering, CAET, NAU, Dediapada. Deptt.of Processing and Food Engineering, CAET, NAU, Dediapada | |
| PDFE/HCP/ 038 | Engineering Aspects of Processing Leaves of <i>Stevia Rebaudiana Bertoni</i> : a Natural Sweetener | Gurveer Kaur*, Sandhya, Baldev Singh Kalsi, M. S. Alam Department of Processing and Food Engineering Punjab Agricultural University, Ludhiana-141004 *Email- kaurgurveer91@pau.edu | |
| PDFE/HCP/ 039 | Curing of Tobacco Leaves Using Heat Pump Dryer | Sadvatha, R. H.1, T. Kiran Kumar2, S. K. Aleksha Kudos1, J. Poorna Bindu2, T. Senthilkumar1 and M. Anuradha2 1ICAR- Central Institute of Agricultural Engineering, Regional Centre, Coimbatore, 2ICAR- Central Tobacco Research Institute, Rajahmundry | |
| PDFE/HCP/040 | A Review on Loss Reduction Strategies in Fruit and Vegetables | Km. Sheetal Bangal1 and Sunil Kumar2 1Assistant Professor, Deptt of Agricultural Engineering, Janta Vedic College, Baghpat, Uttar Pradesh; 2Assistant Scientist, AICRP on PHET Hisar Centre, CCS Haryana Agricultural University, Hisar Haryana *Email: sheetal.0415@gmail.com | |
| PDFE/HCP/041 | Tamarind Seed: Composition, Applications and Value Addition | Chetan Kumar Nagar*, Sanjaya K Dash and Kalpana Rayaguru Department of Agricultural Processing & Food Engineering, College of Agricultural Engineering and Technology, OUAT, Bhubaneswar 751 003, India. *Email: chetan7jul1995@gmail.com | |

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| PDFE/ HCP/ 042 | Development and Optimization of Low-Fat Purple Fleshed Sweet Potato Vacuum Fried Chips | Chintha Pradeepika ^{1*} , Namrata A. Giri ^{1,2} , T. Krishna Kumar ¹ , M.S.Sajeev ¹ , S.Shanavas ¹ 1 ICAR-Central Tuber Crops Research Institute, Trivandrum, Kerala-695017, India ^{1,2} ICAR-National Research Centre on Pomegranate, Solapur-413255, Maharashtra, India | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| PDFE/ HCP/ 043 | Influence of Storage Condition on the Quality Characteristic of Orange Fleshed Sweet Potato Incorporated Pasta | Gitanjali ^{1*} and Sarla Lakhawat ² 1Department of Food and Nutrition, College of Community Science, Dr. RPCAU, Pusa, Samastipur, Bihar 848125; 2 Department of Food Science and Nutrition, College of Community and Applied Science, Maharana Pratap Agricultural University and Technology, Udaipur, Rajasthan 313001 | |
| PDFE/HCP/ 044 | Development of Osmo-Dehydrated Value-Added Products from Elephant Foot Yam (<i>Amorphophallus Paeoniifolius</i>) | Aman Kumar ¹ , Mukesh Shrivastava ² , Rupam Sinha ³ and Shagolshem Mukta Singh ⁴ 1M.Tech. Student, College of Agricultural Engineering, Dr. RPCAU, Pusa, Samastipur, Bihar 2,3,4 Department of Processing and Food Engineering, CAE, Dr. RPCAU, Pusa, Bihar Email: sauravaman12@gmail.com | |
| PDFE/HCP/ 045 | Performance Evaluation of Drying Techniques for Formulation of Tomato Powder | Dr. Mousumi Saha (Ghosh)*, Sanchita Mukherjee, Dr. Lakshmeshri Roy Techno Main Salt Lake, Sector V, Kolkata, WB *Email: mousumi.ft.tmsl.2019@gmail.com | |
| PDFE/HCP/ 046 | Studies on Quality Evaluation of Carrot and Grape Blend Juice | Devendra Kumar*, Punit Kumar Tiwari, T.K. Maheshwari, D. Singh and J.P. Yadav Baba Sahab Dr. B.R. Ambedkar College of Agril.Engg.& Tech. Etawah *Email: devendrachaturvedi2008@gmail.com | |
| PDFE/HCP/ 047 | Development of <i>Moringa Oleifera</i> Pulp Enriched Tomato Soup | S. H. Akbari, Ameer Ravani, H. P. Sharma and R. V. Prasad College of Food Processing Technology and Bio-energy, Anand Agricultural University, Anand 388110 Gujarat, India | |
| PDFE/HCP/ 048 | Process Technology for the Development of Candy from Watermelon Rind | Vishal Kumar ^{1*} , Sanjay Kumar Jain ² , Sagar Madhukar Chavan ³ , Anupam Amitabh ⁴ 1Department of Processing and Food Engineering, CAE, DRPCAU,Pusa 2, 3 Department of Processing and Food Engineering, CTAE, MPUAT, Udaipur. 4Sugarcane Research institute, DRPCAU, Pusa *E.mail: vishal.cae@gmail.com | |
| PDFE/HCP/ 049 | Optimization of Process Parameters for Preparing <i>Mucuna Pruriens</i> Powder | Mohini M. Dange ¹ and P. J. Chirde ² 1Assistant Professor and 2. M.Tech. student, CAET, Dr. PDKV, Akola | |

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| PDFE/ HCP/ 050 | Jaggery infused osmo-dehydrated healthy coconut chips-Optimization and characterization | M. R. Manikantan*,1, M. Pravitha2, R. Pandiselvam1, and P.P. Shameena Beegum1 1Physiology, Biochemistry and Post-Harvest Technology Division, ICAR –Central Plantation Crops Research Institute, Kasaragod-671 124, Kerala, India 2Agro Produce Processing Division, ICAR- Central Institute of Agricultural Engineering, Nabibagh, Berasia Road, Bhopal, India *Email: manicpri@gmail.com | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| PDFE/ HCP/ 051 | Development and Evaluation of Safety Cover for Banana (<i>Musa Paradisiaca</i> L.) Comb Cutter | A K Senapati*, F M Sahu, P S Pandit, Dev Raj Centre of Excellence on Post Harvest Technology, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari-396 450(Gujarat), India. *E- mail: ashoksenapati.iitkgp@gmail.com | |
| PDFE/ HCP/ 052 | Technology for Preparation of Powder from Unripe Banana (<i>Musa Paradisiaca</i> L.) | A. K. Senapati*, F. M. Sahu,P. S. Pandit, H. G. Suthar, Dev Raj Centre of Excellence on Post Harvest Technology ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari - 396450, Gujarat, India *E mail: ashoksenapati.iitkgp@gmail.com | |
| PDFE/ HCP/ 053 | Optimization of Supercritical Carbon Dioxide Oil Extraction Parameters for Mango Seed Kernel Using Response Surface Methodology | Poonam Choudhary*, Manju Bala, Sandeep Popatrao Dawange, Thingujam Bidyalakshmi Devi and K. Narsaiah ICAR-Central Institute of Post-Harvest Engineering and Technology, PAU Campus, Ludhiana- 141 004, India *E-mail: poonam@icar.gov.in | |
| PDFE/ HCP/ 054 | Standardization of the Rose Syrup Production Process from Rose Flower Petals | Rahul S. Yadav, P Naveen Kumar, Ganesh Kadam, T N Saha and K V Prasad ICAR- Directorate of Floricultural Research, Pune, Maharashtra | |

THEME III: DAIRY, JAGGERY, RESINS, GUMS AND FIBRES PROCESSING

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|--------------------|--|---|---|
| PDFE/ DJRF/001 | Development of the Process for Paneer Whey Enriched Fruit Beverage | Rakesh Kumar Raigar and Chanamthabam Jeenson Assistant Professors, Department of Processing and Food Engineering, College of Agricultural Engineering and Post Harvest Technology, Central Agricultural University, Ranipool, Gangtok, Sikkim 737135 Email- rakeshiitkgp07@gmail.com | Technical Session-IV; Date: 24/11/2021; Time: 17:15-19:00 h |
| PDFE/ DJRF/002 | Subzero Temperature Liquid (SZTL) Based Milk Cooling System | Chitranayak, Hitesh K Rohit, P.S. Minz, Khushbu Kumari, J.K. Dabas Dairy Engineering Division ICAR-NDRI, Karnal-132001, Haryana *Email: chitranayaksinha@gmail.com | |
| PDFE/ DJRF/ 003 | Ghee Residue Based Protein Rich Energy Bar: Technological Solution for By-Product Utilization | Amanchi A Sangma, Monika Sharma*, Rekha Menon Ravindra, Laxmana Naik N and K Jayaraj Rao Southern Regional Station, ICAR-National Dairy Research Institute, Adugodi, Bengaluru-560030 *Email: Monika.Sharma@icar.gov.in, sharma.monikaft@gmail.com | |
| PDFE/ DJRF/ 004 | Simulation Studies on Flow Behaviour of Milk During Cooling in Scraped Surface Heat Exchanger | Pawan Mahadik ¹ , PSMinz ^{2*} , Chitranayak Sinha ² , JKDabas ³ , Khushbu Kumari ⁴ , AD Amita Vd ⁴ 1M.Tech. Scholar, 2Senior Scientist, 3ACTO, 4Scientist Dairy Engineering Division, ICAR-National Dairy Research Institute, Karnal-132001 *Email: psminz@gmail.com | |
| PDFE/ DJRF/ 005 | Overall Heat Transfer Coefficient of Scraped Surface Heat Exchanger (SSHE) During the Preparation of <i>Bottle Gourd Halwa (Dudhi Halwa)</i> | Sapna Jain, C. Sahu*, A.K. Agrawal and K.K. Sandey Department of Dairy Engineering, College of Dairy Science and Food Technology, Raipur (CG) *Email: csahu7681@gmail.com | |
| PDFE/ DJRF/ 006 | Performance Evaluation of Centrifugal Clarifier for Quality Jaggery | Jagannadha Rao. P.V.K., Madhava, M., Sreedevi, P., Kiranmayi, K. and Bharathalakshmi, M. All India Coordinated Research Project on Post-Harvest Engineering & Technology, Regional Agricultural Research Station, Anakapalle, Acharya NG Ranga Agricultural University, Andhra Pradesh, India | |
| PDFE/ DJRF/ 007 | Optimization of Ready to Use Bio-Clarificant Mixture for Production of Quality Jaggery Cubes | Anupam Amitabh ^{1*} , Vishal Kumar ² , A.K. Singh ¹ , Amit Tekam ² 1Sugarcane Research Institute, RPCAU, Pusa, Samastipur, Bihar- 848125 2College of Agricultural Engineering, RPCAU, Pusa, Samastipur, Bihar-848125 *Email- anupam@rpcau.ac.in | |

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| PDFE/ 008 | DJRF/ | Comparative Evaluation of Different Shellac Manufacturing Processes | S.K.Pandey1(LM-10430), S.C, Sharma2(LM-10594), N.Prasad3(LM-8007) 1 Scientist (SG), 2 Sr. Scientist and 3 Principal Scientist, MPE Division, ICAR-IINRG, Ranchi-834010 | Technical Session-IV; Date: 24/11/2021; Time: 17:15-19:00 h |
| PDFE/ 009 | DJRF/ | Electromechanical Device for Portable to Determine Ginning Percentage on Real Time to Accelerate Objective Grading of Cotton | V. G. Arude1, S. K. Shukla2 and P. S. Deshmukh1 1Senior Scientist and 2Principal Scientist ICAR - Central Institute for Research on Cotton Technology, Mumbai - 400019, India | |
| PDFE/ 010 | DJRF/ | Kinetics and Modelling of Grape Drying with Abrasive and Chemical Pretreatments for Production of Raisins | D. A. Pawar*1, S. K. Giri1, A. K. Sharma2 1Agro Produce Processing Division, ICAR-Central Institute of Agricultural Engineering, Bhopal, India.2National Research Centre on Grapes, Pune, Maharashtra, India *Email- dilip.agroneer@gmail.com | |

THEME IV: FOOD PACKAGING AND STORAGE

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|----------------|--|---|---|
| PDFE/ FPS/ 001 | Design of Control System for Improving Cooling Efficiency of Solar Refrigerated Evaporatively Cooled (SREC) Structure for Safe Storage of Vegetables | M.C. Monpara1, Indra Mani1, Shalini Gaur Rudra2, Susheel Sarkar3, Sangeeta Chopra1 1 Division of Agril Engg., Indian Agricultural Research Institute, New Delhi 110012, 2 Division of Post Harvest Tech., Indian Agricultural Research Institute, New Delhi, 3Indian Agricultural Statistics Research Institute, New Delhi | Technical Session-IV; Date: 24/11/2021; Time: 17:15-19:00 h |
| PDFE/ FPS/ 002 | Performance Evaluation of Hemp Based Evaporatively Cooled (EC) Structure for Storage of Perishables | Omkar Nagawade1, Indra Mani1, Roaf Parray1, Susheel Sarkar2, Sangeeta Chopra1 1 Division of Agril Engg., Indian Agricultural Research Institute, New Delhi 110012, India,2Indian Agricultural Statistics Research Institute, New Delhi, India | |
| PDFE/FPS/ 003 | Design of Indirect-Direct Type Evaporative Cooling System for Horticultural Produces | K.V. Vala, M.A. Makwana, A. Nema, M.T. Kumpavat College of Food Processing Technology and Bioenergy, Anand Agricultural University, Anand-388110, Gujarat, India | |
| PDFE/ FPS/ 004 | Development of Cold Storage System for Fruits and Vegetables | Shagolschem Mukta Singh1*, Dr. Vishal Kumar2, Anupam Amitabh2, Aman Kumar2 and Rupam Sinha2 1M.Tech student, College of Agricultural Engineering, Dr. RPCAU, Pusa, Bihar, 2Department of Processing and Food Engineering, CAE, Dr. RPCAU, Pusa, | |

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| | | Bihar*Email: shagolshemmukta1997@gmail.com | |
| PDFE/ FPS/ 005 | Pre-Storage Treatments/Packaging Materials Impacting Selected Quality Characteristics of Stored Moong Bean Under Ambient Conditions | Kulwinder Kaur*, Preetinder Kaur and Satish Kumar Department of Processing and Food Engineering, Punjab Agricultural University, Ludhiana, Punjab *Email: kulwinder.verma@gmail.com | Technical Session-IV; Date: 24/11/2021; Time: 17:15-19:00 h |
| PDFE/ FPS/ 006 | Physico-Chemical and Functional Properties of Potato Peel Waste and Developed Biopolymer | Gagandeep Kaur, Gurjeet Kaur and Jaspreet Kaur Department of Processing and Food Engineering, Punjab Agricultural University, Ludhiana | |
| PDFE/ FPS/ 007 | Sustainable Food Packaging: Valorisation of Rice Straw into Green Packaging Application | Potdar Pratik Pandit*1, Preetinder Kaur1, K Radhakrishnan2 and Manpreet Singh3 1Department of Processing and Food Engineering, Punjab Agricultural University,Ludhiana, Punjab; 2Department of Polymer Engineering, Maharashtra Institute of Technology, Pune, Maharashtra; 3Department of Renewable Energy Engineering, Punjab Agricultural University, Ludhiana, Punjab*Email: pratik13-pfe@pau.edu | |
| PDFE/ FPS/ 008 | A Review on Rapid Insect Control under Hermetic Storage Coupled with Other Techniques | Km. Sheetal Bangal, Sunil Kumar2, Nitin Kumar2 1Assistant Professor, Deptt of Agricultural Engineering, Janta Vedic College, Baghpat, Uttar Pradesh; 2Assistant Scientist, AICRP on PHET Hisar Centre, CCS Haryana Agricultural University, Hisar, Haryana *Email: sheetal.0415@gmail.com | |
| PDFE/ FPS/ 009 | Impact of Ultrasonic Treatment on Properties of Soybean Aqueous Extract Based Composite Films | V. Ajesh Kumar*1, P. P. Srivastav2, M. Pravitha3, Muzaffar Hassan3, S Mangaraj1 1Scientist, Centre of Excellence on Soybean Processing and Utilization, ICAR-CIAE, Bhopal; 2Professor, Department of Agricultural and Food Engineering, Indian Institute of Technology Kharagpur; 3Scientist, Agro Produce Processing Division, ICAR-CIAE, Bhopal *Email: ajeshmtr@gmail.com | |
| PDFE/ FPS/ 010 | Effect of Sonication on Bio-Degradable Polymeric Membrane | Gautam, R.B., Kumar S., Maurya K.K., Singh R.K Acharya N.D. University of Agriculture and Technology, Kumarganj, Ayodhya | |
| PDFE/ FPS/ 011 | Performance Analysis and Optimization of a Small Capacity Vapor Absorption Refrigeration System | Boris Huirem and Pradeepta Kumar Sahoo Food Engineering Department, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur 741252, West Bengal, India Email: huiremboris@gmail.com | |

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| PDFE/ FPS/ 012 | Development and Evaluation of Automated Aeration Based Modular Onion Storage System | Kate A.E. * ¹ Pawar D.A. ¹ Chakraborty S.K. ¹ Gotepatti K. ² ¹ ICAR-Central Institute of Agricultural Engineering, Bhopal ² ICAR-Directorate of Onion and Garlic Research, Pune | Technical Session-IV; Date: 24/11/2021; Time: 17:15-19:00 h |
| PDFE/ FPS/ 013 | Study on Water Activity of Maize in Treated and Untreated Grain Storages | Dinesh Rajak ¹ and Genitha Immanuel ² ¹ Ph. D Scholar and ² Associate Professor Department of APFE, V IA E & T, SHUATS, Prayagraj, U. P. *Email: dineshrajak437@gmail.com | |

THEME VI: NOVEL TECHNOLOGIES

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|---------------|---|--|--|
| PDFE/ ET/ 001 | Fabrication of Flaxseed Oil-in-Water Nanoemulsion Using Ultrasonication | Shikhangi Singh* ¹ and N.C. Shahi ² ¹ Research Scholar, ² Professor, Department of Post-Harvest Process and Food Engineering, College of Technology, G.B. Pant University of Agriculture and Technology, Pantnagar, Uttrakhand-263145 *Email: shikhangisingh16@gmail.com | Technical Session-V; Date: 25/11/2021; Time: 09:00-11:30 h |
| PDFE/ ET/ 002 | Manothermosonication: an Emerging Food preservation Technology | Baldev Singh Kalsi*, Sandhya(LM-10052), Mohammed Shafiq Alam Department of Processing and Food Engineering Punjab Agricultural University, Ludhiana *Email- baldev.kalsi94@gmail.com | |
| PDFE/ ET/ 003 | Sensor Technology: Applications in Food Processing | Arun Kumar Attkan1*, Sunil Kumar ¹ , Nitin Kumar ¹ , M.S. Alam ² ¹ Department of Processing and Food Engineering, College of Agricultural Engineering and Technology, CCS Haryana Agricultural University, Hisar Haryana ² Department of Processing and Food Engineering, College of Agricultural Engineering and Technology, Punjab University, Ludhiana *Email: arun.pfe@hau.ac.in | |
| PDFE/ ET/ 004 | 3D Printing in Food Processing: A Review | Shreejaya Sivadas ¹ , P. K. Omre ² ¹ Ph.D Scholar, ² Associate Professor, Department of Post-Harvest Process and Food Engineering,G.B. | |

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| | | Pant University of Agriculture and Technology, Pantnagar, Uttarakhand, India | |
| PDFE/ ET/ 005 | Quality Classification of Mustard Seed Using Image Processing and Logistic Regression | Anjali Sudhakar ¹ , Subir Kumar Chakraborty ² 1PhD Scholar, 2Principal Scientist, ICAR-Central Institute of Agricultural Engineering, Bhopal | Technical Session-V; Date: 25/11/2021; Time: 09:00-11:30 h |
| PDFE/ ET/ 006 | Computer Vision Coupled with Machine Learning Algorithm to estimate Weight of Pomegranate Fruit | Shekh Mukhtar Mansuri ^{1*} , Priyabrata Santra ² and Akath Singh ³ 1Ph.D Scholar (Agricultural Processing & Structures), ICAR-CIAE, Bhopal-462038, 2Principal Scientist (Soil Physics), ICAR-CAZRI, Jodhpur-342003, 3Principal Scientist (Horticulture), ICARCAZRI, Jodhpur-342003 * E-mail: mukhtarmnsr95@gmail.com | |
| PDFE/ ET/ 007 | Use of Light Emitting Diode for Post-Harvest Quality Management of Fruits and Vegetables | Khushboo Gupta ^{1*} , Tapan Kumar Khura ² , Arun Kumar T.V. ³ Division of Agricultural Engineering, ICAR- Indian Agricultural Research Institute, New Delhi *E-mail - khushbooagrahari2012@gmail.com | |
| PDFE/ ET/ 008 | Computational Modelling of Ohmic Heating and Convective Baking For Millet-Based Breads | Arpan Dubey* and P. P. Tripathy Agricultural and Food Engineering Department Indian Institute of Technology Kharagpur, Kharagpur-721302, India *Email: arpandubey.agfe@gmail.com | |
| PDFE/ ET/ 009 | Ohmic Heating Technology: Review on Different Systems and Applications | Lalremmawii, Satish Kumar and Maninder Kaur* Department of Processing and Food Engineering, Punjab Agricultural University, Ludhiana (141004) Email-maninderkaur1@pau.edu | |
| PDFE/ ET/ 010 | Cold plasma: Future of Food Preservation Technology | Kritanjali Goswami, Sandhya*(LM-10052) and Maninder Kaur Department of Processing and Food Engineering, Punjab Agricultural University, Ludhiana *Email- sandhya-pfe@pau.edu | |
| PDFE/ ET/ 011 | High Pressure Processing of Sugarcane Juice to improve its Shelf-Life- A Novel approach | P. Sreedevi ^{1*} and P. S. Rao ² 1Principal Scientist (Ag. Engg), AICRP on Post-Harvest Engineering & Technology, ANGRAU, Regional Agricultural research Station, Anakapalli-531001(A.P.);2Professor (Food Process Engineering), Indian Institute of Technology, Kharagpur, West Bengal.*E-mail: sreedevinasa@gmail.com | |
| PDFE/ ET/ 012 | Artificial Intelligence – Concept, Components and Applications in Agricultural Engineering | Devinder Dhingra ¹ , Sangeeta Chopra ² 1Principal Scientist (AS&PE), ICAR, New Delhi, 2Principal Scientist (Electrical Engineering), ICARIARI, New Delhi Email: devinder.dhingra@gmail.com | |

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| PDFE/ ET/ 013 | Design, Development and Evaluation of Ozonation System for Shelf-Life Enhancement of Minimally Processed Onion (<i>Allium Cepa</i> L.) | Raouf Aslam* and Mohammed Shafiq Alam Department of Processing and Food Engineering, Punjab Agricultural University, Ludhiana, Punjab * Email: raoufaslam@gmail.com | Technical Session-V; Date: 25/11/2021; Time: 09:00-11:30 h |
| PDFE/ ET/ 014 | Encapsulation of Food Bio-Actives Through Co-Crystallization | Neha Rawat ¹ , Rinku Grover ² , Charu Bisht ¹ , Satish Kumar Sharma ³ ¹ PhD Scholar, Department of Food Science and Technology, COA, GBPUAT, Pantnagar, Uttarakhand; ² PhD Scholar, Department of Processing and Food Engineering, COAE&T, CCSHAU Hisar, Haryana; ³ Professor, Department of Food Science and Technology, COA, GBPUAT, Pantnagar, Uttarakhand *Email: rawatneha1225@gmail.com | |
| PDFE/ET/ 015 | Application of Ultrasound Assisted Osmotic Dehydration Pre-Treatment on Fruits & Vegetables: A Review | Satish Kumar ¹ and P. K. Sahoo ² ¹ Deptt. of Ag.Engg., BAU, Sabour, Bhagalpur (Bihar), ² Deptt. of Ag.Engg., BCKV, Mohanpur (West Bengal) *Email: skumarbau@gmail.com | |
| PDFE/ET/ 016 | Comparative Study of Conventional and Microwave-Assisted Hot Water Blanching on Colour and Flavour Characteristics of Onion Puree | Ruchika Zalpouri ¹ , Manpreet Singh ² and Preetinder Kaur ¹ ¹ Department of Processing and Food Engineering, Punjab Agricultural University, Ludhiana, Punjab, ² Department of Renewable Energy Engineering, Punjab Agricultural University, Ludhiana Punjab *Email: zalpouri28@gmail.com | |
| PDFE/ET/017 | Procedures for Feature Extraction Techniques Used in Agriculture | Ravindra Babu Dhulipalla ¹ *, R C Verma ² , Navneet Kumar Agrawal ³ , Isha Suwalka ⁴ and Madhu Bogala ⁵ and 5 PhD Scholars, 2 Professor (Retd.), 3 Assistant professor, 4 Ex.PhD Scholar 1, 2 & 5 Department of Processing and Food Engineering; 3&4Department of Electronics and Communication Engineering, College of Technology and Engineering, Maharana Pratap University of Agriculture & Technology, Udaipur-313001, India. *Email: drdravindrababu@gmail.com | |
| PDFE/ET/018 | Effect of Irradiation on Aflatoxins and Bio active Compounds of Deoiled Peanut Cake | G.P.Tagalpallewar ¹ , S. H. Akbari ² (LM-9000), H.G.Bhatt ² ¹ Assistant Professor, College of Food Processing Technology, Anand Agricultural University, Anand, ² Associate Professor & Head, College of Food Processing Technology, Anand Agricultural University, Anand | |

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| PDFE/ET/019 | Microencapsulation of Bixin Pigment from Annatto (<i>Bixa Orellana</i> Linn.) Extract by Spray Drying and its In Vitro Release Study | M. Balakrishnan ¹ and P.Preetha ^{2*} ¹ Professor, Department of Processing and Food Engineering, Agricultural Engineering College and Research Institute, TNAU, Kumulur, ² Teaching Assistant, Centre for Post Harvest Technology, Agricultural Engineering College and Research Institute, TNAU, Coimbatore. *preethafoodtech@gmail.com | Technical Session-V; Date: 25/11/2021; Time: 09:00-11:30 |
| PDFE/ET/020 | Development of Database for dissemination of information on post-harvest technologies | Sandeep Mann ^{*1} , Renu Balakrishnan ² , Sandeep Dawange ³ and Sewak Singh ⁴ ¹ Pr. Scientist, ² Scientist, ³ Scientist, ⁴ Young Professional, TOT division, ICAR-CIPHET, Ludhiana | h |

Farm Machinery and Power Engineering

THEME I: TRACTION AND MACHANIZATION

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|------------|---|---|---|
| FMPE/TM-01 | Computation the degree of mechanization of farm implements in Uttar Pradesh | T K Maheshwari and D Kumar CAET, Etawah, CSAUAT, Uttar Pradesh maheshwari_tk@yahoo.com | Technical Session-I; Date: 24/11/2021; Time: 09:00-11:00 h |
| FMPE/TM-02 | Mechanization status in <i>Karaya</i> gum tapping and scope of improvement: A review | S C Sharma, S K Pandey and N Prasad ICAR – Indian Institute of Natural Resins and Gums, Ranchi (Jharkhand) INDIA scsharma09@yahoo.co.in | |
| FMPE/TM-03 | Design and development of three-point hitch dynamometer | G Manikandan, B Shridar, and D Manohar Jesudas CIAE-RC and AEC & RI, TNAU, Coimbatore. kandan.mani15@gmail.com | |
| FMPE/TM-04 | Dynamics of farm power sources and their availability in Bihar | P K Sundaram, B Sarkar, P Jeet, S K Patel, A P Anurag, A Upadhyaya and U Kumar ICAR-RC and Dr. RPCAU, Bihar, India prem.k.sundaram@gmail.com | |
| FMPE/TM-05 | Power Tiller Operated Machines for Small Holders Farming in Conservation Agriculture: A Comparative Study | S Kumar and S Karmakar Banda University of Agriculture and Technology, Banda, U.P. and Bidhan Chandra Krishi Vishwavidyalaya, Mohanpur, W.B. sunilkr_iitkgp@yahoo.co.in | |
| FMPE/TM-06 | Development and evaluation of tractor drawn weeder for garlic crop | D Jat and S Imran S ICAR-Central Institute of Agricultural Engineering Bhopal MP-462038 dilipjat2000@gmail.com | |
| FMPE/TM-07 | Effect of cryogenic treatment on the wear resistance of cutter bar blade | C Jakhar, A Kumar and P Antil CCS Haryana Agricultural University, Hisar, Haryana jakharchander@gmail.com | |
| FMPE/TM-08 | Comparative analysis of cryogenic treated and untreated chopping cylinder blade | C Jakhar, A Kumar and P Antil CCS Haryana Agricultural University, Hisar, Haryana jakharchander@gmail.com | |
| FMPE/TM-09 | Effect of normal load and passes on soil compaction | S K Patel, I Mani and P K Sundaram RPCAU, Pusa (Samastipur), Bihar, India skpatel@rpcau.ac.in | |
| FMPE/TM-10 | Farm mechanization pattern in cachar district – a case study | <i>Nandan Chakraborty, SakibAshadLaskar and Avinash Kumar</i> avinashiitkgp86@gmail.com | |

THEME II: TILLAGE AND SEEDING

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|------------|---|---|---|
| FMPE/TS-01 | Investigation on wear pattern of various makes of agricultural discs | A Rani, T P Singh, J Singh G. B. Pant University of Agriculture and Technology, Pantnagar annuchaudhary39@gmail.com | Technical Session-I; Date: 24/11/2021; Time: 09:00-11:00 h |
| FMPE/TS-02 | Field evaluation of small tractor operated reverse forward rotavator in pigeon pea crop | S Marihonnappanavara, S Shirwal, Veerangouda, M Sushilendra and Spoorthi Department of Farm Machinery and Power Engineering, College of Agricultural Engineering, University of Agricultural Sciences, Raichur, Karnataka, India siddeshgouda@gmail.com | |
| FMPE/TS-03 | Application of reverse rotary tillage system – A Review | Shilpa M1, V Palled2, S Shirwal3, Sushilendra4 and Prakash Kv5 College of Agricultural Engineering, University of Agricultural Sciences, Raichur (Karnataka), India. shilpashilpz0822@gmail.com | |
| FMPE/TS-04 | Role of combination tillage implements for efficient land preparation | Harish V, S Shirwal and Sushilendra Department of Farm Machinery and Power Engineering, College of Agricultural Engineering, University of Agricultural Sciences, Raichur (Karnataka) harishsajjan38@gmail.co | |
| FMPE/TS-05 | Effect of different seed metering mechanism on seed rate of Bengal gram and Jowar | R Beerge1*, Revanth K2, Vinayaka3 and Basavaraj4 1- Assistant Professor, Dept of Agril Engg, AC, Vijayapur, UAS Dharwad2- Testing Engineer, FMTC, AC, Vijayapur, UAS, Dharwad3 and 4 – Senior Research Fellow, FMTC, AC, Vijayapur, UAS Dharwad bramesh2066@gmail.com | |
| FMPE/TS-06 | Popularization of zero tillage technology in Patna and Nalanda districts of Bihar: Challenges and opportunities | P K Sundaram, J S Mishra, A Kumar, K K Rao, M Tamta, A Mukherjee and N R Singh ICAR Research Complex for Eastern Region, Patna, Bihar | |
| FMPE/TS-07 | Performance evaluation of bullock drawn zero till drill for direct seeded rice | K V Prakash1, D Maski1, V Raghavendra1 and J N Sreedhar2 1College of Agricultural Engineering (CAE), 2Main Agriculture Research Station (MARS) University of Agricultural Sciences – Raichur (Karnataka), India prakash_kv07@yahoo.co.in | |
| FMPE/TS-08 | Development and evaluation of tractor operated FYM spreader | K V Prakash, M Veerangouda and D Maski College of Agricultural Engineering (CAE), Raichur; University of Agricultural Sciences – Raichur (Karnataka), India prakash_kv07@yahoo.co.in | |
| FMPE/TS-09 | Evaluation of package of improved | A K Mohapatra1, S K Swain2, A K Dash3 and S Panda4 | |

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| | bullock drawn implements for maize cultivation | 1, 2, 3- AICRP on Utilization of Animal Energy, Department of Farm Machinery & Power Engineering, 4- Research Scholar, Department of Farm Machinery & Power Engineering, College of Agricultural Engineering & Technology, Odisha University of Agriculture & Technology, Bhubaneswar, Odisha arun.1531@rediffmail.com | |
| FMPE/TS-10 | Development of a battery-operated rice transplanter for root washed type seedlings | UttamKumar and Abhishek Kujur Department of Agricultural Engineering Birsa Agricultural University, Kanke, Ranchi - 834 006 (Jharkhand), India uttam.bauranchi@gmail.com | Technical Session-II; Date: 24/11/2021; Time: 11:15-13:30 h |
| FMPE/TS-11 | Study on laboratory evaluation of developed manually operated single row planter for groundnut seed | Uday Veer Singh ¹ , Sheen Cline Moses ² and Sukhbir Singh ³ 1- Research Scholar, 2-Professor and Head, Department of Farm Machinery and Power Engineering, VIAET, SHUATS, Prayagraj, U.P., 3-Senior Scientist, Division of Agricultural Engineering, ICARIISR, Lucknow, U.P. | |
| FMPE/TS-12 | Development and evaluation of a four-row bullock drawn seed drill for millets | Megha Meshram ¹ , D Behera ² , SK Swain ³ , AK Goel ⁴ , Prerana P Jena ⁵ and Kamendra ⁶ 1,5,6- Research Scholar, 3,4- Professor, 2- Professor & Head, Department of Farm Machinery & Power Engineering, College of Agricultural Engineering & Technology, OUAT, Bhubaneswar preranajena.54@gmail.com | |
| FMPE/TS-13 | Comparative evaluation between seed drill equipped with pre-emergence herbicide application unit and conventional seed drill | Swapnil Choudhary, Bharat Patel, Naresh, Ganesh Upadhyay and Vijaya Rani Department of Farm Machinery and Power Engineering, College of Agricultural Engineering and Technology, CCS Haryana Agricultural University, Hisar, Haryana | |
| FMPE/TS-14 | An automatic cutoff system for a seed drill equipped with pre-emergence herbicide application unit | Bharat Patel, Swapnil Choudhary, Ganesh Upadhyay, Naresh and Vijaya Rani Department of Farm Machinery and Power Engineering, College of Agricultural Engineering and Technology, CCS Haryana Agricultural University, Hisar, Haryana bharatpatel@hau.ac.in | |
| FMPE/TS-15 | Feasibility testing of a pneumatic planter for sowing of maize and cotton crop in sandy loam soil | Naresh, Swapnil Choudhary, Ganesh Upadhyay, Bharat Patel and Vijaya Rani Department of Farm Machinery and Power Engineering, College of Agricultural Engineering and Technology, CCS Haryana Agricultural University, Hisar, Haryana, sihagnaresh@hau.ac.in | |
| FMPE/TS-16 | Development of pneumatic protray seeder for pelleted seeds | R Thiyagarajan, BSuthakar, RKavitha and Asurendrakumar Department of Farm Machinery & Power Engineering, AEC & RI, TNAU, Coimbatore -641 003, Tamil Nadu, India drthiyagarajan@gmail.com | |

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| FMPE/TS-17 | A Comparative evaluation of direct seeding by drum seeders and transplanting seedling by farmers practice in sandy loam soil | Manoranjan Kumar, Sanjay Kumar and Jaya Sinha College of Agricultural Engineering, Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur-848125 manukr.kumar@gmail.com&manoranjan.cae@rpcau.ac.in | Technical Session-II; Date: 24/11/2021; Time: 11:15-13:30 h |
| FMPE/TS-18 | Laboratory evaluation of a solenoid operated hill-dropping seed metering mechanism for the sowing of pre-germinated paddy seeds | S Hensha1 and H Rahemanb2 1-College of Agriculture, Bidhan Chandra Krishi Viswavidyalaya, Burdwan, West Bengal, 713101, India 2-Department of Agricultural and Food Engineering, Indian Institute of Technology Kharagpur, West Bengal, 721302, India s.hensh1986@gmail.com | |
| FMPE/TS-19 | Optimization of land development using laser land leveler to reduce the total work and improve the efficiency using an optimization technique | P Kumar and R Machavaram Department of Agricultural and Food Engineering, IIT Kharagpur rajpootpradeep112233@gmail.com | |
| FMPE/TS-20 | Performance evaluation of manually operated vegetable transplanter in brinjal and chilli crop | S K Gilhare1, S Chandra2 and R Thakre3 1-M.Tech Student, CAE, RPCAU, Pusa, Samastipur (Bihar) 2-Assistant Professor, CAE, RPCAU, Pusa, Samastipur (Bihar) 3-M.Tech Student, CAE, RPCAU, Pusa, Samastipur (Bihar) sanjaygilhare21@gmail.com | |
| FMPE/TS-21 | Electronic seed metering module for small seed sowing | P V Gautam1, A K Singh2 and O Prakash3 1-Scientist, Farm Machinery and Power, ICAR-CAZRI, Jodhpur-342003 2-Principal Scientist, Farm Machinery and Power, ICAR-CAZRI, Jodhpur-342003 3-Scientist, Agriculture Structure & Process Engineering, ICA | |
| FMPE/TS-22 | Design and development of double row manual vegetable transplanter | J Sinha1, S K Patel2, N Kumari 3 and M Kumar 4 1 & 4Assistant Professor, 2Associate Professor, 3 SMS Dr. Rajendra Prasad Central Agricultural University, Pusa- Samastipur Jaya.sinha@rpcau.ac.in | |
| FMPE/TS-23 | Effect of ploughing activity on crop production | R B Gautam, S K Singh, PK Singh and S P Anan Acharya N.D. University of Agriculture and Technology, Kumarganj, Ayodhya, Uttar Pradesh rksh_gautam@yahoo.co.in | |
| FMPE/TS-24 | Development of a disposable biodegradable protray for mechanical transplanting of SRI method of rice cultivation | P Dhananchezhiyan1, AS Kumar1 and Bshridar2 1Dept. of Farm Machinery and Power Engineering, Agricultural Engineering College and Research Institute, TNAU, Coimbatore-641003. 2Dean, Agricultural Engineering College and Research Institute, TNAU, Coimbatore dhananchezhiyan.p@tnau.ac.in | |

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|------------|--|---|---|
| FMPE/TS-25 | Design, development and evaluation of tractor operated seeder for mat type paddy nursery | RajeshU Modi*, G S Manes*, J S Mahal*, Anoop Dixit*, Manjeet Singh* and Arshdeep Singh* *Punjab Agricultural University, Ludhiana, India rajesh.modi@icar.gov.in | Technical Session-II; Date: 24/11/2021; Time: 11:15-13:30 h |
| FMPE/TS-26 | Design and development of tractor operated two row planter for tissue culture banana | B.SuthakarR.KavithaD.ManoharJesudasA.SurendrakumarAssistant Professor suthakar@tnau.ac.inProfessorProfessor (Rtd.) & Guest FacultyProfessor & Head Department of Farm Machinery & Power Engineering, AEC & RI, Tamil Nadu Agricultural University | |
| FMPE/TS-27 | Comparative Studies between Rice-wheat seeder and Drum Seeder for Paddy Cultivation in Begusarai district of Bihar | Vinita Kashyap1,Ram Pal1,Nidhi Kumari2, Shailesh Kumar3, Manoj Kumar4 1KVK, Begusarai, RPCAU, Pusa, Samastipur, Bihar-848125 2KVK, Turki, RPCAU, Pusa, Samastipur, Bihar-848125 3KVK, Birauli, RPCAU, Pusa, Samastipur, Bihar-848125 4KVK, Sehore, RPCAU, Pusa, Samastipur, Bihar-848125 Corresponding author email- vinitakashyap99@gmail.com | |
| FMPE/TS-28 | Assessment of Mechanized Sowing of Pelleted Seeds for Small Millets | A P Mohan Kumar1,R Kavitha2,A.Surendrakumar3and V.Alex Albert4 Dept. of Farm Machinery & Power Engg., AEC&RI, TNAU, Coimbatore, Tamil Nadu, India | |

THEME III: PLANT PROTECTION

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|------------|--|--|--|
| FMPE/PP-01 | Study On Walking Behind Type Battery Operated Sprayer | P K Mishra, S K Pandey, S K Pandey, R K Mehta and R J Singh Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur, Bihar | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| FMPE/PP-02 | Development and Evaluation of battery-operated Banana pseudostem injector | T Senthilkumar, R Naik,B Padmanaban and G Manikandan Central Institute of Agricultural Engineering,Regional Centre, Coimbatore National Research Centre for Banana, Trichirapalli,Tamil Nadu thasekumar@gmail.com | |
| FMPE/PP-03 | Practical utility of small tractor operated sprayer on black gram | K V Prakash, D Maski, Sushilendra, V Palled and J N Sreedhar College of Agricultural Engineering, Main Agriculture Research Station, University of AgriculturalSciences, Raichur, Karnataka prakash_kv07@yahoo.co.in | |
| FMPE/PP-04 | Optimization of Operating Parameters for Spraying Microbial Bio-pesticides Solution for Foliar Spray | Manish Kumar1 and C R Mehta2 1Scientist, 2Director, ICAR-Central Institute of Agricultural Engineering, Nabibagh, Berasia Road Bhopal-462038 manishagriner@gmail.com | |

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| FMPE/PP-05 | A High Clearance Vertical Axis Rotary Weeder for Tall Crops | A K Roul and P V Gautam Scientist, ICAR-Central Institute of Agricultural Engineering, Bhopal, Scientist, ICAR- Central Arid Zone Research Institute, Jodhpur Ajay.Roul@icar.gov.in | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| FMPE/PP-06 | Field Evaluation of Self Propelled Power Paddy Weeder | R Thakre ¹ , S Chandra ² and S K Gilhare ³ 1M.Tech Student, CAE, RPCAU, Pusa, Samastipur (Bihar), 2Assistant Professor, FMPE CAE, RPCAU, Pusa, Samastipur (Bihar), 3M.Tech Student, CAE, RPCAU, Pusa, Samastipur (Bihar) Email: rohitthakre102415@gmail.com | |
| FMPE/PP-07 | Optimization of pneumatic spray delivery based solid set canopy delivery system for efficient chemical applications in modern fruit orchards | Ramesh K. Sahnia, Rakesh Ranjana, Lav R. Khota*, Gwen-Alyn Hoheisel a, b Matthew J. Grieshopc , aCenter for Precision and Automated Agricultural Systems, Department of Biological Systems Engineering, Washington State University, Prosser, WA, USA, bExtension, Washington State University, Prosser, WA, USA, cDepartment of Entomology, Michigan State University, East Lansing, MI, USA *Correspondence: lav.khot@wsu.edu | |
| FMPE/PP-08 | Development of tractor operated boom type orchard sprayer | Er. P S Pawar, Er. N A Shirsat, Dr. S V Pathak, Dr. P U Shahare, Dr. K G Dhande College of Agricultural Engineering and Technology, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli-415 712, Dist. Ratnagiri, (Maharashtra) pranalipawar430@gmail.com | |
| FMPE/PP-09 | Development of Battery-Powered Weeder for Small-Farm Mechanization | Himanshu S. Pandey ¹ *G. S. Tiwari ² and Ajay Kumar Sharma ³ 1ICAR-Central Institute of Agricultural Engineering, Bhopal, 1,2,3Department of Farm Machinery & Power Engineering, College of Technology and Engineering, MPUAT, Udaipur India *Corresponding author email: pandeyhs13@gmail | |
| FMPE/PP-10 | Development and Evaluation of Tractor Drawn Weeder for Garlic Crop | Dilip Jat* and Syed Imran S ICAR-Central Institute of Agricultural Engineering Bhopal MP-462038 Email: dilipjat2000@gmail.com | |

THEME IV: HARVESTING AND THRESING

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|------------|--|---|--|
| FMPE/HT-01 | Studies on Performance Evaluation of Mobile Shredder Cum Uprooter | M. Siddesh, S Shirwal, M. Veerangouda, Sushilendra, A. Venkatesh, COAE, UAS, Raichur siddeshgouda@gmail.com | Technical Session-IV; Date: 24/11/2021; Time: 17:15-19:00 h |
| FMPE/HT-02 | Performance Evaluation of Side Discharge Flail Mower | S. Shirwal, S. Marihonnappanavara, M. Veerangouda, Sushilendra, A. Venkatesh, COAE, UAS, Raichur sunilsshirwal@gmail.com | |
| FMPE/HT-03 | Development and Performance Evaluation of Rotary Type Groundnut Decorticator | D. Kumar, T. K. Maheshwari, J. P. Yadav, A. Singh DBRA COAET Etawah devendrachaturvedi2008@gmail.com | |
| FMPE/HT-04 | Performance Evaluation of Diesel Engine Operated High Speed Chaff Cutter | K. Revanth, R. Beerge, U. Momin UAS, Dharwad revanthkraj@gmail.com | |
| FMPE/HT-05 | Combine Harvesters | S. Panda, S. Swain DOAE, GIFT, Bhubaneswar | |
| FMPE/HT-06 | Development and Evaluation of Tractor Operated Banana Bunch Harvester | T. Senthilkumar, P. Suresh Kumar, G. Manikandan ICAR-CIAE Coimbatore thasekumar@gmail.com | |
| FMPE/HT-07 | Design and Development of Machines for Flax Fibre Extraction | R. K. Naik, S. Mitra ICAR-CRIFJAAF, Kolkata ranjanagrieng@gmail.com | |
| FMPE/HT-08 | Study on Engineering Properties of Cotton in Relation to Cotton Picker | D Maski, Sharanbasava, K. V. Prakash, J. R. Nidagundi, V. Raghavendra, N. Murali COAE, UAS, Raichur dmaski@gmail.com | |
| FMPE/HT-09 | Need Assessment of a Power Tiller Operated Harvester for Green Gram and Black Gram in Odisha | S Kumar, M Mahapatra, D Behera, P L Pradhan, S K Swain, Kamendra COAE&T, OUAT, Bhuvneshwar skpower@rediffmail.com | |
| FMPE/HT-10 | A Study on The Functional Requirement and Nutritional Characteristics of Little Millet During Threshing by OUAT Little Millet Thresher | S Panda, S K Swain, D Behera, R N Nayak, A K Dash, A K Mohapatra COAE&T, OUAT, Bhuvneshwar pandaswetali44@gmail.com | |

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| FMPE/HT-11 | Performance Evaluation of Axial Flow Combine Harvester in Paddy Crop | Annu COE, GBPUAT, Pantnagar janagal.annu@gmail.com | Technical Session-IV; Date: 24/11/2021; Time: 17:15-19:00 h |
| FMPE/HT-12 | Performance Evaluation of OUAT Green Gram Thresher Operated By Bullock Operated Rotary System | A K Dash, N Choudhury, S K Swain, D Behera, A K Mohapatra, S Panda COAE&T, OUAT, Bhubaneswar ajayadash@yahoo.com | |
| FMPE/HT-13 | Development and Performance Evaluation of OUAT Little Millet (Suan) Thresher Cum Cleaner Operated by Bullock Operated Rotary System | S K Swain, S Panda, A K Mohapatra, A K Dash COAE&T, OUAT, Bhubaneswar, Odisha swainsangram@yahoo.co.in | |
| FMPE/HT-14 | Design and development of a combined onion digger with topping unit | A N Mude, R N Pateriya COE, GBPUAT, Pantnagar arjunnaik133@gmail.com | |
| FMPE/HT-15 | Fabrication and Evaluation of Batch Type Vegetable Root Crop Washer | H M Khobragade, P H Bakane, B V More hitendrakumarmk@gmail.com | |
| FMPE/HT-16 | Performance of Tractor Drawn Round Straw Baler for Paddy and Wheat Crop | A K Gautam, A Shrivastava, K Verma JNKV, Jabalpur avinash.jnkvv@gmail.com | |
| FMPE/HT-17 | Development of Power Operated Desuckering Tool for Grape Crop | S I Imran, R Podtar ICAR- CIAE, Coimbatore syedimran50@yahoo.in | |
| FMPE/HT-18 | Performance Evaluation of Single Row Tractor Operated Potato Digger | D Kumar, M Kumar, P D Sharma DRPCAUI, Pusa dheeraj650@gmail.com | |
| FMPE/HT-19 | Design, Development and Testing of Manually Operated Cabbage Harvester | S K Saurabh, S Chandra, A K Ansh DRPCAUI, Pusa chandrapusa@gmail.com | |
| FMPE/HT-20 | Tractor Operated Cotton Stalk Puller Cum Conveyor for Disposal of Cotton Crop Residues From the Field | A P Pandirwar, H S Pandey ICAR-CIAE, Bhopal pandeyhs13@gmail.com | |

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| FMPE/HT-21 | Optimization of Design and Field Evaluation of Power Tiller Operated Sliding Type Potato Digger | A Sahoo , S Bhunia , S Bhattacharjee , D Saha BCKV, Mohanpur, West Bengal anu94sahoo@gmail.com | Technical Session-IV; Date: 24/11/2021; Time: 17:15-19:00 h |
| FMPE/HT-22 | Development of The Integrated System for Harvesting-Cum-Conveying System for Bunch Field Crops | M Kumar, S Kumari ICAR-CIAE, Bhopal Manoj.Kumar8@icar.gov.in | |
| FMPE/HT-23 | Laboratory Investigations on Cutting Torque and Cutting Efficiency for De-Topping of Onion Leaves | L Kumawat, H Raheman IIT, Kharagpur lokesh567@gmail.com | |
| FMPE/HT-24 | Performance Evaluation of Mini Tractor operated Corn Cob Harvester | R Kavitha, B Shridar, D Manohar Jesudas, B Suthakar, A Surendrakumar TNAU Coimbtore kavitha@tnau.ac.in | |
| FMPE/HT-25 | Development of Picker Combine Harvester for Groundnut | R Kavitha, D Manohar Jesudas, B Suthakar, A Surendrakumar TNAU Coimbtore kavitha@tnau.ac.in | |
| FMPE/HT-26 | Developing a Barnyard Millet Thresher Operated by Bullock Power in Rotary Mode | R Sahoo, S K Swain, D Behera, P K Mohapatra, A K Dash COAE&T, OUAE&T, Bhubaneswar rishikesh371998@gmail.com | |
| FMPE/HT-27 | Development of tractor front mounted harvester for finger millet crop | <i>N. Nisha and M. Saravanakumar²</i> nisha34agri@gmail.com | |

THEME V: ERGONOMICS AND SAFETY IN AGRICULTURE

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|-------------|---|---|---|
| FMPE/ESA-01 | Relationship between HR and OCR for male and female subjects of different age groups | V V Aware, S V Aware, P U Shahare, S V Wandkar and P M Koltharkar College of Agricultural Engineering and Technology, Dr. B S K Krishi Vidyapeeth, Dapoli | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| FMPE/ESA-02 | Development of women friendly ergonomically suitable harvesting tool | H B Sanchavat, S N Singh, B S Patel, N B Valand and D S Pawar CAET, Navsari Agricultural University, Dediapada shitesh@nau.in | |
| FMPE/ESA-03 | An overview of drudgery reducing technologies for women in agriculture | G Srinidhi, S Sushilendra, S Shirwal and V K Palled University of Agricultural Sciences, Raichur (Karnataka), India. reddysrinidhi1997@gmail.com | |
| FMPE/ESA-04 | Study of biomechanical forces among tea leaves plucking workers | B S K Chhetry, K N Dewangan and K Sora North Eastern Regional Institute of Science and Technology, Nirjuli, Arunachal Pradesh Surya3075@gmail.com | |
| FMPE/ESA-05 | Ergonomics issues in the livestock and poultry production in Arunachal Pradesh | S Thockchom and K N Dewangan North Eastern Regional Institute of Science and Technology, Nirjuli, Arunachal Pradesh sarjuthockchomae17@gmail.com | |
| FMPE/ESA-06 | Development of farm women friendly sickle for reducing drudgery | V Kumar, N Kumari and A K Sinha Scientist, Krishi Vigyan Kendra, BAU, Ranchi, Jharkhand vinay.kvkbokaro71@gmail.com | |
| FMPE/ESA-07 | Assessment of actuating forces required for operating tractor controls by women operators of the central part of India | A K Shrivastava, A Barde, M Patel and A K Gautam Department of Farm Machinery & Power Engineering, JNKVV, Jabalpur, Madhya.Pradesh atul_jnkvv@yahoo.com | |
| FMPE/ESA-08 | Development of girdling tool for litchi mechanization | Sweeti Kumari, Manish Kumar, R K Sahni and S K Singh Central Institute of Agricultural Engineering, Bhopal sweeti.kr.iit@gmail.com | |
| FMPE/ESA-09 | Health hazards and drudgery involved in shoulder mounted brush cutter and ergonomic evaluation for paddy harvesting and grass cutting | P R Mali, V V Aware, P UShahare, S V Aware and M D Nikam priyankarmali56@gmail.com | |

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|-------------|--|---|---|
| FMPE/ESA-10 | Gender friendly work place layout of tractors for Indian operators | R R Potdar, C R Mehta and K N Agrawal CIAE, Bhopal rrpotdar@gmail.com | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| FMPE/ESA-11 | Braking system: an ergonomic intervention for fodder cutter machines for injury prevention | A Kumar, HL Kushwaha, U Dwivedi, D K Kushwaha and A Sood IARI, New Delhi adarsh_iari@rediffmail.com | |
| FMPE/ESA-12 | Health hazards and drudgery involved in shoulder mounted brush cutter and ergonomic evaluation for paddy harvesting and grass cutting | P R Mali, V V Aware, P U Shahare, S V Aware and M D Nikam CAET, B S K K V, Dapoli priyankarmali56@gmail.com | |
| FMPE/ESA-13 | Ergonomic evaluation of grass cutter cum paddy harvester prototype for grass cutting operation | P R Mali, VV Aware, M D Nikam, S V Aware and P U Shahare CAET, B S K K V, Dapoli maheshnikm@gmail.com | |
| FMPE/ESA-14 | Performance evaluation of anti-vibration measures for reducing hand transmitted vibration in self-propelled vertical conveyor reaper | R H Nag, A K Mehta, S M Mathur, S S Meena and P S Rao CAET, Udaipur harsha_11408@iari.res.in | |
| FMPE/ESA-15 | Ergonomic design of operators' seat for self-propelled combine harvesters based on anthropometric body dimensions of Indian agricultural workers | P Shukla, C R Mehta, K N Agrawal, R R Potdar, M Kumar and K Singh CIAE, Bhopal prabhakarshukla05@gmail.com | |
| FMPE/ESA-16 | A Fuzzy Logic Approach to Posture-based Ergonomic Analysis for agricultural operations | 1Manisha Jagadale, 2K.N. Agrawal, 3C.R. Mehta, 4R. R. Potdar 1 Scientist, ICAR-NINFET, Kolkata 2 Project Coordinator, AICRP-ESA, ICAR-CIAE, Bhopal, 3 Director, ICAR-CIAE, Bhopal, 4 Scientist, ICAR-CIAE, Bhopal | |

THEME VI: PRECISION FARMING

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|------------|--|--|---|
| FMPE/PF-01 | Optical sensor based embedded system for counting of aeroponically produced potato minitubers | B Nare ¹ , S Singh ¹ , VK Dua ² and G Mann ³ 1Scientist, ICAR -Central Potato Research Station, Jalandhar, 2Principal Scientist, ICAR - Central Potato Research Institute, Shimla, 3SRF, ICAR -Central Potato Research Station, Jalandhar brajesh.nare@icar.gov.in | Technical Session-V; Date: 25/11/2021; Time: 09:00-11:30 h |
| FMPE/PF-02 | Measurement and Digital Display of Operating Depth for Mounted Implements on Tractor's Dashboard | A Kumar ¹ , RK Sahu ² , AK Ansh ³ and PK Pranav ⁴ 1Technical Assistant, Bihar Agricultural University, Sabaur (Bihar), 2M. Tech student, Dr. Rajendra Prasad Central Agricultural University, Pusa (Bihar), 3SRF, Dr Rajendra Prasad Central Agricultural University, Pusa (Bihar), 4Assoc. Professor, CAE, Dr. Rajendra Prasad Central Agricultural University, Pusa (Bihar) anshabhishekitkp@gmail.com | |
| FMPE/PF-03 | Area Calculation of Field Covered By Tractor Using Recorded Geolocations | A Sharma*, R Prasad ² and P K Pranav ¹ 1M.Tech Student, CAE,RPCAU,Pusa,Samastipur(Bihar), 2ReitiUnoTechnologies(Bangalore), 3Associate Professor,CAE,RPCAU,Pusa,Samastipur(Bihar) appushrma97@gmail.com | |
| FMPE/PF-04 | Performance Evaluation of Precision Belt Planter for Planting of Okra Crop in Flat and Raised Beds | G Upadhyay, S Choudhary, Naresh, B Patel and V Rani Department of Farm Machinery and Power Engineering, College of Agricultural Engineering and Technology, CCS Haryana Agricultural University, Hisar, Haryana ganesh.upadhyay0@hau.ac.in | |
| FMPE/PF-05 | Promotion and impact assessment of climate resilient agricultural technology | M Kumar, K P Singh, R Singh, K P Saha, D Singh and N Kushwaha ICAR-Central Institute of Agricultural Engineering, Bhopal-462038, India manoj_iasri@yahoo.com | |
| FMPE/PF-06 | Robotics in Agriculture: A Perspective in Indian Agriculture | A Mishra ¹ , S Padala ¹ , S Sahu ¹ and P Priyadarshini ² 1Department of Agricultural Engineering, GIET University, Gunupur, Odisha 2Ph.D. Scholar, Department of Soil & Water Conservation Engineering, CAET, OUAT, Bhubaneswar mabhinab86@gmail.com | |
| FMPE/PF-07 | Design and Development of digital meter for agricultural operations charge | R Kumar, I Mani, HL Kushwaha and S Barau ICAR-Indian Agricultural Research Institute, New Delhi rajeviitkpl1@gmail.com | |
| FMPE/PF-08 | Development of Thermal Imager for Predicting Crop Stress Using Canopy Temperature and Deep Learning Models | N S Chandel*, YA Rajwade and K Dubey ICAR-Central Institute of Agricultural Engineering Bhopal, 462038 narendracae@gmail.com | |
| FMPE/PF-09 | Drone Spraying of Yield Enhancer in Forage Crop (<i>Kudirai Masal</i>) using Flat Fan Nozzle | Dyallappa ^{1*} , R Kavitha ² , A Surendrakumar ³ , BSuthakar ⁴ and AP Mohan Kumar ⁵ 1Ph.D. Research Scholar, 2Professor, 3Professor and Head, 4&5Assistant Professors, Department of Farm Machinery and Power Engineering, Agricultural Engineering College and Research Institute, Tamil Nadu Agricultural University, Coimbatore - 641 | |

THEME VII: ICT IN AGRICULTURE

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|-------------|---|--|--|
| FMPE/ICT-01 | Computer Program for Predicting the Benefits of Variable Weight Distribution Mechanism of 2WD Tractor | S Kumar 1 and P K Pranav 2 1Agricultural Engineering, Govt. of Bihar 2College of Agricultural Engineering, Dr. Rajendra Prasad Central Agriculture University, Pusa, Samastipur, Bihar snu4ucau@gmail.com | Technical Session-V; Date: 25/11/2021; Time: 09:00-11:30 h |
| FMPE/ICT-02 | Development of a Fuzzy Logic Algorithm Derived Mechatronics Tractor Operated Inter Cum Intra Row Weeder | S P Kumar, V K Tewari, C R Mehta, A K Chandel, B Nare, C R Chethan, C Pareek Agricultural mechanization division, ICAR-CIAE, Bhopal satyaprakashkumar27@gmail.co | |
| FMPE/ICT-03 | Computer Program for the Selection of Optimum Machinery for Vegetable Planting | A K Shrivastava 1 and A K Gautam 2 1Jawaharlal Nehru Agricultural University, Jabalpur, M.P. India 2 Department of Farm Machinery and Power Engineering, JNKVV, Jabalpur, Madhya Pradesh, India | |

THEME VIII: ENERGY IN AGRICULTURE

| Paper Code | Paper Title | Authors Name | Presentation Scheduled |
|------------|---|--|--|
| FMPE/EA-01 | Optimization of oil expression from <i>Jatropha curcas</i> seeds with alteration machine operating parameters | B.K. Yaduvanshi, T.K. Bhattacharya, S.K. Patel, and K. Kundu CAE, Anand Agricultural University, Dahod, Gujarat, India | Technical Session-V; Date: 25/11/2021; Time: 09:00-11:30 h |
| FMPE/EA-02 | Characterization of physical morphological and mechanical parameters of wheat straw | A Kumar, V Rani, R K Kharb, S K Antil and K Dahiya CCS Haryana Agricultural University, Hisar, Haryana, India | |
| FMPE/EA-03 | Development of a multi-row biogas slurry applicator | Deepak, V Rani, B Patel and Naresh Department of FMPE, COAE&T, CCS Haryana Agricultural University, Hisar vijayarani@hau.ac.in | |
| FMPE/EA-04 | Design of hand operated briquetting machine | S Kumar Research Scholar, Department of Farm Machinery & Power Engineering, SHUATS, Uttar Pradesh. sarveshkumar272@gmail.com | |
| FMPE/EA-05 | Concept design of solar energy powered electric tractor system | Y Nupur Knowledge Management Centre (R&D), Escorts Limited, Faridabad, India yatih.nupur@gmail.com | |

THEME IX: RESOURCE CONSERVATION TECHNOLOGIES

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|-------------|--|---|---|
| FMPE/RCT-01 | Effect of practices in conservation agriculture on the mitigation of greenhouse gases | Sarkar K and Karmakar S Department of Farm Machinery and Power Faculty of Agricultural Engineering, BCKV, Mohanpur | Technical Session-V; Date: 25/11/2021; Time: 09:00-11:30 h |
| FMPE/RCT-02 | Comparative performance of in-situ paddy residue management machinery in district Sangrur | Kumar S and Singh M Krishi Vigyan Kendra, Sangrur (Kheri) | |
| FMPE/RCT-03 | Design and Development of Power Tiller Operated Strip-Till Seed Drill for Conservation Agriculture | Bhunias S, Karmakar S Farm Machinery and Power, Bidhan Chandra Krishi Viswavidyalaya | |
| FMPE/RCT-04 | Effect of Straw Moisture On Performance of Mulcher in Paddy Stubble Field | Sripriyanka S N1, Veerangouda M1, Sushilendra1, Palled V 2 and Ravi M V 3 1Department of Farm Machinery and Power Engineering, 2Department of Renewable Energy Engineering, College of Agricultural Engineering, 3Department of Soil Science and Agricultural Chemistry, College of Agriculture, University of Agricultural Sciences – Raichur (Karnataka) Corresponding author email:sripriyanka1112@gmail.com | |
| FMPE/RCT-05 | Crop specific machine parameters for small holders farming: a conservation agriculture perspective | Sahoo P, Sarkar K, Banerjee A, Bhattacharjee S, Kumar S, Bhunia S and Karmakar S Department of Farm Machinery & Power, Faculty of Agricultural Engineering, BCKV, Mohanpur-741252, Nadia, West Bengal | |

THEME X: MISCELLANEOUS

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|------------|---|--|--|
| FMPE/M-01 | Quantifying Cropping Intensity of all 9-agro-climatic zones of Uttar Pradesh | Tarun Kumar Maheshwari ¹ and Devendra Kumar ² ¹ Assistant Professor, Head, Farm Machinery and Power Engineering and ² Associate Professor, Head, Processing and Food Engineering, CAET, Etawah, UP. maheshwari_tk@yahoo.com | Technical Session-V; Date: 25/11/2021; Time: 09:00- 11:30 h |
| FMPE/M-02 | Development and Evaluation of Tractor operated Tobacco transplanter with spot application of water | T. Senthil kumar ¹ , M. Anuradha ² , Syed Imran S ¹ and G Manikandan ¹ ¹ ICAR-Central Institute of Agricultural Engineering, Regional Centre, Coimbatore and ² ICAR Central Tobacco Research Institute, Regional Station, Kandukur thasekumar@gmail.com | |
| FMPE/M-03 | Impact of Climate Resilience Agriculture Project on income of farmers in Begusarai district | Ram Pal ^{*1} , Mukesh Kumar ² and Vinita Kashyap ² Senior Scientist & Head KVK Begusarai, RPCAU Pusa ^{*1} Subject Matter Specialist, Agril Extn. KVK Begusarai, RPCAU Pusa ² head.kvk.begusarai@rpcau.ac.in | |
| FMPE/M-04 | Moisture Dependent Physical and Engineering Properties of Finger Millet | Megha Meshram ¹ , D. Behera ² , S.K. Swain ³ , M. Mahapatra ⁴ , Prerana P. Jena ⁵ , Kamendra ⁶ ^{1,5,6} Research Scholar, ³ Professor, ⁴ Associate Professor, ² Professor & Head Department of Farm Machinery & Power Engineering, College of Agricultural Engineering & Technology, OUAT, Bhubaneswar-751003, India kamendra9431@gmail.com | |
| FMPE/M-05 | Development of mathematical model to optimize the operational parameters of manual chaff cutter | Jaya Sinha ¹ and Adarsh Kumar ² ¹ Assistant Professor, Dr. Rajendra Prasad Central Agricultural University, Pusa- Samastipur ² Principal Scientist, Indian Agricultural Research Institute, New Delhi Email: Jaya.sinha@rpcau.ac.in | |
| FMPE/M-06 | Study on Farm Mechanization in West Champaran District of Bihar | Vivek Raj ¹ and Manoranjan Kumar ² ¹ *M.Tech Student, CAE, RPCAU, Pusa, Samastipur (Bihar), ² Assistant Professor, CAE, RPCAU, Pusa, Samastipur (Bihar). vivek.raj2698@gmail.com manukr.kumar@gmail.com | |
| FMPE/M-07 | Enhancing the Productivity and profitability of rice through mechanization in NICRA Village of Chatra district of Jharkhand | V.K. Pandey ¹ , R.K. Singh ² , Mukesh Mahto ³ , V.P. Rai ⁴ , D. Oraon ⁴ and Zunaid Alam ³ ¹ Scientist (Ag. Engg.), ² Sr Scientist and Head, ³ Young Professional, ⁴ Scientist, KVK Chatra. Birsra Agricultural University, Ranchi vinod.bau@rediffmail.com | |
| FMPE/M-08 | Development of a portable covered poultry litter agitator | Rohit Gaddamwar, A. K. Dash, S. K. Swain, D. Behera, A. K. Mohapatra Department of Farm Machinery Power Engineering, College of Agricultural Engineering & Technology, OUAT, Bhubaneswar grohit11.rg@gmail.com | |

SOIL AND WATER ENGINEERING

THEME I: GROUNDWATER DEVELOPMENT AND MANAGEMENT

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|------------|---|---|--|
| SWE/GWD/01 | Subsurface Drainage for Sustainable Production of Sugarcane in Vertisols of Gujarat | Sagar D. Vibhute, Anil R. Chinchmalatpure, M. J. Kaledhonkar, David Camus D., Vineeth T.V. and Monika Shukla | Technical Session-I; Date: 24/11/2021; Time: 9:00-11:00 h |
| SWE/GWD/02 | Assessment of groundwater quality for drinking and irrigation suitability in Trichy district, India | Amina Khatun ¹ , M. Annie Jenifer ² and Madan Kumar Jha ¹ ¹ Agricultural and Food Engineering Department, Indian Institute of Technology Kharagpur, Kharagpur, India ² School of Water Resources, Indian Institute of Technology Kharagpur, Kharagpur, India Email: aminakhatun9286@gmail.com | |
| SWE/GWD/03 | Cost Effective Drainage Technologies for Enhancing Productivity of Temporary Water Logged Vertisols | Ramadhar Singh ¹ , K.V. Ramana Rao ¹ , K.P. Singh ¹ and Satish Kumar Singh ² ICAR-Central Institute of Agricultural Engineering, Nabi Bagh, Berasia Road, Bhopal-462038 (M.P.) | |
| SWE/GWD/04 | Mole Drainage System in Undulating Waterlogged Field Condition of Vertisols | R.K. Singh*, Ramadhar Singh and Ajita Gupta ICAR-Central Institute of Agricultural Engineering, Nabi Bagh, Berasia Road, Bhopal-462038 (M.P.) | |
| SWE/GWD/05 | Estimation of Groundwater Resources and Groundwater Balance for RPCAU Pusa Campus | Sachindra Kumar Singh ¹ * and Dr. Ravish Chandra ² ¹ * M. Tech Student, Soil and Water Engineering, RPCAU Pusa, Bihar ² ** Assistant Professor cum Scientist, Soil Water Engineering, RPCAU Pusa * Email:sachindrasingh930@gmail.com, Email :**ravish@rpcau.ac.in | |
| SWE/GWD/06 | Artificial Ground Water Recharge Planning for Jamrani Dam Command Using GIS and Remote Sensing | Dr. R. K. Singh* and Dr. H .C. Sharma** *Senior Tech. Officer, SWE, College of Ag Engg., Dr.RPCAU PUSA BIHAR, **Ex. Dean College of Technology, GBPUA&T, Pantnagar (Uttarakhand) | |
| SWE/GWD/07 | Development of Composite Radial Filter For Recharging Aquifer With Agricultural Runoff | Dr. R. K. Singh and Dr. H .C. Sharma | |

THEME II: HYDRO-GEO INFORMATICS AND MODELING (HGIM)

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|-------------|--|--|--|
| SWE/HGIM/01 | Development of Drainage Plan for waterlogged Areas of Darbhanga District using Remote sensing and GIS Approach | Sudhakar Raj D1, InduBhushan Bhagat*2, Sudarshan Prasad3 B K Yadav and Shankar yadav4, 1, 2 &3Soil & Water Engineering, CAE, RPCAU, Pusa-848125 (Samastipur), Bihar, *Corresponding Author:bhagatibpa@gmail.com 4Scientist (Agril. Engg.) KVK, BalumathLatehar, BAU, Ranchi, Jharkhand, India | Technical Session-I; Date: 24/11/2021; Time: 9:00-11:00 h |
| SWE/HGIM/02 | Remote Sensing and Geographical Information System for Morphometric Analysis | Pravin Dahiphale1, Kishor Gharde2 and Daleshwar Rajak3 1Scientist, Punjab Agricultural University, Ludhiana (Punjab), 2Associate Professor, Soil and Water Conservation Engineering department, PDKV Akola (MS), 3Junior Scientist cum Assistant Professor, Zonal Research Station, Darisai, Jharkhand | |
| SWE/HGIM/03 | Hydrological Modeling of a sub-basin of Mahanadi river basin using swat model | Ramesh Verma1, Ram Mandir Singh1 1Department of Agricultural Engineering, I.Ag.Sc., Banaras Hindu University, Varanasi-221005, U.P, India E-mail:ramesh.verma126@gmail.com | |
| SWE/HGIM/04 | Non-parametric and Innovative trend analysis of annual and seasonal rainfall in Uttarakhand, India | Shekhar Singh1, Yogesh Kumar2*, Bikesh Kumar3, Deepak Kumar4, Anil Kumar5 1 and 2Ph.D. Scholar, Department of Soil and Water Conservation Engineering, GBPUAT, Pantnagar, Uttarakhand 3Assistant Agricultural Engineer, Directorate of University Farm, GBPUAT, Pantnagar, Uttarakhand 4 Assistant Professor, Department of Soil and Water Conservation Engineering, GBPUAT, Pantnagar, Uttarakhand 5 Professor, Department of Soil and Water Conservation Engineering, GBPUAT, Pantnagar, Uttarakhand *Corresponding author: yogeshkumarSWEe@yahoo.com | |
| SWE/HGIM/05 | Applicability of GIS-based spatial interpolation and | E. Sujitha Teaching Assistant, Agrl. Engg.(SWEE), Institute of Agriculture, TNAU, Kumulur. Email: sujitha047@gmail.com | |

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| | simulation for estimating the soil organic carbon | | |
| SWE/HGIM/06 | Mobile App on Water Balance Simulation Model for Roof Water Harvesting | Abhishek M. Waghaye ¹ , Mukesh Kumar ^{1*} and Ravindra D. Randhel ¹ 1Scientist, Irrigation and Drainage Engineering Division, ICAR-CIAE, Bhopal-462038 *Corresponding Author Email ID: mukeshpkv@gmail.com | |
| SWE/HGIM/07 | Development of IoT based smart irrigation system for small farmers of Sikkim | G T Patle ¹ , KVR Rao ² T. S. Sherpa ³ and P. P. Dabral ⁴ 1,3 & 4College of Agricultural Engineering and Post Harvest Technology, Central Agricultural University, Gangtok, Sikkim (* Corresponding author email: gtpatle77@gmail.com) 2ICAR-Central Institute of Agricultural Engineering, Bhopal, India | Technical Session-I; Date: 24/11/2021; Time: 9:00-11:00 h |
| SWE/HGIM/08 | Prediction of missing temperature data using Artificial Neural Network | B. S. Deora Jaydip J. Makwana Centre for Natural Resources Management, SardarkrushinagarDantiwada Agricultural University, Sardarkrushinagar – 385 506 (Gujarat) | |
| SWE/HGIM/09 | Application of GIS and HEC-Geo-HMS Model for Estimation of Curve Number | Karnika Dwivedi and M.P. Tripathi Dept. of Soil & Water Engineering, SVCAET& RS, Faculty of Agricultural Engineering, Indira Gandhi Krishi Vishwavidyalaya, Raipur (CG) | |
| SWE/HGIM/10 | Runoff Modelling of a Watershed of Upper HasdeoSubbasin in Chhattisgarh Using HEC-HMS Model | M. P. Tripathi and Karnika Dwivedi Department of Soil and Water Engineering, SVCAET & RS, FAE, IGKV, Raipur mktripathi64@gmail.com | |
| SWE/ HGIM/11 | Study of Land Use / Land Cover Mapping of Parner Taluka by Using Supervised Image Classification | Dhokale Kajal Bhausahab ¹ , KhoseSuyog Balasahab ^{2*} 1 B. Tech (AgrilEngg.) Student, K. K.WaghCollege of Agricultural Engineering and Technology, Nashik 2 Research Scholar, Agricultural and Food Engineering Department, IIT Kharagpur. * Corresponding Author Email: khosesuyog@gmail.com | |
| SWE/ HGIM/12 | Rainfall-runoff Modelling Using Long Short-Term Memory (LSTM) Network | 1Amit Kumar; 2Arjumadatta Sarangi 1Research Scholar, Division of Agricultural Engineering, ICAR-IARI, New Delhi-110012. (Corresponding author E mail: amit.iari.17@gmail.com) 2Principal Scientist, Water Technology Centre, ICAR-IARI, New Delhi-110012. | |
| SWE/ HGIM/13 | Soil Erosion Estimation of Irga River Catchment (Jharkhand) using Remote Sensing and GIS Techniques | Shankar Yadav ¹ R.K. Sahu ² Sudarshan Prasad ³ 1Ex-M.Tech. Student, 2,3Assistant Professor, Deptt.of Soil and Water Engg., College of Agricultural Engineering, Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur- 848125 (India) (*Email of Corresponding Author: Shankar.y1994@gmail.com) | |

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| SWC/ HGIM/14 | Modelling Spatial Variability of Soil available Micronutrients in Samastipur District of Bihar using Geostatistical Approach | Mohit Katiyar ¹ and Nidhi ² | Technical Session-I; Date: 24/11/2021; Time: 9:00-11:00 h |
| SWC/ HGIM/15 | Estimation of Hydrological Fluxes using Arc-SWAT for Central Punjab, India | Manish Debnath ¹ , Arjamadutta Sarangi ^{2*} , Dipaka Ranjan Sena ³ , Dharendra Kumar Singh ⁴ | |

THEME III: ON-FARM WATER MANAGEMENT

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|-------------|---|--|---|
| SWE/OFWM/01 | Water production functions of sugarcane (<i>Saccharum Officinarum</i> L.) under deficit irrigation at various growth stages in semi-arid western India | S.K. Dingre, S.D. Gorantiwar, D.D. Pawar and N.N. Firake Mahatma Phule Krishi Vidyapeeth, Rahuri - 413 722, Dist. Ahmednagar, Maharashtra, (INDIA) Corresponding author email, sachindingre@rediffmail.com | Technical Session-II; Date: 24/11/2021; Time: 11:15-13:30 h |
| SWE/OFWM/02 | “Using CROPWAT 8.0 Model at Different Vegetables crop in the Himachal Pradesh” | Mahesh Prasad Tripathi*, Sandeep Kumar Pandey, Pramod Kumar Mishra, S. K. Pandey *Dr.Khem Singh Gill Akal College of Agriculture, Eternal University, Baru Sahib (H.P) India. College of Agriculture Kotwa, Azamgarh. ANDUA&T Kumarganj Ayodhya (U.P) maheshagriengg@gmail.com | |
| SWE/OFWM/03 | Evaluation of the mechanism for automatic backwashing of media filter | Annu I and Pankaj ² 1Ph.D, Department of PHPFE, COE, GBPUAT, Pantnagar, Uttarakhand, 263145. 2B.Tech, COAE&T, CCSHAU, Hisar, Haryana, 125004. janagal.annu@gmail.com | |
| SWE/OFWM/04 | Studies on Rainwater Harvesting and Reutilization for Protective Irrigation with Farm Pond | More Ram M., Jagtap Raghunath D., More Madhukar R., Harkal Anil D. 1Ph.D. Scholar, Department of Soil & Water Conservation Engineering, College of Agricultural Engineering & Technology, VNMKV, Parbhani-431602 (M.S.), 2M.Tech Department of Soil & Water Conservation Engineering, College of Agricultural Engineering & Technology, VNMKV, Parbhani-431602 (M.S.), 3Assistant professor Department of Soil & Water Conservation Engineering, College of Agricultural Engineering & Technology, VNMKV, Parbhani-431602 (M.S.). | |

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| | | 4M.Tech Department of Farm Machinery and power, College of Agricultural Engineering & Technology, VNMKV, Parbhani-431602 (M.S.), | |
| SWE/OFWM/05 | Effect of irrigation scheduling on summer cucumber in South Saurashtra Region of Gujarat | *Priyanka Priyadarsini ¹ , Abhinab Mishra ² , R. M. Satasiya ³ 1Ph.D Research Scholar, Dept. of SWEE, CAET, Orissa University of Agriculture & Technology, Bhubaneswar, 751003 2School of Agriculture, GIET University, Gunupur, Odisha, 765022 3Dept. of REE, CAET, Junagadh Agril. University, Junagadh, Gujarat, 362001 *Corresponding Author e-mail id:glorypriyanka513@gmail.com | |
| SWE/OFWM/06 | Development of solar operated automatic water level recorder for monitoring water levels in water reservoirs | Mukesh Kumar*, Hargunjot Singh, Ram Naresh, Arun Kumar Attkan and Yogesh Rajrana *Assistant Scientist, Department of Soil and Water Engineering, CCS HAU Hisar mukeshdandi@yahoo.com | |
| SWE/OFWM/07 | Optimizing Lateral Depth and Spacing for Subsurface Drip Irrigated Rice-Wheat Cropping System under Conservation Agriculture through Simulation of Water and Nitrate Movement | Arpna Bajpai*, Arun Kaushal ^b and Harminder Singh Sidhu ^a ^a Senior Research Fellow (Department of Soil and Water Engineering, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur 482004, India) ^b Professor, (Department of Soil and Water Engineering, Punjab Agricultural University, Ludhiana-141004, Punjab, India). Email: arunkaushalarun@rediffmail.com ^c In-charge and Senior Research Engineer (Borlaug Institute for South Asia, Ludhiana-141004, Punjab, India) Email: h.sidhu@cgiar.org *Corresponding author- Email: arpnabajpai@gmail.com | Technical Session-II; Date: 24/11/2021; Time: 11:15-13:30 h |
| SWE/OFWM/08 | Assessment of irrigation applied at different critical stages on yield of transplanted rice | Ashok Kumar ¹ SMS (Agril. Engg), Rita Lal ² SMS (Home Science & Senior Scientist & Head), Vinod Kumar ³ SMS (Agronomy) and Mukesh Kumar ⁴ SMS (Horti.), KVK, Munger Contact no: 993164057, Email id: kykerashok@gmail.com | |
| SWE/OFWM/09 | The Impact of Alternate Furrow Irrigation on Water Use Efficiency and Yield of Potato at Small Scale Irrigation in Palamau District of Jharkhand | Ashok Kumar Sinha ¹ , Vinay Kumar ² and Ramesh Kumar ³ ¹ Scientist (Agril. Engg.), KVK, Palamau, BAU, Ranchi, Jharkhand, India ² Scientist (Agril. Engg.), KVK, Bokaro, BAU, Ranchi, Jharkhand, India ³ Scientist (Hort.), KVK, Palamau, BAU, Ranchi, Jharkhand, India | |
| SWE/OFWM/10 | Fabrication and Performance Evaluation of Low Cost Filter with Different Filter Media | S. Ramya ¹ *, K. Nagarajan ² , T. Arthi ³ , A. Selvaperumal ⁴ , S. Thangamani ⁵ ¹ * Senior Research Fellow, Department of Soil and Water Conservation Engineering, TNAU, Coimbatore, Tamil Nadu, India ² Head of the Department, Department of Soil and Water Conservation Engineering, TNAU, Coimbatore, Tamil Nadu, India ^{3, 4, 5} Teaching Assistant, Department of Soil and Water Conservation Engineering, TNAU, Coimbatore, | |

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| | | Tamil Nadu, India | |
| SWE/OFWM/11 | Wireless Automated drip Irrigation and Fertigation Management System | Sandeep Kumar Pandey ¹ , P. K Mishra ¹ , M. P. Tripathi ² and Pankaj Sharma ³ ¹ Assistant Professor, Acharya Narendra Dev University of Agriculture and Technology Ayodhya,U.P ² Assistant Professor, Eternal University Baru Sahib Himachal Pradesh ³ Research Scholar, Punjab Agricultural University Ludhiana, Punjab | |
| SWE/OFWM/12 | Fertigation Effect on Potato Yield with and without Plastic Mulch Under North-Bihar Agroclimatic Condition | S.K.Nirala ¹ , R.Suresh ² and Daleshwar Rajak ³ ¹ Asstt. Prof., - cum- Scientist, and P.I, PFDC,Department of S.W.E, C.A.E, R.P.C.A.U.,Pusa (Samastipur) Bihar -848125 ² Prof. and Head, Department of S.W.E, C. A.E,R.P.C.A.U.,Pusa (Samastipur)Bihar -848125 ³ Scientist –Cum- Asstt.Prof., ZRC, Darisai, East Singhbhum, BAU, Ranchi, Jharkhand Corresponding Author: Email- sknirala@rpcau.ac.in | |
| SWE/OFWM/13 | Spatial Soil Moisture Variability based Precision Sprinkler Irrigation | Ramadhar Singh ¹ , CD Singh ² ,KP Singh ² and Satish Kumar Singh ³ Irrigation and Drainage Engineering Division, ICAR-Central Institute of Agricultural Engineering (CIAE), Nabi Bagh, Berasia Road, Bhopal-462 038, INDIA Email of Corresponding Author: rsingh067bpl@gmail.com | Technical Session-II; Date: 24/11/2021; |
| SWE/OFWM/14 | “Using CROPWAT 8.0 Model at Different Vegetables crop in the Himachal Pradesh” | Mahesh Prasad Tripathi*, Sandeep Kumar Pandey, Pramod Kumar Mishra, S. K. Pandey *Dr.Khem Singh Gill Akal College of Agriculture, Eternal University, Baru Sahib (H.P) India. College of Agriculture Kotwa, Azamgarh. ANDUA&T KumarganjAyodhya (U.P) maheshagriengg@gmail.com | Time: 11:15-13:30 h |
| SWE/OFWM/15 | Performance evaluation of AquaCrop model for drip irrigated chilli crop | M. M. Deshmukh*, V. B. Garde, M. U. Kale, S. B. Wadatkar, A. N. Mankar Department of Irrigation and Drainage Engineering, Dr. PanjabraoDeshmukhKrishiVidyapeeth, Akola (M.S.) - 444 104 (India) *Corresponding author email address - mahendradeshmukh@yahoo.co | |
| SWE/OFWM/16 | Comparative study of LEWA and Mini Sprinkler on Yield and Water use efficiency of Wheat in Bihar | S.P.Gupta ¹ *,Arti Kumari ² , and Smriti Lata ³ ¹ Associate Professor, College of Agricultural Engineering, RPCAU, Bihar, India ² Scientist, Division of Land and Water Management, ICAR-Research Complex for Eastern Region, ICAR Parisar, Patna, India *Corresponding author. E-mail: | |
| SWE/OFWM/17 | Effect of Mulching with Drip Irrigation on Water Use Efficiency and Yield of Bittergourd | Vinay Kumar, U.K. Singh, Anil Kumar, A.K. Sinha and Neena Bharti Scientist, Krishi Vigyan Kendra, B.A.U. Ranchi, Jharkhand | Technical Session-III; Date: 24/11/2021; |
| SWE/OFWM/18 | Performance evaluation of a testing of centrifugal pumps in series and parallel combination | Ravikant Anand ¹ and S. P. Gupta ² ¹ Post - Territory Manager, TAFE, Bhubaneswar ² Professor, (SWE), College of Agricultural Engineering, RPCAU, Pusa Bihar, India *Corresponding author. E-mail: ravikantanand86@gmail.com | Time: 14:15-16:00 |

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| SWE/OFWM/19 | Assessment of water footprint of rice (<i>Oryza sativa</i> L.) for sustainable production: A case study of Imphal west district, Manipur, India | N BidyaraniChanua*, BakimchandraOinamb aResearch scholar, Civil Engineering Department, NIT Manipur, India bFaculty of Civil Engineering Department, NIT Manipur, India *Corresponding author: nbidyarani@gmail.com | h |
| SWE/OFWM/20 | Effect of hydrogel application on yield of Wheat for local field condition | Ram Kumar Sahu*, Sudarshan Prasad Department of Soil and Water Engineering College of Agricultural Engineering Dr. Rajendra PasadCental Agricultural University, Pusa, Samastipur- 848125 (*Corresponding Author: Email- rksahu@rpcau.ac.in) | |
| SWE/OFWM/21 | Effect Of Mulching On Spatial Moisture Distribution Pattern in Brinjal | Pramod Kumar and Anubha Singh Scientist, KVK, Bena, Jamtara, JamtaraandUG Student, College of Agricultural Engineering, Kandi, Sangareddy | |
| SWE/OFWM/22 | Promotion of Organic Mulch in Turmeric Production and it's Economic Analysis at Muzaffarpur district of Bihar | Nidhi Kumari1*, Prabhat Kumar Singh2, Vinita Kashyap3, Jaya Sinha4 and Moti Lal Meena5 *Corresponding author: ntiwari.hjp@gmail.com 1, 5 Krishi Vigyan Kendra Turki, Muzaffarpur, Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar, 848125. 2 Centre for Advance Studies on Climate Change, Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar, 848125. 3 Krishi Vigyan Kendra Khodawandpur, Begusarai, Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar, 848125. 4 College of Agricultural Engineering, Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar, 848125. | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| SWE/OFWM/23 | Performance Evaluation of Rain Irrigation System in Onion Cultivation in Bihar | Er. Sudarshan Prasad1*, Er. I. B. Bhagat1, Dr. Udit Kumar2 and Dr. Ambrish Kumar1 1 College of Agricultural Engineering, RPCAU, Pusa, Samastipur (Bihar) 2 PG College of Agricultural, RPCAU, Pusa, Samastipur (Bihar) * Corresponding author (email: sp_28783@yahoo.com) | |
| SWE/OFWM/24 | Response of soilless coloured capsicum under different irrigation strategies in greenhouse | Ravindra D Randhe1, Murtaza Hasan2, D. K. Singh3, S. Naresh Kumar4, Pramod Kumar5 Wasi Alam6 1Scientist, ICAR- Central Institute of Agricultural Engineering, Bhopal, Madhya Pradesh, INDIA, 462038 2 Principal Scientist, Centre for Protected Cultivation Technology, ICAR-IARI, New Delhi-110 012, India 3 Professor, Division of Agricultural Engineering, ICAR- IARI, New Delhi, INDIA, 110012 | |

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| | | 4 Professor, Division of Environmental Sciences, ICAR- IARI, New Delhi, INDIA, 110012 | |
| SWE/OFWM/25 | Clogging incidence of subsurface placed emitters using poor quality water | Vinod Kumar Tripathi Department of Agricultural Engineering, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi-221005 Email: vktripathi@bhu.ac.in | |
| SWE/OFWM/26 | Studies on the effect of coloured plastic mulches on growth and yield of okra (<i>Abelmoschus esculentus</i> L.) | Daleshwar Rajak ¹ , Sanjay Kumar Nirala ² and Pravin Dahiphale ³ 1Junior Scientist-Cum-Assistant Professor, Zonal Research Station, Darisai (BAU), Barakhurshi, East Singhbhum, Jharkhand-832304 (Email: drajak76@rediffmail.com) 2Assistant Professor, Soil and Water Engineering, CAE, RPCAU, Pusa, Samastipur, Bihar 3Assistant Professor, Lovely Professional University, Jalandhar (Punjab) | |
| SWE/ OFWM/27 | Effects of Irrigation Scheduling using Drip System on <i>Melia Composita</i> (Malabar Neem) | A.P. Lakkad ^{1*} , P.K. Shrivastava ² , H. Sanchavat ³ and A.H. Jagani ⁴ 1Assistant Professor, Department of Soil and Water Conservation Engineering, CAET, Navsari Agricultural University, Dediapada. 2Principal, Aspee College of Horticulture and Forestry, Navsari Agricultural University, Navsari. 3Assistant Professor, Department of Farm Machinery and Power, CAET, Navsari Agricultural University, Dediapada. 4P. G. Student, Department of Soil and Water Conservation Engineering, CAET, Navsari Agricultural University, Dediapada. | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| SWE/ OFWM/28 | Assessment of different types of irrigation methods on yield of Tomato | Ashok Kumar ¹ SMS (Agril. Engg), Rita Lal ² SMS (Home Science& Senior Scientist & Head), Mukesh Kumar ³ SMS (Horti.), Vinod Kumar ⁴ SMS(Agronomy) and KVK,Munger Contact no: 9931640574, Email id: kvkerashok@gmail.com | |
| SWE/ OFWM/29 | Water use and Water productivity of drip irrigated wheat in North Bihar | Anjali Khandekar and S. P. Gupta Dr.Rajendra Prasad Central Agricultural University, Pusa (Samastipur) (e-mail: anjalikhander12@gmail.com and spgupta.cae@gmail.com) | |
| SWE/ OFWM/30 | Fertigation Effects On Growth, Yield and Cracking Litchi Fruits With And Without Plastic Mulch In Calcareous Soil Of North- Bihar | S.K.Nirala ¹ ,R. Suresh ² and R. Rani ³ 1Asstt. Prof., - cum- Scientist, and P.I, PFDC, Department of S.W.E, C.A.E, R.P.C.A.U.,Pusa. Bihar -848125 2 Prof. and Head, Department of S.W.E, C. A.E, R.P.C.A.U., Pusa (Samastipur) Bihar -848125 3 Scientist -Cum- Asstt.Prof., Department of Horticulture, BAU, Sabour, Bhagalpur Corresponding Author: Email- sknirala@rpcau.ac.in | |
| SWE/ OFWM/31 | Irrigation Optimization through | Thiyagarajan, G., ¹ Balaji Kannan ² and S. Panneerselvam ¹ | |

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| | Artificial Intelligence (AI) | 1Water Technology Centre, Tamil Nadu Agricultural University, Coimbatore 2Department of Soil & Water Conservation Engineering, Agricultural Engineering College and Research Institute, Tamil Nadu Agricultural University, Coimbatore | |
| SWE/ OFWM/32 | IRRICAD Irrigation Design Software for Farm Irrigation and Piped Water Networks | Mrs. Madhuri ghugari, Agrinext Consultancy and Er. Milind S Kayande, Agritech solutions | |
| SWC/ OFWM/33 | Fog Harvesting: A New Advance Technology to Conservation of Water in Coastal and Mountainous Region | Sadhani Kumari ¹ ,Lakshmi Poojitha Challa ² | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| SWC/ OFWM/34 | Post Irrigation Impact Of Wastewater Irrigation On Soils And Crops In Peri-Urban Area Of Nagpur | A. R. Mhaske V.G.Nag | |

THEME IV: WATERSHED MANAGEMENT AND ECOLOGICAL SERVICES

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|-------------|---|--|---|
| SWE/WMES/01 | Estimation of Energy Requirement and Carbon emission from Groundwater Pumping for RPCAU Campus Pusa | Sachindra Kumar Singh ^{1*} and Dr. Ravish Chandra ² 1* M. Tech Student, Soil and Water Engineering, RPCAU Pusa, Bihar 2** Assistant Professor cum Scientist, Soil Water Engineering, RPCAU Pusa * Email: sachindrasingh930@gmail.com Email :**ravish@rpcau.ac.in | Technical Session-IV; Date: 24/11/2021; Time: 17:15-19:00 h |
| SWE/WMES/02 | Shrinking of wetland and its vulnerability to climate change: A case study for Kanwar wetland, Begusarai, India | Akram Ahmed*, Arti Kumari, A K Singh,Ashutosh Upadhyaya,R K Raman and Ujjwal Kumar IICAR Research Complex for Eastern Region, Patna, Bihar 800014 *Corresponding author:akrambckv@gmail.com | |
| SWE/WMES/03 | Estimation of Crop Water | Water Requirement for Summer Sesame Using SIMDual Kc Model A. P. Lakkad*, P. K. Shrivastava ¹ and K. N. Sondarva ² | |

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| | Requirement for Summer Sesame Using SIMDual Kc Model | *Assistant Professor, College of Agricultural Engineering and Technology, Navsari Agricultural University, Dediapada; 1Principal, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari; 2Assistant Professor, College of Agricultural Engineering and Technology, Navsari Agricultural University, Dediapada *Corresponding author e-mail address: larunp@nau.in | |
| SWE/WMES/04 | Comparison of Coriander Crop Evapotranspiration Measured by a Micro-lysimeter, Field Water balance method and Automatic Closed Canopy Chamber | DEEPAK KUMAR*1 ABHINAB MISHRA1 RANK H. D.2 Department of Agricultural Engineering, School of Agriculture, GIETU, Gunupur, Odisha-765022, Department of Soil and Water Conservation Engineering, CAET, JAU, Junagadh, Gujarat-362001 Corresponding Author: Email-dk720244@gmail.com | |
| SWE/WMES/05 | Assessment of climate change impact on the crop water requirement of cotton (Gossypium hirsutum) in Kalaburgi district, Karnataka, India | J. B. Kambale1 and D. Basavaraja2 1. Department of Soil and Water Engineering, College of Agricultural Engineering, University of Agricultural Sciences, Raichur-585104, India Corresponding E-mail: jbkambale@gmail.in. 3. Department of Environmental Science and Agroforestry, College of Agriculture, Bheemaranagudi, University of Agricultural Sciences, Raichur-585104, India | |
| SWE/WMES/06 | Comparison of Various Drought Indices to Monitor Drought Status | Kanhu Charan Pandaa* and Ram Mandir Singha Department of Agricultural Engineering, Institute of Agricultural Sciences, BHU, Varanasi, UP- 221005 * Email: kanhucharan.bm@gmail.com | |
| SWE/WMES/07 | Integrated assessment of drought vulnerability for Bundelkhand Region | R. M. Singh1 Saswat Kumar Kar1, and T. Thomas2 1Department of Farm Engineering, Institute of Agricultural Sciences, BHU, Varanasi, U. P., India 2Ganga Plains South Regional Centre, National Institute of Hydrology, Bhopal, M. P., India Email: mandirsingh@rediffmail.com | Technical Session-IV; Date: 24/11/2021; Time: 17:15-19:00 h |
| SWE/WMES/08 | Evaluation of best machine learning model for prediction of potential evapotranspiration (ETo) using model score in sub temperature valley of Uttarakhand | Utkarsh Kumar1,2, Rashmi3, Manoranjan Kumar4 1Scientist, Crop Production Division, ICAR-Vivekananda ParvatiyaKrishiAnusandhanSansthan, Almora, Uttarakhand 263601, India 2Research Scholar, Division of Agricultural Engineering, ICAR-Indian Agricultural Research Institute, New Delhi, Delhi, 110012, India 3. Research Scholar, Department of Agricultural Economics, Institute of Agricultural Sciences, Banaras Hindu University, Uttar Pradesh 221005, India 4Principal Scientist (SWEE), Division of Resource Management, ICAR-Central Research Institute for Dryland Agriculture, Hyderabad -500059, Telangana Corresponding Author Email: utkarsh.kumar@icar.gov.in | |
| SWE/WMES/09 | Spatial Distribution and Temporal Trends of Rainfall Erosivity Over India | Amar Kant Gautam; Tapasya; Ram Niwas Singh * Assistant Professor, Dr. Rajendra Prasad Central Agricultural University Pusa, Samastipur Bihar-848125; Email: amarkant.gautam@gmail.com 2Assistant Professor, PG Department of Geography, Jai Prakash University, Chapra Bihar 3Associate Professor, Dr. Rajendra Prasad Central Agricultural University Pusa, Samastipur, | |

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| | | Bihar-848125 | |
| WC/WMES/10 | Development and analysis of land use/land cover classification map of Samastipur district of Bihar (India) using remote sensing and GIS technique | Jitendra Kumar* Ram Kumar Sahu Sudarshan Prasad Department of Soil and Water Engineering College of Agricultural Engineering Dr. Rajendra Pasad Cental Agricultural University, Pusa, Samastipur- 848125 (*Corresponding Author: Email- jkyadav430jk@gmail.com) | |
| SWE/WMES/11 | Techno-Economic Feasible Solution of Flood and Sediment Management Strategy of The Koshi River | 1Amit Kumar; 2Arjumadatta Sarangi; 3A. K. Mishra 1Research scholar, Division of Agricultural Engineering, ICAR-IARI, New Delhi-110012. 2, 3Principal Scientist, Water Technology Centre, ICAR-IARI, New Delhi-110012. (Corresponding author E mail: amit_11417@iari.res.in) | |
| SWE/WMES/12 | Study of Spatial and Temporal Distribution of Rainfall for planning water management strategies in Mizoram | B C Kusre Professor (IDE); College of Agricultural Engineering and PHT, Ranipool, (E) Sikkim Email: kusrebharat@gmail.com; Mob: 9933440970 LM 9949 | |
| SWE/WMES/13 | Possible Strategies for improving food security through efficient land water and energy management in Eastern Region | Dr. Ashutosh Upadhyaya Principal Scientist & I/C Head Division of Land and Water Management ICAR Research Complex for Eastern Region, ICAR Parisar, P.O. B V College, Patna | |
| SWC/WMES/14 | Removal Of BOD from Sewage Water by Phytoid Sewage Treatment Plant: A Study Using The Response Surface Methodology | <i>A.R. Mhaske¹, R.B.Biniwale² G.P.Obi Reddy³</i> | Technical Session-IV; Date: 24/11/2021; Time: 17:15-19:00 h |
| SWC/WMES/15 | Effect of LULC change on soil organic carbon stock – A review | ¹ Amit Kumar; ² Arjamadutta Sarangi | |
| SWC/WMES/16 | Rainwater Harvesting for Improving Sustainable Livelihood of Rural Community of Southern Rajasthan | P. K. Singh | |

THEME V: WATER REQUIREMENT AND CLIMATE CHANGE (WRCC)

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|-------------|---|--|--|
| SWE/WRCC/01 | Soil Erosion Estimation of Irga River Catchment (Jharkhand) using Remote Sensing and GIS Techniques | Shankar Yadav ¹ , R.K. Sahu ² , Sudarshan Prasad ³ ¹ Ex-M.Tech. Student, ^{2,3} Assistant Professor, Deptt. of Soil and Water Engg., College of Agricultural Engineering, Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur- 848125 (India) (*Email of Corresponding Author: Shankar.y1994@gmail.com) | Technical Session-V; Date: 25/11/2021; Time: 09:00-11:30 h |
| SWE/WRCC/02 | Impact of Integrated farming system on land and water productivity in Eastern Hills and Plateau agro-climatic region, India | Pawan Jeet ^{1*} , Bikash Das ² , Santosh S. Mali ² , Jaipal Singh Choudhary ² , Suniti Bhengra ² , A. Upadhyaya ¹ and Ujjwal Kumar ¹ ¹ ICAR-Research Complex for Eastern Region, Patna (Bihar) ² ICAR-RCER, Farming System Research Centre for Hill and Plateau Region, Plandu, Ranchi (Jharkhand) *Corresponding author email: pawan.btag@gmail.com | |
| SWE/WRCC/03 | Land feasibility analysis for water harvesting structures using Geo visualization concept in Waghdi watershed, Maharashtra | Arti Kumari ^{1*} , Pramod Tiwary ² , Ashutosh Upadhyaya ³ and Akram Ahmed ⁴ ^{1,4} Scientist, Division of Land and Water Management, ICAR-Research Complex for Eastern Region, ICAR Parisar, Patna, India ² Principal Scientist, Division of Soil Resource Studies (SRS) ICAR- ICAR- NBSS & LUP, Nagpur, India ³ Principal Scientist, Division of Land and Water Management, ICAR-Research Complex for Eastern Region, ICAR Parisar, Patna, India *Corresponding author. E-mail: kumariarti995@gmail.com | |
| SWE/WRCC/04 | Performance of Constructed Wetland in Ibrahimpur Village, Haridwar District, Uttrakhand State | Jhalesh Kumar, ¹ V. K. Pandey ² , Rajesh Singh ³ , V. C. Goyal ⁴ and Omkar Singh ⁴ ¹ Department of Soil and Water Engineering, SV College of Agricultural Engineering and Technology & Research Station, FAE, Raipur, Chhattisgarh. ² College of Agriculture and Research Station, Kurud, Dhamtari, Chhattisgarh. ³ Environmental Hydrology Division, National Institute of Hydrology, Roorkee, Uttrakhand. ⁴ Research Management and Outreach Division, National Institute of Hydrology, Roorkee, Uttrakhand. *Corresponding author. E-mail: jhalesh.ku.sahu@gmail.com | |
| SWE/WRCC/05 | Hydrologic Assessment of Haveli (A Traditional Water | Liansangpuii ^{1*} , Ramesh Singh ² and R M Singh ¹ ¹ Department of Agricultural Engineering, Institute of Agricultural Sciences, BHU, | |

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| | Harvesting Structures) in a Micro Watershed: A case study from Bundelkhand Region, India | Varanasi,Uttar Pradesh, India 2ICRISAT Development Centre, International crops Research Institute for the Semi-AridTropics, Patancheru, Hyderabad, Telangana, India * Corresponding Author:fanaisangpui@gmail.com | |
| SWE/WRCC/06 | Land use/ land cover classification applying fuzzy approach for improving accuracy | Manibhushan* and Ashutosh Upadhyaya (ICAR Research Complex for Eastern Region, Patna) | Technical Session-V; Date: 25/11/2021; Time: 09:00-11:30 h |
| SWE/WRCC/07 | Analysis on Distribution of Land Use Land Cover Changes in BurhiGandak Catchment with Risk Zone Classification based on Flood Risk Assessment | SubodhHanwat, V.K. Tripathi and R. M. Singh Department of Agricultural Engineering, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India. Email: subodh.hanwat@bhu.ac.in | |
| SWE/WRCC/08 | “Socio-economic impact assessment of soil and water conservation measures in ‘Shevdi-Yenoli watershed in Jintuluka of Parbhani District | 1*Khose Suyog Balasaheb, 1Deshmukh M. R., 1Pokale R. S., 2Payal S. D. 1 Former B. Tech Student, College of Agril. Engg. V.N.M.K.V., Parbhani-431402 2Assistant professor, Dept. of SWEE, College of Agril. Engg.V.N.M.K.V., Parbhani-431402 *Corresponding Author, Khosesuyog@gmail.com | |
| SWE/WRCC/09 | Canopy Spectral Reflectance for Crop Water Stress Assessment in Wheat and Okra | YA Rajwade and NS Chandel ICAR-Central Institute of Agricultural Engineering Bhopal Corresponding author: YA Rajwade (Yogesh.Rajwade@icar.gov.in) | |
| SWE/WRCC/10 | Pan Evaporation Modelling Using Soft Computing Techniques: A Case Study | Manish Kumarand Ambrish Kumar College of agricultural engineering, Dr. R.P.C.A.U, Pusa, Bihar-848125 | |

Energy & Other Areas

THEME I: BIOMASS AND BIOENERGY

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|------------|--|--|--|
| EOA/BB-01 | Titanium dioxide nanoparticles as additive to the biodiesel - a catalyst for enhancing the performance of CI engine | Vidya Kulkarni , Vijayakumar Palled , Prakash, K.V., Devanand Maski, Sharanagouda Hiregoudar and Sushilendra, College of Agricultural Engineering, UAS, Raichur, Karnataka E-mail:kulkarnividya95@gmail.com | Technical Session-I; Date: 24/11/2021; Time: 09:00-11:00 h |
| EOA/BB-02 | Biogas generation from biodegradable kitchen waste | Shruti Thaneer, Prakash K.V, Sunil Shirwal and Sushilendra College of Agricultural Engineering, UAS, Raichur, Karnataka E-mail: shruthithaneeru03@gmail.com | |
| EOA/BB-03 | Effect of varied pretreatment processes on characteristics of paddy straw and water hyacinth for further energy conversion | P. Subramanian, J. Gitanjali, K. Nithiyaand B. Prabha Department of Renewable Energy Engineering, AEC&RI,TNAU, Coimbatore, Tamil Nadu E-mail : manianpasu@yahoo.com | |
| EOA/BB-04 | Assessment of bamboo stem in frugal engineered thermal reactor for higher energy recovery | J. Gitanjali, K. Nithiyaand P. Subramanian Department of Renewable Energy Engineering, AEC&RI,TNAU, Coimbatore, Tamil Nadu E-mail:jogitanjali@gmail.com | |
| EOA/BB-05 | Bio-oil catalytic upgradation via ex-situ pyrolysis process of paddy straw | S. Sriramajayam, J. Gitanjali, B. Prabha and K. Chandrakumar and P. Subramanian Department of Renewable Energy Engineering, AEC&RI,TNAU, Coimbatore, Tamil Nadu E-mail:ramajayam@gmail.com | |
| EOA/BB-06 | Supply chain management of paddy straw for bpcl bio-refinery plant in odisha | S.K. Samal and M.K Mohanty Dept. of Farm Machinery and Power Engineering, CAET, OUAT, Bhubaneswar-751003 E-mail:sirius2sk@gmail.com | |
| EOA/BB-07 | Synthesis of fuel oil from plastic carry bags using pyrolysis process | B.Prabha, D. Ramesh, S. Sriramajayam, S. Pugalendhi and S. Kamaraj Department of Renewable Energy Engineering, AEC & RI, TNAU, Coimbatore E-mail:prabha_026@yahoo.co.in | |
| EOA/BB-08 | Bioethanol production from paddy straw-a review sustainable bioethanol production from paddy Straw | L. Pattanaik, S. Samal and M.K.Mohanty College of Agricultural Engineering & Technology, OUAT, Bhubaneswar Email: mohanty65m@gmail.com | |
| EOA/BB-09 | Development of an manually operated briquetting machine for | Y. P. Khandetod, H. Y. Shirrame, L Suryawanshi and S. R.Pradhan College of Agricultural Engineering and Technology, DBSKKV, Dapoli, Maharashtra, Email: ypkhandetod@rediffmail.com | |

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| | use in rural communities | | |
| EOA/BB-10 | Integrated biomass supply chain for delivery logistic cost of paddy straw to biorefinery | Devanand Maski, Neeraja J, K. V. Prakash, Udaykumar Nidoni, Vijaykumar Palled and Pushpa Tuppad College of Agricultural Engineering, University of Agricultural Sciences, Raichur, Karnataka Email: dmaski@gmail.com | Technical Session-I; Date: 24/11/2021; Time: 09:00-11:00 h |
| EOA/BB-11 | Bioenergy production from paper mill sludge | G.Saravanapriya,R. Shreelavaniya and T.Karuppayee Sri Parasakthi College for Women, Courtallam – 627 824, Tenkasi District, Tamil Nadu Email: energyengineershree@gmail.com | |
| EOA/BB-12 | Alkali pretreatment of paper mill sludge to enhance biogas production | R. Shreelavaniya,G.Saravanapriya and T.Karuppayee Sri Parasakthi College for Women, Courtallam – 627 824, Tenkasi District, Tamil Nadu Email: energyengineershree@gmail.com | |
| EOA/BB-13 | Physical properties of absorbents used for biogas purification | K.A. Sahu and S.R. Kalbande Department of UCES & EE, Dr. PDKV Akola, (M.H.) India Email: sahukrishna500@gmail.com | |
| EOA/BB-14 | Feasibility study of cashew nut shell as feedstock for gasification | H. Y. Shriram, A. G. Mohod, Y. P. Khandetod and K. G. Dhande College of Agricultural Engineering and Technology, DBSKKV, Dapoli, Maharashtra Email: hemantshrirame@gmail.com | |
| EOA/BB-15 | Effect of variation of compression ratio on the performance of a 4 stroke direct injection engine using rice bran biodiesel | A.Mishra, Priyanka Priyadarsiniand Deepak Kumar School of Agriculture, GIET University, Gunupur,Odisha-765022, Email: mabhinab86@gmail.com | |
| EOA/BB-16 | Performance evaluation of a rocket cookstove in terms of its thermal efficiency and heat losses | Vinod Kumar, Nishant Chaudhary, Yadvika, YK Yadav and Arun Atkan Department of Renewable and Bio-Energy Engineering, COAE&T, CCS HAU, Hisar Email: vinodghorla@yahoo.in | |
| EOA/BB-17 | Development of a small scale portable biochar kiln for biochar production | Subham Shankar, Uttam Kumar, Asha Kumari Sinha and Mintu Job Department of Agricultural Engineering BAU, Ranchi – 834 006 (Jharkhand), India Email: uttam.bauranchi@gmail.com | |
| EOA/BB-18 | Biogas production using pressmud, bagasse and paddy straw | Nitin Karwasra, Yadvika, Gaurav Chaudhary and Y K Yadav Department of Renewable and Bio Energy Engineering COAE&T, CCS HAU, Hisar Email: karwasra.nitin@gmail.com | |
| EOA/BB-19 | Development of torrefaction system of 200 kg biomass capacity | Sandip Gangil and Vinod Kumar Bhargav Central Institute of Agricultural Engineering, Bhopal Email: gangilsandip@yahoo.co.in | |
| EOA/BB-20 | Bio-polymeric transitions and kinetics of thermal degradation processes on pigeon pea stalk | Sandip Gangil, VK Bhargav, Omprabha and Amit Tiwari Central Institute of Agricultural Engineering, Bhopal Email: gangilsandip@yahoo.co.in | |

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| EOA/BB-21 | Utilization of agro-waste: an approach towards sustainable development | Charu Bisht and Neha Rawat Department of Food Science and Technology, COA, GBPUAT, Pantnagar, Uttarakhand E mail: bishtc123@gmail.com | Technical Session-I; Date: 24/11/2021; Time: 09:00-11:00 h |
| EOA/BB-22 | Experimental investigations of waste tender coconut conversion into energy rich biocoal | M. K. Ghosal and D. Behera Dept. of Farm Machinery and Power Engineering, CAET, OUAT, Bhubaneswar-751003 E mail: mkgghosal1@rediffmail.com | |
| EOA/BB-23 | Performance study of a diesel engine by using producer gas from selected agricultural residues on dual-fuel mode of diesel-cum-producer gas | D. K. Das and M. K. Ghosal Dept. of Farm Machinery and Power Engineering, CAET, OUAT, Bhubaneswar-751003 E mail: mkgghosal1@rediffmail.com | |
| EOA/BB-24 | Encapsulation of food bio-actives through co-crystallization | Neha Rawat, Rinku Grover, Charu Bisht and Satish Kumar Sharma Department of Food Science and Technology, COA, GBPUAT, Pantnagar, Uttarakhand E mail: rawatneha1225@gmail.com | |
| EOA/BB-25 | Enhancement of biogas generation from urea treated baled paddy straw | Jadhav Swapnaja K., Jena P. C. and Maheshwari, C. M. ICAR-Central Institute of Agricultural Engineering, Bhopal E mail: swapnaja20kjadhav@gmail.com | |

THEME II: SOLAR ENERGY

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|------------|---|---|--|
| EOA/SE-01 | Techno-economic feasibility analysis of parabolic concentrator based solar thermal desalination device for hot arid region of India | Surendra Poonia, A.K. Singh and Dilip Jain ICAR-Central Arid Zone Research Institute, Jodhpur – 342 003 E-mail: poonia.surendra@gmail.com | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| EOA/SE-02 | Development of automated dry cleaning system for solar photovoltaic module | V. M. Modi, Hitesh Sanchawat, Vinit Modi, Paresh Kachhv and Kidiya Riyaj College of Renewable Energy and Environmental Engineering, SDAU, S.K. Nagar E-mail: vmmodee@gmail.com | |
| EOA/SE-03 | Design and development of solar tree for multipurpose power application | V. M. Modi, Vikas Singh, Vinit Modi and Sanghani Chirag College of Renewable Energy and Environmental Engineering, SDAU, S.K. Nagar E-mail: vmmodee@gmail.com | |

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| EOA/SE-04 | Scope and option of solar energy application in eastern region of India | Atiqur Rahman, Prem K Sundaram, B Sarkar, Anil K Singh and A Upadhyaya ICAR Research Complex for Eastern region, Patna, Bihar E-mail: rahman_patna@yahoo.co.in | Technical Session-III; Date: 24/11/2021; Time: 14:15-16:00 h |
| EOA/SE-05 | Performance evaluation of a phase change material (PCM) based PV/T hybrid solar dryer | A.K. Singh, Surendra Poonia and Dilip Jain ICAR-Central Arid Zone Research Institute, Jodhpur – 342 003 E-mail: akcazri@yahoo.co.in | |
| EOA/SE-06 | Agri-voltaic systems and its potential to optimize agricultural land use for energy production in arid Rajasthan | Surendra Poonia, N.K. Jat, H.M. Meena and Dilip Jain ICAR-Central Arid Zone Research Institute, Jodhpur – 342 003, India E-mail: Surendra.Poonia@icar.gov.in | |
| EOA/SE-07 | Studies on performance parameters of solar flat plate collector of water heating system | Hitesh Sanchavat and Vinit Modi College of Agricultural Engineering & Technology, Navasari Agricultural University, Dediapada, Gujarat. E mail: shitesh@nau.in | |
| EOA/SE-08 | Optimization of drying technology for date palm fruits using novel techniques | S. S. Kapdi, N. Sagarika, and R. F. Sutar College of Food Processing Technology & Bio-Energy, AAU, Anand Email: ss_kapdi@rediffmail.com | |
| EOA/SE-09 | Agri-voltaic system impacts on microclimate and yield of different irrigated and rainfed crops in a hot arid ecosystem of Western Rajasthan, India | Surendra Poonia and Dilip Jain ICAR-Central Arid Zone Research Institute, Jodhpur – 342 003, India E mail: Surendra.Poonia@icar.gov.in | |
| EOA/SE-10 | Design and fabrication of solar-cum-phase change material (PCM) based hybrid cooling system for raw milk | Surendra Poonia, A.K. Singh and Dilip Jain ICAR-Central Arid Zone Research Institute, Jodhpur – 342 003, India E mail: Surendra.Poonia@icar.gov.in | |
| EOA/SE-11 | Performance evaluation & economic analysis of dual axis solar Fresnel system for water boiling Test | A. J. Dere and S. R. Kalbande Department of UCES&EE, Dr. PDKV, Akola E mail: amardeep.dere2@gmail.com | |
| EOA/SE-12 | Field performance evaluation of solar assisted e-prime mover for agricultural operation | P. C. Jena, V. K. Bhargav and A. Nagori ICAR-Central Institute of Agricultural Engineering, Nabibagh, Berasia Road, Bhopal E mail: prakiitkqp@gmail.com | |
| EOA/SE-13 | Development of solar PV water pumping system for irrigation in NEH Region of India | Mahendra S. Seveda College of Agricultural Engineering and Post-Harvest Technology, Ranipool, Gangtok, Sikkim Email: sevda_mahendra@rediffmail.com | |

THEME III: OTHER AREAS

| Paper Code | Paper Title | Authors and their Affiliation | Presentation Scheduled |
|------------|---|---|--|
| EOA/OT-01 | Role of agricultural engineer in nation building and farmers upliftment after covid-19 | L.V. Rautmare CAET, VNMKV, Parbhani E-mail: lvrcet@gmail.com | Technical Session-V; Date: 25/11/2021; Time: 09:00-11:30 h |
| EOA/OT-02 | Impact of flood and rainfall on rice production in Bihar using ARIMAX model | Rohan Kumar Raman, Abhay Kumar, Ujjwal Kumar, Jaspreet singh, Akram Ahmed, S.M. Raut, D.K. Singh, Rakesh Kumar and P.S. Brahmanand ICAR Research Complex for Eastern Region, Patna-800014, Bihar E mail: rohan4741@gmail.com | |
| EOA/OT-03 | Energy optimization of the rice-wheat-green gram cropping system by data envelopment analysis Benchmarking | Snehasish Bhunia, Subrata Karmakar and Suvendu Bhattacharjee, Farm Machinery and Power, Bidhan Chandra Krishi Viswavidyalaya Mohanpur, WB-741235 Email:er.s.bhuniah@gmail.com | |
| EOA/OT-04 | Analysis of energy utilization for wheat (<i>triticum aestivum</i>) production in conservation and conventional agriculture | Snehasish Bhunia, Subrata Karmakar and Suvendu Bhattacharjee Farm Machinery and Power, Bidhan Chandra Krishi Viswavidyalaya Mohanpur, WB-741235 Email:er.s.bhuniah@gmail.com | |
| EOA/OT-05 | Energy requirement for onion cultivation in Karnataka state | A. Carolin Rathinakumari, G. Senthil Kumara1, Venu, S. A., AshokSuraj, B. S.and Murugesh Huchagoudar ICAR-Indian Institute of Horticultural Research, Bengaluru-560 089. E-mail: carolina.kumari@icar.gov.in | |
| EOA/OT-06 | Design and economics of a small-scale 2-tier stacked net-shade structure for vegetable cultivation in marginal lands of Tripura | Amaresh Sarkar, Ezekiel Riang, Kamal Tripura and Dharmenda Debbarma College of Agriculture Tripura, Lembucherra, Agartala - 799210, India Email: amaresh.sarkar@gmail.com | |
| EOA/OT-07 | Challenges & technological solutions for ensuring food, water and energy security in the context of Indian agriculture | R. N. Muni Retd. Executive Director (Tech), OLIC Ltd. Bhubaneswar Email: rnmuni@rediffmail.com | |

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| EOA/OT-08 | Different types of energy use in agriculture | S. K. Goyal, Jai P. Rai, Shree Ram Singh and Sant Prasad KVK, Instt. of Agril Scs., Banaras Hindu University, RGSC, Barkachha, Mirzapur (U.P.) E mail: skgoyal@bhu.ac.in | Technical Session-V; Date: 25/11/2021; Time: 09:00-11:30 h |
| EOA/OT-09 | Performance evaluation of zero-till drill for rice-mustard cropping system: an energy audit in conservation agriculture (CA) | Suwendu Bhattacharjee, S. Bhunia, Kingshuk Roy and Subrata Karmakar Faculty of Agricultural Engineering, BCKV, Mohanpur- 741252, Nadia, West Bengal Email: suwendubhattacharjee10@gmail.com | |
| EOA/OT-10 | Dehydration of vegetables through low grade heat exhaust ofrefrigeration system | Ankur Nagoriand Rubina Chaudhary ICAR-Central Institute of Agricultural Engineering, Bhopal -462038 Madhya Pradesh, India E mail: ankur.nagori@icar.gov.in | |
| EOA/OT-11 | Forecasting of wheat productivity in Siwan district of Bihar based on biometrical characters | Pratibha Kumari and Mahesh Kumar Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur, Bihar -848125 Email:mahesh.kumar@rpcau.ac.in | |
| EOA/OT-12 | Forecasting of pineapple yield in Tripura using non-linear models | Arup De andMahesh Kumar Dr. Rajendra Prasad Central Agricultural University, Pusa, Samastipur, Bihar -848125 Email:mahesh.kumar@rpcau.ac.in | |
| EOA/OT-13 | Variations in cutting force and cutting energy of cereal crops with blade bevel angle | Anand Shivashmpar, Roaf Ahmad Parrayand Satish Devram Lande Division of Agricultural Engineering, ICAR-IARI, New Delhi-12 E mail: ms.anand76@gmail.com | |
| EOA/OT-14 | Enhancing efficiency of jaggery making furnaces with innovative approach | S.I. Anwar and Akash Patel ICAR-Indian Institute of Sugarcane Research, Raebareli Road, Lucknow E mail:sianwar@yahoo.co.in | |
| EOA/OT-15 | Energy assessment in the fuel supply chain of power plants installed in Punjab | Vinod K Bhargav, Sandip Gangil, Janak Ghodasara, Manish Deshmukh , Surendra Pal and Sachin Gajender ICAR-Central Institute of Agricultural Engineering, Bhopal -462038 (M.P.) E mail: vinodkbhargav@gmail.com | |
| EOA/OT-16 | Design of suitable cost-effective animal shelter using plastics for temperate Himalayan region | R. M. Shukla, Rohitashw Kumar & Hilal M. Khan College of Agricultural Engineering & Technology,SKUAST-Kashmir, Srinagar (J&K) E mail: shukla_rm2005@yahoo.co.in | |