**BIODATA**

**1. Name** : JANIFER RAJ XAVIER

**2. Date of Birth** : 18th Apr 1983

**3. Educational Qualifications** :

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Degree | **Year of Passing** | **University/ Institute** | **Subject** | **Grade** |
| **B.Sc (Agri)** | 2004 | TamilNadu Agricultural University (TNAU) Coimbatore-3 | Agriculture | I |
| **M.Sc (Agri)** | 2006 | TamilNadu Agricultural University (TNAU) Coimbatore-3 | Biotechnology | I |
| Ph.D | Continuing | Bharathiar University, Coimbatore. | Biotechnology | Regd. |

**4. Details of Service:**

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| --- | --- | --- | --- | --- |
| **Grade/Post** | **From** | **To** | **Institution** | **Nature of work** |
| Scientist ‘E’ | 03-Sep -2021 | Till date | DFRL, Mysore | * Development of biodegradable cutlery for food and packaging applications. * Developed convenience rations for integrated field shelters. |
| Scientist ‘D’ | 01-Jul-2017 | 02-Sep -2021 | DFRL, Mysore | * Development of biodegradable cutlery for food and packaging applications. * Developed convenience rations for chemical, biological, radiation and nuclear warfare scenario. * Studied prevalence of heavy metal contamination of fruits and vegetables. |
| Scientist ‘C’ | 01-Jul-2012 | 30-Jun-2017 | DFRL, Mysore | * Bacterial cellulose (BC) scale-up achieved upto 500 liters. * Developed BC juices and ice-cream. * Developed edible cutlery and edible films. * Extracted transglutaminase for preparation of edible films. * Developed enzymatic methods for prebiotic production using levansucrase and xylanase. * Biopolymer production using microorganisms and identified   bacteriocin producing lactic acid bacteria. |
| Scientist ‘B’ | 02-Apr-2012 | 30-Jun-2012 | DFRL, Mysore | * Joined DFRL on 02 April 2012 and worked on biopolymers and   identification of bacteriocin producing bacteria under XI FYP. |
| Scientist ‘B’ | 27 - Feb -08 | 01-Apr-2012 | DIHAR, Leh, Ladakh | * Studied growth regulator treatments for survival and rapid establishment of Seabuckthorn. * Studied wild edible and medicinal plants for antioxidants and phyto constituents. * Analyzed genetic structure of *Rhodiola imbricata* and *Medicago* sp. Standardized plant tissue culture for *Rhodiola* sp. * Conserved local germplasm of various crops and stored at Changla top, Ladakh. |

**5. Brief Resume of Contributions**

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| **Research Experience** | | | |  |
| **S.No.** | **Year** | **Topic of research** | **Sponsoring agency** | **Gist of research** |
|  | 2008-2010 | Studies on Ladakh Flora (RD-P1-03/FRL 103). | Defence Research and Development Organisation | Studied growth regulator treatments for survival and rapid establishment of Seabuckthorn. Studied wild edible and medicinal plants for antioxidants and phyto constituents. |
|  | 2008-2012 | Zero energy based conservation of seeds under Himalayan condition. (SL/P-1-2008/DIHAR-119) | Defence Research and Development Organisation | Conserved local germplasm of various crops and stored at Changla top,Ladakh. |
|  | 2009-2012 | Crop improvement through conventional and biotechnological tools & evaluation of cold tolerant varieties and transgenics (S&T-09/DIH-116) | Defence Research and Development Organisation | Analyzed genetic structure of *Rhodiola imbricata* and *Medicago* sp. Standardized plant tissue culture for *Rhodiola* sp. |
|  | 2009-2014 | Development of Specific Processed Food Technologies for Armed Forces in Combat Environments (S&T/DFR-297) | Defence Research and Development Organisation | Developed antimicrobial  polyhydroxybutyrate films with antifungal activity.  Identified 05 bacteriocin producing lactic acid  bacteria using 16S rDNA sequencing. |
|  | 2015-2020 | Processed Food Technologies for Armed Forces (S&T/DFR-303) | Defence Research and Development Organisation | Developed technology for producing edible cutlery such as spoon, forks and bowls has been developed using starch, protein and fruit processing  by-products. Developed and characterized edible films such as wheat, ragi,corn and rice film. |
|  | 2015-2020 | Theatre and Terrain based Food Technologies (DFR-302) | Defence Research and Development Organisation | Developed fruit juices containing bacterial  cellulose using pineapple, grapes and pomogranate. Studied the effect of bacterial cellulose addition on the melting time of ice-cream. |
|  | 2016-2019 | Soldier Preparedness in High Mountains of NE Region - Arunodaya (TD/14-15/DRL-99.07 DFR-301) | Defence Research and Development Organisation | Enzymatic methods were developed for preparation of fructooligosaccharides and xylooligosaccharides for prebiotic applications. |
|  | 2017-2020 | Development of Convenience Rations/Ready-to-Drink Meals for use during Overt and Covert Asymmetric War and likely Radiation Scenarios(DFR 304) | Defence Research and Development Organisation | Development of plant based convenience rations such as tasty nuts bar, liquid meals and instant mixes for CBRN scenario. Liquid meal delivery system suitable to CBRN ensemble was also developed. |
|  | 2018 to till date | Gaganyaan mission | DRDO-ISRO | Designed and modernized clean kitchen for safe and clean production and packaging of foods for Indian Space programme |

**6. List of Publications**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **a) Patents** | | | | | |
|  | | Process for preparation of biodegradable containers. Karna Venkata Ramana, **Janifer Raj X**, Neera, Pathloth Reddya, Dhananjay Kumar, Natarajan Gopalan and Rakesh Kumar Sharma **(Indian Patent No. 385569)** | | | |
|  | | A process for bulk production of bacterial cellulose and uses thereof” . Karna Venkata Ramana, **Janifer Raj X**, Neera, Dhananjay Kumar and Rakesh Kumar Sharma (DEL201711025579, Published on 25.01.2019). | | | |
|  | | Process for preparation of heat sealable edible films, coatings and edible cutlery. Karna Venkata Ramana, Amit Kumar, **Janifer Raj X,** Neera, Dhananjay Kumar, Narasipura Vishwanath Nagaraj and Rakesh Kumar Sharma (DEL201711033183 dated 22.09.2017). | | | |
|  | | **Janifer Raj X**, OP Chauhan and AD Semwal.2020. A meal replacement liquid meal and a process for preparation thereof. Indian patent (submitted). | | | |
|  | | **Janifer Raj X**, OP Chauhan and AD Semwal. 2020. A nutritionally balanced meal replacement bar and a process for preparation thereof. Indian patent (submitted). | | | |
|  | | OP Chauhan, **Janifer Raj X**, Naveen and AD Semwal. 2020. Design of a liquid food delivery system compatible with CBRN ensemble. Indian patent (submitted). | | | |
|  | | DD Wadikar, SS Wandhekar, Sivashankar N, **Janifer Raj X,** GK Sharma and AD Semwal.2019. Design and formulation of edible straw and the process for preparation thereof (submitted). | | | |
| **b) Publications - International** | | | | |  |
|  | | 2010 | **Janifer Raj,** Ballabh Basanth, Pal M. Murugan, Jaime A. Teixeira da Silva, Kumar Saurav, Om P. Chaurasia and Shashi Bala Singh.2010.Screening Phytochemical Constituents of 21 Medicinal Plants of *Trans*-Himalayan Region. Medicinal and Aromatic Plant Science and Biotechnology. Special Issue. 4(1): 90-93. | | Author |
|  | | 2011 | **Janifer Raj X ,**Jitendra Kumar and RB Srivastava.2011. Characterization of Genetic Structure of Alfalfa *(Medicago sp*) from Trans-Himalaya Using RAPD and ISSR Markers. African Journal of Biotechnology. 10 (42):8176-8187. | | Author |
|  | | 2015 | **Janifer Raj X**, ST Babusha, Jhonsy George and KV Ramana. 2015.Material properties and antimicrobial activity of Polyhydroxybutyrate (PHB) films incorporated with vanillin Applied Biochemistry and Biotechnology, Springer Publications, 176:1498–1510. | | Author |
|  | | 2017 | **Janifer Raj X** and Karna Venkata Ramana.2017. Optimization of levan production by cold-active *Bacillus licheniformis* ANT 179 and fructooligosaccharides synthesis by its levansucrase. Applied Biochemistry and Biotechnology, Springer Publications. 181:986–1006. | | Author |
|  | | 2017 | Divya, **Janifer Raj X** and Karna Venkata Ramana. 2017. Optimization of bacteriocin production in *Lactobacillus plantarum* DFR 4 using a simple food grade growth medium Research Journal of Biotechnology,12 (2): 57-65. | | Co-author |
|  | | 2017 | Karna Venkata Ramana, **Janifer Raj X** and Rakesh Kumar Sharma.2017. Recent Trends In Pharmaceutical Biotechnology. Pharmaceutical Biotechnology: Current Research, 1:1-10. | | Co-author |
|  | | 2018 | **Janifer Raj X**, Karna Venkata Ramana and Rakesh Kumar Sharma β-Galactosidase: Biotechnological applications in food processing. Journal of Food Biochemistry, Wiley Publishers,, DOI: 10.1111/jfbc.12564 | | Author |
|  | | 2018 | **Janifer Raj X** ,Ramana, K. V., & Sharma, R. K. (2018). Production of a thermostable and alkali resistant endoxylanase by *Bacillus subtilis* DFR40 and its application for preparation of prebiotic xylooligosaccharides. Journal of Food Biochemistry, 42(5), e12563, Wiley Publishers, DOI: 10.1111/jfbc.12563 | | Author |
|  | | 2019 | **Janifer Raj X**, Mrithula Mahalakshmi, Madhan Kumarr, Gopalan Natarajan, Karna Venkata Ramana and Anil Dutt Semwal (2019)Optimized production of poly (*γ* –glutamic acid) (*γ* -PGA) using *Bacillus licheniformis* and its application as cryoprotectant for probiotics. Biotechnology and applied biochemistry. *67*(6), 892-902. DOI: 10.1002/bab.1879 | | Author |
|  | | 2020 | **Janifer Raj X**, Mythri V, Roopa N, Ramakrishna VCP, Patki PE, Semwal AD (2020) Organic versus conventional – a comparative study on quality and nutritive value of selected vegetable crops of southern India. SAARC J. Agric., 18(1): 99-116 DOI: 10.3329/sja.v18i1.48385 | | Author |
|  | | 2021 | **Janifer Raj X** and Karna Venkata Ramana (2021) Development of slow melting dietary fiber enriched ice cream formulation using bacterial cellulose and inulin doi:10.1111/jfpp.15394 | | Author |
|  | | 2021 | **Janifer Raj X**, Roopa Nagaraj, Muthaiah Pal Murugan, Om Prakash Chauhan, Prakash Eknath Patki (2021) [Data on the detection of toxic metals, essential nutrients, and microbial load of *Solanum lycopersicum* L.(tomato) and *Abelmoschus esculentus* (L.) Moench (okra) in Southern India and their impact on human health–A comparison between organic and conventional vegetables](https://scholar.google.com/scholar?oi=bibs&cluster=12924284579005130626&btnI=1&hl=en). 100765 | | Author |
| **Publications - National** | | | | |  |
|  | | 2010 | **Janifer Raj X**, P.K.Bajpai, O.P.Chaurasia and Shashi Bala Singh. 2010. Preliminary Phytochemical and Flourescence Studies on A High Altitude Medicinal Plant *Rubia tibetica* Hook.F (Rubiaceae). Journal of Economic and Taxonomic Botany. 34 (4):880-885. | | Author |
|  | | 2010 | **Janifer Raj X**, Bajpai PK, Phani Kumar G, Pal Murugan M, Jitendra Kumar, Chaurasia OP and Shashi Bala Singh .2010. Determination of Total Phenols, Free Radical Scavenging and Antibacterial Activities of *Mentha longifolia* Linn. Hudson from the Cold Desert, Ladakh, India. Pharmacognosy Journal. 2 (12): 470–475. | | Author |
|  | | 2010 | **Janifer Raj** X, OP Chaurasia, P.K. Bajpai, M Pal Murugan and Shashi Bala Singh. 2010. Antioxidative activity and Phytochemical investigation on a High Altitude Medicinal Plant *Dracocephalum heterophyllum* Benth. Pharmacognosy Journal.2 (6): 112-117. | | Author |
|  | | 2010 | **Janifer Raj X,** O.P. Chaurasia and M. Pal Murugan. 2010. Bio-medicinal Properties and *In Vitro* Studies of *Rhodiola imbricata* Edgew (Artic Root) - A Rare Phytoadaptogen of Ladakh, The Cold Desert. Herbal Tech Industry. 6 (10): 3-7. | | Author |
|  | | 2010 | Pal Murugan M**, Janifer Raj X**, Phani Kumar. G, Sunil Gupta and Shashi Bala Singh. 2010. Phyto foods of Nubra valley, Ladakh –The Cold Desert. Indian Journal of Traditional Knowledge. NISCAIR Publications.9 (2): 303-308. | | Co-author |
|  | | 2010 | Pal Murugan M**, X Janifer Raj**, G. Phani Kumar and Shashi Bala Singh.2010. Red Spider Mite (*Tetranychus Utricae*) Incidence on Green House *Spinacia oleraceae* (Chenopodiacea) In Ladakh: The Cold Desert, Jammu and Kashmir, India. Journal of Economic & Taxonomic Botany. 34 (4): 860-862. | | Co-author |
|  | | 2010 | Pal Murugan M, **Janifer Raj X**, G. Phani Kumar, Sunil Gupta, Eli Paljor and Shashi Bala Singh.2010. Phenological observations on temperate dry deciduous trees of the cold arid region Ladakh, Jammu and Kashmir. Journal of Economic & Taxonomic Botany.34 (4): 833-839. | | Co-author |
|  | | 2011 | **Janifer Raj X** and M. Pal Murugan. 2011. A Preliminary Study on Phyto constituents of *Rhodiola* Species of Trans – Himalayan Cold Desert. Herbal Tech Industry .7 (1): 4-5. | | Author |
|  | | 2011 | **Janifer Raj X**, Prabodh Kumar Bajpai, Pal Murugan M, Jitendra Kumar, Chaurasia OP and Shashi Bala Singh.2011.Trans-Himalayan Phytofoods – A rich source of antioxidants, Journal of Medicinal and Aromatic Plants. 33(1): 21-26. | | Author |
|  | | 2012 | **Janifer Raj X,** R. Gnanam, M. Pal Murugan, Anju Paapachan.2012.Clonal propagation of *Phyllanthus amarus* – A hepatoprotector. Pharmacognosy Magazine. 8 (29):78-82. | | Author |
|  | | 2012 | **Janifer Raj X** and RB Srivastava.2012.Using inter-simple sequence repeat markers to analyze the genetic structure of natural *Rhodiola imbricata* populations from the Trans-Himalayan region and implications for species conservation. Madras Agricultural Journal. 99(4-6): 221-227. | | Author |
|  | | 2012 | **Janifer Raj X**, Prabhod Kumar Bajpai, M Pal Murugan and RB Srivastava. 2012. Antioxidant activity of *Urtica hyperborea* from Cold Arid Desert Ladakh. Madras Agricultural Journal. 99(4-6): 181-184. | | Author |
|  | | 2013 | **Janifer Raj X**, Basant Ballabh, M Pal Murugan, Priyanka Dhar, Amol B Tayade, Ashish R Warghat, OP Chaurasia and RB Srivastava.2013. Effect of auxins on adventitious rooting from hardwood cuttings of *Hippophae rhamnoides* under Ladakh Himalayas.139(3): 228-231. | | Author |
|  | | 2017 | **Janifer Raj X**, Karna Venkata Ramana and Rakesh Kumar Sharma.2017. Screening and statistical optimization of media ingredients for production of microbial transglutaminase. Defence Life Science Journal, DESIDOC,2 (2):216-225. | | Author |
|  | | 2017 | Divya, **Janifer Raj X**, Natarajan Gopalan and Karna Venkata Ramana.2017. Immobilisation of selected mixed lactic acid bacteria for enhancing bacteriocin production. Defence Life Science Journal, DESIDOC,2(2): 231-238. | | Co-author |
|  | | 2018 | **Janifer Raj Xavier**, Monisha Naren, Gopalan Natarajan, Karna Venkata Ramana and Rakesh Kumar Sharma. 2018.Optimization of pullulan production by *Aureobasidium pullulans* NRRLY 12996 using sugarcane juice and its application as antimicrobial coating on vegetables. Sakthi, 2018. | | Author |
|  | | 2018 | Mrithula Mahalakshmi MK, **Janifer Raj X**, Natarajan Gopalan,Karna Venkata Ramana, and Rakesh Kumar Sharma, Poly (γ-) Glutamic Acid : A Promising Biopolymer**,** Defence Life Science Journal, 3,(3) 301-306. | | Co-author |
|  | | 2019 | Dev Kumar Yadav, **Janifer Raj X\*,** Om Prakash Chauhan, Prakash Eknath Patki, and Rakesh Kumar Sharma Nutritional Intervention during Chemical, Biological, Radiological, Nuclear Environments: A Dietary Perspective (2019) Defence Life Science Journal, 4 (2), 122-129, DOI : 10.14429/dlsj.4.12766 | | Co-author |
|  | | 2020 | **Janifer Raj X**, Roopa N, Om P Chauhan and Anil D Semwal (2020) Organic vegetables: Are they safer and nutritive? IWD technical article, Shakthi 2020, NPOL, Cochin (Accepted). | | Author |
|  | | 2021 | Bal A, OP Chauhan, **Janifer Raj X** and AD Semwal (2021) Use of vacuum-assisted microwave drying for development of instant soy paneer. Journal of Food and Agriculture Research 1(2) 142-156 | | Co-author |
|  | | 2021 | RK Sharma, OP Chauhan and **Janifer Raj X** (2021) Technological Innovations in Food Processing and Value Addition to Coconut, 69-85 | | Co-author |
|  | | 2021 | Janifer Raj Xavier, Om Prakash Chauhan and Anil Dutt Semwal. Military Ration - Comparative study. ASC journal (communicated) | | Author |
|  | | 2021 | Pathloth Reddy, **Janifer Raj X** and OP Chauhan. बायोधडग्रेडेबल कटलिी औि एधडबल दफल्में: प्लाधस्टक प्रिूर्ि को कम किने का उपाय िक्षा खाद्य धिज्ञान पधिका, 2020-2021 (29) 44-48. | | Co-author |
|  | | 2022 | **Janifer Raj X,** Om Prakash Chauhan, Vani Vijay, Prakash Eknath Patki and Rakesh Kumar Sharma (2022) In silico modeling for identification of radio protectors of phyto and phyco origin based on their bioactive properties. Bulletin of environment, pharmacology and life science. 4 :239-246 | | Author |
|  | | 2022 | **Janifer Raj X,** Om Prakash Chauhan and Rakesh Kumar Sharma (2022) Natural products as promising radio protectors. Bulletin of environment, pharmacology and life science. 4 :261-276 | | Author |
|  | | 2023 | **Janifer RX,** Monika J, Sumeet K, Pathloth R, Chauhan OP and Semwal AD (2023) Development and characterisation of a functional milk chocolate bar. Proceedings of DRDO IWD 23 workshop (SMRITI). pp 84-96. | | Author |
|  | | 2023 | Roopa N, Neha KD, Pooja KC, Rachitha N, **Janifer RX**,  Chauhan OP and Semwal AD (2023) Non-thermal decontamination techniques for fruits and vegetable: An overview. Proceedings of DRDO IWD 23 workshop (SMRITI). pp 78-83. | | Co-author |
|  | | 2023 | Pal Murugan M, Santosh Pal, Sakshi Sharma, Ramya V, Govinda Raj T, **Janifer RX**, Wadikar DD & Semwal AD (2023) Development of Ready to Reconstitute fermented kidney bean (*Phaseolus vulgaris*) curry mix by combination processing technology with higher protein digestibility and lower anti‐nutritional factors. Proceedings of DRDO IWD 23 workshop (SMRITI). pp 147-156. | | Co-author |
| **Books** | | | | | |
|  | 2011 | | RB Srivastava, Pal Murugan M, **Janifer Raj X** and Somen Acharya (2011) Glorious Five Decades of DIHAR, In Service to the Soldier and the Society. DESIDOC, Metcalfe House, Delhi, 110054. | | Editor |
|  | 2020 | | Gopal Kumar Sharma, AD Semwal and **Janifer Raj X** (2021) Advances in Fermented foods and beverages ISBN No.9789390175697, NIPA publishers, New Delhi. | | Editor |
|  | 2022 | | Gopal Kumar Sharma, AD Semwal, M Pal Murugan and **Janifer Raj X** Small millets and Pseudo cereals for nutritional and health security. ISBN No.9789390591633, NIPA publishers, New Delhi. | | Editor |
| **Book Chapters** | | | | | |
|  | 2008 | | O.P.Chaurasia, Basanth Ballabh, **Janifer Raj X**, SK Saurav, Divakar Sharma, Amol Tayde and Shashi Bala Singh. “Medicinal Plant Biodiversity of Trans-Himalaya: Sustainable utilization and conservation” In: Advances in Agriculture Environment and Health, Fruits, Vegetables, Animals and Biomedical sciences, Shashi Bala Singh Chaurasia et al (Ed), Sathish Serial Publishing House, New Delhi 2008.pp 171-183. | | Co-author |
|  | 2011 | | **Janifer Raj X**, Jitendra Kumar, Manish Bhoyar, Prabodh K Bajpai, Ashish R Warghat and R B Srivastava Characterization and Conservation of Trans-Himalayan Flora Through Biotechnological Approaches. Innovations in agro animal technologies. Srivastava RB and W Selvamurthy (Ed) ISBN: 978-93-81226-02-5 Sathish Serial Publishers, New Delhi.2011.Pp 177-184. | | Author |
|  | 2011 | | **Janifer Raj X**, Jitendra Kumar, Eli Paljor, Narendra Singh, OP Chaurasia and RB Srivastava. Prospects of Fodder Production and Management in Ladakh. Innovations in agro animal technologies. Srivastava RB and W Selvamurthy (Ed) ISBN: 978-93-81226-02-5 Sathish Serial Publishers, New Delhi.2011.Pp 245-256. | | Author |
|  | 2011 | | Pal Murugan M, Elipaljor, **Janifer Raj X**, OP Chaurasia, Narendra Singh and RB Srivastava. Eco environment improvement of Ladakh - The cold desert: DIHAR initiatives. Innovations in agro animal technologies. Srivastava RB and W Selvamurthy (Ed) ISBN: 978-93-81226-02-5 Sathish Serial Publishers, New Delhi.2011.Pp 257-2676. | | Co-author |
|  | 2011 | | **Janifer Raj** **X**, O.P.Chaurasia, M Pal Murugan and Shashi Bala Singh.“High Altitude Medicinal Plants - A rich source of valuable phytoconstituents” In: Herbal Perspectives: Present and Future. Parimelazhagan et al. (Ed) ISBN:81-89304-91-7.Sathish Serial Publishers, New Delhi.2011.Pp 46-52. | | Author |
|  | 2020 | | **Janifer Raj X**, Om Prakash Chauhan and Anil Dutt Semwal. Enzymes in fruits and vegetable processing In: Recent trends in industrial application of enzymes in food processing and preservation(Invited book chapter). | | Author |
|  | 2020 | | Om Prakash Chauhan, **Janifer Raj X** and Anil Dutt Semwal. Management of fruit and vegetable waste In: Waste management in food processing industries (Invited book chapter). | | Co-author |
|  | 2021 | | **Janifer Raj X** and Gopal Kumar Sharma (2021) Fermented Foods: Impact on human micro biome and beyond**.** In**.**Advances in Fermented foods and beverages.Eds. Gopal Kumar Sharma, AD Semwal and Janifer Raj X pp137-150 | | Author |
|  | 2021 | | **Janifer Raj X,** Om Prakash Chauhan and Anil Dutt Semwal. Role of enzymes in processing of fruits and vegetables (Invited book chapter - Accepted). | | Author |
|  | 2021 | | **Janifer Raj X,** Om Prakash Chauhan and Anil Dutt Semwal. Use of Enzymes in food industry waste utilization. Book: Food Processing Waste and Utilization: Tackling Pollution and Enhancing Product Recovery, CRC Press (Invited book chapter - Accepted). | | Author |
|  | 2021 | | **Janifer Raj X** and Gopal Kumar Sharma. (2021) Progression of biotechnology and its application in food processing. In:Advances in processing technologies pp 247-259. | | Author |
|  | 2021 | | **Janifer Raj X**, Pal Murugan Muthiah, Gopal Kumar Sharma and Anil Dutt Semwal, Biotechnological approaches in development of millet based products In: Small millets and Pseudo cereals for nutritional and health security | | Author |
|  | 2021 | | Pal Murugan Muthiah, **Janifer Raj X**, Gopal Kumar Sharma and Anil DuttSemwal. Small Millets & Pseudo Cereals: Distribution, Production, Productivity and Cultivation Methods In: Small millets and Pseudo cereals for nutritional and health security | | Co-author |
|  | 2021 | | Pal Murugan Muthiah, **Janifer Raj X**, Gopal Kumar Sharma and Anil Dutt Semwal, Small millets and Pseudo cereals: An overview. In: Small millets and Pseudo cereals for nutritional and health security | | Co-author |
|  | 2022 | | Pal Murugan Muthiah\*, Athulya Dev, Santosh Pal and **Janifer Raj X**. Teff (Eragrostis Tef): Chemistry, Nutritional Attributes, Processing Innovations, Traditional and Modern Foods and Beverages. In: Small millets and Pseudo cereals for nutritional and health security | | Co-author |
|  | 2022 | | **Janifer Raj X**\* Foodomics for detection of adulteration – Principles and emerging trends. In Handbook on Food Adulterants and Contaminants – Detection, Chemistry and Health hazards (Invited book chapter - Accepted). | | Author |
|  | 2022 | | **Janifer Raj X**\* Adulteration of fruits, vegetables and their products: Impact on healthy living. In Handbook on Food Adulterants and Contaminants – Detection, Chemistry and Health hazards (Invited book chapter - Accepted). | | Author |
|  | 2022 | | Mrithula MMK and **Janifer Raj X**\* Nanotechnology – A promising venture to ensure food quality and safety. In Handbook on Food Adulterants and Contaminants – Detection, Chemistry and Health hazards (Invited book chapter - Accepted). | | Co-author |
|  | 2022 | | Snigdha Mohandas, C Sarathambal\*, K Anees, E Jayashree and **Janifer Raj X**. Innovations in detection of adulterants in spices and condiments. In Handbook on Food Adulterants and Contaminants – Detection, Chemistry and Health hazards (Invited book chapter - Accepted). | | Co-author |
|  | 2022 | | Monika Jangir, **Janifer Raj X**\*, Om Prakash Chauhan and Anil Dutt Semwal Food security and climate change in United Arab Emirates (UAE): SWOT Analysis (Invited book chapter – Communicated). | | Co-author |
|  | 2023 | | **Janifer Raj X**\* (2023) Synergistic effect of sonication and microwave for deactivation of enzymes. In: Ultrasound and microwave for food processing Synergism for preservation and extraction. pp 217-237. | | Author |
| **Popular articles** | | | | |  |
|  | 2008 | | | **X. Janifer Raj** and R.Gnanam (2008). *Phyllanthus amarus* – A weed in need. Herbal Tech Industry, Samanthi Publishers, Chennai, Pp. 11. | Author |
|  | 2008 | | | Pal Murugan. M, **X. Janifer Raj** and G. Phani Kumar (2008). *Dactylorhiza hatagirea* – A High Value Medicinal Plant of Himalayas. Journal of Herbal Tech Industry, Samanthi Publishers, Chennai, Pp. 08. | Co-author |
|  | 2011 | | | **Janifer Raj X** and Pal Murugan M. (2011) *SOWA RIGPA* - The Ethno-Medical System of Ladakh, India. Kisan World. Chennai Pp 55-58. | Author |
|  | 2011 | | | **Janifer Raj X**, Jitendra Kumar, Prabodh Kumar Bajpai, Ashish Warghat, Narendra Singh and R B Srivastava, (2011) “Biotechnology – A Tool to Characterize and Conserve Ladakh Flora” Defence Institute of High Altitude Research (DIHAR) DRDO,Leh-Ladakh-194101 (J&K). | Author |
|  | 2020 | | | Shivani Ojha, Tejas S. Dongare, Sameer Kumar and **Janifer Raj X.** Anti-stress hormones: Work & Functions Food and agriculture spectrum FASJ010302. 1-12. | Co-author |
| **Editor/Expert member/Technology transfer** | | | | | |
|  | * Associate editor – Journal of Food and Agriculture Research ISSN No. 2583-1291 | | | | |
|  | * Expert member for BIS- FAD 23 (Biotechnology for food and Agriculture) 2018- till date | | | | |
|  | * Expert evaluator for BIRAC Innovation fellowships for Igniting new market led ideas and Expert member for Biotechnology Ignition Grant, BIRAC project proposals. | | | | |
|  | * Technology transfer to industries. 1. Edible cutlery – 10 nos.; Biodegradable cutlery- 02 nos.; Bacterial cellulose production – 01 no. | | | | |
| **Conference – Invited talks** | | | | | |
|  | 2017 | | | Genetically modified crops at CEP of DRDO on ‘Trends in Food Biotechnology’ DFRL, Mysore | |
|  | 2018 | | | DFRL technologies in food processing at Agri Entrepreneurs Meet (VAIGA, 2018) at Thrissur, Kerala | |
|  | 2018 | | | Biotechnological applications of biopolymers at Faculty Sensitization Workshop on ‘Triggering Innovations in Research’ by University Innovation Cluster of DBT, India at TNAU, Coimbatore. | |
|  | 2018 | | | Biotechnological applications of bio-polymers in food at 8th International Food Convention (IFCON 2018), CFTRI, Mysore. | |
|  | 2018 | | | Panelist at International Workshop on 'Endeavours in Biotechnology Research and Career Prospects - Alumnus Perspective' by CPMBB, TNAU, Coimbatore. | |
|  | 2019 | | | Bioprocessing: A way to food ingredient production at 7th Bioprocessing India Conference at CSIR- CFTRI, Mysore | |
|  | 2020 | | | Biotechnological applications of biopolymers St Philomena’s College,Mysore | |
|  | 2021 | | | Heavy metal contamination in fruits and vegetables: Impact on health and wellness. POSHAN MAHA-NUTRITION MONTH-2021 National Level Webinar Series held from 22-09-2021 to 28-09-2021 organised by University of Mysore. | |
|  | 2023 | | | Composite materials for food applications. FDP on Recent advances in composite materials (RACM 2023) organised by NIT, Puducherry. | |
| **Conference - Oral presentations** | | | | | |
|  | 2006 | | | “BIO-FIESTA” National Seminar held during 6 January, 2006 at Nirmala college for Women, Coimbatore | |
|  | 2011 | | | National conference of Angiospermic taxonomy, Bharathiar University, Coimbatore, Tamil Nadu. | |
|  | 2014 | | | National Conference on Fungal Diversity and Biotechnology for food and chemicals and 40th Annual meeting of Mycological Society of India, organised by Annamalai University, Parangipettai, TamilNadu. | |
|  | 2022 | | | International conference on recent advances in industry 4.0 technologies, organised by NIT, Puducherry. | |
| **Conference - Poster presentations** | | | | | |
|  | 2006 | | | National Seminar “BioXplore ‘06” held during 17-18February,2006 organized by Vivekananda College of Engineering for Women, Erode, Tamil Nadu | |
|  | 2008 | | | National Seminar on “Herbal Medicine” during September 26-28, 2008 at Bharathiar University, Coimbatore, Tamil Nadu. | |
|  | 2008 | | | International Conference on “Novel Approaches for High Altitude Food and Health Security” during September 6-8, 2008 at Defence Institute of High Altitude Research, Ladakh, Jammu and Kashmir. | |
|  | 2010 | | | International Conference on “Bioresource Technology” during October 7-8, 2010 at Nirmala college for Women, Coimbatore, Tamil Nadu. | |
|  | 2014 | | | National conference on empowering mankind with microbial technologies | |
|  | 2015 | | | 55th Annual Conference of AMI on Empowering Mankind with Microbial Technologies (AMI EMMT 2014) organized by Association of Microbiologists of India at Tamil Nadu Agricultural University, TamilNadu. | |
|  | 2015 | | | UGC sponsored National Symposium on Microbes and Human Welfare organized by JSS College of Arts, Commerce and Science, Mysuru India. | |
|  | 2018 | | | Organic versus conventional - a comparative study on microbial quality, heavy meatk contamination and mineral content of selected vegetable crops from Mysore region – IFCON 2018, Mysore | |
|  | 2018 | | | *In silico* bioprospection to identify radioprotective molecules of phyto and phyco origin – IFCON 2018, Mysore | |
|  | 2018 | | | RSM optimization of liquid meal - ICRAFT-2018,IICPT, Thanjavur | |
|  | 2022 | | | Optimisation of lactic acid production using cost effective agro wastes for food application.62nd Annual International conference of AMI September 2022. | |
|  | 2023 | | | Biodegradable composites to develop cutlery for food applications: optimization of composition and characterization 29th ICFOST of AFSTI 5- 7 January 2023. | |

**7. Membership of Professional Societies**

Life member – Association of Microbiologists of India (AMI).

Life member – Association of Food Technologists of India (AFSTI), India

Life member – South Indian Horticultural Association (SIH), Coimbatore, Tamil Nadu.

Life member – Institute of Scholars, Bangalore, India.

**8. Training undergone**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl.no.** | **Year** | **Name of the training programme** | **Name of the institute** | **Duration** |
|  | 2006 | Techniques in Molecular Marker Technology | Indian Agricultural Research Institute (IARI), New Delhi, India | 01 month |
|  | 2008 | Training on HPLC techniques | DRDE, DRDO, Gwalior. | 10 days |
|  | 2009 | ICAR Winter school on Molecular tools for crop improvement | Sugarcane Breeding Institute, ICAR, Coimbatore, Tamil Nadu. | 21 days |
|  | 2011 | NAIP National Training on Allele Mining: Basic Principles, Methods and Applications | Tamil Nadu Agricultural University, Coimbatore,  Tamil Nadu. | 10 days |
|  | 2012 | CEP of DRDO on Biodefence Technologies | DEBEL, DRDO, Bangalore | 05 days |
|  | 2012 | CEP of DRDO on Trends in food packaging | DFRL,DRDO, Mysore | 05 days |
|  | 2012 | ICAR Short course on Advances in gene identification and marker development | NRC for banana, Trichy, Tamil Nadu. | 10 days |
|  | 2013 | Design of Experiments | Indian Statistical Institute, Bangalore | 02 days |
|  | 2013 | CEP of DRDO on Biodefence technologies | DRDO-DEBEL, Bangalore | 05 days |
|  | 2014 | Pre-conference workshop ‘Taxonomy of fungi’ | Annamali university, TamilNadu | 02 days |
|  | 2015 | National Workshop on Women Innovators for  Excellence in Research and Science | DRDO-CFEES, Delhi. | 01 day |
|  | 2016 | Recent advancements in comparative genomics and proteomics | TANUVAS, Chennai | 10 days |
|  | 2016 | Project Management | ITM, Mussorie. |  |
|  | 2017 | CEP of DRDO on Trends in Food Biotechnology | DFRL, Mysore | 05 days |
|  | 2017 | Building competencies for personal excellence | Art of living foundation, Bangalore | 05 days |
|  | 2019 | CEP of DRDO on Foodomics | DFRL, Mysore | 05 days |
|  | 2020 | CEP of DRDO on Nutraceuticals | DFRL, Mysore | 03 days |
|  | 2020 | DST sponsored online training programme on 'Science Administration, Research Management for Scientists | Administrative Staff College of India (ASCI), Hyderabad | 14 days |

**9. Distinctions in educational and scientific career**

* DRDO Technology group award - 2021
* DRDO Laboratory Scientist of the year award - 2019
* DRDO Technology spin-off award - 2017
* DRDO Technology group award - 2017
* InSc Young researcher award- 2020
* Dr MJ Thirumalachar Young Scientist award 2014 instituted by Mycological Society of India, Chennai, India.
* DRDO Second best research paper award at laboratory level - 2020
* DRDO Second best review award at laboratory level – 2019
* Best oral presentation on ‘Green composites for food applications’ during International conference on recent advances in industry 4.0 technologies September 2023, organised by NIT, Puducherry.
* Best oral presentation on ‘Development of instant fermented kidney beans curry using combination processing system’ 28th ICFOST organised by AFSTI, Mysore during August 2021.
* Third best logo in logo designing competition for National workshop on “Women Innovators for Excellence in Research and Science 2015” organized by CFEES, Delhi.
* Second best Collage for Theme 'Stars of women achievers radiating glory' during DFRL-DRDO International Women's day celebration, 2017.
* Secured distinction in Hindi Prabhod Exam (2012) and Hindi Praveen Exam (2013).
* Second best Rangoli award for theme Vibrant India during DFRL Lab raising day, 2013.
* Runner-up Table tennis doubles event during DFRL Annual Sports day, 2016.
* Secured Jawaharlal Nehru University-Junior Research fellowship (JNU-JRF) in 2004 to carry out M.Sc. (Biotechnology) programme.
* Recipient of Tamil Nadu Agricultural University(TNAU) Merit Scholarship from 2000-2004 to carry out B.Sc.(Agriculture)
* Won Best Poster presentation award for “Biolistic mediated Site specific integration of Transgene” in National Seminar BioXplore ’06.
* Won prize for Biotechnology Quiz in National Seminar ‘BIO –FIESTA’.
* School Topper in Life sciences in Higher Secondary Education.
* School Topper in Secondary Education (SSLC).

**II. Technical Coordination**

* Served as Member of organizing committee during conferences and meetings.
* Contributed in preparation of technical documents, Annual reports and Annual project reports.

**III. Other Contributions**

* Represented DFRL, Mysore in DRDO-LS exhibition at DIHAR, Leh during International Women’s day celebrations of DRDO on 11 March, 2018.
* As Nodal officer, International Yoga Day - DFRL, 2019 and Joint Secretary, Welfare Committee (2018-19) successfully organized lectures on importance of yoga for well being and yoga day celebrations at DFRL, Mysore during 10 to 21 June, Mysore.
* Served as member of various committees such as Exhibition committee for Indian Science Congress (2016), Defence Expo (2018) and Aero India (2019), Cultural committee for Lab raising day (2016 & 2017), organizing committee member for one day brainstorming workshop at DFRL, 2017, Registration committee member IFCON, 2018, Registration committee member ICFOST, 2022 and technical committee member National conference DFRL, 2022 and as technical committee member IWD 2023.

**DECLARATION**

I hereby declare that the information given above is true and correct to the best of my knowledge.

Place: Mysore

Date: 12.04.2023 **JANIFER RAJ.X**