

**Innovate, Network, and Grow.**



**National Initiative for Developing and Harnessing Innovations-  
Technology Business Incubators**

**NIDHI-TBI (DST, GoI)**

**PAU Food Entrepreneurship Development Society**

**Host Institute: Punjab Agricultural University, Ludhiana**



## An Overview of Our Journey

Established in 1962 and inaugurated by Pandit Jawaharlal Nehru in 1963, Punjab Agricultural University (PAU) has been a pioneer in agricultural research, education, and extension. Renowned as the "Mother of the Green Revolution," PAU played a pivotal role in transforming India's agricultural landscape by significantly boosting food grain production, leading to the nation's self-sufficiency in food. Its mission continues to focus on promoting sustainable farming practices, driving agricultural innovation, and empowering startups through cutting-edge research and impactful outreach programs.

In alignment with this mission, the PAU Food Entrepreneurship Development Society (PAU FEDS) was established in 2019. Dedicated to fostering entrepreneurship and innovation, PAU FEDS serves as a catalyst for agripreneurs, offering a supportive platform to tackle the sector's critical challenges. By emphasizing advancements in food processing, the society equips startups to create sustainable, impactful solutions that address both current and future needs of the agricultural sector.

Together, PAU and PAU FEDS create a dynamic synergy, merging academic excellence with entrepreneurial ingenuity. While PAU drives groundbreaking research and education, PAU FEDS translates these innovations into actionable entrepreneurial ventures, nurturing future leaders in food processing. This partnership continues to play a vital role in strengthening innovation, economic growth, and food security across India.

## About NIDHI-TBI

NIDHI-TBI, supported by the Innovation and Entrepreneurship Division of the Department of Science and Technology, Government of India, fosters high-growth, technology-based enterprises by enabling innovation. Hosted in academic and technical institutions, these incubators accelerate venture creation by leveraging institutional expertise and infrastructure. NIDHI-TBI supports startups through incubation services, mentoring, and research commercialization, while building a vibrant ecosystem connecting academia, industry, and financial institutions to drive job creation, economic growth, and national priorities.

## Objectives of NIDHI-TBI

- To promote new technology/knowledge/innovation-based startups.
- To provide a platform for speedy commercialization of technologies developed by the host institution or by any academic/technical/R&D institution or by an individual.
- To build a vibrant startup ecosystem, by establishing a network between academia, financial institutions, industries, and other institutions.
- To provide cost-effective, value-added services like mentoring, legal, financial, technical, intellectual property related services.
- To create jobs, wealth, and businesses aligned with national priorities.

## Mission of NIDHI-TBI

- Inculcate the spirit of innovation and entrepreneurship.
- Encourage and support innovative ideas.
- Food startup creation through the technology business incubator.

## Objectives of TBI

- To promote and develop high-end entrepreneurship.
- To facilitate and conduct informational services relating to support entrepreneurship.
- To network support agencies, academic institutions, and R&D organizations to foster entrepreneurship and self-employment, focusing on youth.

## Technology Available

NIDHI TBI offers advanced technology in food processing, value addition for pulses, fruits, vegetables, and innovations in packaging and preservation, supporting startups with tools that enhance sustainability and efficiency.

### **1.Supercritical Fluid Extractor (SFE)**

SFE uses supercritical CO<sub>2</sub> (SC-CO<sub>2</sub>), a green, non-toxic, non-flammable, and easy-to-handle technology. It operates at low pressures and near room temperature, ensuring minimal alteration of bioactive compounds. SC-CO<sub>2</sub> is cost-effective, readily available, and highly pure.



### **2.High-Performance Liquid Chromatography (HPLC)**

HPLC is an analytical technique used to separate, identify, and quantify components in liquid mixtures from food, chemicals, pharmaceuticals, and more. It uses high-pressure pumps to deliver solvent mixtures through a column packed with adsorbent material (stationary phase), collecting and analyzing sample components.



### **3.Amino Acid Analyzer**

Amino Acid Analyzers separate, identify, and quantify amino acids in biological samples using liquid chromatography. Unlike conventional HPLC, these systems provide more accurate, sensitive measurements and support higher throughput.





#### 4.UV-VIS Spectrophotometer

Analyzes components based on optical density differences. It is useful for identifying and analyzing the color and concentration of nutrients in food, detecting heavy metals, pesticide residues, and other food-related hazards. It also helps identify antibiotics in animal-based products, determining bioactive compounds and antioxidants, and conducting quality inspections and stability tests of food products.



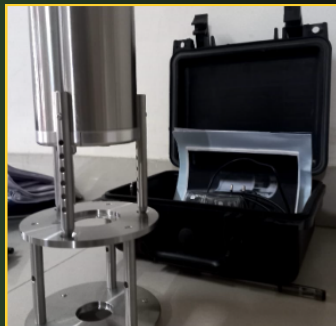
#### 5.Probe Sonicator

Facilitates the extraction of various compounds. Applications include creating fine emulsions, breaking down plant materials to extract bioactive compounds like antioxidants and essential oils, enhancing the nutritional profile, microbial and enzymatic inactivation to extend shelf life while preserving natural taste (a non-thermal green technology), degassing liquids like carbonated beverages, and ultrasound-assisted drying and freezing.



#### 6.Digital Portable Viscometer

Measures the viscosity of fluid samples. Applications include quality control for food products with specific textures like sauces, jams, honey, and yogurt; testing emulsions in salad dressings and whipped creams to ensure stability; viscosity testing in ice cream mixes for optimal quality and texture; and maintaining consistent viscosity to enhance product appeal and uphold brand standards, building consumer trust and loyalty.

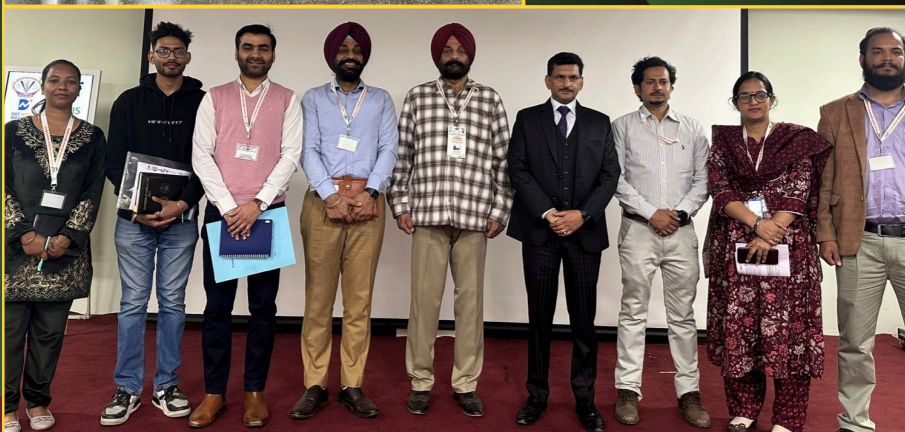


## Associated Members/Technical Mentors

- Dr. Kiran Grover (Principal Extension Scientist cum Head)
- Dr. Baljit Singh (Principal Food Technologist)
- Dr. Rupinder Kaur (Associate Director, Skill Development Center)
- Dr. Lavleesh Garg (Extension Scientist)
- Dr. Mahesh Kumar (Professor)
- Dr. Preetinder Kaur (Principal Scientist)
- Dr. Amarjeet Kaur (Scientist)
- Dr. Sukhdeep Kaur (Assistant Professor)
- Dr. Sukhmani Virk (Assistant Professor)
- Dr. Sukhpreet Kaur (Food Technologist)
- Dr. Neha Babbar (Assistant Professor)
- Dr. Rakesh Rathore (Assistant Professor)



## Events



**Event - Pitchquest organized by VLIIF, DST-NIDHI TBI, GADVASU**  
**A snapshot of Team NIDHI-TBI PAU FEDS and Team NIDHI-TBI VLIIF GADVASU coming together to exchange ideas.**





## Technical & Media Partners



## Our Potential Incubatees



## Team NIDHI-TBI (DST, GoI)

**Dr. Poonam A. Sachdev**  
Co Principal Investigator  
Principal Food Technologist  
FST, PAU, Ldh


**Dr. Ramandeep Singh**  
Principal Investigator  
Professor cum Director  
SBS, PAU, Ldh


Mr. Gurinder Singh (CEO)

Mr. Sameer Gautam (Business Manager)

Ms. Pallavi Kalyan (Accounts-cum-Executive Officer)

Mr. Akashdeep Singh (Technical Assistant)

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## **Dr. Satbir Singh Gosal**

Worthy Vice Chancellor, PAU, Ludhiana  
Chairman, PAU FEDS

At Punjab Agricultural University, we laud Team NIDHI TBI's efforts in crafting a space for young minds to harness their creativity and develop

forward-thinking solutions for the agri-business sector. Opportunities for agripreneurs in Punjab are abundant and growing from developing crops, tailored for health-conscious consumers to tapping into emerging plant-based food trends. Our vision here is a transformation of Punjab's agricultural identity through innovation and sustainable practices.



## **Sh. Rishi Pal Singh (IAS)**

Registrar, PAU, Ldh  
Secretary, PAU FEDS



## **Dr. Shammi Kapoor**

Comptroller, PAU, Ldh  
Treasurer, PAU FEDS

## **Respected Members of PAU FEDS**

Dr. A. S. Dhatt (Director of Research, PAU, Ldh)

Dr. M. S. Bhullar (Director, Extension Education, PAU, Ldh)

Dr. M. I. S. Gill (Dean, PGS, PAU, Ldh)

Dr. C. S. Aulakh (Dean, COA, PAU, Ldh)

Dr. Mrs. Kiran Bains (Dean, COBSH, PAU, Ldh)

Dr. Manjit Singh (Dean, COAET, PAU, Ldh)

Dr. Mrs. Kiran Bains (Dean, HSC, PAU, Ldh)

Dr. Mrs. Savita Sharma (HOD, FST, PAU, Ldh)