



# NEWSLETTER

## Key Activities

- 5<sup>th</sup> of June, 2024, DST-TEC UoL, in collaboration with Department EVS of UoL, Organized “World Environment Day-2024” at Kargil Campus.
- 28<sup>th</sup> of June, 2024, DST-TEC UoL organized the Ladakh Agrithon 2024 at Leh campus.
- 22<sup>nd</sup> of August, 2024, 2nd PAG Meeting of TEC, University of Ladakh was held at Kargil Campus.
- 14<sup>th</sup> of October, 2024, DST-TEC UoL in collaboration with iHUB, Divyasampark, IIT Roorkee and Department of Computer Science / IT organized UOL APPATHON 1.0.
- 2<sup>nd</sup> of November, 2024, DST-TEC UoL Organized Workshop on Packaging.



## HIGHLIGHTS OF THE ISSUE:

A summarized report of activities organized by DST TEC UoL for the period May to November 2024.

### World Environment Day-2024

- 5th of June, 2024, DST-Technology Enabling Centre, University of Ladakh, in collaboration with Department of Environmental Science Organized “World Environment Day-2024” under the theme “Technological Intervention for Land restoration, Desertification and Drought Resilience”. Dr. Iftikhar Ali, key note speaker talked about the Environment Technology which has a big role to play in Technological Intervention for Land restoration such as GIS and Remote Sensing, ArcGIS, etc.



He further elaborated how the Environment Technology has impacted positively on the lives of human being. Dr Ali mentioned that by leveraging modern AI Techniques, cost effective and efficient tools can be developed, which can help achieving goals of sustainable development. Dr. Mehboob Ali wholeheartedly invited all the interested and desired researchers to work under the TEC and take the benefit for the betterment of students and researchers. The objectives of TEC is to enable eco-system, process and support system which has spread all over India and also the purpose of the TEC is to create technology, spread awareness amongst researchers and be a part of the tech-hub.





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## Argithon Leh Edition

- 28th June, 2024, DST-Technology Enabling Centre, University of Ladakh Organized Argithon Leh Edition The event aimed to provide a platform for technocrats, researchers, entrepreneurs, startups, and progressive farmers to showcase their innovative ideas, inventions, and product prototypes related to cold arid agriculture of Ladakh. The themes for the event included Precision Agriculture, Crop and Horticulture Farming, Farm Mechanization, Digital Agriculture & Automation, Supply Chain & Logistics, Post-Harvest & Food Technology, and Innovation & Invention in Agriculture.

A total of 35 participants/teams/firms registered for the event the jury evaluated the presentations of the participants based on novelty, commercialization potential, societal impact, and other parameters. Winners and runners-up in various categories were awarded cash prizes and certificates of appreciation.

During the event TEC-UoL observed that Ladakhi farmers are gradually adopting modern agricultural practices. Participants presented innovative farming solutions such as hydroponics, an advanced technique for vegetable production that can address the scarcity of locally grown vegetables and agricultural land in Ladakh by enabling vertical and horizontal growth. The concept of vegetable nurseries was also introduced as a potential livelihood source, especially in Ladakh's challenging climate, to meet market demand by promoting the cultivation of various vegetables. Additionally, farm mechanization and automation, including the use of drip irrigation, were presented as promising solutions to water scarcity and the challenges of unregulated water supply. The event not only showcased these advancements but also provided valuable feedback on this sector's requirements and technological gaps.



## 2nd PAG Meeting 2024



- 22<sup>nd</sup> August, 2024, 2nd PAG Meeting of TEC, University of Ladakh was held under the chairmanship of Hon'ble Vice-Chancellor, University of Ladakh at Kargil Campus. The meeting was attended by Dr. K. Sankaran, Expert Advisory Group Member for TEC-UoL, Dr. Krishna Kanth Pulicherla, Scientist E, Technology Development Transfer, DST, Govt. of India, Dr. Om Prakash Chaurasia, Director DIHAR Leh and other special invitees from various DST TECs and industries. Members and special invitees offered their valuable advice and suggestions about how TEC UoL can work improve the TRL level of 7 identified technologies.

The Experts Advisory Group reviewed the progress of TEC and the reviewed the proposed activities for next 6 months. The TEC through power point presentation presented industry specific problems/gaps identified in sectors like Pashmina Industry, Apricot Processing, Heritage Preservation, Cold Arid Agriculture and Floriculture. The PAG members asked the TEC-UoL to focus on two to three problem areas for exploration and communicate/float the problems identified with specification to other TECs for exchange of technology etc.



In the meeting TEC-UoL also presented seven technology/product ideas submitted by faculty members of UoL and other Govt. institutes. The Expert Advisory Group reviewed all projects and advised TEC to explore avenues for enhancement of technology readiness level of the product ideas. The Hon'ble Vice Chancellor expressed that the University is committed to provide all sorts of possible assistance for development of technology ecosystem in Ladakh region.





## UoL APPATHON 1.0

- October 14, 2024, Technology Enabling Centre, University of Ladakh in collaboration with iHUB, Divyasampark, IIT Roorkee and Department of Computer Science/IT successfully organized UOL APPATHON 1.0. The event took place at the Kargil Campus and provided a platform for young talent to innovate and develop Android apps. Thirteen participants from across Ladakh were thoroughly evaluated based on app design, code implementation, and documentation & presentation.

The expert panel included Mr. Iftiqar Hussain, District Informatics Officer, Kargil, and Mr. Asgar Ali, founder of Ladadx Code Studio and Hash Himalaya.

Mr. Mohd Taqi from Damsna Suru Kargil Ladakh secured first place for his exceptional app development and coding skills. He received a cash prize of Rs. 10,000, while the runner-up, Mr. Imtiyaz Ali, was awarded Rs. 5,000.

The Valedictory Function was graced by distinguished dignitaries, including Hon'ble Chairman/Chief Executive Councillor (CEC) LAHDC Kargil, Dr. Mohd Jaffer Akhoon, attended as the chief guest, and Hon'ble Vice-Chancellor, University of Ladakh, Prof. (Dr.) S.K. Mehta, was the guest of honor.

Addressing the gathering, Hon'ble VC UoL Prof. (Dr.) S.K. Mehta stressed the importance of technology-driven events that foster entrepreneurship and start-ups in Ladakh. He noted that the University of Ladakh is among only twenty-two institutions in India to have a Technology Enabling Centre sanctioned by DST, a significant achievement in promoting technology develop.



Chairman/Chief Executive Councillor (CEC) LAHDC Kargil, Dr. Mohd Jaffer Akhoon, chief guest in his keynote address, praised the participants and encouraged Ladakh's youth to engage in entrepreneurship and innovation, particularly in creating apps that serve the greater good in fields like health and education. He applauded Prof. Mehta's leadership and announced financial assistance of Rs. 10 lakh for the Kargil Campus, with an assurance of continued support from LAHDC Kargil. The CEC, LHDC Kargil lauded the efforts of UoL under the leadership of Hon'ble VC.



## workshop on packaging



- 2<sup>nd</sup> November, 2024, DST Technology Enabling Centre, University of Ladakh held a workshop on packaging at the Leh campus. The workshop aimed to help entrepreneurs, start-ups and technocrats. Dr. Tanveer Alam from the Indian Institute of Packaging and Dr. Rigzin Tsewang from APEDA-Ladakh were the resource persons for the workshop and they shared their expertise on packaging. Participants learned about eco-friendly packaging and special methods for Ladakh products like Pashmina and Seabuckthorn. The event pondered over how new packaging ideas can improve the export of Ladakh's local products.

The Hon'ble Vice Chancellor University of Ladakh Prof. (Dr.) S.K Mehta delivered opening remarks and encouraged participants to explore the technicalities of packaging from the prospective of Ladakh. He also Highlighted the need to explore scope of packaging & survival goals in entrepreneurship, business start-ups, agriculture and horticulture.

Dr. Rigzin Tsewang presented a talk on "Role and importance of packaging in agriculture and horticulture exports from Ladakh", He highlighted the various aspects of packaging like eco-friendly packaging, technicalities of packaging, Ladakh specific packaging requirements & demands, Local traditional touch in packaging and trends of packaging for exporting local apples & apricots and organic certifications. He also mentioned some recent Ladakh specific case studies & challenges in export packaging sector.



Dr. Tanveer Alam delivered a talk on "Unleashing the potential of Ladakh's products: Role of Packaging". He highlighted packaging methods for local products like Pashmina shawl, Yak cheese, Seabuckthorn products, herbal tea and handicrafts. He also mentioned about Some of the Design developed by Institute for Handloom & Handicraft items under USTTAD Project and protection packaging requirement for food products.





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## Field Visit for Networking



**Visit to KVK to identify the problems faced in Ladakh's Agriculture**

## Field Study in Agriculture



**Exploring Innovative Grafting Techniques for Sea Buckthorn: Visit to Nadeem Nursery**



## Evaluating Solar Dryers for Apricots

Solar Dryer cum Space Heating



Solar Dryer cum Space Heating



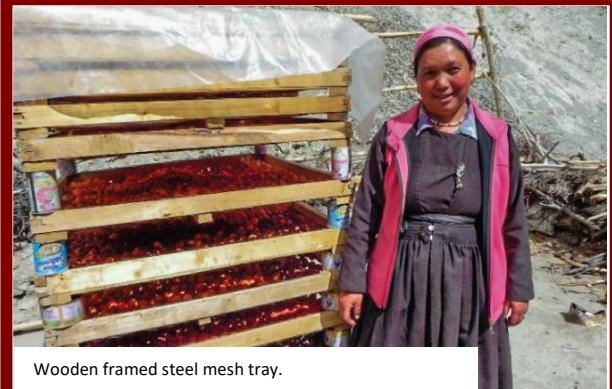
Solar Dryer for fruit and vegetables by Planters Energy Network



Planters Energy Network Solar Dryer



Wooden framed steel mesh tray.



Wooden framed steel mesh tray.



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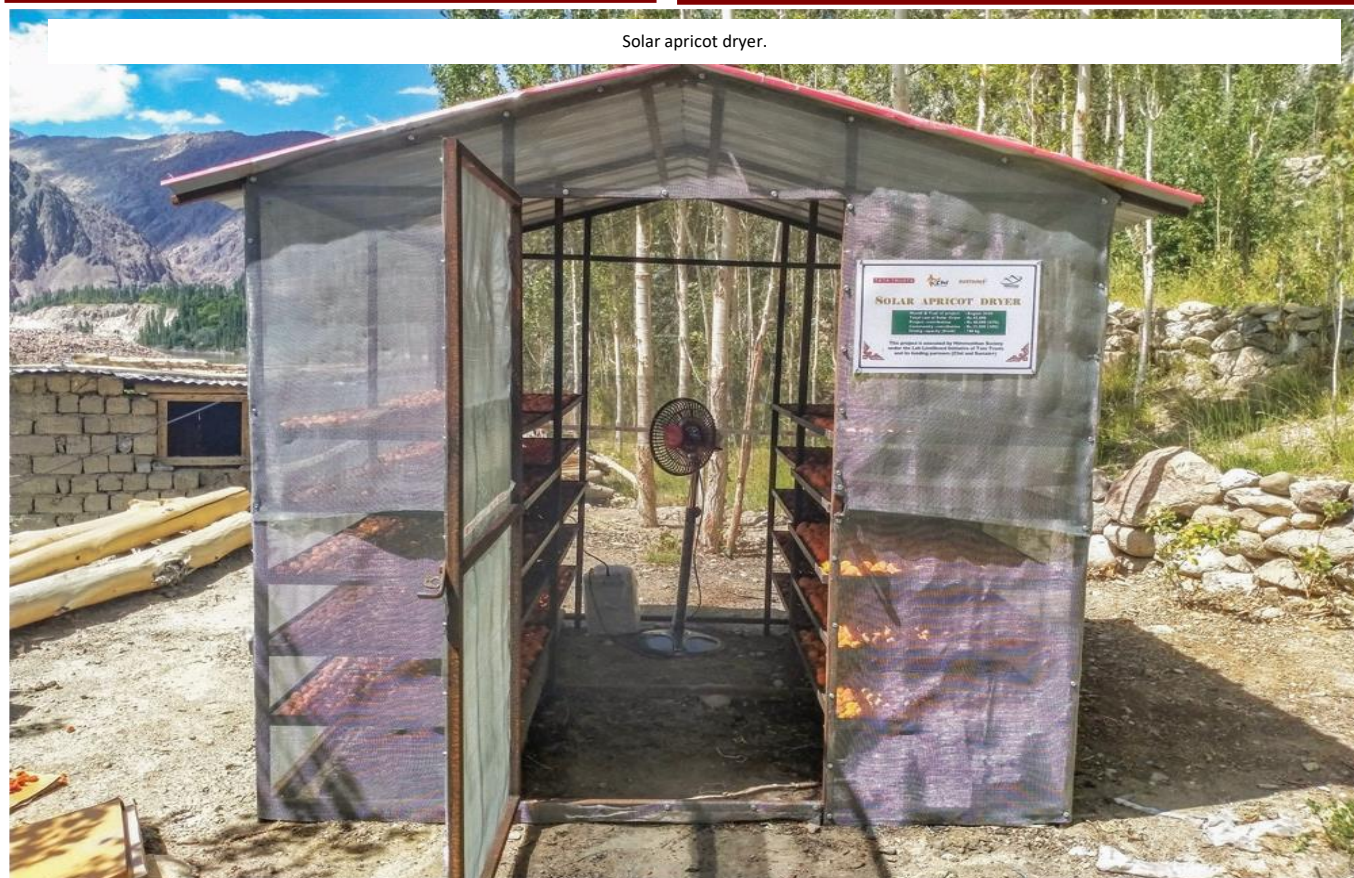
Green House type dryer.



Protected cage dryer.



Solar apricot dryer.



Solar apricot dryer.

Evaluating Solar Dryers for Apricots: A Study of Available Models and Limitations



## Initiation of Solar Dryer Technology Transfer from GITAM-TEC

- October 29, 2024, DST- Technology Enabling Centre at University of Ladakh conducted a meeting to discuss transferring technology for a hybrid solar dryer, developed by GITAM-TEC, to the University of Ladakh.

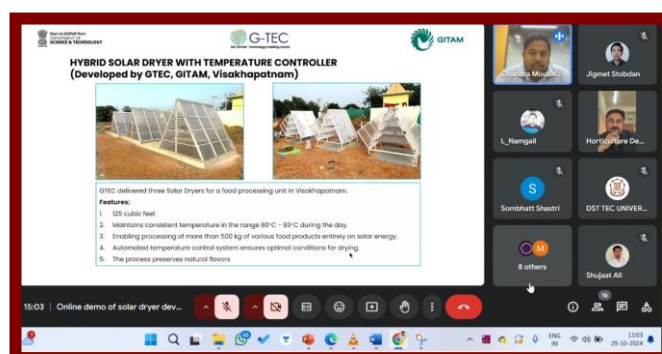
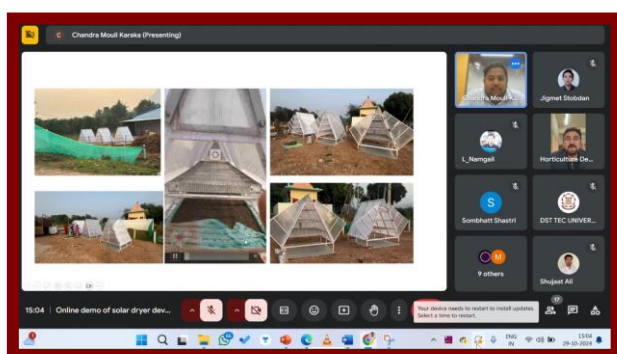
The Expert Committee member attended included:

1. Dr. Tsering Stobdan, Scientist-F DIHAR-DRDO.
2. Mr. Ali Raza, Chief Horticulture Officer Leh.
3. Mr. Mohd Zaffar, Chief Horticulture Officer Kargil.
4. Dr. Deldan Namgyal, Associate Professor, School of Agriculture Science University of Ladakh.
5. Dr. Anwar Hussain, Associate Professor, School of Agriculture Science University of Ladakh.
6. Dr. Changchup Lamo, Scientist ICAR-CAZRI Leh.

Additionally, from GITAM, Dr. Chandra Mouli and Dr. Sombhatt Shastri were present to introduce the dryer.

The meeting began with an overview of the limitations of conventional dryers, followed by a detailed presentation of the hybrid solar dryer by Dr. Chandra Mouli. This dryer features consistent temperature control, a capacity over 500 kg, automated temperature maintenance, and the ability to operate day and night, making it suitable for drying various products like fruits, tea, and medicinal plants.

Attendees raised questions about increasing capacity for apricot drying, the feasibility of night operation, dust prevention, and system portability. Dr. Mouli assured them that the system could be adjusted to meet specific needs, including enhanced capacity and grid-powered night operation. Dr. Anwar Hussain and others suggested conducting trials in Ladakh to evaluate the dryer's performance, specifically for apricot drying.



**Initiation of Solar Dryer Technology Transfer: TEC-UoL Organizes First Online Demonstration of Solar Dryer developed by GITAM-TEC**



## Expert Committee meeting on Modern Root Cellar Technology



- October 14, 2024, An Expert Committee meeting for Root Cellar Technology, conducted by DST-TEC-UoL, was held at the Horticulture Department office in Baroo, Kargil. The primary objective was to assess the feasibility of root cellar technology in cold arid region of Ladakh. Experts from various fields contributed valuable input to formulate a plan for developing this technology.

The Expert Committee included:

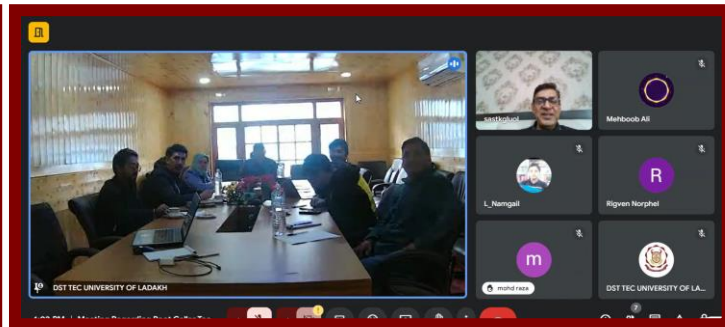
1. Mr. Mohd Zaffar, Chief Horticulture Officer, Kargil.
2. Dr Faizan Ahmad, Chief Scientist, School of Agriculture Science and Technology, UoL.
3. Dr Nasreen Fatima, Associate Professor, KVK, Kargil.
4. Dr Mohd Raza, Assistant Professor in Biotechnology, Govt. Degree College, Kargil.
5. Mr. Mohd Ali Khan: Horticulture Development Officer, Kargil.
6. Er. Iftikhar Hussain: Assistant Executive Engineer, Subdivision 3rd R&B (SVD) Division Sankoo.

Mr. Mohd Zaffar, Chief Horticulture Officer proposed a Modern Root Cellar Technology stating that it would serve multiple purposes. During winter, it can store surplus vegetables for consumption, and during summer, it can be used for mushroom cultivation. Dr. Mehboob Ali added that the proposed technology is currently at TRL-1 (concept stage with promising potential) and suggested that developing and testing a prototype over the winter would elevate it to higher TRL level.

Other committee recommendations include building three cellar prototypes across Kargil, equipped with ventilation, humidifiers to ensure optimal storage conditions.

Each prototype should be construct with dry stone wall to maintain an equilibrium temperature inside the cellar with respect to the ground. The committee also suggested to use electronic data logger to record temperature, humidity, gasses, and other vital parameters so that a conclusive research data can be obtained. Chief Horticulture Office committed to provide a grant of 1 lakh for the construction of Project.

The meeting ended with a commitment to conduct further meetings to review research findings and advance the cellar's readiness for widespread adoption in Ladakh.



First Expert Committee meeting on Root Cellar Technology



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