

Vigyan Ashram Status Report

Volume 41 Issue 05

May 2024

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- Australian cricket Captain Pat Cummins visited summer camp
- On field testing of 'Sugar cane juice making' e-cart
- 'She Leads': Documenting traditional skills practiced by women
- Technical support to Van-Dhan Vikas Kendra in Junnar (Pune)

A] Australian Cricket Captain Pat Cummins visit

Australian cricketer Mr. Pat Cummins visited ATL state training center at ZPHS Karmanghat school (Hyderabad) on 17th May. Pat is brand-ambassador of UNICEF and was in Hyderabad during IPL tournament. He visited summer camp running in ATL at Karmanghat. Students demonstrated their learning of ATL lab through projects, tinkering activities. Students played cricket with him.

During 16 to 18 May, 35 students and 3 teachers from ZPHS Karmanghat, Hyderabad, Ranga Reddy district, Telangana participated in summer camp training.



B] Design Innovation Centre (DIC) meet @ IIT Hyderabad

The 4th edition of All India Design Innovation Centre (DIC) meet was held at IIT Hyderabad during 2nd & 3rd May. Mr. Prasad Patil participated in the meeting with DIC team of Savitribai Phule Pune University (SPU). Prasad presented work on technology development under DIC through poster-exhibition. We displayed technologies like solar dome dryer, solar based grey water recycling, kitchen waste composter etc.

C] DBRT Updates:

i) Internship Experience: DBRT students are undergoing summer-internship at various enterprises as per their career preferences. Their teachers are regularly visiting them and providing on-field guidance & mentoring support. Some of the internship experiences are as follows:

a) Siddharth, Kunal and Viraj are learning milk processing and bakery operations while working at 'Kunjir Diary' at Urali-Kanchan (Pune).

b) Mahesh and Sarthak are learning hotel management skills while working in Arohaan Café (Kothrud) and Bhau Chinese (Pabal).

c) Malikarjun, Kripa, Vishnu, Ramkrishna, Mohan, Vaibhav, Srishant are working with different fabricators in Pabal village.

d) Abhishek is working in cow-farming unit at Kanhesar.

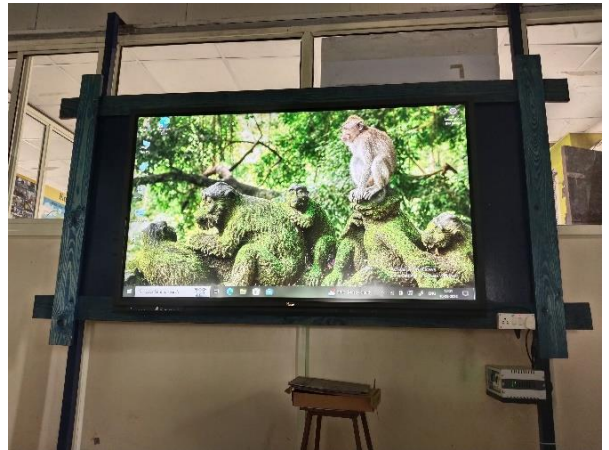
e) Omkar is working with polyhouse farmer in Khairnagar. He calculated total cost of fertilizer dosing for polyhouse.



Installing 2Hp pump by DBRT students

ii) Assignments on campus:

- a) **Food Lab:** Students prepared cookies and crackers from Bajara millet. They also carried out processing of jamun juice, jam (spread) and Karonda pickle for Pabal farmer. Total sale of processed food was Rs.7,010/-
- b) **Workshop:** Vinod and Satish fabricated dining table, teapoy, laptop desk. They learned powder-coating skills & learning epoxy-coating skills.
Students fabricated 8 units of seating stools and completed classroom wall-painting.
- c) **Energy & Environment:** We received interactive Smart TV as a donation from Mrs. Anita Dandekar. Students installed new smart TV screen in the conference room. It is 56" TV screen with built-in smart board, audio-visual screen sharing facility. Students also installed power-backup inverter for BSF breeding chamber. Students also shifted solar-water heater system of DIC hostel. Total value of their work was Rs.10,973/-.
- d) **Agriculture & Animal husbandry section:** Students installed 91 foggers in polyhouse. Total value of their work was Rs.53,670/- including labour charge of Rs.1,700/-. In dairy farming unit, students milked 463 liters of milk from cows with cost of Rs.23.93 /lit.



56" Smart TV screen

D] Entrepreneurship Development Program (EDP) updates (VATF):

i) Online webinar on business opportunities in the Fruits and Vegetables Dehydration Industry was conducted on 5th May 2024. Total 50 people participated. Expert guide Mr. Sujit Londhe provided valuable guidance during this webinar and answered questions from the participants.

ii) Van-Dhan Vikas Kendra Training: A one-day training of founding members of Van-Dhan Vikas Kendra was conducted on 15th May at Junnar (Pune). Training was attended by 12 farmers from 4 Van-Dhan clusters. Ranajeet & Ganesh guided participants on Non-Timber Forest Produce (NTFP) based raw material, processing methodologies, skills requirement etc. It is decided that clusters will explore value addition & marketing of jamun, karonda, millets, milk and other local produce. As a follow-up of training, four farmers collected raw & ripe Karonda and visited Pabal on 17th May to learn its processing. Now, they will try to sell processed products and get customer feedback.



Van Dhan Training

iii) WSHG training on basic food-processing: A two days hands-on training workshop was conducted for Women Self-Help Group (WSHG) on 29th & 30th May. Training was attended by 17 WSHG members from Jahwar block (Palghar) supported by Arohan organization. Participants learnt making of Karonda & Mango pickles, Karonda Jam & Syrup, Moringa fortified Chikki. Our food-entrepreneur alumni Ms. Kalyani Chavali guided participants about product standardization, packaging, marketing etc.

Marketing linkage & mentoring support:

- Support for PMFME scheme application: A Detailed Project Report (DPR) preparation & submission support was provided to Sanjay Galande (DBRT 2017-18) student entrepreneur. Sanjay has got a loan sanctioned under Pradhan Mantri Formalization of Micro Food Processing Enterprise Scheme (PMFME). He has got loan of Rs. 1,76,903/- with subsidy of Rs. 69,962/- for Papad & Noodles (shevai) making enterprise.
- On-field technical support: Dada Kunjir (Founder of Kunjir Dairy Urali Kanchan) & Yogesh Onkar visited Akkai Dairy Group (Nanoli-Tarf Tal-Maval, Pune) to provide on-field technical guidance & mentoring support on 20th May.
- Enterprise registration & licensing support provided to 4 budding rural entrepreneurs (Udyam Certificate-2, Shop-Act-1, FSSAI-1).



Sunil Dhaphal : Products for organic farming

Hero of the month:

Mr. Sunil Dafal (Dhamari, Shirur, Pune) started cottage scale organic product manufacturing enterprise with name of 'Sunil Dafal Nisargik Sheti'. Sunil is practicing organic farmer since last 10 years and selling his products without proper packing, branding etc. With EDP support, he has started proper branding & marketing of products through exhibitions. He has invested Rs.60,000/- in the enterprise.

E] Technology development & Desing Innovation Centre (DIC) updates:

DST-SUNIL project updates:

a) Red-Chilly dryer: Abhijit & Prasad have completed CAD design & Material of Construction (MOC) for 200 kg loading capacity solar dome dryer. Design is based on experiments carried out on 0.785-meter diameter dome dryer over last 2 months. New design has 4-meter diameter dome with upper air heating chamber & set of 40 loading trays at the bottom. The central exhaust & side wall mounted air circulating fans will ensure proper drying of substrate. We expect to complete its fabrication in 2 months and start field trials.

b) Polyhouse climate control system development:

Suhas installed a temperature-humidity data logger in polyhouse at chemistry department of SPPU. Two students from M. Sc. (Botany) department are working on collecting data for calculation of specific heat. The data will help in the automation of climate control system.

As a part of upgradation of polyhouse farming unit, a fertigation unit (Midigitek make) installed in polyhouse. It has an automated fertilizer suction (venturi) and flow control system. A 2 HP solar DC pump (PVS solar make) was also installed for evaporative pad & fogger operations.



Installation of Fertigation unit

c) Black-Soldier-Fly (BSF) based composting & poultry farming:

- Dried BSF larvae are tested for its nutritional analysis. The testing was carried out in BAIF development & research foundation laboratory (Urali, Pune). Two samples tested for protein, fat Neutral Detergent Fiber (NDF) and Acid Detergent Fiber (ADF). The samples showed 28 to 30 % protein, 20 to 22 % fat, 20

to 21 % NDF and 11 to 12 % ADF. The data will be useful in designing poultry feed from BSF larvae. Similar testing will also be carried-out with student intern from Savitribai Phule Pune University (SPPU) biochemistry department. They will check variations & standardization of testing protocol.

- Ranajeet & Ganesh conducted on-field training for 'backyard poultry' farmers at Pasli (Velha), Taleghar (Ambegaon) and Pimpargane (Amabegaon) on 1st May, 3rd May and 24th May respectively. Training was for feed management & measurement of Feed Conversion Ratio (FCR) in poultry farming.

Other research-fellow projects:

- Mobile Solar Electricity Generator: Nikunj Jain & team from Innovation Design Labs Pvt. Ltd. (IDL) fabricated a tractor-trolley mounted solar PV based electricity generator at Vigyan Ashram. IDL team wish to create a mobile solar PV generator for rural application like water-pumping, remote lighting etc. DIC students are working with them to fabricate a prototype & test with local farmers for feedback. System is ready and tested at Pabal village.



Mobile Solar Generator

- Anjali completed experiments on fermented idly-ready-mix powder. She successfully passed organoleptic test with 10 trial customers in Pabal campus. Now she is taking feedback from outside customers for finalizing recipe with its packaging, labelling etc.
- Vedika & Anirudha completed their 6 months DIC internship in Plant-Tissue-Culture (PTC) and fab-lab respectively. Rutuja Vishwasrao (B.Tech. Food Science) joined fellowship program. She will be working on millet-based products in food processing dept.
- Short-term student internship program has started for M. Sc. students of SPPU. It's a hybrid mode internship where students will work at their department labs in SPPU campus on rural technology-based projects. Batch of 8 students (6 from biochemistry & 2 from Botany) joined internship program in May.

- Himanshu & Sidhant completed field testing of E-cart of sugar-cane juicer. They tested it at Pabal & Loni village and carried out juice of 600 kg sugar-cane (full load trial) and sold it. Field testing was successful. We will be despatching the machine to New Delhi for further field testing.



Sugar cane juice e-Cart @ Pabal bazaar

- Fab-academy update: Fab Academy classes were over on 29th May. We have two students Sumit and Prachi doing Fab Academy. They had completed interface application programming, Wild card (plasma and textile) assignment and project related assignments. Sumith Thakare will complete his assignments and will make final project presentation on 7th June in global class but Prachi Shingane is shifted to next evaluation cycle due to health issues.

F] Introduction to Basic Technology (IBT) program updates:

i) IBT schools are on summer vacation. IBT team was preparing for instructor's training program. They learned new skills for e. g. Ms. Archana learned Karonda Pickle making. Suyog assembled a micro-solar DC pump while building AC-DC inverter from old computer cabinets. Akshay learned carpentry and metal fabrication skills.

ii) Summer camp activities: 4 IBT schools Navlakh-Umbre, Kohinde, Salumbre and Shirgaon conducted summer camp for non-IBT students in the school. Various learning activities like 3D designing & printings, making of seed-balls, clay articles, salads & bhel making etc. were performed by students. Students of Shirgaon school prepared 190 murti's of Diwali Sainik (Soldiers). Students in Gram Prabhodhani Vidyalaya (Salumbre) learnt skills of preparing 10 different designs of embroidery in school.

iii) IBT team is providing mentoring support to schools participating in SEED the future competition. Four IBT schools are selected for semifinal presentation.

iii) UNICEF -UP project is over. We are working on proposal for funding for next academic year.

iv) Samagra Shiksha Abiyaan officials Mr. Vishnukant Pandey (ASPD Samagra Shiksha UP Madhyamik), Mr. Rajesh Mishra (Consultant UNICEF) and Mr. Ravi Dayal (Education Officer, UNICEF) visited LBD schools at Naubasta (Lucknow) on 1st May to study impact of program on students learning. They met school administration to get the feedback on students learning activities, teacher's role in implementation of program. Officials express satisfaction over program & students feedback on hands-on learning activities.



G] Atal-Tinkering-Lab (ATL) & DIY lab update:

i) Advanced workshop for ATL teachers at Pabal: Four days 'Advanced digital-fabrication & Robotics' training for selected teachers of Atal Tinkering Lab (ATL) from Karnataka & Telangana state was conducted during 20 to 23 May at Pabal. Training was attended by 10 ATL teachers to learn advanced digital fabrication skills like building 'Otto' robot with 3D printing, molding & casting skills, developing mobile app with MIT inventor, application of 'scratch' & AI etc. Teachers also learned design-thinking methodology for school science projects. The making of 'Otto' robot during training can be found on <https://www.facebook.com/share/v/ySPBwckh9U3nMZYa/?mibextid=oFDknk>



ii) Low-Cost-Maker (LCM) lab installation: Work of LCM installation in Telangana state is in the final stage of completion. In this month, installation work is completed in 8 out of 10 schools.

iii) Summer camp was also organized at Government High School, Shiragaon, Chikkodi (Belgaum, Karnataka) with 30 students & 5 teachers from 5 ATL labs.

Do-It-Yourself (DIY) lab update:

- During 9 to 17 May, DIY lab conducted 3 summer camps for class 6 & above students. The camps were aimed to create awareness on importance of tinkering activities & facilities at DIY lab. The workshops were based on building robot through open-source design & 3D printing, developing mobile application through MIT app inventory, making of paper & using epoxy resin for wall-mounts. Summer camp was attended by 9 students.
- Regular membership students built a tetrahedral dryer (ARTI model) while learning basics of carpentry skills. Students also learned web-site (HTML coding) designing, paper electronics and 3D printed ballon car as regular tinkering activities.

HJ TAP-RISE project update:

Following services were provided through TAP-RISE (Technology Acceleration Platform for Rural Innovations & Social Entrepreneurship) platform:

- i) Himalayan Research Group (HRG), Shimla: Preparing CAD drawing for IP registration for mountain based solar water heater.
- ii) Greeny-the-Great, Pune: Marketing linkages of home composter.
- iii) Vigyan Ashram: Registration agro-waste composting culture under Liquid Organic Manure (LOM) category.

VA team is working with Development Alternative (DA, New Delhi) for designing system & protocols for deciding technology ready-ness level, support structure etc. to social institutes & enterprises.

IJ Wikipedia & Project ASMITA:

Wikipedia:

i) Wiki team completed shooting & editing of 4 videos for wiki-medians 'She Leads' campaign. The campaign is aimed at video documentation of rural women led traditional activities as part of their daily life, livelihood and traditions. Team documented following activities:

1) Broom making 2) Winnowing 3) Hand pounding 4) Grinding 5) Plastering of walls using cow dung



winnowing



Grinding



Broom making



Cow dung plaster

You can visit the documentation on :

https://commons.wikimedia.org/wiki/Category:Capturing_%E2%80%9CCher_Life%E2%80%9D,%E2%80%9CCher_Skills%E2%80%9D_and_%E2%80%9CCher_Art%E2%80%9D

- Priyanka Chaudhary attended a 1-day training workshop on 'digitalization of open-source literature' on 15th May. Workshop was organized by Pune Nav-Nagar Vachan Mandir and The Centre for Internet and Society (CIS) with the aim of popularising open-source knowledge in local languages.
 - Komal Shambhudas is selected Wikimania-2024 conference to be conducted at Katowice (Poland) during 7th to 10th August 2024. CIS-A2K foundation has provided 100 % scholarship to Komal for her contribution in open-source content creation.
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J] Other tit-bits:

- i. Ranajeet, Archana & Abhijit attended 1 day workshop of 'Net-Zero Climate Resilient Villages: Learning from Mandede (Pune)' on 3rd May. Workshop was organized by Praj Foundation & Gokhale Institute (Pune) for sharing learning methodologies used in Mandede village for sustainable village development.
- ii. Yogesh Kulkarni participated in 'Eco-versities Asia Gathering Nepal 2024' from 11th – 17th May. This was aimed at discussion on Reimagine education, connecting with learning spaces across Asia and explore sustainable learning. 40 participants from 8 countries participated in the gathering. Yogesh also visited Fab lab -Nepal and STEM kit manufacturer – Karkhana on 17th May.



- iii. We have carried out video shooting of 'Activity using Bamboo' on 25th May for IBT training purpose at Nagarkar Prashala, Kavenagar, Pune. The shooting was carried out with the help of MKCL. Mrs. Swati Upadhye wrote the script for the activity.

- iv. **DBRT course Promotion for admission 2024-25:** Online webinar for DBRT introduction was conducted on 21st May. Further, DBRT team visited various organizations and alumni. Vishal visited alumni and organizations in Thane, Wardha and Nasik district, Kailash and Bhanudas visited Beed district.



- v. Weather record – Rainfall of the month – 37.6 mm (Total: 521.62 mm), Max temp-41.00° C, Min Temp –27.00° C, Humidity –59%, Water height in well– 3.75 M.



- vi. Energy consumption record- Electricity unit – III Phase-594 units, I Phase import- 000 units, Solar generation-105 units (Solar on-grid)

DBRT promotion for 2024-25

meter has malfunctioned). DG used – 4:45 Hrs, Biogas- 55.89 m³ (dung used 1117 kg)

vii. Animal Husbandry section update – Milk production – 463.00 Kg (Gross loss Rs: -4772.00). Poultry- 80 egg produced.

viii. Online visitors: www.dsttara.org – 1351(Organic search-1028, Direct search-323), www.vigyanashram.com – 1639 (Organic search- 983, Direct search- 657). Campus tour visitors –95.

K] Data Report: <https://shorturl.at/pRPIg>

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Photo Gallery:



Bamboo activity: Video shooting



Food processing training for SHG members from Jawhar



ATL summer camp @ Belguam



ATL summer camp @ Karamanghat

**विषय - विज्ञान आश्रमातील
विविध कोर्स माहिती**
(ग्रामीण तंत्रज्ञान पदविका अभ्यासक्रम)

**GOVIND
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दिनांक : 03/06/2024
वार : सोमवार
वेळ: दुपारी 2 वाजता

नाव :- सुहास लबडे
(फॅब लॅब समन्वयक)

LIVE Govind Innovative Farmers Group Phaltan

Vigyan Ashram Startup Sarathi **praj** foundation

उद्योजकता विकास केंद्र
विज्ञान आश्रम पावळ, आयोजित
**फळे व भाजीपाला
निर्जलीकरण (Dehydration)**
उद्योग वेबिनार

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मोफत वेबिनार

मार्गदर्शक -

श्री.सुजित शिवाजी लोंढे
(Founder) ईवा एग्रो इंडस्ट्रीज

दिनांक - 05 मे 2024
वेळ - सकाळी 10.00 वा.

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DIC : Dryer Fabrication



Yogesh visiting Fab Lab – Nepal

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