

Vigyan Ashram Status Report

Volume 41 Issue 07

July 2024

In this issue

- **Open-House Exhibition @ Vigyan Ashram on 30th July**
- **New Academic year begins! Welcome to DBRT 2024-24 batch!**
- **New approach road to Vigyan Ashram campus**
- **Entrepreneurship program on Jamun processing and Tea café business**

A] Open-House Exhibition @ Vigyan Ashram:

Every year we are organizing an 'Open House Exhibition' on the occasion of Anniversary of Dr. S. S. Kalbag (Founder of Vigyan Ashram). On his 21st anniversary, we organized an Open House Exhibition on 29th & 30th July.

An exhibition was visited by 3177 visitors including farmers, women self-help group members, students, CSR representative, villagers etc. We exhibited all our educational programs and technologies for visitors. Highlights of the event are:

- 1) 'YUVA Udyojak-2024' award: This year's award was given to DBRT alumni Mr. Dnyaneshwar Butte for his dairy business. DIC alumni Mr. Siddhesh Sakore was given 'Special Achievement Award'. He is selected as a 'Land Hero' by United Nations convention to combat Desertification. Mr. Datatrye Bhojane (VA alumni & retired agricultural officer) and Mr. Sachin Wable (Sarpanch, Pabal village) were Chief Guest for the program.
- 2) Nine alumni entrepreneurs put up their stalls and sold their products during the exhibition.
- 3) Many nearby schools visited exhibition on 29th July.
- 4) We had organized focused discussion with groups of progressive polyhouse farmers on 29th July. Over 40 farmers from Khaire-Nagar, Jategaon and Kamshet villages participated in the discussion. We had presented our project on application of Artificial Intelligence (AI) in polyhouse farming and got their feedback.
- 5) Five engineers from Praj Industries (Sanaswadi, Unit) helped us as a volunteer for exhibition.
- 6) We are very thankful to all our supporters for their continuous support.

स्वाळ

विज्ञान आश्रम पाबळ येथील विज्ञान प्रदर्शनास प्रतिसाद

पाबळ, ता. ३० : पाबळ (ता. विरार) येथील विज्ञान आश्रम संस्थापक डॉ. श्रीनाथ कलबाग यांच्या स्मृतिदिनाभिमित मंगळवारी (ता. ३०) आयोजित विज्ञान प्रदर्शनास राज्यभरातील शालेय विद्यार्थी, संशोधक, विज्ञानसेवी यांनी उत्सुकता प्रतिसाद दिला. दिवसभरत अवळ्यास चार हजारपेक्षा जास्त लोकांनी प्रत्यक्ष भेट देत वर्षभरत केलेले नावीन्यपूर्ण प्रयोग जाणून घेतले. आश्रमचे संचालक डॉ. योगेश कुलकर्णी यांनी सलचे स्वागत केले.

विज्ञान आश्रमात भरवण्यात आलेल्या खुल्या विज्ञान प्रदर्शनास राज्यभरातील शालेय-महाविद्यालयांचे विद्यार्थी, विविध संस्थांचे सदस्य, पदाधिकारी, परिसरातील शेतकरी, ग्रामस्थांनी आवर्जून भेट दिली. या प्रदर्शनात काळ्या सैनिकी माशांपासून कचऱ्याचे व्यवस्थापन करणे, कडधान्यांना

ग्रामीण भागाच्या विकासासाठी विज्ञान संशोधन, उद्योजकतेच्या माध्यमातून काम करण्याचे प्रशिक्षण या प्रकल्पांद्वारे दिले जाते. दरवर्षी हजारो विद्यार्थी, शेतकरी, उद्योजक, महिला बचत गट व विविध क्षेत्रातील मान्यवर प्रदर्शनास भेट देतात. यावर्षी चार हजारपेक्षा जास्त लोकांनी प्रदर्शनास भेट देत माहिती जाणून घेतली.

- डॉ. योगेश कुलकर्णी, संचालक, विज्ञान आश्रम, पाबळ

मांडव्यात आली होती. कचऱ्याचे कंपोस्टिंग, शेतीसाठी माती-पाणी परीक्षण, यांत्रिक व मत्स्य शेती, डिस्टिल्ड वॉटर प्रकल्प, कॅम्ब्रिकेशन हॅब, सौर ऊर्जा, सोलर ड्रायर, पाण्याचा पुनर्वापर, फूड टॅस्टिंग हॅब, कॅम्ब्रिक डिझाईन, हस्तकला, माहिती तंत्रज्ञान आदी विविध विषयांवरील प्रकल्प येथे मांडले होते.

पाबळ (ता. विरार) : विज्ञान प्रदर्शन पाहण्यासाठी विद्यार्थ्यांनी केलेली गर्दी.

मोठे आणण्यासाठी बनवलेली स्वयंचलित स्याउट्टर मशीन, ह्रायड्रोपोनिक संज्ञान, कृत्रिम बुद्धिमत्ता आधारित कीड व्यवस्थापन, पॉलिहाऊस मधील स्वयंचलित प्रकाश नियंत्रक, शेतातील पालापोचोळा व कचऱ्यापासून कंपोस्ट खातनिर्मिती, विज्ञान आश्रमातील नवीन तांत्रिक प्रकल्प, नवीन सुविधा, शैक्षणिक प्रकल्प याबाबतची सविस्तर माहिती या प्रदर्शनात

Pune, District-Today
31/07/2024 Page No. 5



B] Welcome to DBRT 2024-25 batch:

Diploma In Basic Rural Technology (DBRT) course 2024-25 has started from 10th July. DBRT is one-year residential program certified by National Institute Open Schooling (NIOS). This year we have 61 students (49 Boys, 12 Girls) for the course. We have students from Maharashtra, Madhya-Pradesh, Chhattisgarh and Assam states. We have revised our syllabus and added new skills viz powder-coating, advanced carpentry, hydroponics farming, use of AI in different occupations etc. Beside this, we are including skills for Service sector occupations as a part of DBRT curriculum.

We are very thankful to ASHA for Education, Eaton Foundation, La-Fondation, Mahle Engineering services, SPA foundation & many individual donors for supporting DBRT program.



Asha ye ! New Hope and New Energy on campus

C] Introduction to Basic Technology (IBT) senior instructor's training program:

A three days training program for senior IBT instructors was conducted during 3rd to 5th July at Uday Gujar Foundation (UGF) wing, Shirwal. Training was attended by 82 instructors from 38 schools from various parts of Maharashtra. Objective of training was to introduce 'Artificial Intelligence (AI)' tools in the IBT practical. Instructors enjoyed using different apps in IBT practical. Mr. Venkatesh and Mrs. Tejaswini conducted training on 'Entrepreneurship mindset & basics of business modeling'. Future of IBT program on the background of 'New Education Policy (NEP)', participation of IBT schools in ATL marathon's were also discussed during training. On the last day, Shri. Satish Suryavanshi (Joint-Director, DVET) addressed the participants on various administrative and Govt permission related issues (VATF).



D] Construction of approach road to Vigyan Ashram:

A new approach road is constructed at the entrance of Vigyan Ashram. It's a 100 meter long (10 ft wide) road build by Public Works Dept (Govt). It is done from MLA local area development fund of Shri. Dilip Walse-Patil (MLA, Ambegaon & Minister of Co-operative). Work was started on 16th July. Shri. Sachin Walbale (Sarpanch, Pabal), Shri. Prakashbapu Pawar (Panchayat Samiti Member), Mrs. Savita Bagate, Mr. Sopanrao Jadhav and

other villagers were present for ground breaking ceremony. The work was completed in record time and we have started using the road from 30th July.



Ground breaking ceremony (16th July)



Road completed (30th July)

E] Entrepreneurship Development Program (EDP) update (VATF):

i) Jamun processing enterprise: A two days hands on training on Jamun fruit (*Syzygium cumini*) processing was conducted on 13th & 14th July at Pabal campus. The training was attended by 8 participants to learn production of syrup, RTS, crush, jam and seed powder etc. EDP dept is providing an enterprise registration (FSSAI), label design, packaging etc. support to farmer participants from Pradhan Mantri Vandhan Scheme (Junnar).



Jamun Processing Training

ii) Webinar & hands-on training on tea coffee café business: A webinar session on opportunities in tea & coffee café - stall business was conducted on 13th July by EDP section. Mr. Akshay Davadikar (Founder entrepreneur-Chai 99) guided participants on use of ready-mixes, flavoured tea, costing etc. aspects. Webinar recording is available on the following link - <https://youtu.be/8UWUkexY7kE?si=YhBKu7WsTkPINJ3O> . Total 48 participants attended the online webinar. Out of them 7 participants attended hands on practical training on 27th & 28th July at Vigyan Ashram. Tea expert Mr. Akshay demonstrated process of making over 40 different flavoured tea. He also discussed costing, break even sales and franchise opportunities in café business.

Marketing linkage & mentoring support:

Yogesh & Saurabh visited Mr. Kantilal Bhoje, Kailash Dodake and Pushpalata Mahajan for on the field technical support to enterprise on 5th & 6th July. They also met officials from Adivasi Vikas Mandal (Nasik) and Jagar Manch (social organization) for future collaboration.




उद्योजकता विकास केंद्र विज्ञान
आश्रम पावळ आयोजित

**चहा उद्योगातील
नवीन संधी वेबिनार**

दिनांक: 13 जुलै 2024
(शनिवार)

वेळ- सकाळी 10 वा





ID: 81472054631
Password: 058559

मोफत
वेबिनार



मार्गदर्शक : अक्षय दावडीकर
(उद्योजक- Chai 99)

योगेश : 7774073920 | गणेश : 9730005029 | अदिति : 9067493830

www.vigyanashram.com | www.startupsarathi.vigyanashram.online/

- Ganesh visited Aarohan NGO supported 'Jaswandi Women Self-Help Group' and Bakery unit at Pragati Pratishtan at Jahwar to provide on the field technical support on 12th July.
- Ganesh visited TMD food Narayangaon along with food industry expert Mr. Pramod Pansare on 16th July. TMD food is manufacturing potato-wafers.
- An enterprise registration & licencing support provided to 8 budding rural enterprises (Udyan certificate-5, FSSAI license – 3).

Hero of the month:

Mrs. Vandana Wazare started a cottage scale food processing enterprise 'Aadi food Products' At-Jawhar, Tal-Jawhar, Dist.-Palghar. Vandana has completed short-term bakery training from Vigyan Ashram. Presently she is getting on-field technical & marketing linkage support from us. She is using bakery facility at 'Pragati Pratishtan' for production.



Hero of the Month: Vandana Vazar

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

DST-SUNIL project updates:

i) Red-Chilly dryer: Abhijeet & Prasad installed exhaust fans to solar dome dryer after calculating total energy capture on 135 Sq ft surface area and ΔT requirement.

The calculated capacity of exhaust fan is 629 CFM and team has installed 900 CFM fan for dryer. In the month of July, temperature rise of 22 to 27°C was recorded in the heating section of dryer. The results are encouraging and team is waiting for clear sky for live trial.

ii) Black-Soldier-Fly (BSF) based composting & poultry farming: BSF system was started after drop in atmospheric temperature. We have started waste processing trials with processing of 170.5 kg of kitchen waste at Vigyan Ashram. Through this 14.24 kg pupae were produced, while additional 40 kg pupae was sourced from Dighi campus (Pune). All these pupae were loaded to breeding chamber for producing 5 days old (DOL) larvae for waste processing at Rajgurunagar dumping ground. Meanwhile Mahesh processed around 3500 kg of bio-waste through windrow composting.

iii) Polyhouse climate control system development:

- A 1-day brainstorming workshop on 'climate control systems' in polyhouse farming was held on 29th July. Total 40 farmers participated in the brainstorming. They came from Maval & Shirur block of Pune district. We discussed important of temperature, humidity, light intensity, fertilizer application etc. Farmers also shared their concerns on quality of fertilizers available in market, difficulties in pest control etc. It is decided that VA will provide data-logger to selected 10 polyhouse farmers to learn more on their expectations from automation systems.



Data Loggers installed inside Polyhouse

- Ayush compared AHT2415C humidity sensor with dry-wet bulb thermometer (psychrometric chart). He found that sensor shows 10 to 12 % variation (error). DIC Team is working on building an algorithm to theoretically calculate value of specific-humidity inside polyhouse from open-source weather data of temperature & humidity outside polyhouse.
- Suhas, installed 9 dataloggers (temperature & humidity) inside polyhouse to capture variations at different levels & directions.
- To capture image data of pest attack percentage and temperature / humidity readings, Mr. Lohit from IIT- Pawai has developed a mobile application. Trials have been started to test this application on pest infection on capsicum crop.

iv) Other research-fellow projects:

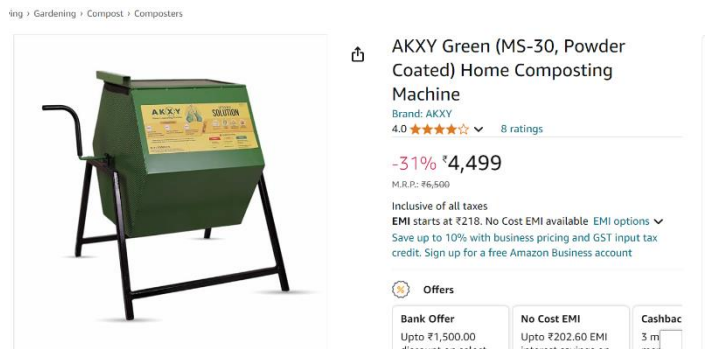
- Shrutika made 70 H₂S strip (E.Coli infection in potable water) in the microbiology lab and sold them in the open-house exhibition. She has also prepared 20 lit of agricultural composting microbial consortium.
- Rutuja finalized multi-millet (ragi major ingredient) cookies with cocoa powder & coco-chips. She has also designed packaging & labels for cookies. Rutuja sold these cookies worth Rs.7000.00 on open-house exhibition as test marketing.
- We are redesigning www.dstattara.in website. Pranit Sankpal has finalized website design & backend data entry MIS along with Rohit Hedda for www.demo.dstatar.in. He completed data transfer for 27 DST-SEED supported organizations.
- 2 DIC interns (IIT-Living Lab) Prajyot Hepat and Atharva Ambre completed their 2 months internship.



Rutuja with her millet products

v) TAP-RISE project update: Under the Technology Acceleration Platform for Rural Innovations & Social Innovation (TAP-RISE) program:

- We have completed ONDC platform registration (stage I) for Akxy composter of Greeny-the-Great.
- On 17th August, Agricultural officer visited Pabal campus for inspection of agricultural waste composting microbial consortia production facility. We are trying to get production license for microbial culture under 'liquid bio-fertilizer' license.



AKXY Home composter on Amazon

G] DBRT skill training update:

New batch of DBRT students are given induction in 4 sessions. This is a trailer of activities that will be conducted in a year. Based on their immediate interest, students selected their first section of their interest. Following are important updates -

Workshop section: Students fabricated a dining table, seating stool, laptop desk, hanging lighting unit etc. items while learning wood-cutting, polishing, epoxy resin coating etc. skills. These pine-wood furniture items were displayed on open-house exhibition.

Home & Health section: Students prepared following items for sale; Chikki (peanut & moringa), cake base, syrup & jam from Jamun fruits. They had also processed 66 kg of wheat flour for making bread. Students sold these products in Open House Exhibition. Total community service of the month was Rs.18740/-.

Energy & Environment: Students installed 25 tube-lights, 7 switch boards, 2 ceiling fans in boys & girls hostel premises. Students installed new water 3HP (3 Phase) submersible pump in well and helped instructor to assemble a 650-watt home-invertor system from spare-kit. Total cost of their community service work was Rs. 11757/-.

Agriculture & Animal husbandry: Students planted 320 seedlings of capsicum in the polyhouse. They also planted lettuce & spinach in NFT & DWC system of hydroponics farming. Students learnt fertilizer dosing and applied 8 kg fertilizer (15:15:15) to fodder maize and sprayed insecticide for 'army-worm' infection. Students installed new chaff-cutter machine (2 Hp, single phase) in dairy farm.



Students fabricating wooden furniture



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

i) Schaeffler's India officers' visit: Students of Shirgaon IBT School met Chief Human Resource Officer (CHRO) of Scheffler India Ltd at their corporate office in Pimpri-Chinchwad. Students explained IBT program activities, learning through projects & community service activities. They demonstrated 3D printing activities, DC energy-based mixture-grinder project and also gifted a lithograph-based photo-frame to guests.

Students learning highlights-

- Students of Narayangoan IBT School fabricated 10 tree-guards using weld-mesh & MS bars. The total cost fabrication was Rs.5000/-.

- Students of Hiware IBT School, prepared a plot of kitchen garden on 1000 Sq ft area. Students learnt basics of land preparation & planting skills through this activity while planting 16 different vegetables in their kitchen-garden. They have invested Rs.2000/- for the activity.
- At Nigade School, IBT students created an automatic handwash unit. Students used a 5 V DC relay, a water pump, an IR sensor and a battery to build the unit.
- The 9th standard students in Gulani IBT school carried out setup and installation of new electrical laboratory in the school.



Kitchen Garden @ Hiware IBT school

Updates on Learning-By-Doing (LBD):

- On 25th July, Yogesh Kulkarni & Komal Raut visited Samgra Shiksha Abhiyaan (Uttar-Pradesh) and UNICEF officials at Lucknow to discuss action plan for new educational year and Training of Trainer (TOT) for 1772 schools' teachers.
- Prashant, Sharad and team started implementation of LBD activities in selected 24 schools with the help of school instructors. Team is also providing technical support all other LBD schools in the state.

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

- Visit of Officials from J&K and Chattisgarh: Educational Officers and SCERT Director from Education Dept of J&K and Chattisgarh visited Vijayawada along with UNICEF state officials on 15th and 16th July. Purpose of the visit was to get first hand exposure of work of Strengthening of ATLs done at Andhra Pradesh in partnership with UNICEF. They visited two ATLs and also met SPD of Andhra Pradesh and Director of BCDE. Team also visited Hyderabad and Low cost



With SPD , Unicef and J&K - Chattisgarh State team

Maker Space established at TSWRS Isnapur on 17th July. Dr. Yogesh Kulkarni and State team were present. Mr Prateek Deshmukh from AIM was also present during the visit to Vijayawada.

- Online training session (Karnataka ATL): During July, four online sessions were conducted for ATL labs in Karnataka. ATL students & instructors learnt making of DIY kit of hydraulic brake and Bluetooth RC car and also shared their 'Seed the Future Entrepreneur' competition learning experiences.
- Regional Training Workshop (Andhra-Pradesh): Two training workshops on 'Advanced tinkering skills' were conducted at ZPHS Masapet, Rayachoty, Annamaya school during 3rd to 5th July. Training was attended by 6 HUB ATL & 4 spoke ATL teachers to learn skills in sensor-based project building, use of Scratch programming tool and AI based mobile application.
- 'Seed The Future Entrepreneur' competition: 7 ATL schools from Karnataka registered for Dassault (La-Foundation) systems & Atal Innovation Mission (AIM) supported 'Seed the Future Entrepreneur' innovation competition.

Effective Management of Atal Tinkering Lab Workshop

(By our Skyline Staff Reporter) Rayachoti, July 3: The regional level Atal Tinkering Lab (ATL) workshop commenced on Wednesday morning at ZP High School in Masapet. The event was inaugurated by Kadapa Regional Joint Director (RJD) Yeddula Raghava Reddy and Annamaya District Education Officer U.Siva Prakash Reddy. During his address, RJD Yeddula Raghava Reddy emphasized the need for teachers to move away from traditional teaching methods and adopt experimental approaches to education. He highlighted the importance of Atal Tinkering Labs in fostering creativity and innovation among students, encouraging the use of technical equipment available in schools to enhance students' skill development. Reddy stressed the importance of efficiently managing these labs to nurture future scientists.

Following RJD Reddy's remarks, Annamaya District Education Officer Siva Prakash Reddy elaborated on the objectives of the three-day workshop. This workshop, organized by the AP State Sarva Shiksha Abhiyan (SSA) in

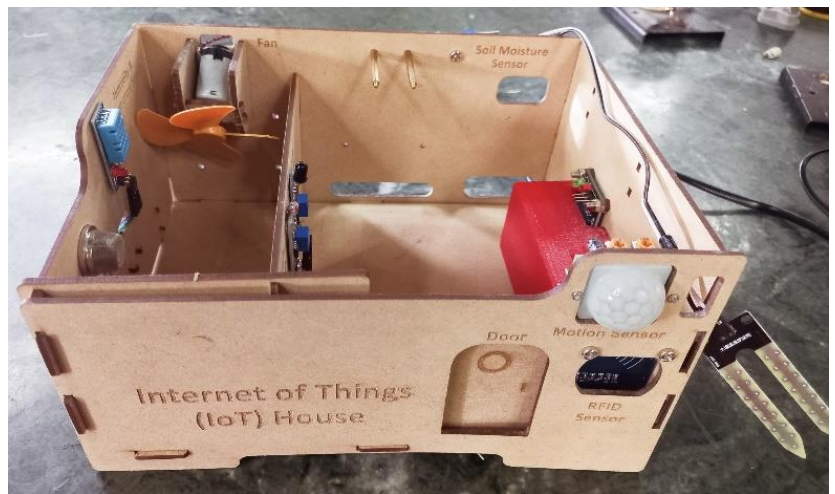
collaboration with UNICEF, aims to train District Science Officers, HUB ATL Headmasters, and in-charge teachers from ten districts under Greater Rayalaseema. The primary goal is to ensure the effective implementation of ATL

programs. Each district will have one HUB, and the remaining Atal Labs will be developed in collaboration with these HUB schools. Training sessions were conducted by Venkatesh and Hema from Pune's Vigyan Ashram. UNICEF Representative Sudarshan, School Headmaster Sivakumar Reddy, District Science Officer Marla Obul Reddy, Assistant AMO Samiullah Khan, DCEB Secretary Nagamuni Reddy, Nodal Teacher Anjaneyu, along with the Headmasters of HUB schools, District Science Officers, and in-charge teachers of ATL from ten districts of Greater Rayalaseema, participated in the workshop. This initiative aims to revolutionize the teaching methods in schools by integrating experimental and hands-on learning, ultimately contributing to the holistic development of students and preparing them to become innovators and leaders in the future.



Do-It-Yourself (DIY) lab update:

- Following projects were conducted at DIY lab → Heat transfer experiment (rotating cup on 6th July), rope and pulley mechanism (Cable car on 13th July), recycling trash (Table top 3D apple model on 20th July), use of drafter (mandala art on 13th July), use of STEMPedia kit for home automation @20th July, Bluetooth controlled car @27th July etc. Students displayed their learning projects at 30th July Open-House exhibition.
- Pabal campus – A batch of 6 students (age 10 & above) from Shikrapur village are attending weekend class to learn basic tinkering activities.
- Tanmay More (DBRT student alumni) joined DIY lab as student inter-instructor in DIY team. He is participating in E-Yantra (IIT Pawai) training session from 25th July.



DIY Project

J] Project ASMITA & Wikipedia update:

ASMITA project update: Under women led tailoring enterprise (ASMITA) project-

- Construction of production unit: Work of columns & roof structure is completed for pre-fabricated building.
- Trainee women learnt measurement, cloth cutting & stitching of petticoat, kitchen caps & aprons, curtains and school uniform aprons. Training was conducted by experienced tailor from Pabal village during 2nd to 17th July.
- Women team sold kitchen aprons of Rs.1218/- during open-house exhibition.
- Shweta & Ranajeet met Mr. Anand Pathak (garment Industry expert) on 4th July to discuss sewing machines procurement, training and marketing support for ASMITA unit.



Wikipedia:

Asmita Shed fabrication work in progress

- CIS-A2K team comprising of Mr. Subhodh Kulkarni, Pawan Santhosh and Tanvir Hasan visited Pabal campus on 8th July. Team reviewed the work of video documentation of traditional women occupations under 'she-leads' campaign and Wiki-library publication work and also suggested new topics for further work.
- Team completed scanning of 6 books of Mr. Gajanan Raikar comprising 618 pages.

K] Other tit-bits:

- i. Komal & Kishor attended meeting with State Council of Educational Research & Training (SCERT) on 4th July. They presented DIY lab work with 10 Pune Municipal Corporation (PMC) schools & MKCL for 6th to 9th standard.
- ii. ProEngage 20: An employee volunteer program of TATA group is started with joining of 4 volunteers. They will work online & help us in technology design manual and HR policy drafting.
- iii. Karishma Gaikwad attended account management training organized by UNICEF Uttar-Pradesh division (STARS Forum) on 4th July.
- iv. Dr. Yogesh gave online talk during Malaviya Mission Teacher Training Programme: NEP Orientation and Sensitization Programme organized by on Teacher Training Centre, Punjabi University, Patiala on 29th July.
- v. Weather record – Rainfall of the month – 239.24 mm (Total: 300.81 mm), Max temp-31.00°C, Min Temp –21.00°C, Humidity –91%, Water height in well– 8.10 M.
- vi. Energy consumption record- Electricity unit – III Phase-812 units, I Phase import- 0 units (Solar on-grid meter has malfunctioned)., Solar generation (off-grid)-145 units, DG used – 6:22 Hrs, Biogas- 62.17 m³ (dung used 1243 kg)
- vii. Animal Husbandry section update – Milk production – 707.50 Kg (Gross loss Rs: 4470.00).

viii. Online visitors: www.dstattara.org – 991(Organic search-795, Direct search-196),
www.vigyanashram.com – 1347 (Organic search- 694, Direct search- 653. Campus tour visitors –3177.

KJ Data Report: <https://shorturl.at/N4HwH>

((Work at Vigyan Ashram is supported by: Asha for Education, Praj Foundation, EATON Foundation, LTI-Mindtree, SPA Education Foundation, UNICEF, TATA Technologies Pvt. Ltd, MAHLE Engineering Services Pvt. Ltd, Schaeffler India, Texol Engineering Pvt Ltd, INDUSA Endowment, Savitribai Phule Pune University, Dept. of Science & Technology, La-Foundation, The Prabhu Trust and many individuals and foundations).

Photo Gallery:



Meeting with CIS-A2K (Wikipedia project)



Farmers training cum discussion on 29th July



Board @ Vigyan Ashram's Entrance



IBT training @ Shirwal



Tropies made in Fab Lab for Yuva Udyojak Award 2024



Demonstrating Chilly dryer on 30th July

For Regular update: www.facebook.com/vigyan.ashram.pabal ; www.vigyanashram.blog
www.vigyanashram.com ; <https://vigyanashram.in/>