

Vigyan Ashram Status Report

Volume 41 Issue 01

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In this issue

- Technical Write-shop at Pasli (Velhe) to document technology development work
- Crop yield has shown significant increase by using compost
- Poultry & Sliding window training by Entrepreneurship Development dept.
- DBRT students completed fabrication of shed for staircase

A] Technical 'Writeshop' @ Pasali:

A 'Writeshop' was held at Pasali village from 4th – 6th January. Objective of the Writeshop was to create written documentation of technical work carried out through different projects in the last 5 years. Dr.Yogesh Kulkarni, Dr.Arun Dixit, Ranajeet, Suhas, Prasad, Sonal, Mahesh and Amol (DIC alumni) participated in the workshop and wrote on progress of different project. Following technologies were selected for documentation 1) Kitchen waste composting 2) Hydroponics & Aquaponics 3) Grey water recycling 4) Food & Protein 5) Azolla cultivation & applications 6) Water filtration etc. During three days, first draft outline was prepared by team. It will be reworked and edited before published it. (VATF)



B] New Sound system installed at Memorial Hall (Classroom)

Memorial hall at Vigyan Ashram has steps down (amphi theater) seating arrangements. Speaker is standing at the lower level and audience is on ascending steps. This results in poor sound distribution across the hall. Many times' speaker is not heard well in the top rows. We were using sound system but it was giving lots of Echo. We had taken advice from Sound experts, conducted trials for uniform distribution of sound. After conducting trials, we have purchased sound system for memorial hall. (VATF)



Memorial hall (Classroom)



Installing speakers to avoid echo



Sound mixer and control system

C] Design Innovation Centre (DIC) project updates:



Effect of Composting on Crop yield

Sonal found 34 % more yield for tomato crop and 51% more yield for brinjal crop when compost is used. She used 50% compost (28%Organic carbon) + 50% soil in experimental plot. Only soil is used in the control plot. The plants were cultivated in the plastic bag in polyhouse conditions.

<https://vadic.vigyanashram.blog/2022/09/05/45748/>



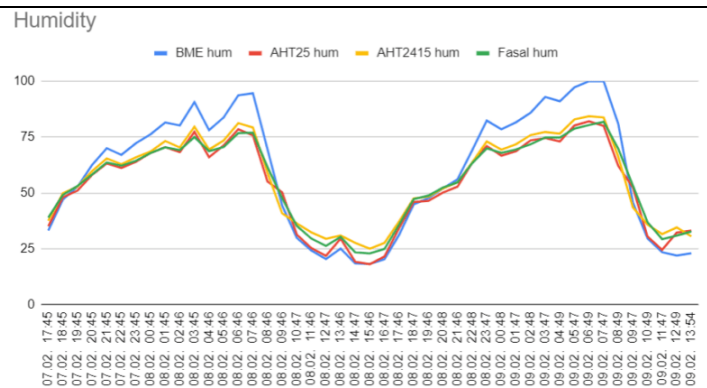
Chotulal successfully installed temperature sensor based Chimani for fire-wood chulha in kitchen. He replaced old MS pipe with cement pipe, fixed a exhaust fan (as blower) with cap & temperature sensor. This intervention led to reduction in smoke by almost 90 % with better fuel efficiency.

<https://vadic.vigyanashram.blog/2022/12/30/kitchen-smoke-problem-2/>



Black Solider Fly (BSF) for kitchen waste : In Jan, we have processed 677 kg kitchen waste. It took 14-16 days. We have obtained 11.6 kg of pre-puppa. They were kept in the fly chamber. To maintain the temperate during winter, we have installed two bulbs and put mattresses for insulation.

<https://vadic.vigyanashram.blog/author/Mahesh-Shinde/>



Polyhouse automation :

Arthur studied performance of temperature-humidity sensors BME-280, AHT25 & AHT2415 for its field application. He found AHT25 is best suited for polyhouse conditions with minimum error & deviation. Results of his study are available on -

<https://vadic.vigyanashram.blog/2023/01/24/fasal-accuracy-measurement/>



Temp control for BSF chamber :

Sumedh working on developing automated humidifier & data logger for breeding chamber of Black soldier fly. Objective is to control ambient temp conditions inside the breeding chamber to get maximum yield of BSF larvae.

<https://vadic.vigyanashram.blog/2023/01/10/data-logging-and-automation-for-bsf-chamber/>



Sumedh completed automation of UV filter. This filter uses batch process instead of continuous process used in commercially available filters. It automatically operates the pump to keep treated water available all times.

<https://vadic.vigyanashram.blog/2023/01/23/uv-based-water-purification-system/>

Other DIC news:

- Ranajeet attended India International Science Festival (IIFS)-2022, held at MANIT Bhopal on 21st to 23rd January. On 22nd January he delivered talk on 'Improving accessibility of education among unreached' at National Social Organization & Institute Meet (NSOIM).
- Nandini & Chotulal from Barefoot college completed their 6-month DIC internship on 26th January.
- Gaytri Pakhale (BTech Agril Eng) & Ashwini Waghmare (BTech Biotechnology) joined DIC program. They will work in soil-microbiology & Tissue culture section.
- Fab-Academy 2023: A new batch of FA has started from 25th January (<https://fabacademy.org/>) with two students i) Pushkar surywanshi (BE Mech) ii) Sanjay Surage (BE Mech, Fablab Narmadalaya). As a part of preparation, Suhas attended an online instructor's boot camp from 12th to 15th January.



Graduation of Nandini

DJ DBRT student learning updates (VATF):

- Asha for Education Volunteer Ms. Jyoti Gawade visited Vigyan Ashram on 2nd Jan to meet DBRT students. ASHA for Education is financially supporting DBRT program from long time. They have also helped in strengthening infrastructure facility at Vigyan Ashram. We are thankful for their support.



Visit of Jyoti Gawade

- **Agriculture & Animal husbandry:**

Students harvested 140 kg onion & sold it to kitchen @ Rs.12/kg. Their cost of cultivation was Rs.8/kg.

They also harvested 2170 kg of fodder (Jawar) & sold it to dairy section @ Rs.5/kg. Students learnt basic land preparation & seed sowing skills while sowing cowpea (2 guntha) and fodder maize (6.44 guntha). In the Animal husbandry section, 6 new goat kids are born. Students recorded average growth rate of 119.6 gm/day for them. In poultry farming batch of 200 broiler birds started on 13th January.



Recording growth of goat

- **Energy & Environment section:** DBRT students completed electrical wiring of new agriculture classroom. Total expenses incurred were Rs.17280.00 for this work. Students learnt concealed wiring work during electrical wiring work of new food processing unit. They also installed new audio system in classroom & repair 5 CCTV cameras on the campus.
- **Home & Health section:** Students learnt basics of bakery while processing 64 kg bread-flour for preparing bread cakes & cookies. Students also learnt suger-syrup preservation technique while preparing Amla candy, Lemon-Amla syrup, Tomato sauce etc. They sold 56 kg of moringa & linseed chikki to Sahydri-School (Vada, Rajgurunagar). Total value of their community service was Rs.27916.00 during January month.



Installation of CCTV camera's on campus



Fabrication of shed

Workshop section: Students learnt brick laying, PCC flooring and plastering work while constructing 158 Sqft front-porch for new food processing unit. Sudham, Akash & Rohidas learnt fabricated terrace-railing of 76 ft (2.5 ft height) for new food processing unit. Dinesh, Sudam & Yadnesh completed plumbing work of new agriculture section while fixing 1000 lit plastic tank. Hrushikesh & Sachin fabricated a staircase shed for boys' hostel. Total value of their community service was Rs.49273.00

Computer section : students learnt basics of illustration design & editing while using 'canva' design website. Their

blogs can be viewed on <https://alumni.vigyanashram.blog/category/22-23/>

EJ IBT Maharashtra & Uttar-Pradesh updates:

IBT students are busy preparing projects for 'Technovation' competitions & other district level exhibitions.

Highlights of IBT Program in Maharashtra :



IBT @ Rajapur (Dist Ratnagiri) fabricated 'Betel nut de-sheller'



IBT @ Kurdhe (Dist.Ratnagiri) fabricated fruit pulp heating kettle with stirrer arrangement.



IBT @ Dhauvali (Dist.Ratnagiri) fabricated coconut climber unit.



Project of 'Transmission line leakage identifier' by IBT @ Amboli (Pune) was among top 30 projects selected for National children's science congress



IBT @ Walsang (Dist Sangali) fabricated foldable sofa cum bed cum table.



IBT girls of Vahangaon (Dist.Pune) made 10 wooden guns in carpentry shop for cultural programs on 26th Jan

Students from 6 IBT schools in Pune districts arranged food product exhibition on 26th January republic day celebration. They sold food products worth Rs.6647.00 as community service. Activity also taught them soft skills like communication, presentation, accounting etc.

IBT Uttar-Pradesh updates (Stars): Schools in the state were on winter vacation during 1st to 15th January. Proof reading & correction for 2nd draft of 'Learning by Doing (LBD) teachers' hand-book' was done by respective subject experts & teachers. Six online training sessions conducted for instructors during winter vacations.



Ayush has joined the school and taking interest in IBT activities.

Ayush was out of school student. He was working at food stall. IBT teachers from Dist.Muradabad pursued his parents and now



starting IBT program in her school near Agra, she started attending IBT classes and learning by 'Doing'.

Monica is a student with hearing difficulty. She was not attending classes since she was not following the lectures. After

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

Through EDP program, we are helping our alumni and supporting them in starting technology-based enterprises. During past 3 months 125 trainees participated in various training & 20 new rural enterprises have started. Following are some of the highlights of training conducted in the month of January -

- Poultry farming training: A 2 days poultry farming training was conducted on 3rd & 4th January at Sakhar village (Velha, Pune). It was awareness training with hand-on sessions & field visits to small & marginal farmers of 9 villages associated with Raintree Foundation (Pune). Total of 45 farmers attended the training.
- WSHG EDP camp @ Mahad (Raigad): Yogesh & Ganesh conducted EDP awareness camp for Women Self Help Group (WSHG) at Birwadi Grampanchayat (Mahad) on 16th January. These WSHGs are formed & supported by Anubhav Prathishtan Trust. Total 45 members from 4 SHGs attended the camp to learn different business opportunities and support available to make it successful.
- Sliding window & door lamination business: A training on sliding window & door lamination was conducted at Pabal on 7th & 8th January. Training was attended by 11 business aspirants. VA alumni entrepreneur Mr.Vaibhav Rahane conducted sessions along with workshop department instructor.
- Agrowon Exhibition @ Aurangabad: VA-EDP dept participated in the agriculture exhibition organized by Agrowon (Sakal Media Group) at Aurangabad during 13th to 16th January. Our alumni entrepreneur Ms.Kalyani Chavli (Sahrudaya foods) & Mr.Pramod Pansare (Srinath foods) exhibited their food products.
- Yogesh Onkar attended training on Farmers Producer Company (FPC) management during 9th to 11th January at Dindori (Nashik). Training was organized by Sahydri Farms Producer Co Ltd to provide first hand information on FPC management, Govt schemes, Role of farmers facility centre, supply chain management etc.



Hero of the month:



Mr. Rajesh Kasar started “Matoshree electricals and motor rewinding” shop at -Shingave-Pargaon Tal-Ambegaon Dist.-Pune.

Rajesh is 2018-19 DBRT batch students & getting a licensing, technical mentoring support through EDP program.



Mr. Shubham Kawde started local internet (broadband) service centre with a name 'Speed link broadband services' at -Ozar, Tal-Junner, Dist.-Pune. Shubham is 2016-17 batch DBRT student.

G] Fab-Lab for tribal area updates (DST support):

Fab-lab established at Narmadalaya (Madya-Pradesh) and ISKON (Wada, Palghar) are providing training to tribal youth in various digital fabrication skills. Following are some of the highlights of this month -

- Fab-Lab Narmadalaya demonstrated fab-lab training centre to the guest & visitors participated in 'Narmada Jayanti' celebration on 27th January. Distinguished guest Dr. Vinodji Tare (IIT Kanpur) , Mr. Ajitji Joshi (IAS ,Chandigarh) visited fab-lab skill training centre & 'Narmada Kaushalya Rath' a Skill-on-Wheel project initiative under DST support.
- A lathe machine & sheet bending machine is installed at Fab-Lab Narmadalaya.
- During this month, Skill-on-Wheel visited Satya, Bhikangaon and Kasarwad schools & give awareness training to 335 students. Apart from these 100 students' participants from Khargaon school participated in 1 day training workshop.
- Fab-lab Palghar students made 5 DIY project kits with documentation to conduct activities for schools. They also conducted 2 days training workshop for ITI (Wada) & Surya Valley School with 67 students.



Fab workshop @ Palghar

H] Atal-Tinkering-Lab (ATL) & Do-It-Yourself (DIY) project update:

➤ DIY-ATL team conducted online sessions for Andhra-Pradesh & Karnataka ATL labs. The sessions were live stream through DIKSHA (Digital Infrastructure for Knowledge sharing) YouTube platform of Samagra Shiksha Abhiyan.

➤ A state level ATL & training centre:

Work of establishing state ATL Lab & training center at Zilla Parishad High School Penamaluru (Dist- Krishna, Andra-Pradesh) is almost complete and ready for inauguration. VA team headed by Kishore is in Vijaywada for completing all installations. The lab is set for inauguration on 1st Feb.

Topic	Session link	ATL labs
Basic Arduino with process flow for programming	https://youtu.be/bHoamVKuwHM	Telagu
Learning Basic electronics through Projects (Make solar desk lamp)	https://youtu.be/YajhsblUsog	Telagu
Molding and Casting for arts and crafts	https://youtu.be/4lgCvUFVUa0	Telagu
Canva-Online Software to make poster and flyers	https://youtu.be/dlhFlvhN0gl	Telagu
DIY Soldering Station Accessories	https://youtu.be/AMvVMa4cJMo	Kannada
RFID Door locking mechanism (Electronics)	https://youtu.be/biJAmsgLiVs	Kannada
Hydraulic scissor lift and press (Toy making)	https://youtu.be/uu2vllRuYc4	Kannada
Basic Arduino with process flow for programming	https://youtu.be/bHoamVKuwHM	Kannada

- **DIY Lab Pune:** 5 new members joined DIY lab for weekly membership class. In this month student learnt digital fabrication application through moulding for art & craft, making of automated toy with laser cutter, DIY soil moisture sensor etc activities.

I] Other tit-bits:

- Republic Day Celebration: 74th Republic Day was celebrated with usual enthusiasm and cultural programs. on 25th January morning students & staff did 'Shramdaan' by conducting a 'cleanliness' drive at weekly market-place. Students collected plastic waste, garbage, removed weeds, cleaned public toilet, and painted trees to beautify the place. Nearly 400 Kg of plastic waste was removed from roadside & water-stream. Students also fabricated & placed big dust-bin near public toilet. The 'Pabal-Traders association' provided hand-gloves, masks to students. Villagers and Gram panchayat members joined us in the drive.



Shramdaan 25th Jan

- Digital Learning Library project (Stars): A skills training video shooting was completed for 'Solar drying' and 'Installation & maintenance of water-pump' on 19th & 20th January at Pabal.
- Wiki-team completed scanning of 6 books with 793 pages. They had also completed OCR making for 5 books with 354 pages.



Skills training Video shooting

- A proposal on 'Increasing productivity of existing livelihood system of Katkari tribe in Bhimashankar region' and 'Livelihood generation for rural youth through innovation, training and entrepreneurship promotion' is submitted to Department of Science & Technology (DST) SEED division.
- Yogesh visited IIM-Udaipur on 9th and 10th Jan. He had conducted 4 sessions for MNGF fellows on skills development. He also visited Shikshantar on 11th Jan.
- Mr.Hemant Gadgil (La-foundation) along with School teachers from Satara ashram school visited Vigyan ashram and IBT school at Mukhai on 21st January.
- DBRT girls went for study tour on 30th Jan. They visited Sahyradi school as well as food production center at Taleghar and learned to manufacture Nachani (millet) Ladoo's.
- Indrajit Joshi resigned from DIY-instructor post for better prospects. We wish him best luck for future endeavours. Sohel Saikh (BE, Electronics) joined as trainee lab instructor.
- Weather record – Rainfall of the month – 0 mm (Total: 935.77 mm), Max temp-30.00°C, Min Temp – 12.00°C, Humidity – 42%, Water height in well– 5.90 M.

- x. Energy consumption record- Electricity unit – III Phase -682 unit, I Phase import- 137, Solar generation- 1838.00. DG used – 04.30 Hrs.
- xi. Animal Husbandry section update – Milk production –980 Kg, New Poultry batch (200 birds of broiler)- FCR-1.53 . Goat – 6 new kid (2 male + 4 female)
- xii. Biogas produced-46.0 M³ (Dung used- 932.0 Kg)
- xiii. Online visitors: www.dsttara.org – 949 (New visitor-848, Repeated-101), www.vigyanashram.com – 1015 (New visitor-837 Repeated-178). Campus tour visitors – 210.

KJ Data Report: shorturl.at/crtU6

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Photo Gallery:



Visit of La fondation team



Vigyan Ashram team @ India International Science festival



IIM Udaipur: Sessions of skills development



DIY activities @ JPNC



ATL activities @ ZPHS, Penamaluru



Vaccination of poultry birds during poultry training

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