Vigyan Ashram Status Report

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A] Black Soldier Fly (BSF) farming updates:

Vigyan Ashram is developing a technology package for Black Soldier Fly (BSF) farming with financial and technical support from the Department of Science & Technology (DST), Government of India, under the SEED Division's 'SUNIL' programme. BSF larvae feed on bio-waste and can be utilised as a rich source of protein and fat for poultry and fish farming. Over the past three years, Vigyan Ashram has developed and field-tested a comprehensive BSF technology package covering breeding, larval rearing, larval processing, and the use of processed larvae in poultry feed. A two-day training workshop on BSF farming technology was conducted at the Pabal campus on 22 and 23 August. Five budding entrepreneurs participated in the workshop and received hands-on training in the management of BSF breeding chambers, larval rearing practices, poultry-feed formulation, and the marketing and sale of final products.





Other technology development & Design Innovation Centre (DIC) updates:

- Ayush completed fabrication & started trials for the BSF-new breeding chamber. The new chamber has a central air-exhaust system with peripheral water-curtains for humidity management. This will eliminate foggers clogging problems (results yet to be verified), an auto-shutter is provided on top to protect the chamber from rains and while allowing natural sun-light in non-rainy days. Chamber loaded with 5 kg pupa for testing its performance.

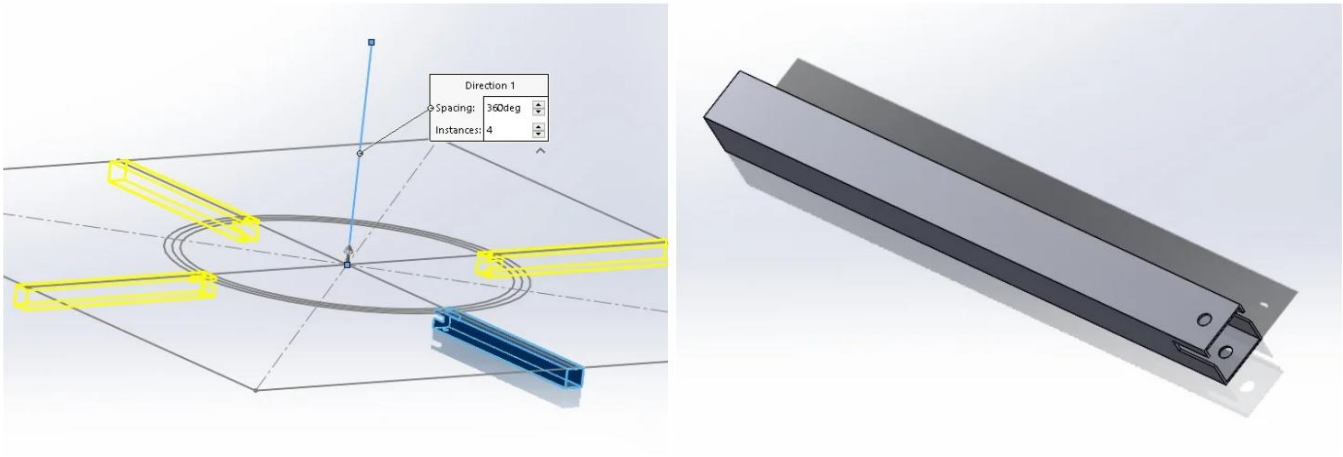


Figure 1 Conceptual Design of Exhaust Unit

- Pranit & Ganesh visited polyhouse farmers (Dnyaneshwar Kashid, a rose cultivation at Retwadi village and Sunil Khaire, a capsicum cultivation at Kahirenagar) for installation of temperature-humidity data logger and on-field training of pest identification mobile application. Team is regularly visiting farmers to get feedback on data-loggers & mobile app for further modifications.
- Pranit & Shreyas, while working on UV potable water-filtration system in campus, found that the UV-tubes malfunctioned due to salt deposition on the class tube and non-functioning UV lamps. They tested 2-3 different types of UV tubes from the market for its effectiveness but most of them failed (H_2S strip test for E. coli). A quartz-UV tube (Kent make) is sourced and filters are re-designed with 58 Lit/min water filtration flow. For avoiding failures due to salt deposition, a protocol for acid-treatment is designed.



- Shekhar is working on a low-cost protein-bar. He has tested a combination of Soybean and Chickpea for its palatability. He used a sprouted soybean and chickpea flour, fermented it with curd to form a bar (50g). The acceptance of bar constancy and palatability was satisfactory with 70% protein in 50g serving size.
- Pranit has developed a 1st prototype of 'mobile app (flutter-based Android application with Firebase Authentication) for 'livestock management'. App aims to help farmers in maintaining dairy/goat farm records. The app integrated a weighing-scale with ESP32 + HX711 (for goat weight gain or milk yield record), an Image Renomination (IR) feature for animal tag identification (TFLite AI). He is collecting training data (goat images) and testing features in the goat-farm for feedback.



- Samruddhi is working on the PBAT biodegradation. She has isolated Rhodococcus sp. and Bacillus sp. along with other 5 fungal & bacterial cultures. These isolated cultures are multiplying on Mineral Salt Medium (MSM) for testing their impact on PBAT degradation.

Details of individual projects & intern-student work can be found – https://vadic.vigyanashram.blog/

B] Kaushal-Bodh teachers training program

A three-day residential training programme for school teachers on the implementation of 'Kaushal-Bodh', a vocational education subject, was organized at the Pabal campus from 3rd to 5th August. The training was attended by 70 school teachers from rural areas of Nandurbar, Dharashiv, Solapur, Nashik, and Pune districts. Vigyan Ashram has collaborated with the STARS Forum for the implementation of a school-based vocational education programme, with the financial support from Tata Trusts, Schaeffler India Foundation, and Tata Technologies CSR. The participating teachers were trained in the implementation of the 'Kaushal-Bodh' vocational education subject in accordance with the National Education Policy (NEP) 2020 guidelines.





C] Fab-Opportunity-Academy (FAO):

The Fab-Opportunity-Academy (FAO) is progressing with 9 students. In the month of August, students learned & practiced machine-networking hardware (UART, I²C, SPI, One-Wire, Bluetooth and Wi-Fi) along with software part (Web Server, PictoBlox, p5.js, MIT App Inventor and Blynk IoT). Students also started work on applying their learning in their 'individual projects'. Students' learnings are documented on their blogs - https://vadic.vigyanashram.blog/watershed-management/







D] Independence-day celebration & cultural program:

The 80th Independence Day was celebrated with great excitement and joy at the Pabal campus. The celebration began with the flag-hoisting ceremony at 7:50 a.m. After the flag hoisting, students and staff organized a cultural programme featuring individual and team performances. The dance performances by the girls' staff team and the agriculture boys were the real show-stealers. Following the cultural programme, students played volleyball matches. The Home and Health section students distributed delicious gulab jamuns to all participants.

Prior to this, on 14th August, students participated in *Shramdaan* as a skill-based community-service activity. The students were divided into four groups and carried out work at Bhairavnath Mandir (electrical maintenance), Pabal Village Police Station (cleaning), Vaikunthdham (plumbing repair), and Maruti Mandir (cleaning of the village water well). Through Shramdaan, students demonstrated their practical skills to provide service to the community.









E] Updates on Diploma in Basic Rural Technology (DBRT) skills training:

DBRT students have adapted to campus life with daily routine on skills training and Ashram (prayer, exercise, medication) activities. This year we have introduced book-reading, spoken-English and computer clubs during morning & evening free time.

The following are some of the key learning activities of students in each section:

Agriculture and Animal Husbandry: In the farming section, students planted 100 cucumber saplings behind the seminar hall and, sowed 1 kg of Rajma seeds on plot near the EDIC hostel, In goat & poultry farming, students learnt estimation of body weight & feed conversion ratio (FCR). They recorded FCR 3.3 for 150 chicks, but lost 84 chicks due to cat attack in the poultry shed.



Energy & Environment section: Students in this section, learnt repair & maintenance of solar-invertor systems while installing 2 units of 5 kV lead-acid batteries. As a part of regular campus maintenance work, students repaired ceiling fans & mixer-grinder in the Food Lab, and fixed a new MCB board & wiring at Bhairavnath Temple. The total value of their community service was Rs. 61,953.00/-. (Students earnings: Rs. 6150.00/-)



Engineering Section: The workshop section students completed wall painting work for STARS Forum office at deccan. As a team they completed work of 4700 Sq.ft area while learning skills in surface preparation, use of painting tools, estimation of paint quantity based on area and paint coverage etc. Students also fabricated 40 sets of school tables, a storage-rack to earn a community service of Rs. 62,818.00 (students' earnings of Rs. 12086.00)



Home & Health Section: In the Home & Health section, a health check-up camp was conducted with the help of the local Public Health Centre (PHC). Students learned to measure vital parameters like, haemoglobin, blood group, BMI and blood pressure. They tested vital parameters for 51 students In food processing skills, students prepared chikki, solar dried ready-mixes and bakery items. The total value of their community service was Rs. 9,722.00. (Students earning Rs. 2,678.00)

As a part of computer skills training students are learning, basics of Microsoft Office application (PPT, word), photos & video editing and internet applications. Students regularly publish their learning on blogs diary. Individual students learning can be found on - https://alumni.vigyanashram.blog/dbrt-batch-2026-27/

F] School based vocational education (IBT), DIY lab & STEM updates:

IBT updates:

- A project review meeting was conducted with MAHLE Engineering Solutions India Pvt Ltd- CSR team. They are supporting the IBT program in 6 schools of Pune district. The program outcomes, students-teachers feedbacks and coming activity planned were reviewed during the meeting. We are very thankful to them for supporting the IBT program from 6+ schools.
- Sharad visited Bhivadi (Pune) and Padsare Ashram School (Raigad) on 7th & 11th August. He had conducted sessions on Solar PV based street-lamp design and 3D design & printing technology respectively. He has also guided students in the participation of 'Seed The Future Entrepreneur-made in 3-D' competition during his visit.
- Sharad conducted a meeting on 12th August with school administration & head-master at Khadakwadi (Pune) school. Schools are starting the IBT program from this education calendar with MAHLE Engi Solution Pvt Ltd- CSR financial support.

DIY Lab updates:



In August, students at D.I.Y lab did various hands-on activities related to designing, electronics and creativity. Following are some key learning highlights of students as -

- Students developed a demo of an automated flag-hoisting setup using the Makey Makey board as part of the Independence Day activity. They also made Rakhis using the Cricut cutting machine for Raksha Bandhan.
- Students designed individual parts of a boat using Inkscape, based on Newton's Third Law of Motion. They also made an LED lighting background for Ganapati decoration.
- 5 Students from Gurukul School learnt basic designing & electronic programming concepts while converting 2D designs into 3D paper models (solar-lunar model) and LDR based -street light models.

STEM program @ PMRDA region school:

We are supporting XX schools in Pune city for STEM – Koushal bodh program. Radhika, Jagruti and Sakib are visiting schools regularly and helping them in their project work. Nutan Marathi Vidyalaya **(NEMS**) students are working on developing indoor-plant & medicinal gardens and cooking-without fire.Ahilyadevi High School students of 6th class are doing projects on jewellery making. Students of MSGGV School are doing project on Basic Grooming Art.

I] Other titbits:

i. Activities in Atal Tinkering Lab (ATL) strengthening program @ Karnataka state has started. A MOU with Karnataka Residential Educational Institutional Society (KREIS), Collins Aerospace and Vigyan Ashram was signed. Activities in the schools have been started with recruitment of 2-field technicians.

ii. In the DST supported TAP-RISE program, case studies of the 10 finalised high-potential technologies from SEED-supported organisations (SSOs) were prepared to support their further acceleration. On 31st August 2026, a webinar on "Technology Demonstration on Steam Boiler for Haldi Processing" was conducted. A total of 28 SSOs attended the webinar.

iii. A backyard poultry farming training workshop: Aa a part of promoting scientific practices in backyard poultry farming a 2-days training workshop was conducted at Pabal campus on 22-23 August. Training was attended by 21 tribal & Economically Weaker Section (EWS) farmers 16 men & 5 women) from Shirur, Ambegaon and Rajgurungar region of Pune district. Selection of improved breed, boarding, housing-management, vaccination & feed management, egg-incubation technology etc practices were demonstrated to the participants during training.

iv. Dr. Yogesh Kulkarni attended the launch of Seed The Future Entrepreneurship competition at La foundation- Dassault systems on 21st Aug.

v. Dr. Yogesh Kulkarni attended a Text book development workshop organised by Balbharati on 22nd Aug. He shared experiences of Grade 9 and Grade 10 text book development with the textbook writing team of Balbharati.

vi. Weather record – Rainfall of the month – 30.50 mm (Total: 399.68 mm), Max temp-31.00˚C, Min Temp –22.00˚C, Humidity –76 %, Water height in well– 5.00 m, Waste-water COD – Girl's hostel – 192 ppm, Boys hostel – 244ppm (within limit)

vii. Energy consumption record- Electricity unit (import) – III Phase-2799 units, I Phase-403 units, , Solar generation (off-grid)-73 units, DG used – 1 Hr, Biogas- 40.97 m3 (819 kg dung used).

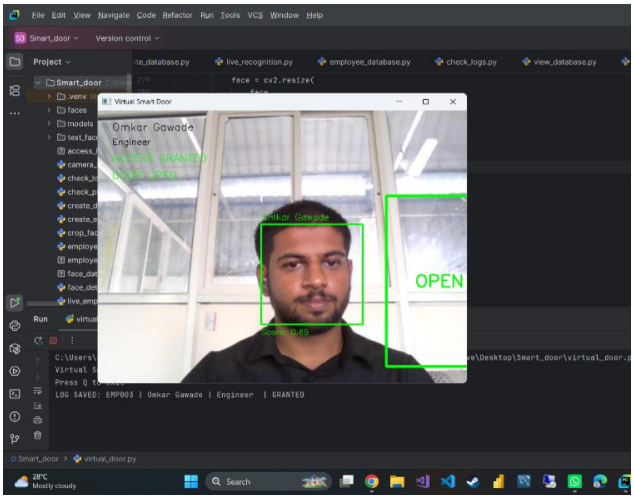
viii. Animal Husbandry section update – Milk production – 228.5 L (Loss: Rs 9975.0/-).

ix. Online visitors: www.vigyanashram.com –3069 (Organic-1751, Other-1318), Pabal campus visitors: 165

J] Data Report:

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

Photo Gallery:



Omkar Gawade developed a python-based face detection app for smart door access system.



Technology demonstration of Haldi Boiling Unit developed by GEAG



Raksha Bandhan celebrations at Pabal Campus



Practicals and measurements techniques



2-Day Poultry Farming training at Pabal on 22nd and 23rd August

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www.vigyanashram.com ; https://vigyanashram.online/