



Dr.LANKAPALLI BULLAYYA COLLEGE
VISA KHAPATNAM – 13

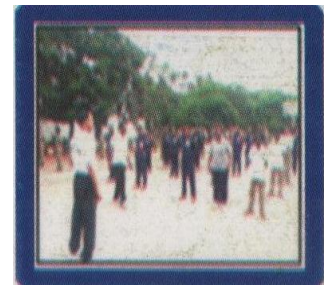
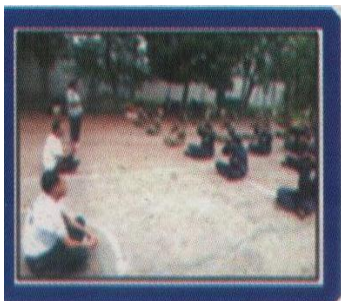
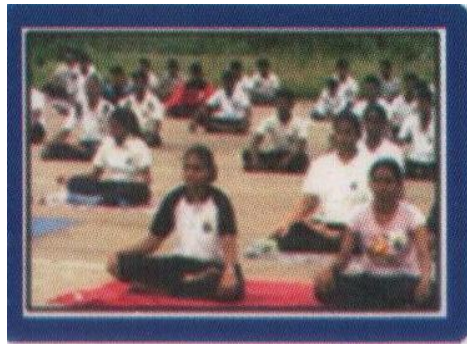
LIFE SKILLS

(YOGA, PHYSICAL FITNESS & HEALTH AND HYGIENE &
ENTREPRENEURIAL SKILLS)



Dr.LANKAPALLI BULLAYYA COLLEGE VISAKHAPATNAM - 13

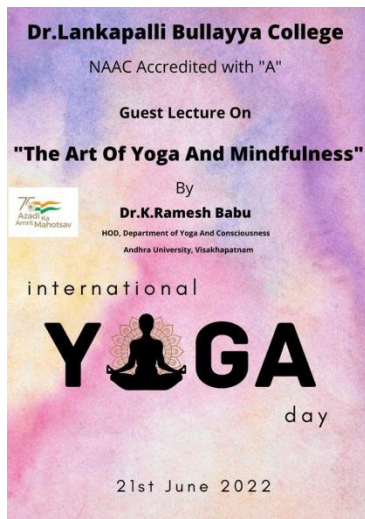
International Yoga Day was celebrated on the campus On 21st June 2018. Students enthusiastically participated in this event.





Dr. LANKAPALLI BULLAYYA COLLEGE
VISAKHAPATNAM

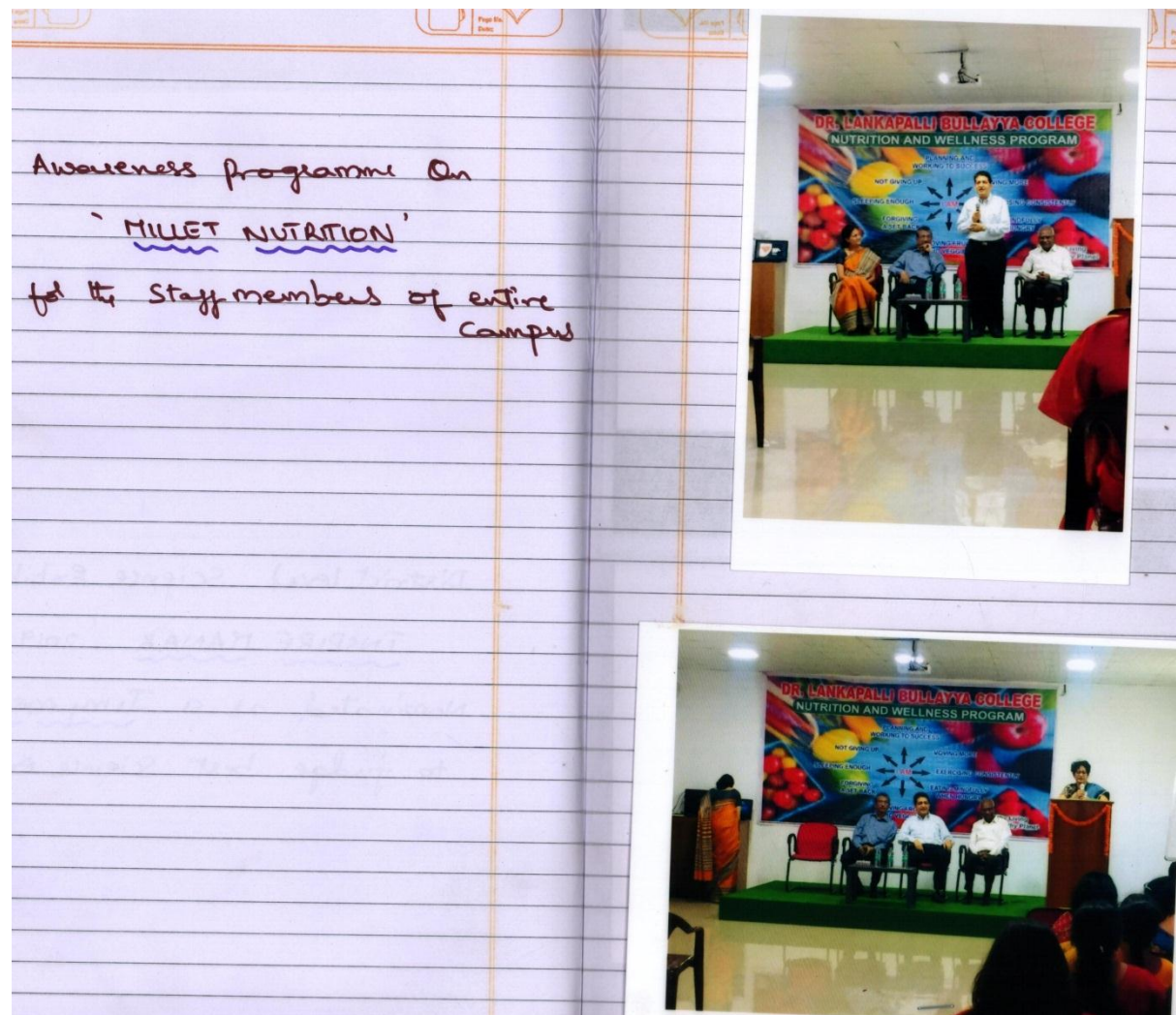
International Yoga Day was celebrated on the campus on 21st June, 2022. Dr.K.Ramesh Babu, HOD, Department of Yoga and Consciousness, Andhra University delivered a lecture and enlightened the students on the importance of yoga and its impact on spiritual and mental health of human beings.





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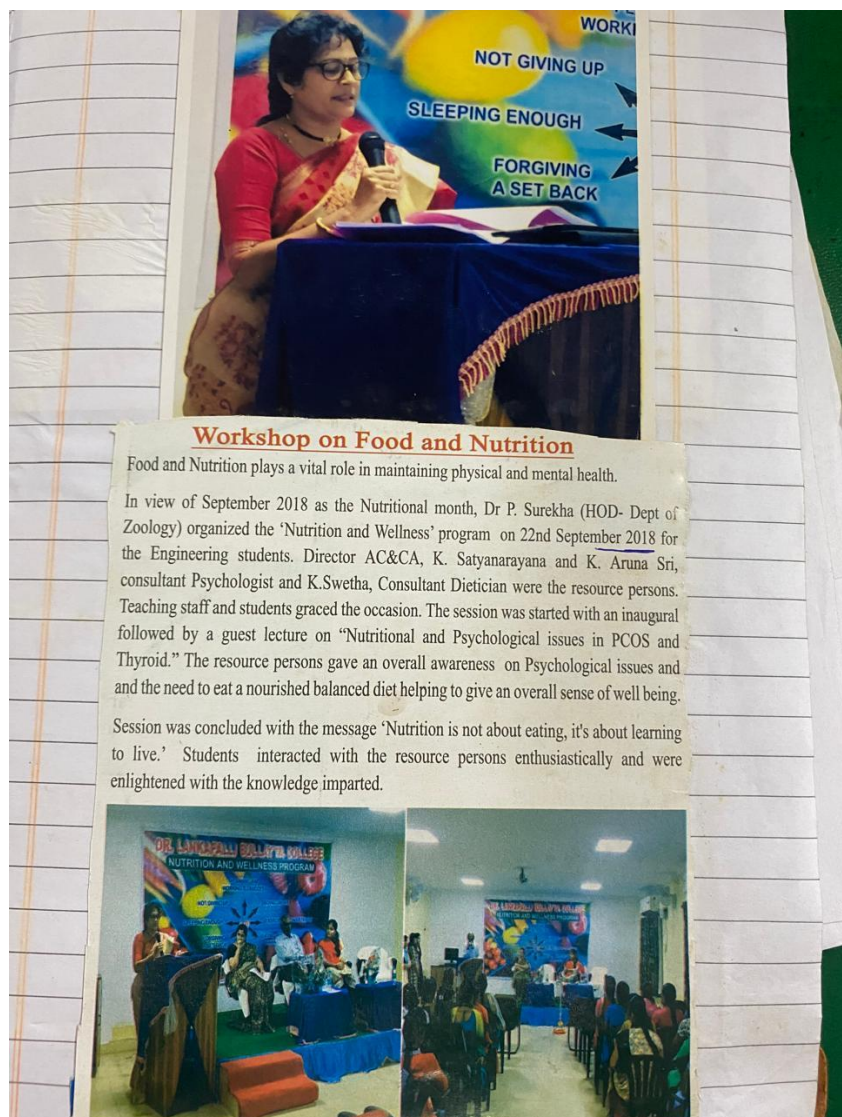
An awareness programme on “Millet Nutrition” as organised on campus for all staff members.





Dr. LANKAPALLI BULLAYYA COLLEGE VISA KHAPATNAM – 13

A Programme on Nutrition and wellness programme was organised on 22nd September, 2018 on campus for all the staff members.



ENTREPRENEURSHIP INNOVATION START UP CELL

The Entrepreneurship Innovation Start Up Cell (EISC) was started in (2021) by our college. with the aim of instilling an entrepreneurial spirit among individuals. With immense enthusiasm, we are working towards bringing forward the concealed potential held by today's youth for the betterment of society. We operate on our goal by bridging the network gap that exists in the entrepreneurial ecosystem. By creating an efficient channel comprising students, entrepreneurs, mentors, and industry experts. We strive to create an avenue for students to sharpen their business acumen and skills through competitions and interactive speaker sessions.

- With the support of our visionary & beloved Secretary and Correspondent Dr.G.Madhu Kumar, Garu the EISC Cell is playing an active role by encouraging the students in participating the long entrepreneurship development–cum–vidyarthi to vysvasaayee (V2V) Startup Program which was conducted by IIMV in association with S2.Tech.com India & MoonShot junior for 6 months. Nearly 20 students from U.G, P.G and Engineering were participated, 12 got selected and finally a team of 5 students from engineering secured third place, with a cash prize of 10,000/- for the idea Carnal Master.
- On behalf of EISC Cell of our College we have conducted a small contest among the campus colleges of U.G., &P.G. We received nearly 32 innovative ideas. 14 teams were shortlisted and 13 teams have undergone with presentations held from 11th to 18th Nov 2022 and 8th to 13th Dec2022.

The image displays four separate welcome banners arranged in a 2x2 grid. Each banner has a light blue background with a green decorative border at the top. The text on each banner reads 'WELCOME Today's Presentations by' followed by a group photo and the names and degrees of the presenters. Below each photo, it says 'We wish them ALL THE BEST'.

Top Left Banner:
WELCOME Today's Presentations by
V.Sirisha
B.Varaha Venkata Driya
P.Vishnu Vardhan Reddy
N.Sai Kiranthy
BSc(CBZ), 3rd year
N.Likitha
N.Subhash
BSc(M.E.Cs), 2nd year
We wish them ALL THE BEST

Top Right Banner:
WELCOME Today's Presentations by
Sk.Naushad
Msc.Biotechnology
2nd year
N.Bhavann
MSc.Bio-technology
2nd year
We wish them ALL THE BEST

Bottom Left Banner:
WELCOME Today's Presentations by
Shib Shankar Paul
Msc.Biotechnology
2nd year
B.Baghya Lakshmi
T.Giridhar
G.Siva Sampath
K.Sai kumar
T.Rakshitha
N.Rani
K.D.S.Madhuri
B.Com - 2nd year
We wish them ALL THE BEST

Bottom Right Banner:
WELCOME Today's Presentations by
R.Arana
A.Sandeep
Msc.Bio-technology
2nd year
G.Swetha Devi
N.Saunpathi Kumar
Bio-Technology
2nd year
We wish them ALL THE BEST

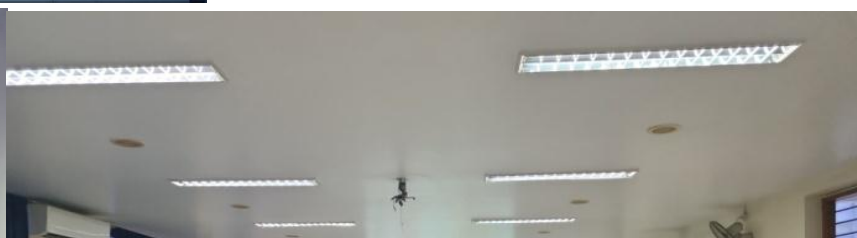
- The best innovative idea winner was awarded with cash prize, memento and certificate on February 4th 2023.



- EISC cell provided the Entrepreneurship Development Program- A short duration program for the students of our college. The primary objective of this course is to expose the students to the subject of entrepreneurship with practical orientation, so as to prepare them to establish a new enterprise and effectively manage the same.



- World Enterprise week is celebrated from August 21st to August 31st by Entrepreneurship Innovation Start-Up Cell under the mentorship of Dr. D Vijayalakshmi, in our college. Which aims to promote vision of entrepreneurship as a viable avenue for employment among the youth and to support the aspiring entrepreneurs. Student participants were encouraged through various activities like seminars , easy writing , quizzes , debate competitions, slogans ,posters, banners etc. Students of M.B.A.M.C.A.& M.Sc. Computers were participated with zealously and enthusiastically. A model of pan shop is build by the students of M.B.A and their research on Pan shops in Visakhapatnam District is highlighting in the last day of celebrations.





Dr. Lankapalli Bullayya College

Visakhapatnam

DEPARTMENT OF BIOTECHNOLOGY

Sno	Concept	Budding Entrepreneurs
1.	Bio Enzymes & Bio Cleaners	D Kaushik Krishna
2.	Bioplastic: Films, edible toys, key chains	P Swathi
3.	Bio edible water- Under progress	D Kaushik Krishna, Swathi and G. Sai Mounika
4.	Incense sticks	A. Sivanagajyothi
5.	Organic soaps	A. Sivanagajyothi (first Year), Sumit Bhui (second year)
6.	Mushroom cultivation (milk and Oyster)	Sk. Saddam Hussein and G. Sai Mounika
7.	Recycling of solid waste (Paper, vegetable etc) – Packaging	K. Madhuri (First year)
8.	Heal Meals:	K. Jessica, Y. Jyotsna
9.	Wine production	D Kaushik Krishna, P Swathi, Sk. Saddam Hussein

REPORT

1. Bio cleaners

Entrepreneurs: D Kaushik Krishna

Current Status: Still at Proof of concept

Commercialization: Commercialization can be planned in about 2 months.

Intense research on advanced microbiological systems based for the removal of organic waste has lead to development of producing a viable alternative for Culture heritage restoration.

The productive exploitation of microorganisms has been there since ancient times. Although, a few known microorganisms play a destructive role (causing deterioration) in the natural processes, the majority of them are responsible for “exemplary” processes.

- Bio cleaners were produced purely from fruit waste *ie.*, Pineapple, orange, papaya, banana, grapes, sugarcane, watermelon (Pomace) and Neem leaves, using the process of microbial fermentation.
 - The microbial isolation particularly bacteria (LAB, acetic acid bacteria) and fungi (Yeast and aspergillus niger) was done using soil source and specific medium.
 - Using mixed fermentation for a period of 60 days, the byproduct was extracted and purified.
 - Unlike bioenzyme in market, available as biotoilet cleaner, (patented) based on orange peel, the product obtained in this investigation has properties of a unique composition
 - The end products determined were **ethanol, citric acid, lactic acid, acetic acid and hydrogen peroxide**. The other components known to be present as per scientific literature are phenolic compounds (flavonoids) and Phyto-pigments. These poly phenolic fraction from plant by-product, are responsible for biopesticide activity tested against few plant pest.
 - Each of these compounds possess effective disinfection as well as sanitation potential, as validated by phenol coefficient method.
 - The immediate product had undesirable odour, this limitation, was overcome by addition of camphor and turmeric. In the pilot scale study, the final formulated product showed the presence of active enzymes and organic acids leading to removal of dirt, killing of surface dwelling microbes and common plant pest, as evident in this pilot study.
- ✦ The components indicated below, possess antimicrobial and cleaning efficacy in combination in the claimed product. The significance of the components:

1. Ethyl **alcohol**, at concentrations of 60%–80%, is a potent virucidal agent inactivating all of the lipophilic viruses (e.g., herpes, vaccinia, and influenza virus) and many hydrophilic viruses (e.g.,

adenovirus, enterovirus, rhinovirus, and rotaviruses but not hepatitis A virus (HAV) or poliovirus). In present study the biocleaners produced showed a concentration ranging from 33-57 mg/L.

2.Acetic acid (a.k.a. white **vinegar**) can act as a **disinfectant** that can destroy some bacteria and viruses. Can be used as mold and mildew **cleaners**, floor **cleaners**, window **cleaners**, surface **cleaners**, **cleaning** and dusting sprays, and roof **cleaners**.

3. **Citric acid** is widely used to clean industrial sites, including nuclear sites contaminated with radionuclides and soils polluted with heavy metals. Citric moiety facilitates the removal of metals in soils and enhances the soil desorption of hydrophobic organic compounds from soils.

4. **Lactic acid**: The minimal inhibitory concentration for bacteria was ≥ 1.25 mg/mL, while minimal biocide concentration was ≥ 2.50 mg/mL. Minimal inhibitory concentration for yeasts was ≥ 12.50 mg/mL, while minimal fungicidal concentration was ≥ 25.00 mg/mL. The lactic acid concentration in the present product is a proven efficient natural antimicrobial agent

3.Hydrogen peroxide is recognized by the Centers for Disease Control and Prevention (CDC) as a “stable and effective **disinfectant** when used on inanimate surfaces at 3% concentration.” Incredibly effective; it cleans, disinfects, and deodorizes surfaces. It is also anti-bacterial, anti-fungal, anti-mold, and anti-mildew. This is especially useful in healthcare facilities fighting against infections and other emerging threats.

The merits of biocleaners :

Effective cleaning performance at Room temperature, No usage of chemicals , increased lifetime of the surfaces, targeted removal of different contaminants, and reduced health risks (respiratory illness or allergies)

- ✓ The concentrated microbial cleaning solutions can be used in a typically 20:1 dilution ratio, in manual cleaning applications with conventional spray cleaning systems. **A ready application in household and institution for floors and other hard surfaces in kitchens, bathrooms, locker rooms, garages.**
- ✓ **Future prospects: Can be formulated into a laundry detergent and for stain and spot removal on fabrics, by lipase enzyme formulations.**



Before

Market prize: 120 Rs

Our prize: 60 Rs



After

The microbial processes have advantages over chemical methods with enzymes and antimicrobial byproducts at the end of fermentation. Even when the substances to be cleaned are complex and encrusted, due to their specificity of a pool of enzyme production, it is possible to remove difficult dirt complexes with proper combination of microbial activity. ([Ranalli and Sorlini, 2008](#)).

2. Bioplastics: P Swathi

Bioplastics, the green plastic which are biodegradable and hard as plastic are ready to replace certain items such as toys, films (single use plastic) that can be used to wrap candies or for food packaging. At present the films and few items which come in mould forms are cost effective. These are prepared from starch, dairy industry waste. The preparation is standardized.

Synthesis of biodegradable plastics was done using the ingredients such as vegetable starch materials, glycerol, vinegar and casein protein that is directly extracted from milk. Starch based bioplastic thin films and plasticized thick moulds were produced by varying the concentrations of the source materials and modification of standard protocol.

The plasticizing capabilities were tested for their water and alcohol absorption capacity, Solubilities in water and alcohol. The biodegradation rate was also assessed by soil burial method.

The mould based starch bioplastic has been standardized while in film preparation tensile strength feature needs to be optimized.

The milk based plastic material are synthesized with proof of concept ready.

The plastic items with mould based on starch is also ready with proof of concept.

Next level of standardization for improving the tensile strength of plastic is needed



Market cost : Starting at 20 Rs

Our prize: 10 Rs

Figure: 5.3 Corn starch based moulds were synthesized.



Market cost- 100 Rs

Our prize- 80 Rs

3. MUSHROOM CULTIVATION : Sk. Saddam Hussein and G. Sai Mounika Spawn Production

The cellulose based waste has been a big concern in agriculture waste. Even leaves falling from plants, waste from groundnut peels, coconut shells, etc can be cautiously used as substrate for one of the globally demand food ie., mushrooms. The idea was incubated with successful spawn production and cropping of milk mushrooms and oyster mushrooms. The conditions for production have been optimized and good quality food grade mushrooms production.

Preparation of spawn:

Preparation of mother spawn is carried out under completely sterile conditions. Pure culture raised either from tissue or spores is inoculated in a suitable substrate (wheat, sorghum, barley) which provides food to the mycelium. Using two methods, one soaking and another method boiling, spawn preparation was standardized.

Using 100gms of grains soaked and boiled. Followed by sterilization at 121°C & 15 lbs pressure for 20 mins, and Sterilized bottles were allowed to cool. Using of dessication agent ie., calcium carbonate in the grains followed by incubation at dark condition for 7 days at optimum pH and temperature, spawn production was successful.



Figure16: Sorghum (day-0)
(Spawn production from sorghum)



Figure17: Sorghum (day-9)
(Spawn yield obtained from sorghum)

The organic method of cultivation involved pasteurization method and pH, temperature and humidity maintenance and dark and light room incubation. With complete control of these parameters, the process was taken up in a properly fumigated sterile room. Followed pure exclusion of chemicals throughout the process.



Figure18: pin head formation



Figure19: medium growth



Figure 20: Final growth



With paddy straw as source substrate, the process is successful for milky mushrooms. While groundnut shell and sugarcane bagasse has also produced successful results in oyster mushroom cultivation.

Mushroom yield is standardized for both milk and oyster type. The process is successful with three batches of successful results.

This product is of ready to commercialize grade

The market cost for milk mushroom and oyster mushroom-

Milky mushroom:

Market price: kg 335/-

Our price: kg 150 or 200/- based on our investment for production.

Oyster mushroom :

Market price: kg 600/-

Our price: half rate 300/-

4. Beauty Soaps : Sumit Bhui

With the pandemic hailing everywhere, the market for soaps and cleaners has escalated in recent times. As people have become more conscious of personal hygiene, personalized and customized soaps of organic nature have immense value.

The lab has mentored preparation of cold pressed and melt and pour soap using tea tree oil, olive oil, sandal wood oil, khush roots, turmeric, tulasi, neem, safron, orange peel and charcoal based.

These soaps were hand made following the basic chemistry of saponification process. Different combination of oils needed for formulating a personalized or customised type of soap were used based on Lye calculator.

Multiple characteristics of soaps Manufactured, based on the different kinds of fats and Natural oils were evaluated

Highly demanded natural personalized organic soap having biodegradable nature, with pleasant smell were prepared using high quality oils. The property of soap in terms of its chemistry and the economic benefits were standardized. The process of soap preparation was based on thorough literature study

- The ingredients and recipe of a cold press and melt and pour soap were standardized
- The cold-process saponification using different fats and oils have been adopted. These soaps were characterised for their soap valued feature such as the colour, texture, leathering, and cleansing power, Conditioning, Bubbly, Creamy nature.
- **The cost of this soap is around 50% less than market cost.**
- **To commercialize these soap , with 25% margin profit can give a cost that can be viable in soap in Market**

1. Tea tree oil and olive oil based cold and press Soap



2. Castile soap***

Castile soap is a Highly demanded brand and a multipurpose soap based on olive oil.

Based on the skin care condition needed these soaps can be prescribed.





**KHUS ROOTS
SOAPS**



CHARCOAL SOAPS



TULASI SOAPS



NEEM SOAPS



TURMERIC SOAPS

5. Floral waste based Incense sticks: Siva nagajyothi

As a part of solid waste management, floral waste has been judiciously converted in aesthetic purpose material.

About eight million tonnes of flowers are offered across the temples, mosques, gurudwaras and in other worshiping centres in India (Subhojit, 2018), that is later dumped into rivers and other bodies of water in India every year, choking and polluting them, and leading to environmental degradation. As floral waste contains adequate nutrients and other lignocellulosic materials, it can be utilized for various purposes like compost making, biofuel and bio energy production, extraction of dyes and essential oils and also to produce valuable eco-friendly products like incense sticks, soaps etc.

In our incubation centre, we have been engaged in making incense sticks and dhoop sticks for insect repellent purpose and for aesthetic purpose. Based on standard literature, the making of this product has been standardized with flower waste, wood powder, jigat powder and essential oils

The cost of these product comes at 20% less than the market prize.



