

JAWAHARLAL NEHRU NEW COLLEGE OF ENGINEERING
SHIVAMOGGA – 577204



Department of Electrical and Electronics Engineering
CERTIFICATE

This is to certify that Social Connect and Responsibilities course

Is a bonafide work carried out jointly by

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These students of 3rd semester B.E., Electrical and Electronics Engineering under our supervision and guidance have completed Social Connect and Responsibilities course (Subject code: 21SCR36).

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ACTIVITY 1

PLANTATION AND ADOPTION OF TREE

Topic: Plantation and adoption of a tree

Date: 12.12.2022

Plant Name: Areca nut

Place of activity: JNNCE

Plant origin:

1. Areca nut is not a native crop of India.
2. Areca is a Malayalam language word which means "CLUSTER OF NUTS".
3. It is generally believed to be native to Malaysia or Philippines where it is grown in many varieties.
4. It is a tropical crop which grows from West Indies to the East Coast of Africa.
5. It also grows in China, Bangladesh Malaysia etc.

The process of chewing the areca nuts is attributed to VIETNAM and MALAYSIA. It was from southeast Asia that the crop spread to Asia and India where it is cultivated as a cash crop. It is conjectured that the ancient Indian literature provide information on betel nut and its mastication. The Indian Ayurveda texts also refers to the areca nuts as a traditional medicine.

Details of activity:



Fig:1.1 Plantation of Areca nut

Ourself Shraddha, Navya, Navana and Harini had wonderful experience by conducting this activity by planting areca nut. Our first activity was best activity we are looking after the growth of a plant.

Plant usage in daily life:

1. In the metabolic system as a digestive and carminative Anti-diabetic
2. Used against certain skin diseases
3. Used as aphrodisiac
4. Improves eyesight when used as Tambala seva
5. Helps in relieving asthma
6. CFTRI Mysore has developed a soft drink concentrate called Pan Supari Nectar

Appearance in folklore and literature:

The book titled Areca nut, edited by the former Director of CPCRI P. Chow Appa, being released by Chief Minister Basavaraj Bomby recently, the antioxidant activity of areca nut might play an active role in repairing DNA damage in cancer cells. While investigating the effect of aqueous and various organic extracts from different parts of Areca catechu on oxidative DNA damage in human hepatocarcinoma HepG2 cells, it was noticed that the methanol extract of eight-month-old areca nut husk showed a dose dependent inhibition of comet formation while other solvent extracts did not (Peychaud et al., 2009). The same chapter concluded: "Areca nut in its pure form is not dangerous but has got a plethora of medicinal properties, including curing ulcers, wounds and even cancer. Most of its folklore medicinal properties are now validated by scientific evidences. Detailed studies on the nature of active principle(s) responsible for all these properties and clinical trials on them are warranted to utilize such plant products effectively and profitably as these palms are available in plenty in most of the South and Southeast Asian countries.

Conclusion:

From this activity we have learnt to take care the beautiful and mesmerizing nature that we humans are living in. We have also come to know the responsibilities that we have to take for a plant to grow like that we have to take care of our health and the career for which we are working hard now. We have also learnt the importance of Areca nut in our daily life.

ACTIVITY 2

Heritage walk

Topic: Heritage walk

Date: 17.01.2023

Name of the Place Visited: Kudli

Survey:

1. What is the history of kudli?
2. What are the other names given for kudli?
3. Which is the different river connecting to kudli?

Koodli, also spelled Kudli or Kudali, is a small historic village in Shimoga District, in the Indian state of Karnataka. It is at the sangam (confluence) of two rivers, the Tunga River and Bhadra River at nearly 1,200 metres (3,937 ft). They meet here to give rise to the Tungabhadra River, a tributary of the Krishna river. Their valleys host many architectural sites. The village was a much larger town and pilgrimage center before the 14th-century, one destroyed during the Islamic conquests of the south. Important temples and their ruins here include the Sangamesvara temple (8th-century, oldest), Rameswaram temple, Sri Chintamani Narasimha temple, Sringeri Vediki temple (with monastery), Vishwakarma temple, Sharadamba temple (with monastery), Amma Devasthanana, and the Brahmeswara temple. Other scattered ruins of unknown temples are also found here.

History and culture:

The shrine is an ekakuta construction (single shrine and tower). The material used is Soap stone, a standard in Hoysala constructions. It is built on an east-west axial plan and comprises a sanctum (garbhagriha) which has a vesara style superstructure (Shikhara), and a vestibule (sukanasi) that connects the closed hall (mantapa) to the sanctum. The vestibule also exhibits a tower which from the outside looks like a low protrusion of the main tower over the shrine. Art historian Gerard Foekema calls it the "nose" of the main tower.

The entrance to the hall is via three porches; at the north, south and east, each of which is supported by four lathe turned polished pillars, a standard feature in Hoysala temples according to art historian Percy Brown. Inside the temple and facing the sanctum is a platform on which is mounted a sculptured image of Nandi the bull (a companion to the god Shiva). The sanctum houses a linga, the universal symbol of the god Shiva.

The platform on which the temple stands, the jagati, comprises five plain moldings (without friezes). The outer walls of the shrine are plain but for regularly spaced slender pilasters. The tower of the shrine has a finial called the kalasha (decorative water-pot like structure). Below the finial is a heavy dome like structure. This is the largest sculptural piece in the temple with a ground surface area of about 2x2 meters and is called the "helmet" or amalaka. Its shape usually follows that of the shrine (square or star shape). Below the dome the tower comprises three tiers, each descending tier increasing in height.

On the protruding tower of the vestibule is the royal Hoysala emblem; a warrior stabbing a lion.

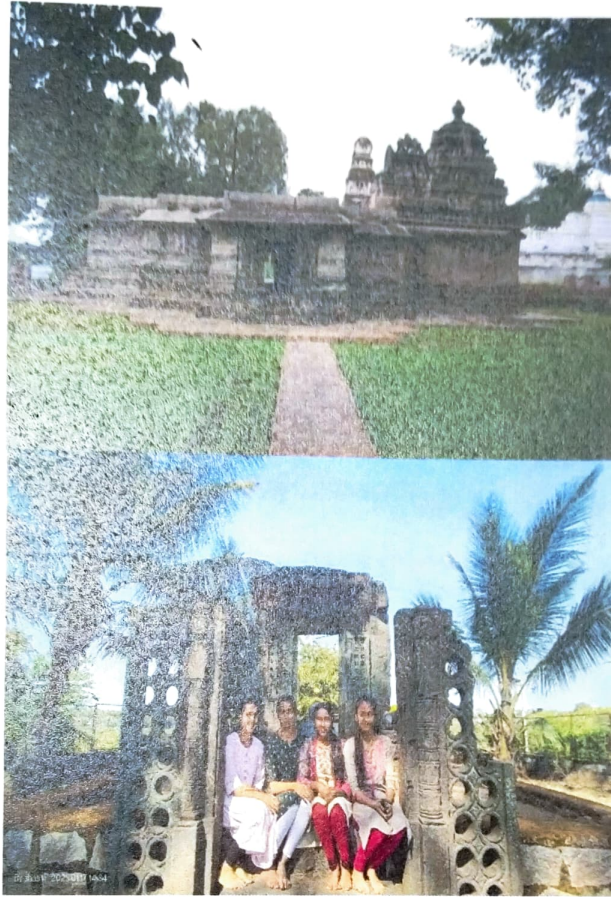


Fig:2.1 Rameshwara temple, kudli

Conclusion:

Koodli is the place where two rivers, the Tunga River and Bhadra River, meet to give rise to the Tungabhadra River. An exquisite view of the ‘Sangama’ makes the place exotic, with the 12th century Rameshwara Temple adding to its culture-rich natural beauty. There is also a popular Sri Chitamani Narasimha Swamy Temple beside the Sangameshwara temple. It believed to be installed and worshipped by Sri Prahlada. The rivers are worshipped and considered to be sacred. We have enjoyed the historical visit.

ACTIVITY 3

ORGANIC FARMING AND WASTE MANAGEMENT

Topic: Organic farming and waste management

Date: 11/01/2023

Usefulness of Organic Farming:

By segregating dry waste such as plastic, glass, metals, paper, etc. from wet waste it becomes easier to recycle them into new products. Whereas wet waste like vegetable leftovers, fruits, used tea bags etc. can be used for producing gas. Proper waste management is necessary because, it will help in reducing Greenhouse gas emission, Toxic gas explosions, Waste Landfill, Air, soil and water pollution.

Wet Waste Management in Neighboring Villages:

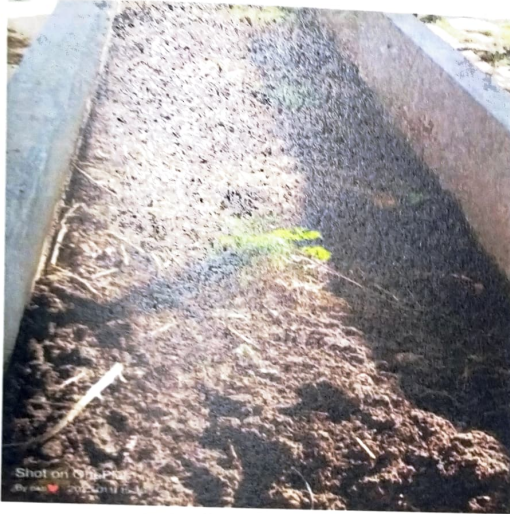


Fig:3.1 Composite



Fig:3.2 Earthworm



Fig:3.3 Agriculture college visit

Aerobic Composting: Decomposition of organic matter using microorganisms that require oxygen is known as aerobic composting. These microorganisms are inhabited naturally in the moisture surrounding organic matter. The oxygen diffuses in the moisture from the air is utilized by the aerobic microorganisms for their respiration and other metabolic activities. As a result of aerobic decomposition carbon dioxide (CO₂), water and heat are released as by-products. Production of heat in aerobic decomposition accelerates creation of micro-environments within the compost heap which helps in killing catastrophic pathogens and bacteria due to non-adaptability of these harmful organisms to these environmental conditions. These environmental conditions also help in proliferation of diverse bacterial species i.e., psychrophilic, mesophilic, and thermophilic. These microorganisms are basically classified as: First level decomposers, second level decomposers and third level decomposers

Anaerobic Composting: Anaerobic composting generally takes place in nature. Composting which progresses without the entanglement of oxygen is known as anaerobic composting. In this process, the organic material is breakdown by the different species of anaerobic microorganisms. Like aerobic microorganisms, anaerobic microbes also employ the N, P, K and other nutrients for their metabolic development. The major differences between aerobic and anaerobic composting are: breakdown of organic nitrogen to ammonia and organic acids; release of methane (CH₄) from the decomposition of carbon compounds. Reduction is the main process of breakdown of organic matter under anaerobic composting, though for a shorter period oxidation also takes place for preparation of final end product in anaerobic composting. There are four major stages of anaerobic decomposition i.e., Hydrolysis, acidogenesis, acetogenesis and methanogenesis

Segregation of waste:

Segregation of dry waste and wet waste can be done from home. This habit will reduce the burden of the municipal authorities to segregate the waste. To get started with it, you just need some awareness and the desire to act towards this. You need to keep these following things in mind before segregating waste at home:

1. Keep 2 separate dustbins for dry and wet waste.
2. Remove any covering on the kitchen waste before throwing it in the dustbin.
3. Do not mix wet waste with dry waste.
4. Keep the plastic from the kitchen dry and separate in the dry bin.
5. Keep the dry waste rinsed of any food content before throwing in dry bin.
6. Throw the sanitary waste in a separate paper bag.

Implementation in the campus:

1.Solid Waste Management



Fig:3.4 Solid Waste Management

Solid Waste Management System of one ton per day capacity has been established at JNNCE in the year 2017. The system consists of Shredder Machine and Chopper Machine. The biodegradable solid waste generated in the college campus and the hostel is collected and dumped in one place, further it is powdered and added with compost culture to increase rate of decay of the waste. The manure, thus obtained is used internally for the garden and the excess if any is sold to farmers at a marginal price.

1. Bio Diesel



Fig:3.5 Bio Diesel

JNNCE is producing around 4000 liters of bio diesel annually using various kinds of non-edible oil seeds and cooked oil. Around 10% bio diesel is blended with petro diesel and used in few of the college buses. JNNCE is committed to expand the usage of bio diesel in all its college busses, hence promoting green transportation. Bio diesel production and usage is not only a green initiative, it is also a sustainable and decentralized program to improve rural economy, and local job prospects.

Conclusion:

Organic farming is an agricultural method that adheres to the principles of sustainable development. It is an agricultural production management method that does not utilize pesticides, chemical fertilizers, industrial synthetic products, or genetically modified organisms. To fulfil the basic needs of the teeming millions, crop and livestock production has to be expanded each year, which simultaneously generates large quantities of agricultural wastes and fearmongering regarding their impacts on environment and human health. As aforementioned, the major portion of the agricultural wastes comes from crop residues, livestock, agro-industrial, and aquaculture routes therefore, managing the agricultural wastes is the need of the hour and requires robust strategic.

ACTIVITY 4

WATER CONSERVATION

Topic: Water Conservation

Date: 09/02/2023

Present Practices:

Water conservation is the preservation, control and management of water resources.

Importance of water conservation:

1. Creates more efficient use of the water resources.
2. Ensures that we have enough usable water.
3. Helps in decreasing water pollution.
4. Helps in increasing energy saving.

Agricultural conservation:

Agricultural water is mostly lost due to leaks in canals, runoff and evaporation. Some of the water conservation techniques used in the agricultural are sprinklers and drip irrigation.



Fig 4.1: Sprinkler system

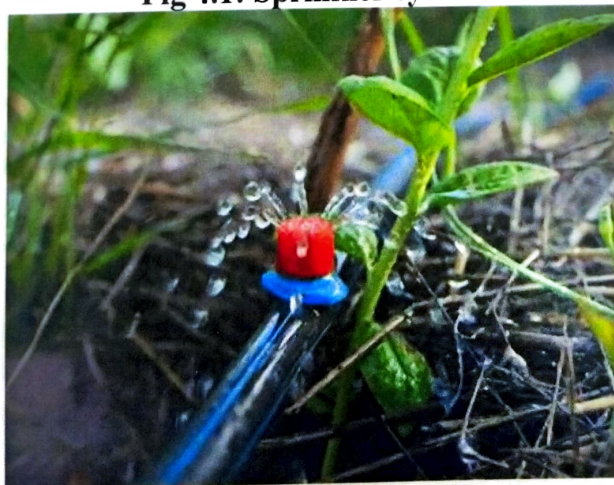


Fig 4.2: Drip irrigation

Domestic conservation:

It is necessary that each of us gets access to an adequate amount of water. Wastage of water can occur at the individual level as well as knowingly or unknowingly. Wastage can occur while brushing teeth, shaving, bathing, washing etc. The leakage of taps is also another source where significant water wastage occurs.

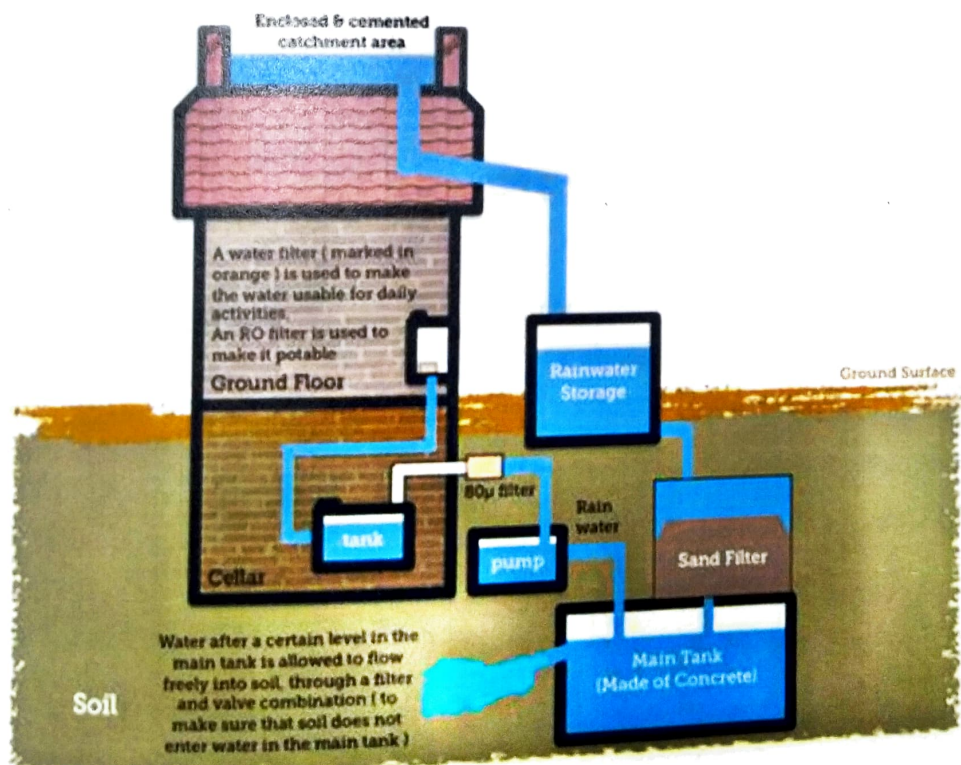
All of us have the responsibility to conserve water. Following are the methods through which water can be conserved:

1. Usage of a bucket of water to take a bath than using a shower.
2. Usage of low flow taps.
3. Usage of recycled water for lawns.
4. Repairing the leaks that are present in the taps.
5. Recycling of water wherever possible.

Strategies used for water conservation:

1. Rainwater harvesting:

Water obtained through rain generally flows away as surface runoff. Rainwater can be saved and is used to replenish the groundwater levels of the Earth. This method collects rainwater from rooftops before being routed into percolation pits via pipes. Rainwater is filtered before entering recharge pits or ground wells.



2. Improved irrigation techniques - sprinkler and drip irrigation.
3. Use of traditional water harvesting structures. An example includes the Bawris. The construction of Bawris is for the storage of water and recharge of groundwater.
4. Minimising the consumption of domestic water.
5. Creating awareness on water conservation.
6. Recycling water

Implementation in the campus:

1. Sewage treatment plant:



Fig:4.3 Sewage water treatment

Sewage water treatment is the process of removing contaminants from wastewater, primarily from household sewage. It includes physical, chemical, and biological processes to remove these contaminants and produce environmentally safer treated wastewater (or treated effluent). A by-product of sewage treatment is usually a semi-solid waste or slurry, called sewage sludge, it has to undergo further treatment before being suitable for disposal or land application.

JNNCE has installed Sewage Treatment Plant(STP) to treat the sewage produced in the campus. The clean water obtained after treating the sewage is utilized to maintain the grass grown in the cricket stadium and lawns inside the campus. The solid sludge obtained is used as manure for gardening. The capacity of the STP is 200KLD.

2. Rain water harvesting:



Fig:4.4 Rain water harvesting arial view



Fig:4.5 Rain water harvesting

Rain water harvesting is the gathering or accumulating and storing of rain water. Rain water can be used for drinking, irrigation and for ground water recharge purpose. Rain water can be collected from roofs, sloppy ground, roads, etc..., rainwater coming from roof tops are in good quality compared to others.

The rain water from all the buildings in the campus is collected in a huge reservoir constructed which has a capacity of 10 million litres. The annual collection of water is around 6 million litres. The water collected in the reservoir is treated using indigenously developed water treatment system and supplied for in house consumption for other than drinking & cooking purposes.

Conclusion

We should understand the importance of water conservation from the fact that now only 1% of water is left on earth. And if we continue to waste it in this way, all the sources of water can be exhausted in future.

ACTIVITY 5

FOOD WALK-COOKING WITHOUT FIRE

Topic: Cooking without Fire

Date: 30/01/2023

Recipes Prepared: Puffed masala rice (masala mandakki) and lemon juice



Fig:5.1 Cooking without fire

Ingredients used:

i. Recipe 1: masala mandakki

1. Puffed rice
2. Onion
3. Tomâto
4. Salt
5. Chilli powder
6. Botti
7. Coriander leaves
8. Green chilly

ii. Recipe 2: lemon juice

1. Lemon
2. Water
3. Salt