

WASTE MANAGEMENT

SOLID WASTE MANAGEMENT

The University and colleges pays dedicated focus to see that minimal waste is generated in the campus. Solid waste is segregated as bio degradable and non-degradable and handed over to Tirupati Municipal corporation as a part of Swachh Bharat initiative and Clean and Green Tirupati. All Departments and classrooms are provided with dustbins for dry wastage disposal. Segregation of waste in to dry and wet waste from the separately allotted dustbins is done in strategic locations, thus maintaining the Campus clean and Eco-friendly. The use of plastic carry bags, cups and laminated paper plates are prohibited on the campus. Students and staff are advised to bring cloth bags. Workshops and awareness programmes were organized in the university.





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Azadi Ka
Amrit Mahotsav



SRI VENKATESWARA UNIVERSITY

Department of Chemistry, SVU College of Sciences, Tirupati.

Awareness Programme on "SOLID WASTE MANAGEMENT" in Rural Areas Around Tirupati



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Amrit Mahotsav



SRI VENKATESWARA UNIVERSITY

Department of Chemistry, SVU College of Sciences, Tirupati

Awareness Programme on "SOLID WASTE MANAGEMENT" (Elimination of Single Use Plastics) In Rural Areas Around Tirupati

Sponsored By

Central Sector Scheme of Hazardous Substances Management Division (HSMD),
Ministry of Environment, Forest and Climate Change (MoEF&CC), G.O.I.

Organized by

Prof. G.Madhavi
Principal Investigator

Single Use Plastic Banned from 01st July - 2022



Flag



Glasses



Plastic Straw



Ear Buds



Wrapping Films



Candy Sticks



Cups



Cutlery



(Less than 100 Microns)

Banners



Thermocol Decoration



Cigarette Packets



Balloon Sticks



Awareness programmes on Solid Waste management











ఘనవ్యర్థాల నిర్వహణ పర్యావరణానికి ఎంతో మేలు : ఆచార్య మాధవి



విశాలాంధ్ర - తిరుపతి

ఎస్వీయూ: పారిశ్రామిక విప్లవం నేపథ్యంలో సమాజంలో ఘన వ్యర్థాల యాజమాన్య నిర్వహణ పద్ధతులు పాటించడం ద్వారా

పర్యావరణానికి ఎంతో మేలు కలుగు తుందని శ్రీ వేంకటేశ్వర విశ్వవిద్యాలయం రసాయన శాస్త్రం అధ్యాపకులు ఆచార్య జి.మాధవి పేర్కొన్నారు. ఆచార్య మాధవి ఆధ్వర్యంలో ఎంఓ ఈఎఫ్, సిసి ప్రాజెక్టులో భాగంగా రసాయనశాస్త్ర విభాగం విద్యార్థులు, ఎన్ సిసి, ఎన్ ఎస్ ఎస్ విద్యార్థులతో సంయుక్తంగా ఆదివారం ఎస్వీయూ లోని రసాయన శాస్త్ర విభాగం నుంచి తుమ్మలగుంట వరకు ఘన వ్యర్థాల నిర్వహణపై అవగాహన ర్యాలీ నిర్వహించారు. ఈ కార్యక్రమంలో ఎస్వీయూ అధ్యాపకులు రెడ్డి భాస్కర్ రెడ్డి, సరిత, ఉమా మహేశ్వర్ రెడ్డి, శ్రీనివాసులు రెడ్డి, తుమ్మలగుంట సర్పంచ్ సుబ్బారెడ్డి, పరిశోధకులు, విద్యార్థులు, అంగన్వాడీ కార్యకర్తలు, ప్రాథమిక ఆరోగ్య కేంద్రం సిబ్బంది తదితరులు పాల్గొన్నారు.

Single Use Plastic Banned

from 01st July - 2022



**Cigarette
Packets**



Balloon Sticks



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Flag



Glasses



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Wrapping Films



Candy Sticks



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Cups



Cutlery



Solid waste management in the campus



LIQUID WASTE MANAGEMENT

Next to air, water is the most important element for the preservation of life. Water is a finite commodity which, if not managed properly, will result in shortages in the near future. Water conservation can go a long way to help alleviate these impending shortages. Students are made aware that conserving water is equivalent to conserving their future. Drinking water from the tap, and refilling bottle as often as the students need is one of the best practice followed at SVU Disposable bottles are not allowed. Sustainable liquid waste treatment is adopted in campus through bioremediation using microorganism metabolism which helps to minimize the chemical and biological load of domestic sewage and is good for gardening purpose.



Liquid Waste Management



BIOMEDICAL WASTE MANAGEMENT

In the S.V University biomedical waste is produced in the labs where animals are using for research purpose. "Bio-medical waste" means wastes that are generated during diagnosis, treatment or immunization of human beings or animals or research activities or in the production or testing of biologicals. Medical waste includes all the waste generated from the Health Care Facility which can have adverse effects on the human health or to the environment in general if not disposed properly. In general, the quantity of biomedical waste will be 5% to 10% of total waste generated from the campus. Though the amount of waste is very negligible amount, the carcass of the animals are stored in the -20 °C for the time being. After sufficient amount of carcass stored university hand over to Tirupati Municipal Corporation for Biomedical waste management. Workshops on Bio Medical Waste Management Rules, procedures were conducted in the University.





Bio medical waste management awareness programme.



Paper clipping on Bio Medical Waste



Animal house is one of the sources of biomedical waste.

E-WASTE MANAGEMENT

With the proliferation of electronics also comes the challenge of their proper disposal. SV University has very efficient mechanism to dispose E wastes generated from various sources. E-wastes are generated from computer laboratories, electronic labs, Physics Labs, Chemistry Lab, Biotech Labs, Academic and Administrative Offices. The e-waste includes out of order equipment's or obsolete items like lab instruments, circuits, desktops, laptops and accessories, printer, charging and network cables, Wi-Fi devices, cartridges, sound systems, display units, UPS, Biometric Machine, scientific instruments etc. All these wastes are put to optimal use. All such equipment's which cannot be reused or recycled is being disposed off through authorized vendors. Instead of a new procurement Buy-Back option is preferred for technology up gradation. The University is grappling with ways to efficiently and cost-effectively handle the issue of electronic waste, ore-waste, on campus. It's normal for people to discard of products due to normal wear and tear, but technological advancements have accelerated e-waste growth as students, faculty and administrators frequently upgrade to better gadgets. This surge has forced University administrators to carefully examine and address the environmentally responsible disposal of these products on a campus-wide scale. E Waste collected is stored and disposed off annually. Students are also made aware of E-Waste issues and its safe disposal.





E-Waste management



Athletic Sculpture

WASTE RECYCLING SYSTEM

Degradable solid waste collected from cafeteria, Boys and Girls Hostels, Guest Houses and from Residential Quarters are dumped in the Vermi Compost Unit to make some Organic fertilizer which are used for Gardening.



Vermi compost

HAZARDOUS CHEMICALS AND RADIOACTIVE WASTE MANAGEMENT

Campus is free from any kind of hazardous waste. Ideally, collection, transportation and proper handling of chemicals begin with understanding the potential hazards related to their use. All stakeholders, especially from Academic departments and laboratories are responsible for disseminating information on hazardous materials being used in the facility. Various types of chemicals are used in chemistry labs for number of experiments in the University. Some might be harmful while others may not. Some of the dangerous chemicals in lab are Acetonitrile, Chloroform, Dimethyl sulfoxide, Formaldehyde, 2-mercaptoethanol, Methanol, Sodium Azide, Sodium Hydroxide, Sodium hypochlorite, and Tetrahydrofuran. Highly toxic chemicals such as Arsenic trioxide, Chlorine, Hydrogen cyanide, Nitrous oxides, Phosgene, Potassium cyanide, Sodium arsenate, and Sodium cyanide which are dangerous and hence they are handled with care.

General procedures while working with hazardous chemicals -

1. Personal behaviour.
2. Minimising exposure to hazardous chemicals.
3. Avoiding Eye injury.
4. Avoiding ingestion of hazardous chemicals.
5. Avoiding inhalation of hazardous chemicals.
6. Avoiding injection of hazardous chemicals.
7. Minimising skin contact.
8. Storage of chemicals.
9. Use & maintenance of equipment and glassware.
10. Working with scaled-up reactions.
11. Responsibility for unattended experiments & working alone.
12. Chemistry demonstration & Magic shows.
13. Responding to accidents and emergencies.
14. Handling the accidental release of hazardous substance.

Four fundamental principles followed in the labs are -

1. Plan ahead: Determine the potential hazards associated without an experiment before beginning.

2. Minimize exposure to chemicals:

Do not allow laboratory chemicals to come in contact with skin. Use laboratory chemical hoods and other ventilation devices to prevent exposure to airborne substance whenever possible.

3. Do not underestimate hazards or risk:

Assume that any mixture of chemicals will be more toxic than its most toxic component. Treat all new compounds and substances of unknown toxicity as toxic substances.

4. Be prepared for accident:

Before beginning an experiment know what specific action to take in the event of accidentally release of any hazardous substance. Post telephone number to call in an emergency or accident in a prominent location. Know the location of all safety equipment and the nearest fire alarm and telephone.

Be prepared to provide basic emergency treatment. Keep your co-workers informed of your activities so they can respond appropriately.

Common Laboratory chemicals & their Hazard class-

1. Oxidizers: inorganic Nitrates, Nitrites, permanganates, chlorates, perchlorates, iodates, periodates, persulfates, chromates, hypochlorite, peroxides, sodium nitrates, sodium updates, Ammonium persulfate, sodium peroxides.

2. Oxidizing acids: Nitric acid, perchloric acids, Hydrogen peroxide, periodic acid, chromic acids.

3. Flammable liquids: methanol, ethanol, acetone, xylene, toluene, ethyl acetate, tetrahydrofuran, ethyl ether, Benzene, Dimethylformamide, Hexane.

3. Inorganic bases: metal hydroxides such as sodium, potassium, calcium, nickel hydroxide Ammonium hydroxide.

4. Organic bases: Amines such as Ethanolamine, tributylamine.

5. Acid flammable liquids: Glacial acetic acid, acetic acid, acetic anhydride, formic acid, propanoic acid.

6. Organic acids: Butyric acid, pentanoic acid.

7. Inorganic acids: Hydrochloric acid, Sulfuric acid, Phosphoric acids, Hydrofluoric acid.

8. Poisons: Acrylamides, chloroform, Formaldehyde, phenol, Glutaraldehyde, methylene chloride,

Toxic metals such as silver chloride, mercury acetate, barium carbonate, lead acetate, cadmium sulfate.

9. Cyanides

10. sulfides

11. Pyrophorics (air reactives)





Hazardous Chemicals are kept separately



BIOGAS PLANT

A Biogas Plant is located in the Campus for energy conservation. Biogas is a renewable energy source, a mixture of gases produced by the breakdown of organic matter in the absence of oxygen (anaerobically), primarily consisting of methane and carbon dioxide. Biogas is produced from raw materials such as plant material, leaves, Kitchen waste like Vegetables and fruits peelings, stale food, waste generated in the campus. sewage, green waste or food waste etc. Biogas is primarily methane (CH_4) and carbon dioxide (CO_2) and hydrogen sulphide (H_2S), moisture and siloxanes. The gases methane, hydrogen, and carbon monoxide (CO) can be combusted or oxidized with oxygen. This energy release allows biogas is used as a fuel; it can be used for any heating purpose, such as cooking. It can also be used in a gas engine to convert the energy in the gas into electricity and heat.



Biogas Plant Facility in the Campus

WASTE WATER RECYCLING

Waste water management has been critical towards our sustainability models for reducing and reusing water at our campuses. The waste water after treatment is proposed to be utilized effectively for gardening and washing purposes. Waste Water Recycling process facilitates the treatment of existing contaminants in the water or reduces the concentration of such contaminants so that the water becomes fit for the desired use. One of such seen in S V University Working Women's Hostel.



Waste Water Recycling in Women's Hostel


The Director
NAAC Committee
S.V. University
TIRUPATI - 517 502