

Manipal University Jaipur's Processes to Prevent Water Pollution

Clean and safe water is a fundamental necessity for human health and the environment. Manipal University Jaipur, as centers of education and innovation, have a responsibility to protect and preserve its surrounding ecosystems and communities. One crucial aspect of this responsibility is to prevent polluted water from entering the water system, including pollution caused by accidents and incidents at the university.

One of the primary steps Manipal University Jaipur takes is to ensure it complies with all environmental regulations and standards set by local, state, and federal authorities. This includes obtaining permits and licenses that govern water discharges and pollution prevention. Manipal University Jaipur regularly monitors its activities to ensure that they do not exceed established pollution limits. Universities often deal with various hazardous materials, including chemicals used in laboratories and maintenance activities. To prevent these substances from contaminating water sources, Manipal University Jaipur has strict protocols for handling, storage, and disposal. Hazardous waste is typically collected and disposed of in accordance with environmental regulations. Stormwater runoff can carry pollutants into local water bodies. Manipal University Jaipur implemented comprehensive stormwater management plans to control and treat runoff. This includes installing retention basins, using permeable surfaces, and employing filtration systems to remove contaminants before they can reach nearby rivers or lakes. Accidents can happen, and universities need to be prepared to respond swiftly to prevent pollutants from reaching water systems, Manipal University Jaipur has well-defined spill response plans in place, outlining the steps to contain, clean up, and report spills of hazardous materials. Training programs ensure that staff and students are knowledgeable about these procedures. Manipal University Jaipur has extensive green spaces. Implementing sustainable landscaping practices can significantly reduce water pollution risks. This includes using native plants that require fewer chemicals and fertilizers, practicing responsible irrigation, and minimizing pesticide use. The university generates wastewater from various sources, including laboratories, restrooms, and dining facilities. To ensure that this wastewater is treated properly, Manipal University Jaipur operates on-site treatment facilities. These facilities are designed to remove contaminants and meet stringent water quality standards before discharging the treated water.

Through compliance with environmental regulations, responsible management of hazardous materials, effective stormwater control, spill response plans, sustainable landscaping, wastewater treatment, research and innovation, and community engagement, Manipal University Jaipur is taking significant steps to prevent polluted water from entering the water system.

INITIATIVE TOWARDS
HAZARDOUS WASTE
DISPOSAL AT MANIPAL
UNIVERSITY JAIPUR



MANIPAL UNIVERSITY
JAIPUR

(University under Section 2(f) of the UGC Act)



CLEAN AND SMART CAMPUS

- Solar Power Plant of 2.3 MWp is installed on roof-top of the buildings, Ground Mounted and parking shed in the Campus - one of the largest roof-top Solar Power Plant in India for any Private University.
- The University is a '**Zero Discharge Campus**', with Rain Water Harvesting, Waste water recycling and reuse and Ground Water recharging in place. Water conservation through campus wide drains and ponds for water collection.
- Sewage treatment plants on both sides of the campus.
- Campus greening through extensive tree plantation.
- The University has a Bio-Gas generation system using Kitchen waste, producing 30kg of Gas per day with 500 kg of Kitchen waste.
- All buildings are optimally designed to maximize daylight and minimize heat gains.
- Digital Campus



**MANIPAL UNIVERSITY
JAIPUR**

(University under Section 2(f) of the UGC Act)

SOLID WASTE MANAGEMENT- Segregation & Collection at Source



Solid waste Generation Data



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MEDICAL WASTE SEGREGATION MANAGEMENT



SOLID KITCHEN WASTE MANAGEMENT

Collection frequency & clearance: Twice a day

Time: 9:00 AM & 4:00 PM

Sr.No.	Department/ Area of source of waste (Every point of waste generation within the campus should be identified and listed - cross)	Types of waste generated in each of the point source (for each type of waste, use separate row)						Dry (in kgs/ day)
		Food wastage	Paper/Card board	Plastic	Wood	Glass	Metal	
Mar-19	MUJ Academic Blocks		6790	65	60		120	7035
Mar-19	MUJ HOSTEL Blocks	4279						
Apr-19	MUJ Academic Blocks		92	33	44	0	20	189
Apr-19	MUJ HOSTEL Blocks	3689					940	940
May-19	MUJ Academic Blocks		73	28	31	2	17	151
May-19	MUJ HOSTEL Blocks	2452		591			860	1451
Jun-19	MUJ Academic Blocks		68	25	31	1	17	142
Jun-19	MUJ HOSTEL Blocks	1160					700	700
Jul-19	MUJ Academic Blocks		85	36	45	0	26	192
Jul-19	MUJ HOSTEL Blocks	4638					240	240
Aug-19	MUJ Academic Blocks		101	40	47	0	29	217
Aug-19	MUJ HOSTEL Blocks	4596		260			380	640
Sep-19	MUJ Academic Blocks		97	30	62	1	37	227
Sep-19	MUJ HOSTEL Blocks	2839						
Oct-19	MUJ Academic Blocks		170	95	92	0	82	357
Oct-19	MUJ HOSTEL Blocks	4799						
Nov-19	MUJ Academic Blocks		66	55	71	0	75	192
Nov-19	MUJ HOSTEL Blocks	4155						
Dec-19	MUJ Academic Blocks		81	58	48	0	45	187
Dec-19	MUJ HOSTEL Blocks	2033						
Jan-20	MUJ Academic Blocks		112	62	51	0	76	225
Jan-20	MUJ HOSTEL Blocks	6195						
Feb-20	MUJ Academic Blocks		73	70	51	8	82	202
Feb-20	MUJ HOSTEL Blocks	6178						
Mar-20	MUJ Academic Blocks		55	50	46	8	49	159
Mar-20	MUJ HOSTEL Blocks	5159						
Apr-20	MUJ Academic Blocks		23	17	26	2	17	68
Apr-20	MUJ HOSTEL Blocks	NIL						
May-20	MUJ Academic Blocks		40	46	35	5	41	126
Jun-20	MUJ Academic Blocks		38	35	24	3	42	100
Jul-20	MUJ Academic Blocks		43	33	33	6	59	115
Aug-20	MUJ Academic Blocks		20	21	31	3	26	75
Sep-20	MUJ Academic Blocks		27	16	22	6	41	71



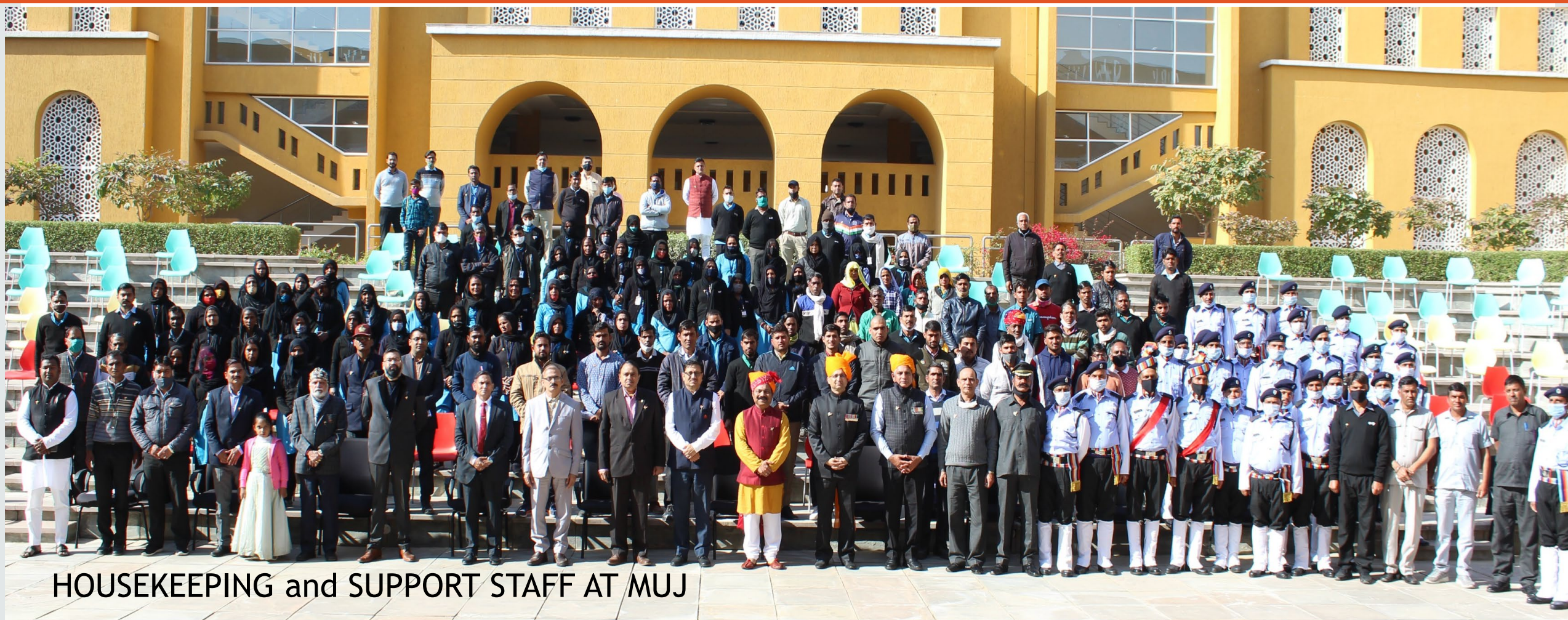


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Clean And Smart Campus 2021

HUMAN RESOURCE FOR WASTE MANAGEMENT



HOUSEKEEPING and SUPPORT STAFF AT MUJ



GREEN CLUB @ MUJ since 2012

The Green Club of Manipal University Jaipur has been an active social and environment fruition club since 2012 and has continued to aid a helping hand for the benefactor factor of the environment. Since its inception, the club has motivated the students or the Y-Generation and faculty members to take initiative about the environment that we subsist in which sorrowfully is under rapid depletion. From social awareness, technical solutions, to more evident clean drives and plantation, the club has been working extensively on such projects and pioneers path breaking ideas for the future.



➤ [Green Club Report \(click here\)](#)

T44 Gulmohar *Fabaceae*

Planted by - Shri Purushottam Agarwal
Year of Plantation - 2014
Family- Leguminosae - Leguminosae

Nature - Deciduous
Climate - Temperate and tropical
Texture of leaf - wrinkled/pulvini
Shape & Colour of leaf - Range from pinnately or palmately compound to simple, green
Foliage of tree - Dense
Soil Type - soil that is above freezing temperatures and offers enough warmth
Height of tree - 10-15m
Diameter of trunk - 2 inches
Region - predominant outside the tropics

Uses
- Anti-diabetic activity
- To treat polymenorrhoea, anemia, ulcers and menorrhagia (during pregnancy).
- In the treatment of diarrhoea, in overcoming the protein deficiency Kwashiorkor and can also impact hypocholesterolaemic conditions, and thyroxine-induced hyperglycaemia.









T40 Rugtoora *Spathodea campanulata*

Planted by - Shri N.R Narayan Murthi
Year of Plantation - 2018
Family- Bignoniaceae

Nature - Deciduous
Climate - Cooler tropical climate
Shape & Colour - Bark: when young is pale grey brown and smooth which turns to grey-black.
Foliage of tree - Compact, round crown of dense and dark green foliage
Height of the tree - 7-25 m
Region - West coast from Guinea to Angola, and inland across the tropical rainforest region to southern Sudan and Uganda

Uses
- Cure rashes and inflamed skin,
- Lower blood sugar levels.
- Treat ulcers,
- Treat diabetes,
- Cure glaucoma







T43 Kadamb *Neolamarckia cadamba*

Planted by - Smt. Vasanti Pai
Year of Plantation - 2012
Family- Madder family

Nature - Evergreen
Climate - Tropical
Shape & Colour - Flowers: flowers are sweetly fragrant, red to orange in colour, occurring in dense
Foliage of tree - broad crown and straight cylindrical bole
Soil Type - it grows well in deep moist alluvial soils, often along river banks.
Height of tree - up to 45 m
Diameter of trunk - 100cm
Region - South and Southeast asia

Uses
- Low-grade timber and paper
- Timber is used for plywood and light construction.







T39 Sheesham *Dalbergia sissoo*

Planted by - Shri G.S. Sandhu (IAS)
Year of Plantation - 2014
Family- Leguminosae - Mimosoideae

Nature - Deciduous Tree
Climate - Indian subcontinent and southern Iran
Texture of trunk: are often crooked when grown in the open. Leaves are leathery
Foliage of tree - Round foliage
Soil Type - Soils range from pure sand and gravel to rich alluvium of river banks.
Height of tree - 25 m (82 ft)
Diameter of trunk - 2-3 m
Region - Native to India, Pakistan and Nepal

Uses
- Decoration of leaves is useful in gonorrhoea.
- Wood is alterative, useful in leprosy, boils, eruptions and to allay vomiting.
- The wood is used for making doors, window frames, furniture, especially cabinets and much more.
- The pulp of wood is also used for making papers.







T10 Saat Patti *Alstonia scholaris*

Planted by - Dr. Ajay Kumar
Year of Plantation - 21st March 2012
Family- Apocynaceae

Nature - Evergreen
Climate - Tropical
Leaf Texture - Glossy & Greyish
Leaf Shape & Colour - Flattened roots similar to buttresses.
Foliage Shape - Slightly round.
Soil Type - Red Alluvial
Tree Height - 20-40 mts.
Bark Diameter - 100-200cms.
Region - Malaysia Pakistan

Uses
- *Alstonia scholaris* has been used in different system of traditional medication for the treatment of diseases.
- The wood of *Alstonia scholaris* has been recommended for the manufacture of pencils.
- Wood close to the root is very light and of white color, and is used for net floats, household utensils, trenchers, corks, etc.
- Used for landscape purpose.






T17 Neem *Azadirachta indica*

Planted by - Dr. Kiran Mazumdar Shan
Year of Plantation - 9th August 2014
Family- Mahogany family, Meliaceae

Nature - Evergreen
Climate - Tropical & Semi-Tropical Region
Leaf Texture - Mildly soft
Leaf Shape & Colour - Long medium to dark green
Foliage Shape - Round
Soil Type - All types
Tree Height - 15 to 20 mts.
Bark Diameter - 30-80 cms.
Region - Burma, Iran, India and Pakistan

Uses
- The neem tree is noted for its draught resistance. It can grow in many different type of soil.
- Dried neem leaves prevents insects from eating clothes and can also be used in storing rice.
- The flowers and the shoot are eaten as a vegetable.
- Products made from neem tree can be used as medicine.
- Neem is a key ingredient in pesticides.










T19 Bottle Brush *Callistemon*

Planted by - D.S.Chauhan
Year of Plantation - 18-01-2017
Family- Myrtle

Nature - Evergreen
Climate - Temperate regions
Texture of flower - Fury
Shape & Colour - Flower: Red flower spikes
Foliage of tree - Crown is rounded
Soil Type - Well-drained, sandy soil. Also grow in clay or loam
Height of tree - 10-15 ft
Diameter of tree - 10 to 15m
Region - Western North America and in colder regions in greenhouses

Uses
- Ornamental landscaping
- Common remedies for treatment of diarrhoea, dysentery and rheumatism

T24 Ashoka *Saraca asoca*

Planted by - Shri J.C.Mohanty
Year of Plantation - 18-01-2017
Family- Legumes

Nature - Evergreen
Climate - Rain-forest tree. Central areas of Deccan plateau
Texture of Bark: Warty surface
Shape & Colour - Leaf: Green colored leaves with oblong shape.
Foliage of tree: Shiny foliage
Height of the tree - 10-15' tall
Diameter of trunk: 3m
Region - Central areas of the Deccan plateau

Uses
- Reduces acne, pimple
- Very useful in gynaecological conditions
- Boosts memory power
- Beneficial in diabetes







T15 Maulsari *Minusops elengi*

Planted by - Ms Krishna Poonia
Year of Plantation - 18-01-2017
Family- Sapotaceae (Mahua family)

Nature - Evergreen
Climate - Summer season
Shape & Colour - Bark: Thick bark and appears dark brown in color
Foliage of tree - Glossy, dark green leaves
Soil Type - Rich free draining loamy and sandy soil with pH of 5.5-8.5
Height of tree - 9-18 m (30-59 ft)
Diameter of trunk - 1m (3ft 3in)
Region - Tropical forest in South Asia, Southeast Asia and northern Australia

Uses
- Treatment and maintenance of oral hygiene
- Rinsing mouth with water solution made with bakul helps in strengthening the teeth
- Prevents bad breath
- Keeps gums healthy







T42 Bargad *Ficus benghalensis*

Planted by - Dr. Ramdas M. Pai
Year of Plantation - 21-03-2012
Family- Moraceae

Nature - Evergreen
Climate - Monsoon and rain forests
Texture of leaf - leathery
Shape & Colour - Heart and green
Foliage of tree - Round Foliage
Soil Type - High moisture
Height of tree - up to 30m (100 ft)
Diameter of trunk - spreads laterally indefinitely
Region - south eastern region of India

Uses
- Boosts immunity
- Prevents depression
- Treats vomiting
- Lowers cholesterol
- Prevents inflammation







T19 Bottle Brush *Callistemon*

Planted by - D.S.Chauhan
Year of Plantation - 18-01-2017
Family- Myrtle

Nature - Evergreen
Climate - Temperate regions
Texture of flower - Fury
Shape & Colour - Flower: Red flower spikes
Foliage of tree - Crown is rounded
Soil Type - Well-drained, sandy soil. Also grow in clay or loam
Height of tree - 10-15 ft
Diameter of tree - 10 to 15m
Region - Western North America and in colder regions in greenhouses

Uses
- Ornamental landscaping
- Common remedies for treatment of diarrhoea, dysentery and rheumatism











T8 Peela Gulmohar *Petroporum pterocarpum*

Planted by - Dr. D. Srikanth Rao
Year of Plantation - 21st march, 2012
Family- Legumes

Nature - Deciduous
Climate - Tropical warm climate
Leaf Texture - Fern like leaves
Leaf Shape & Colour - Rusty red tomentose.
Foliage Shape - Round
Soil Type - moist, but well drained soil.
Tree Height - Approx. 10 mts.
Bark Diameter - 20-25 mts.
Region - Sri Lanka, the Andamans & Australia

Uses
- Gulmohar is well known for its beautiful flowers.
- It also has some medicinal properties like Anti-diabetic activity, Anti-bacterial activity, Anti-diarrheal property, Hepatoprotective/Cytotoxic property, Anti-microbial activity, Anti-inflammatory activity

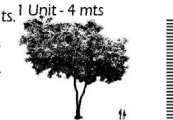
T6 Karanja *Millettia pinnata*

Indian sub continent & Southeast Asia

Planted by - Shree Abhay Jain
Year of Plantation - 21st March 2012
Family- Fabaceae



Nature - Evergreen
Climate - Humid & Sub Tropical Region
Leaf Texture - Soft & Shiny
Leaf Shape & Colour - Round & Glossy
Deep Green
Foliage Shape - Round
Soil Type - Sandy stony & clayey
Tree Height - 15 to 25 mts.
Bark Diameter - 50 cms.
Region - Temperate Asia, Australia



T45 Kachnar *Bauhinia variegata*

Eastern Africa

Planted by - Shri Sunil Arora
Year of Plantation - 16-04-2012
Family- Leguminosae - Legumes



Nature - Deciduous
Climate- The desert/desert terrain plain of Western or Eastern Ghats. Plateaus, plains of Ganges, Doab Punjab, eastern ranges, north east zone, high altitudes.
Shape & Colour of tree - Twigs of tree are slender, light green, angled, hairy and brownish grey in colour.
Foliage of tree -Spreading crown and a short bole.
Soil Type - Acid and Neutral
Height of tree - Small to medium upto 15 M



Uses
- Treat hypothyroidism
- Controls blood sugar
- Treatment of digestive system problems

T9 Jamun *Eugenia jambolama*

Indian sub continen

Planted by - Brig(Dr.) P.S.Siwach(Retd.)
Year of Plantation - 21st March 2012
Family- Myrtaceae



Nature - Evergreen
Climate - Tropical & Sub Tropical Region
Leaf Texture - Smooth, Leathery
Leaf Shape & Colour - Glossy Dark Green, Long with Pointy tips
Foliage Shape - Round
Soil Type - Deep Loamy
Tree Height - 30 mts.
Bark Diameter - 40-100 cms
Region - India, Myanmar & Srilanka



Uses
- Jambolan fruits can be eaten raw or are made into jams.
- Fruits have great nutritional value.
- Jambolan is used in medicine for diabetes, swelling of the stomach, constipation, diarrhea & other conditions.
- Jamun fruit is used in treating common cold, cough & flu.
- Jamun fruit helps in regulating blood pressure.
- The tree bark can be used for decoration.

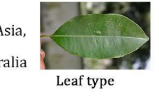
T15 Maulsari *Minusops elengi*

South Asia

Planted by - Ms Krishna Poonia
Year of Plantation - 18-01-2017
Family- Sapotaceae (Mahua family)



Nature -Evergreen
Climate - Summer season
Shape & Colour - Bark: Thick bark and appears dark brown in color
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Cleanliness Drive in Dehmi Kalan Jaipur



Cleanliness drive by our housekeeping staff

LIQUID WASTE MANAGEMENT-INHOUSE- SEWAGE TREATMENT PLANT

MUJ is equipped with **4 STP** Plants with different capacity 1000 KLD, 350 KLD(two) and 150 KLD **IN TOTAL 1850 KLD.**

Sewage treatment removes contaminants from wastewater, which includes physical, chemical, and biological processes to remove these contaminants and produce environmentally safer treated water (it has been used for flushing and gardening). In normalcy are producing 1850KL treated water per day.

➤ [Production of recycle waste-water report \(click here\)](#)





LIQUID WASTE MANAGEMENT-INHOUSE- SEWAGE TREATMENT PLANT





**MANIPAL UNIVERSITY
JAIPUR**

MUJ/REGR/PCB/267/2020

Date: 11.11.2020

To
The Member Secretary
Rajasthan State Pollution Control Board,
4, Institutional area, Jhalana Doongari, Jaipur

Sub: Annual Return in form 4 for disposal of Hazardous Waste for the year 2019-20

Dear Sir,

Please find enclosed herewith Annual Return of Hazardous Waste generated from our unit in form 4.

This is for your information please.

Thanking You

With Best Regards

Authorised Signatory



CC: Regional Officer, RPCB(S), Jaipur

FORM IV

[See Rules 6(5), 13(8), 16(6) and 20 (2)]

FORM FOR FILLING ANNUAL RETURNS[To be submitted to state pollution control board by 30th day of June 20 of every year for the preceding period April 19 to March 20]

1.	Name and address of facility	:	M/s. Manipal University, Jaipur VPO: Dehmi Kalan, Tehsil: Sanganer, Off Jaipur-Ajmer Expressway, Jaipur
2.	Authorization No. and Date of issue	:	-
3.	Name of the authorized person and full address with telephone and fax number	:	M/s. Manipal University, Jaipur VPO: Dehmi Kalan, Tehsil: Sanganer, Off Jaipur-Ajmer Expressway, Jaipur
4.	Production during the year (Product wise)	:	Lube oil- 220 ltrs Used fuel and lube oil filters and cotton waste:- 52kg

Part: A To be filled by Hazardous waste generators

1.	Total quantity of waste generated category wise (in MTA)	:	Type of Hazardous waste	Quantity (in Tonnes / KL)
			Used Lube Oil (Cat.:5.1) Used Fuel Filter & Used cotton Waste	220 Liter 52 Kg
2.	Quantity Dispatched :			
			Type of Hazardous waste	Quantity (in Tonnes / KL)
	(i)	To disposal facility	-	-
	(ii)	To recycler or co-processor or pre-processor	Used Oil (Cat.:5.1) Used Fuel Filter & Used cotton Waste	-
(iii)	Others	-	-	
3.	Quantity utilized in house		Nil	
4.	Quantity in storage at the end of the year		Used Oil: - Used Fuel Filter &:- Used cotton Waste	220 Liter 52 Kg.

Part: B To be filled by Treatment, storage and disposal facility operators

1.	Total Quantity received	Not Applicable
2.	Quantity in stock at the beginning of the year	Not Applicable
3.	Quantity treated	Not Applicable
4.	Quantity disposed in landfills as such and after treatment	Not Applicable
5.	Quantity incinerated (if applicable)	Not Applicable

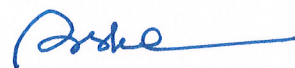
6.	Quantity processed other than specified above	Not Applicable
7.	Quantity in storage at the end of the year	Not Applicable

Part: C To be filled by Recyclers, or co-processors or other users

1.	Quantity of waste received during the year	
	(i) Domestic Sources	Not Applicable
	(ii) Imported (if applicable)	Not Applicable
2.	Quantity in stock at the beginning of the year	Not Applicable
3.	Quantity recycled or co-processed or used	Not Applicable
4.	Quantity of product dispatched (wherever applicable)	Not Applicable
5.	Quantity of waste generated	Not Applicable
6.	Quantity of waste disposed	Not Applicable
7.	Quantity re – exported (wherever applicable)	Not Applicable
8.	Quantity in storage at the end of the year	Not Applicable

Date: 02.11.2020

Place: Jaipur



Signature of the occupier or operator of the disposal facility

