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CONTRIBUTION OF COLLEGE CAMPUS IN ENVIRONMENT CULTIVATION AND CONSERVATION.

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Introduction:-

India's flora and fauna wealth of known 1,21,000 species include 49,000 species of plants, algae and fungi. Out of 15,000flowering plants occurring in India, 6000 -7500 species are used for medicinal purposes in different traditional systems of medicines; such as: Ayurveda, siddha, Unani, herbo- mineral etc.In our College campus 959 plants and trees are cultivated. In which some are medicinal , some are economically important , some are flowering plants, bearing plants Some are decorative and some are important for maximum oxygen production ,as they deliberate oxygen for 24 hours as well as capable of absorption of carbon dioxide, sulphur, carbon monoxide and other pollutants from the environment which are responsible for air pollution.

Theory:-

In our college campus so many trees and plants are cultivated. Our college campus is rich from the point of view of Environment. We have 959 trees and plants. They are of 50 types. Among them 13 types of medicinal plants (405), 10 are environmental, which have capacity to enhance amount of Oxygen in Environment(91), 07 are important at commercial plant of view (21), 05 are mainly flowering plants (353), 05 are fruit producing plants (12) and remaining 08 are come under the category of ornamental/ Decorative plants (19) and 3 Religious plants (58). Among them medicinal plants such as Tulsi, Neem, Giloy; Some are flowering plants such as Rose, Marigold, Mogra; Some are medicinal as well as flowering plants such as barahmasi (Sadabahar), Champa (Jasmine), Chameli, Hibiscus (China Rose), some are fruiting trees such as ber, Jamun, Guava, mango banana and so on. Mahua a boon for pharmacy and food industry is there. At our college campus in Nakshatra Vatika plants are cultivated according to Nakshatra and Jyotishya Vigyan.

Observation Table/Methodology:

AMILY	*BOTANICAL NAM*	NO.	LOCAL NAMES	PART USED	MEDICINAL VALUS/USES	SIDE EFFECTS
Moraceae	*Ficus religeosa*	8	Peepal	seeds,bark,fruit,leaves&	Kapha,Pitta &Vatta Doshas,leaves cleans the digestive tract ar	for Pregnant wor
Malxaceae	*Thespesia populnea*	2	Paras Peepal-	seeds,bark,fruit,leaves&	treatment of Diabetes, ,UTI, Arthritis, asthama, Gunea worm ir	for Pregnant wor
Moraceae	*Ficus benghalensis*	2	Banyan Tree	seeds,bark,leaves&fig	Diarrhea, polyuria,dental ,diabetes and Urinary disorders.	No side effects
apotaceae	*Mimusops elengi*	2	Morsali	seeds,bark,flower&frui	dental ailments &as eye tonic.It has Antimicrobial, Antipyretic,	cause miscourage
Meliaceae	*Azadirachta indica*	12	Neem	seeds,bark,fruit,flower,	Its leaf is used for leprosy, eye disorder, bloody nose, intestina	cause abortion
abaceae	*Saraca asoca*	5	Ashok	seeds,bark,flower	menorrhagia, astringent, diabetes, dyspepsia ulcers.	pregnant ladies(a
ombreatacae	*Terminalia arjuna*	1	Arjun	bark	The Arjun tree also known as Terminalia of health and skin car	No side effects
recaceae	*Arecaceae aracaceae*	42	Palm	flower,fruit,leaves&Roo	Palm oil preventing a lack of Vitamin A deficiency,palm oil use	safe
ausarinaceae	*Causarina cauiseti f*	14	Causarina/Pine	fruit,leaves,flower & ste	dysentery diarrhea and stomach ache.	high pitta disorde
oaceae	*Dendracalanus*	1	Bamboo	shoot	antifungal and antibacterial.use in furniture &fabrics.	Thyroid disorder
abaceae	Dalbergia sissoo	2	Sheesham	Bark & Root	used for the treatment of obesity,for curing non healing wounds	avoid during prag
Moraceae	*Ficus elastica*	3	Rubber plant	Bark & Root	used as a cheap source of wood fuel, for industrial brick burnir	mild to severe
Molvaceae	*Gossypium hirsutum*	1	Cotton plant	Seed,Bark & Root	neuralgia, paralysis, constipation, bloating,inflammation, pain, w	kidney problem,r
andanaceae	*Pandanum lectoriur*	5	Kewra	flower,leaves&Roots	as a food flavour & in diabetes.	No side effects
Moraceae	Moraceae	14	Ficus	flower,leaves&Roots	Bark given in diarrhea and diabetes	unsafe for skin
abaceae	*Clitoria ternatea*	5	Aparajita	flower,stem,leaves&Ro	antistress. anxiolytic, antidepressant, anticonvulsant and tranqu	kidney & heart d
Menispermia	*Tinospora cardiofol*	1	Giloy	stem,eaves&Roots	for chronic fever, dengue fever, hay fever, coronavirus infectior	it may reduce sug
utaceae	Murraya koiniggi	1	Curry Neem	leaves	dysentery , diarrhea, diabetes, morning sickness and nausea. it	No side effects
Molvaceae	*Bombax ceiba*	1	Simal	Resin,leaves,thornflowe	Cholera, fracture, toothache, cough, urinary problems, influenz	for cardiovascula
upharbiceae	Eupharbiceae hista	2	Doodhi	flower,leaves&Roots	treatment of cancer, diarrhea, dysentery intestinal asthma ,bron	vomitting,skin irri
abaceae	*Butea momosperma*	1	Khakhra	seeds,flower,leaves&R	externally to treat wounds and cuts.diuretic,manage liver disord	it can interfere kid
abaceae	*Bauninion variegata*	1	Kachnar	bark,flower	indigestion, cough progression of cancer and controlling blood	blood thinning du
ythraceae	*Lawsonia inermis*	385	Golden mehndi	flower,leaves& Bark	improve hair health,antifungal,antibaterial.	when taken by m
sphodelaceae	*Aloebarbadensis mil*	4	Aloe vera	leaves, gel	Antioxidant, antiviral ,antiseptic and antibiotic properties, it hea	stomach pain, cra
Musaceae	*Musa acuminata*	1	Banana	flower,stem,leaves&fru	bronchitis, dysentery,ulcer, diabetes,leprosy, fever, hemorrhage	rarely allergy(vor
hamnceae	*Ziziphus mairiticina*	1	Ber	bark,leaves.fruit	for indigestion,liver troubles,asthma ,fever,jaundice,eye disease	antidepressant dr
Myrataceae	*Syzygium cumini*	2	Jamun	bark,leaves.fruit,seed	diabetes, heart disease and to radiant skin	constipation prob
osaceae	*Prumus dulcis*	1	Almond	fruit,	it controls blood sugar level, reduce blood pressure and lowers	headache,diarrhe
Myrataceae	*Psidium guajava*	4	Guava	fruit,leaves,	lowers blood pressure , boost heart health,relieve painful symp	No side effects.m
nacardiaceae	*Mangifera indica*	4	Mango	fruit,leaves,bark	it prevents anemia, improve digestion, decrease constipation ar	No side effects
pocynaceae	*catharanthus roseus*	73	Sadabahar	flower extract,roots	as brain tonic and brain stimulation, it reduces risk of cancer,so	lowB.P.,constipa
Molvaceae	*Hibiscus sadariffa*	18	Gudhal	leaves,flower	as herbal tea, antioxidant,lower blood pressure, boost liver hea	No side effects
steraceae	*Chrysanthenum mu*	105	Sewanti	flower	chest pain,high blood pressure , diabetes, headache, dizziness	allergic person co
utaceae	*Murraya pemiculata*	3	Madhukamini	flower,leaves,root& Ba	as analgesic , to activate blood circulation and relieve convulsio	No side effects
annaceae	*Canna indica*	5	Canna lily	flower,leaves,seed,sten	in treatment of gonorrhea and amenorrhea	breathing difficult
osaceae	*Rosa rubiginosa*	24	Rose	flower,rose water	antidepressant, astringent, antibacterial and antiseptic	burning,stinging,r
sparagas	*Sansevieria trifusint*	2	Snake palm	leaves	It removes air pollutant,anti cancer plant,it is effective against al	poisonous plant c
actaceae	*Echinocactus grusoi*	2	Cactus	stem,leaves	for type -2 diabetes,high cholesterol, obesity colitis, diarrhea ar	safe but may caus
upressaceae	*Thuja occidentalis*	2	Vidya	twigs,bark,leaves	Cough, fever, headache, Cystitis& venereal disease	vomitting,diarrhea
raceae	*Epipremnum aureur*	1	Money plant	Ornamental	release stress,reduce anxiety,act as anti- radiator. it increase o	No side effects
racheophyta	*Tracheophyta*	4	Sword Fern	leaves,root	It improves humidity,air purifier,improves digestion,in post men	breathing difficult
utaceae	*Aegle marmelos*	2	Belpatra	leaves,stem,fruit	purify air, balancing Vatt, pitta and cough,control diabetes, hyp	stomach ache,co
abaceae	*Prumus cineraria*	1	Shami	Bark,fruit	tree reduce the ill effect of Shani,as astringent,remedy for diarrh	not usded who ha
aminales	*Ocimum sanctum*	55	Tulsi	leaves	to treat heart diseases,Asthma,best painkiller,purify Air,farm oz	pregnant women
leaceae	*Jasminum sambac*	5	Mogra	Flower, leaves	for skin disease ,wound healing.	allergic person co
abaceae	*Delonioe regia*	3	Gulmohar	leaves	Antidiabetic, Antibacterial, Antidiarrheal, Antimicrobial, Anti-in	No side effects
steraceae	*Tagesta frecta*	27	Merigold	flower,leaves,seed	Anti-inflammatory , Antibacterial & Antiseptic.	No side effects
recaceae	*Cascade palm/Areca*	6	Decorative Palm	flower,leaves,root& Ba	to treat infections, digestive disorders, respiratory & urinary inf	Intoxication
Myrataceae	*Eucalyptus globulus*	5	Eucalyptus	leaves,gum	as Insect repellant. It heals wound &stimulate Mental health.	Nausea,vomitting
upharbiceae	*Acalypha wikesiana*	45	Acalypha	leaves	to treat superficial Mycoses and in Jaundice treatment	haemolysis & dis

In short, Importance of Campus plants/treeslife ; without plants will be very hard but again plants/trees play a very important role in our life. They fulfill our food, fodder, fuel, fiber and medicinal needs.They are the source of Oxygen and sink carbon dioxide.Trees such as;Tamarind(Tamarindus indicus), Ashok (Polyanthia longifolia) & Neem (Azadirachta indica); are very used in control of noise pollution. Plants/trees are helpful in Restoration of degraded lands. Plants are useful in removal of heavy metals from the contaminated sites. Trees are helpful in maintenance of groundwater level; besides above all importance of the plants, some of the campus plants among them have their own unique medical values as well as there are economically important too such as; jamun tree, Kher tree, Aawala, Bamboo tree, Banyan tree, Khakhara, peepal Neem, Bel-patra, Juhi, Gular, mango, Bougavillea, Arjun etc.Shami and bel-patra has Mythological importance and religious belief that shami reduce the ill effect of Shami (Saturn) and bel-patra used for worship of Lord Shiva. Besides this bel-patra powder is also good for liver.

Total Calculation of Total oxygen production by Campus Trees/plants:

Plants make their food in a process called photosynthesis. Once they have water and carbon dioxide, they can use energy from sunlight to make their food. The leftovers from making the plant food is another gas called oxygen. This oxygen is released from the leaves into the air.

All photosynthetic eukaryotic cells contain chloroplasts that use the radiant energy of sunlight to convert carbon dioxide and water into carbohydrates. As a byproduct of photosynthesis, oxygen gas is also released into the atmosphere through tiny openings in the leaves called stomata. The average indoor plant will produce 900 ml of oxygen/day or 27 litres of oxygen a month, if we say the average growing plant has 15 leaves and each leaf gives an average of 5ml oxygen/hour for 12 hours a day. Peepal, Neem, Bamboo tree, Banyan tree, money plant, oxygen plant, palm, Tulsi,Cactus ,Bel-patra, These 10 plants surely give a large amount of O2 in the day and reduce CO2 at night to increase the ratio of oxygen level. A 100 foot tree 18 inches diameter at its base produce 6000 pounds of oxygen. On an average one tree produces nearly 260 pounds of oxygen each year. Banyan Tree gives oxygen for 24 hours it release oxygen at night also by Crassulacean Acid Metabolism(CAM) process and during day by process photosynthesis. It also purify air and decrease existence of Carbon di oxide in the environment.

In our campus there are some plants which produce maximum 6000 lbs of oxygen in a year as: Ashok(05),Neem(13),Peepal(10),Arjun(01),banyan(02),Palm tree(42),Ficus(14)and Jamun(02) .thus there are total 89 Trees which produce maximum 6000pounds of oxygen.

1 Pound = 2.205kg

6000 Pound= 6000×2.205

oxygen production by 89 Trees=89× 6000×2.205

=242176.871kg

oxygen production by a Bamboo Tree=70 Ton/year (1 ton= 907 kg)

=70×907=63490kg

There are 100 trees in our campus. thus oxygen production by remaining 10 trees=

Average 118 kg oxygen is produce by a tree i.e. 118×10=1180kg tal oxygen production : 242177.000 kg+ 63490.000kg + 1180.000kg= 306847.000kg

1 Ton =907 kg

306847÷907=338.309 tons of oxygen production by100 Trees.

Similarly an average 600-900ml of oxygen produce by plants. Tulsi(55), Aloevera((04), Belpatra (02) & oxygen plant(02) are maximum oxygen producing plants. This 63 plants are capable of producing oxygen for 24 hours. Among 859 plants only 696 plants are capable of producing enough oxygen to purify air around them

Average oxygen production by a plant =600ml/day=219litre/year

maximum oxygen producing by a plant =900ml/day=324 litre/year

Average(minimum) oxygen production by 685 plants= 685×219=150015 kg/year.

maximum oxygen producing by 11 plant =324×11 =3564kg/year

Total oxygen production by plants=150015 kg/year+3564kg/year= 153579kg/year

1 Ton =907 kg

153579 ÷907=169.32 Tons of oxygen production by 859 plants.

Calculation of Total Carbon di oxide by Campus Trees/plants:

On an average 48 pounds of Carbon di oxide is absorbed by a tree per year.

1 Pound = 2.205kg

48 pound=105.84kg

695×105.84=73558.8 kg/year.

one Bamboo tree capable of absorbing 80 Ton of Carbon di oxide per year.

1Ton=907kgi.e. 80×907=72560 kg/ Carbon di oxide year

Total Carbon di oxide absorption by Trees/plants: 73558.8 +72560=146118.8kg/year

OR 161 Ton of Carbon di oxide per year

SUMMARY

	Trees	Plants	Total	**Production (In Tons)**
Oxygen	306847kg	153579kg	460426 kg	507.6 Ton
Carbondioxide	77640 kg	68478 kg	146118 kg	161 Ton
People Benefitted	622	208	830	

A tree produce maximum 250 liters of oxygen daily, which enough for 25 people. A human being breathe is about 2.18 tons of oxygen every year. Similarly an Indoor plants will produce average 900 ml of oxygen daily or 27 liters of oxygen in a month. Each leaf gives an average of 5 ml of oxygen per hour for 12 hours in a day. It will consumed by a person in around 3 min. In our college campus 100 trees and 859 plants are there. Thus they all are capable of producing approximately 507.6 tones of oxygen every year, which is sufficient for 830 peoples of 1.2-1.8 Hectare Canopy area(average 3acre land around our college campus).Market value of oxygen is around 20 USD/kg or 18140$/ton. It estimates around 64,45,50,480Rs./Anum Indian Rupees(Around 17.78 lacs Rs. daily)

Press Note:@ujjain,MP,India

1.FREE PRESS

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2.Dainik Bhaskar

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