

ECO SOLUTIONS PVT LTD. ,V/88,ACA BUILDING , PAZHOOKARA,TRICHUR,KERALA 680 731 Ph: 09496137206 Email: <u>info@theecosolutions.com</u>, <u>www.theecosolutions.com</u>





1.2 Trillion Kilograms (approx.) of garbage generated in the World Other 18% Metal 4% **Organic** Glass 46% 5% **Plastic** 10% Paper



SITTING ON 4 LAKH METRIC TONNE OF GARBAGE

AIR POLLUTION: JANUARY 2015*

100/rcpm Normal value (upper limit) 400-500/rcpm

Value recorded in the direction in which wind was blowing

200/rcpm

Value recorded against the wind

WATER POLLUTION**

2013	1276 mg/litre TDS (total dis- solved solids)	352 mg/litre Calcium & magnesi- um levels in water
2015	1994 mg/litre TDS (total dis-	796 mg/litre Calcium and mag-

600mg/litre

should be the upper limit of potent water

solved solids)

TURBIDITY

2013

0.86 NTU

Turbidity (suspended solid matter) in water 2015

1.64 NTU

Calcium & magnesium levels in water

nesium

1 NTU

Normal level should not cross

*REPORT BY MPPCB

**COLLECTED FROM TUBE WELL NEAR
TRENCHING GROUND, REPORT BY MPPCB





- ☐ The present human life has endangered our future existence. this is the result of unmanaged waste and ignorance.
- Global warming /climate change
- Water depletion /pollution
- Biodiversity depletion
- Soil health depletion leading to plant health challenges
- Human/animal health impact









FOSSIL FUEL BURNING

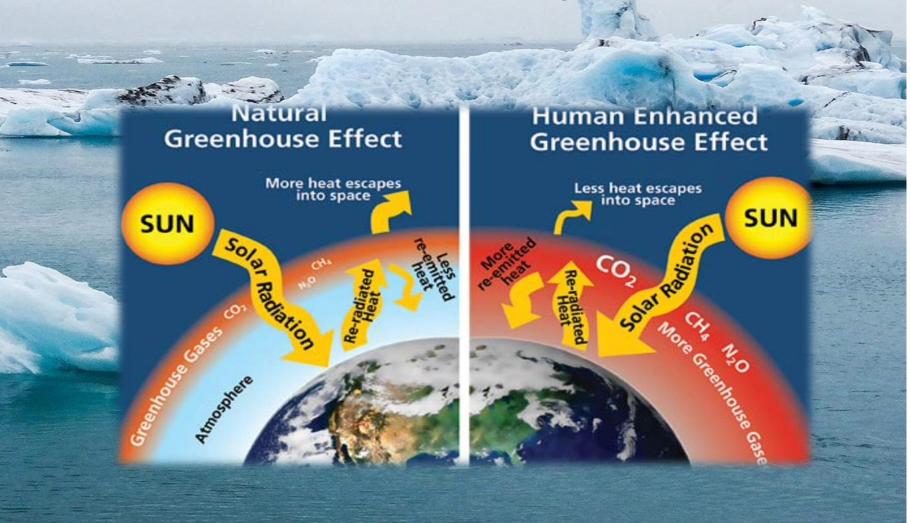




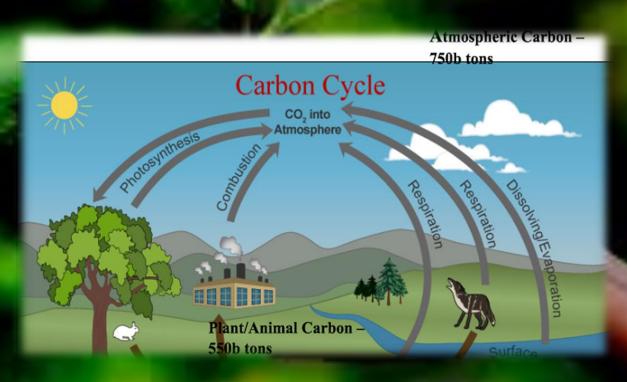




GLOBAL WARMING



Soil Organic Matter (Organic Carbon is 58% of Organic Matter)











A **carbon footprint** is historically defined as"the total sets of **greenhouse gas** emissions caused by an organization, event, product or individual



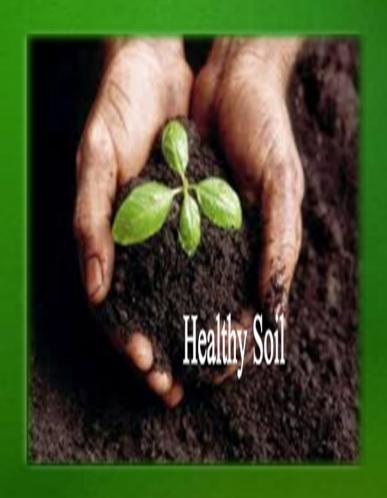


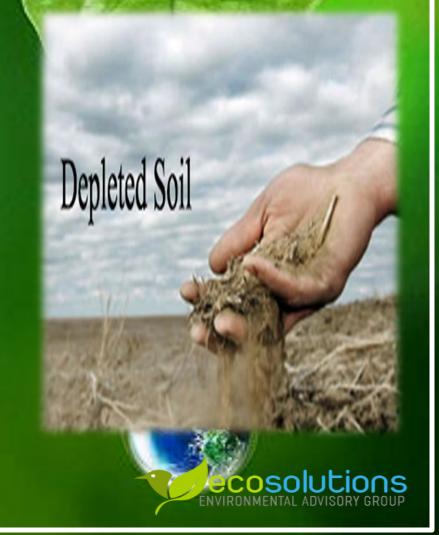
EFFECT ON PEOPLE





ORGANIC FERTILITY OF INDIAN SOIL





DANGEROUS CHEMICALS USED FOR CROP PROTECTION



ADVERSE BEFEROTOR

DANGEROUS CHEMICALS ON HUMANS

CANCEROUS GROWTH







EFFECTS OF ENDOSULFAN ON CHILDREN





CLIMATE CHANGE CHALLENGES













THE DIFFERENT WASTES ARE SEGREGATED

The Sorting Generates

- ☐ Various Types Of Plastics
 Which Is Send For Recycling
- ☐ Glass , Metal Can Be Recycled
- ☐ Biowaste
- ☐ A Small Percentage Of Waste Need Incineration



WASTE SEGREGATION CHART











Vegetable & Fruit Peel, Food Remains, Expired Food item, Meat, Bone, Egg Shell, Flower, Tea Bag & Coffee Powder, Coconut Shell & Fibre etc.



They can be composted











Clean and Store. Give it to Recyclers









Diaper, Dead Pest, Ear Buds, Dental Floss, Bandage

Mark it with red cross (X) before disposal













Large Quantity of Leaves, Branches, Dried Plants

Hazardous Household Waste





Handover Separately to MCC Collection Trucks

DO Not Mix with other Waste

Store Carefully Hand it over to specific Recyclers

Debris/ Rubbish





Mosquito Repellent, Syringes, Cosmetics









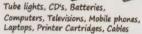
Construction Debris, Demolition Waste, Broken Glass, Broken Furniture

Call MCC or Other Agencies for Pickup

E-Waste













DO Not Mix with other Waste Store Carefully Hand it over to specific Recyclers





WASTE WITH WISE

- Wet waste collect, compost, manure, sold, used for agriculture
- □ Plastic can be cleaned, collected, sold, recycled
- ☐ E-waste can be cleaned, collected, sold, recycled
- ☐ Paper waste collected, sold
- ☐ Hazardous waste collected and destroyed
- Other waste can be incinerated in an un harmful ways



ecosolucions	ENVIRONMENTAL ADVISORY GROUP	

	4R Recycling Private Limited						
	Price List to VEYENNEM dated Dec 2 2015.						
		UOM	Unit	CST@	Unit Rate		
SI.	Particulars		Rate (₹)	5.00%	Total (₹)		
1	Electric Choke	KGS	19.05	0.95	20.00		
2	Fax	KGS	11.43	0.57	12.00		
3	Keyboards	KGS	11.43	0.57	12.00		
4	Monitor	KGS	26.67	1.33	28.00		
5	Mother board parts	KGS	28.57	1.43	30.00		
6	Printers	KGS	13.33	0.67	14.00		
7	Telephone	KGS	11.43	0.57	12.00		
8	Xerox Machine	KGS	13.33	0.67	14.00		
9	Washing machine	KGS	13.33	0.67	14.00		
10	Refigerators	KGS	10.48	0.52	11.00		
11	Air coolers	KGS	14.29	0.71	15.00		
12	Air conditioners	KGS	23.81	1.19	25.00		
13	CRT Monitors	KGS	26.67	1.33	28.00		
14	CRT TV	KGS	9.52	0.48	10.00		
15	CPU	KGS	23.81	1.19	25.00		
16	TFT Monitors	KGS	26.67	1.33	28.00		
17	SMPS	KGS	9.52	0.48	10.00		
18	Laptop adaptor	KGS	19.05	0.95	20.00		
	Hard Disk	KGS	38.10	1.90	40.00		
20	Laptop	KGS	95.24	4.76	100.00		
21	Wires and Cables	KGS	23.81	1.19	25.00		
22	General E-Waste	KGS	14.29	0.71	15.00		
	HAZARDOUS WASTE (To be picked against PAYMENT)						
			Negative Purchase				





പല്ലാരിമംഗലം ഗ്രാമപഞ്ചായത്ത് കുവള്ളർ പി.പ. അം 671. - എറണാകുള്ള അള 'ഹരിത കേരളം - ഹരിതം പല്ലാരിമംഗലം स्वच्छ - भारत एक कदम स्वच्छता की और മാലിന്യമുക്ക ഗ്രാമത്തിനായി നമുക്ക് ചൈകോർക്കാം

ALTERNATIVE INITIATIVE TO PLASTIC AT KOLLAMKODE PANCHAYATH

AVOIDING PLASTIC CARRY BAGS AT PALLARIMANGALAM PANCHAYTH

OUR SOLUTION FOR MUNICIPAL AND INDUSTRIAL SOLID WASTE





WASTE MANAGED AT CATERING HOUSE





CENTRALISED BIOGAS PLANT



THUMBOORMUZHI MODEL WITH COMPOSTING MEDIA





DECENTRLISED WASTEMANAGEMENT



- **□** BIOCOMPOSTER
- DESSIGNED FOR FAMILIES
- ☐ CAN BE KEPT IN YOUR

 WORK AREA
- ANYTHING EXCEPT
 PLASTIC CAN BE ADDED
- CONVERTED TO MANURE IN 20 DAYS
- **EASY TO HANDLE**
- FLIES FROM RATS AND
- NO FOUL SMELL



ecosolutions

KITCHEN BIN



COMPOST MEDIUN
10 Kg

Integrated Rural Technology Centr Palakkad

0491-2832132, 8547232324 ppcirtc@gmail.com

Use before 3 months

VENTILATED BIN

COMPOST MEDIUM

മാലിന്വം ജൈവവളമായി; ഇനി വിപണിയിലേക്ക്

കുന്നുകളും • സേഡരികിൽ നേത്യത്തെലാണ്യ രാജവവ ചേർത്ത മി.രിതം ആഴ്ചയിൽ on minim; asagleery, ownser, aslocit; 200/mg ate entropy manufactures ason mayou it it is a leasy m നത്. കുടുംബുശികളുടെ നേതു നൽകും วมวิวไว้ กระงาก จอตามายู กใช้มากา ณใช่งากตั*ช*กุ<u>สส</u> สาขาลารา คุณาสา

ഇന്ഡെറ്റഡ് റുറത് ടെക്നോ gail arudalori (asprodsirul)

negymaxelny, gril seesen g miasemminy uniotem. נשני, במוכבנות הכובובה הניהונה ובנים במתנובוני וכנגם una iministration of calmin infere respective ൽ പ്രാന്റിൽ പാര്ഷണാടിസ്ഥാ - മിക്കുന്ന മാലിനും ഇവിടെ വച്ച നത്തിൽ തുടങ്ങിയ രാജവവള തന്നെ വേർതിരിക്കുന്നു പച്ചകാ നിർമാണം വൻ വിജയത്തിലോ റി ഉൾപ്പെടെയുള്ള മാലിനുമാ m; severing missemment free free pariospectors നുനും ഇനോടൊപ്പം സംസ്കരി ความีคราม เกาะการให้ราวทา ซ์. อาจักานมีผูวราก ออตาเวาลู วุ๋ มวยใกรู: อาวาน กริ่มวงการาก กโร้องสาองสกา อุมาที่ไรโ กระชา การ อกูลวาก กูนตามเกลงว่า

> นวาริเจยเวตโลงรูกา ขวยใ מנים פפנתה מתנים בנית ודתים ביות डीका मा चीनाई क्रुगीयं अकी റിപ്പോറും ബാക്ടിറിയയും ചേർ ത്തു കുഴയ്ക്കുന്നു ഇങ്ങനെ

ടെടു തവണ വിതം നമ്പ്പു കൂട്ടി pis m, an annomos go; מולדוכת שורכב לביכבעי ביחופם การเราะ กรุงคนุ และกุษม കമ്മിറ്റിയം വിമാനാജ്കുമാറി and mission was easing mis മാണം മുന്നോട്ടു പോകുന്നത്.

การอยู่อยารวยในการข้าย രു സേവന എന്നി കുടുംബശീ नकार क्षायाच्याच्याच्या करावरक മിച്ചു പ്രാനിലേക്ക് എത്തിക്കുന്നു. शोगों वार्वजीयों, स्त्रीया सामान എന്നിവർ ചേർന്നാണു വളം നിർ മിക്കുന്നത് പ്ലാന്റിന്റെ ഉദ്ഘാടനം ה בינצומים בסכם שולים במנים של מינים של തിയിൽ മാലിന്യം സംസ്കരിക്കാ നുള്ള പാധനിയിലാണു കുടുംബ ഗി നാംഗങ്ങൾ

മാലിന്യം കുറഞ്ഞു;കുന്നംകുളത്തു നായ്ക്കളും

കുന്നംകൂട്ടം നേരത്തിലെ colony perim apportun o, smilei, obneka antanno egos ecumpled intermy an gasophymol couplel ממן לבורממשה בינית ושבב ושם ങ്ങിൽ തല്ലുന്നതിനാൽ തൊറ്റവു ทางชื่องเกือง รอมสาวานเก็จรั้ง ample cases; in these

ഇതു തിന്താനത്തുന്ന നായ്ക്ക מיינים בינות בינות בפוף קומונה שורכב ומהם לכנודות. രാജവവളം നിർമാണം നുടങ്ങി യതു മുതൽ ഇവിടെ തെരുവുതാ മ്കളുടെ ഗവ്യം കുറവാണെന്നു ומון מכנו לכהן בכח

क्राउनकोठी कोका<u>श्रह</u> 200ी നും താം തിരിച്ചാണ് ഇവിടേക്ക് എന്തിക്കുന്നത്. ഹോട്ടലുകളി ലെ ഭരകണങ്ങളുടെ അവരിഷ്ട ങ്ങളെല്ലാം തന്നെ ജൈവാളമാ ക്കി മാറ്റാൻ ഉപയോഗിക്കുന്നുണ്ട്.

ഇതുകൊണ്ടു തന്നെ അവശി ഷ്ടതാർ കഴിക്കാനെത്തുന്ന തെ อากุกวซ่องส์ สำหน. อมยู



കുന്നകുള, കുറുകൻപനയിലെ 5ജ്മിജ് ഗ്രൗത്തിൽ തയനാ ออากา จอสมาบฐา

വുനായ്ക്കളെ ഇവിടെ കാണാനി ബ്രന്നു ജീവനക്കൾ പറത്യന്നു

विषय सा<u>त्रक</u>ण क्षत्रिक प्रथम ny msjagin nom nina מניכתם ובכביכוכבים ובכסולם നായ്ക്കളുടെ ഗല്യം ഒരു പരിവി מהנפן ברואה להנפסברון ה בפנה ശാസ്,ത സാഹിത്യ പടിഷത് സം กบันวาก ละอย่าวไทยเกม านโลกทา ค่องว่า นาสตา

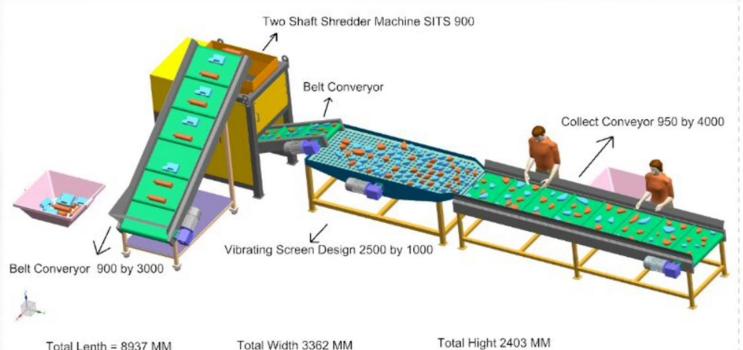
alejagles zasley, njan സമ്പ്രാരെ വടുകളിൽ തന്തെ സസ്കരിക്കാർ കഴിയും ഇതോ os omojajmordaogios usai ונימושו

නුත්තාත් ක්දෙයන්ත් යෝ റിയ മാലിനു സംസ്കരണ പ്രാ njed midalyod amirody. תעכשות תוכביםות מנסת ങ്ങൾ ഇത്തരം പദ്ധതികളുമായി മുന്നോട്ടിറങ്ങിയാൽ മാലിയു നിർ മാർജനത്തോടൊപ്പം തെരുവുനാ มุจอดีอะเพลไป"ชไปมโฮรนมโ ינונו (בנה

നോറുംകുറഞ്ഞുവന്നു. ഇപ്പോൾ ചാടിസ



ORGANIC WASTE SHREADING UNIT



Total Lenth = 8937 MM

Total Width 3362 MM

"Shredder India" Two Shaft Shredder Machine SITS 900 Date = 14-2-2017



ORGANIC WASTE DISPOSER

ABIA FOOD WASTE DISPOSER- Commercial Models



ecosolutions ENVIRONMENTAL ADVISORY GROUP

KUNNAMKULAM MUNCIPAL TRENCHING GROUND BEFORE





KUNNAMKULAM TRENCHING GROUND NOW





ecosolutions ENVIRONMENTAL ADVISORY GROUP

PARAVOOR WASTE MANEGMENT PLANT







ATHIRAPILLY







GURUVAYUR





ORGANIC MANURE PRODUCTION CENTERS

- □ INVEST ON WASTE AND EARN FROM IT
 □ 40% SUBCIDES ON INVESTEMENTS
 □ FIVE YEAR TAX EXEMPTION ON MANURE PRODUCED FROM WASTE
 □ QUALITY MANURE PRODUCED OUT OF VEGETABLE, FISH, AND CHICKEN WASTE
 □ JOBS GENERSATED
 □ POLLUTION ELIMINATED
- ☐ SOCIAL COMMITMENT DONE.







Grow safe & healthy Food



Organic Manure

Aerobic Composting

ecosolutions









ADDING BIO CLEAN





ORGANIC MANURE AFTER 20 DAYS FROM THE BIO WASTE







ADVANTAGES OF BIOCLEAN

- Biodegradation takes place in a very short time using the media.
- Absolutely no foul smell. A biodegradable waste which generate foul smell when introduced to the composting medium looses the foul smell immediately.
- No Leachates during the composting process
- No flies when the moisture is maintained at an optimum level.
- Frequent turning of the material not required thereby reducing the cost incurred for turning.
- Frequent watering of the heap not required because the composting media has got excellent water retention qualities.
- The composting media ensures optimum temperature for most efficient composting.



- ☐ The buffering capacity of the media ensures the optimum ph for the most efficient degradation.
- The efficient and complete breakdown of organic material prevents the possibility of evolution of any unwanted gases like Carbon Monoxide, Hydrogen Sulphide etc.
- A hassle free, convenient and odor free composting of organic material permits us to do the composting even in a domestic environment.
- □ Hardly any capital investment is required to do composting using this medium.
- ☐ The output is a high quality organic manure with a pleasant odor and could be handled very conveniently.
- The organic manure generated by this media has a very important role to play in enhancing soil fertility and it is an excellent growing which can be used in home gardens.

If Biodegradable waste is managed and processed well it will generate quality **Organic Manure.**

This Organic Manure is the food for the soil.

The biggest crisis agriculture facing today is poor organic matter in soil.



PRESENT STATUS OF INDIANISON. IN TERMS OF ORGANIC PERTURY

HEALTHY SOIL	DEPLETED SOIL (Based on the studies conducted by Dr. Joshy V. Cherian and his team.)
The Organic Matter level approx 2 to 3 %	The Organic Matter level below 0.5% in Most places
Approximately 25 to 30 lakh earth Worms per acre	Approximately 2 to 3 lakhs of earth Worms per acre
Various other soil organisms abundantly available	Few soil organisms are available
Approximately 10 to 15 tons of Microbes present per acre soil	Approximately 3 to 5 tons of microbes Present per acre of soil.
Microbes present per acre son	Present per acre of son.
Approximatory to to to total or	Approximately o to o tone or minimus

BENEFITS OF ORGANICO MANURE

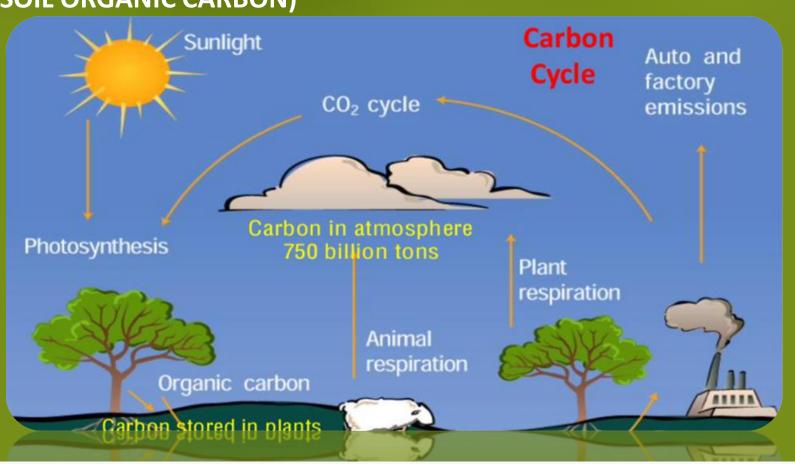
- Organic manure provides various macro and micro nutrition on a sustainable basis to the plants.
- Organic manure ensures adequate supply of organic carbon which is a source of energy for the soil microbes and insects therefore optimum organic carbon in the soil will ensure a rich population of beneficial microbes and soil organisms.
- ☐ It enhances the buffering capacity of the soil.
- ☐ It helps maintain an optimum air water balance in the soil.





SOIL ORGANIC MATTER

(SOIL ORGANIC MATTER IS ROUGHLY 1.72 TIMES THE VALUE OF SOIL ORGANIC CARBON)



SOIL ORGANIC MATTER

SOIL ORGANIC MATTER

(a complex and varied mixture of organic substances)

The release of carbon from the soils into the atmosphere is about 62 billion tons/year while only about 60 billion tons of carbon is going back into the soil from the atmosphere via the plant residues. This imbalance of about 2 billion tons of carbon along with about 5 billion tons of carbon released by the burning of fossil fuels every year is added to the atmosphere. Therefore soil organic matter plays a critical role in the global carbon cycle, and there by the climate change

carbon cycle, and there by the climate change



Environmental benefits...



- Aerobic composting is a well accepted CDM practice which attracts carbon credit
- Our technology helps to reduce Nitrous Oxide release which is a very potent green house gas

Studies have clearly shown that increased chemical Nitrogen fertilizer use over the past 50 years is responsible for dramatic rise in atmosphereic Nitrous oxide which is 300 times more potent that Carbondioxide as a green house gas.

The organic manure generated by our process by converting various nitrogen rich bio waste like slaughter waste, fish waste etc helps to replace chemical Nitrogen fertilizer application in a big way. Therefore this

chemical Nitrogen fertilizer application in a big way. Therefore this



Énvironmental benefits...

- The organic manure generated by this process helps to improve the soil organic matter thereby improving the soil health
- Healthy soil will ensure healthy plants
- Healthy plants require less poisonous chemicals for protecting the plants therefore less harmful residue in the environment, food and water



- Organic manure helps save water
- Provides balanced macro and micro nutrients to the crop
- Improves the biodiversity
- Provides perfect air-water balance at root zone
- Retain physical properties of soil for a long time
- Retain physical properties of soil for a long time



Environmental benefits...

- Ability to retain nutrients by adsorption
- Maintains optimum media/ soil temperature
- Provides more quality yield and growth
- Supports very high population of beneficial microbes in the root zone.

in the root zone.



Social benefits...

- The BIOCLEAN can be used to convert different types of bio-degradable waste generated locally like domestic waste, fish waste, chicken waste, hotel waste etc into organic manure. Thereby ensuring a clean odor free environment
- The organic manure generated will be used for producing safe / organic vegetables, flowers and mushrooms where ever the manure is generated.
 This is will ensure a healthy human and animal population
- This project can generate employment at various levels

This project can generate employment at various levels

OMEGA ECOTECH PRODUCTS INDIA PVT LTD

•OMEGA ECOTECH PRODUCTS INDIA PRIVATE

LIMITED came into existence in the year1999 at Coimbatore, Tamil Nadu (India). We are engaged in manufacturing, supplying and exporting a comprehensive gamut of Bio Fertilizers, Bio Fungicides, Bio Pesticides, Organic Manures, Growth Promoters and Processed Coco Peat. This company is promoted by a team of Environmental and Agricultural scientists with rich experience in Biotechnology, Horticulture, Waste Land Development, Solid Waste Management and Organic Agriculture.







Dr. Joshy V Cherian
Ph.D., Environmental Science

Area of Specialization - Natural Resource Management, Organic Agriculture and Solid Waste Management

Managing Director

Omega Ecotech Products India Pvt Ltd, Coimbatore

Founding Chairman

Indian Organic Farmers Producer Company Limited, Aluva, Cochin

Co-ordinator

Farmers Self Help Group

Consultant

Sustainable Agriculture & Solid Waste Management



Dr.P.Thamizhchelvan

Ph.D., Microbiology

Technical Director

Omega Ecotech Products India Pvt Ltd, Coimbatore

Consultant

Sustainable Agriculture & Solid Waste Management



Dr.D.Purusothaman

Ph.D., Microbiology

Former Head of the Department

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THANK YOU



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