

FREEDOM FROM WASTE

MY WASTE
MY RESPONSIBILITY

RANJU MINHAS



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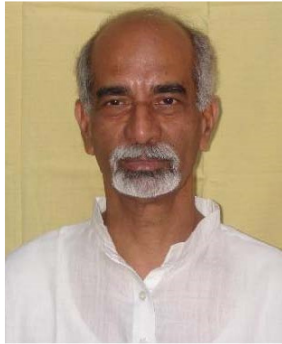
FEEDBACK



It rarely happens that a woman RWA activist excels in social service, conducts regular workshops on issues like composting, and then writes a book on it. Ms Ranju Minhas has done it. This book very nicely brings out the potential of composting. The waste, actually, is our treasure. The need for space for composting of bio degradable waste has been, in particular, brought out in this book; it applies both to Govt and non -Govt organisations. The way micro aspects of composting have been explained in this book is an eloquent testimony to the acumen and vision of the writer.

We wish this book to cover the entire spectral width of households in the country.

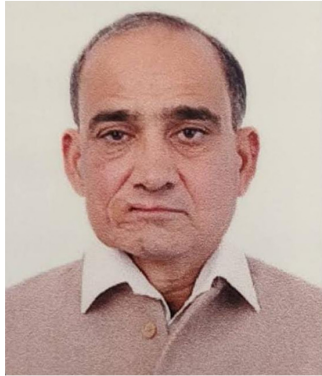
**Col Tejandra Pal Tyagi, Veer Chakra Chief
Convener , Confederation of RWAs (CoRWA)**



Mrs. Ranju Minhas's book is not a lamentation on waste that is happening in the house and particularly in the kitchen; but a story of her sincere concern, personal observations, experiments in team and practical solutions found by her. Along with these pages, she shares her experiences in different colonies in New Delhi and also in east African countries like Uganda and Kenya, imparting knowledge she has acquired over years and proposing solutions which are scientific and aesthetic at the same time. As a result, green waste can be totally absorbed within the house and within the Resident Welfare Association in the locality. She has a business model that can provide extra income if handled by an RWA. Across her recitation, she upholds the role of individual initiative, responsibility and freedom of choice with a spiritual touch, unlike many environmental militants to ask for commandments to be issued by the governments to solve the problem arising out of Climate Change. It is inspiring.

**Dr.Rao VBJ Chelikani, President, Confederation
of Resident Welfare Associations (CoRWA)**

SHRI JITENDER MAHAJAN
B J P MLA Rohtas Nagar



MAKING ORGANIC HOLI COLORS

I was introduced to Mrs Ranju Minhas by a few women of SHG groups of my constituency. These women had received waste management training from her at NCUI (National cooperative Union of India) Delhi organised by NULM .(National urban livelihood mission) One of the skill they got training for was in Organic powder colors for Holi.

We under her guidance and coordination worked on this project where more than 150 women alone were trained in Rohtas Nagar. The powder colors for Holi festival was sold under the brand name Sumangalam. Sumangalam brand has created a niche for itself. This environment friendly sustainable business not only financially empowered the women but also paved the way for many such eco friendly future projects. I wish Mrs Ranju Minhas all the best in her mission to make cities waste and pollution free.

FOREWORD

This is my humble attempt at sharing my learnings on kitchen waste composting with the readers. During my decade long experience and research in this field, I have reached an understanding that we need to adopt a Regenerative lifestyle in order to nip the problem in the bud. We all should form a habit of consuming fresh, seasonal, and local produce. This will cutdown on the need of processing, preserving, packaging, transporting of goods resulting in waste generation. Recycling is another important step ie being responsible for managing personal waste. The most important is to inculcate the habit of pre cycling, it is inculcating a habit of prevention of waste generation.

“Only Micro efforts can help solve the mega problem of waste generation in the world”

Ranju Minhas

INTRODUCTION

We humans are part of nature. In our quest for comforts and pursuit of vain life, we have compromised on the essence of coexistence. All living creatures live organically, and any waste they produce is food for lower organisms in the food chain. Human beings have invented and created many things, in creation of things we have generated toxic and permanent waste which has polluted the environment. We have destroyed natural resources that were crucial for sustaining life on Earth. It is important that we smartly process waste, which we produce daily, in a way that is least harmful for other organisms and environment.

We as individuals need to understand the importance of segregation and micro segregation of wet kitchen waste at home. Dry waste fetches immediate monetary benefit to waste collectors, but the benefits of micro segregation of organic kitchen waste are numerous. The use of reformed waste has far-reaching beneficial effects on health of family and environment. House managers need to understand and learn such practices. The Habit of managing kitchen waste in a family will help in saving a lot of money. Reforming organic waste to compost and Biocleaners will help to cut down expenses on buying of chemical cleaners for household as well as personal use. Compost making will initiate

the practice of maintaining a kitchen garden and growing herbs. The regular consumption of herbs boosts and strengthens immunity. This would mean fewer infections and fewer visits to doctors. The process of composting at home will be a practical science lesson for students. Children will learn and get sensitized that all living organisms big or small have an important role in maintaining balance on planet Earth, an important lesson on coexistence and a learning on the path of spiritual awakening. We have to seek help from nature to halt the phenomenon of climate change. Human activity is causing droughts, floods, melting of glaciers, changes in weather patterns, all of which result in the disappearance of many species of flora and fauna. All this is the doing of man, the most intelligent of animals on earth. Since we are the cause, we have to take responsibility of halting this catastrophe.

Irresponsible waste disposal practices have led to precious organic waste getting mixed with toxic waste, and as a result the soil is losing its fertility. Consumerism has led to the problem of excessive waste generation at micro levels, and the problem now has become alarming. The solution to this issue lies in our own hands. Household waste needs to be segregated from the kitchen itself, and the green waste should go in compost bins at home or community compost bins (if any). The dry waste is sold for recycling and only five to ten percent goes to landfill sites. The garbage dumps will become much cleaner, and there will be lesser

chances of epidemics breaking out. Garbage lifters will work in cleaner environments, hence improving their life. Less garbage means reduced pressure on landfill sites. This will save on the cost of transportation of waste to landfill sites thus in turn save tax payers money. The demand and sale of compost thus made will generate new business opportunities for under privileged garbage handlers. Compost improves the fertility and texture of soil, health of plants and trees. With mindful segregation you do not have to line your bins meant for organic waste with plastic bags. Composting processes would begin if green bins are designed as compost bins for maintaining optimum moisture, aeration and temperature. Dry and wet waste segregation at source saves stray animals and cows from ingesting plastic along with green waste. Micro-organisms that feed on compost produce nitrogen, phosphorus and other nutrients which enrich the soil. Compost is a great fertilizer for the plants, and it's nature's way of recycling. The creators of the problem to a large extent are citizens! Rich or poor, all humans generate waste, and the solution lies in our hands. Once people start seeing green waste as a rich resource coupled with the knowledge of composting processes, the problem arising due to waste management will be reduced by fifty percent or even more. If we care enough for our future generations and environment, let us all make a habit to segregate waste and also learn to cook compost! small steps taken at micro levels will soon become a giant leap! freeing the world from waste.

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EARTH HEROES

2 ENVIRONMENTAL | DELHI | 24 | AUGUST 2019

Ranju Minhas - Green Crusader of Greater Kailash

It is possible to live green in Greater Kailash without landfill. Ranju Minhas, an environmental crusader, is working towards a sustainable waste management system in the posh locality. She has started a social enterprise, 'Green Crusader', to help people in the locality to manage their waste. She has also started a social enterprise, 'Green Crusader', to help people in the locality to manage their waste. She has also started a social enterprise, 'Green Crusader', to help people in the locality to manage their waste.



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Ready to carry and take to market? She has started a social enterprise, 'Green Crusader', to help people in the locality to manage their waste. She has also started a social enterprise, 'Green Crusader', to help people in the locality to manage their waste. She has also started a social enterprise, 'Green Crusader', to help people in the locality to manage their waste.

PROCESS
 • There are two types of compost bins. One is for kitchen waste and the other is for garden waste. The bins are made of plastic and are easy to use. The bins are also very durable and can last for many years. The bins are also very easy to clean and maintain.

CHALLENGES
 • The biggest challenge is getting people to use the bins. Many people are not aware of the benefits of composting and are not willing to change their habits. It is important to educate people about the benefits of composting and to make it easy for them to use the bins.



THE AWAKENING

During my road journeys from Delhi to Chandigarh, I used to pass Bhalswa dumping ground in North Delhi. The rising waste mountains formed by city dwellers were always a cause of serious concern. I often thought about the issue of waste generation, the environmental pollution caused by it and lack of concern among masses. We are so busy trying to make ends meet in our daily lives that we forget about the irreversible damage our lifestyle is causing to natural resources and environment.

Often one can see animals trying to eat wet waste packed in polybags leading to their death. Rising fumes from garbage dumps is a common sight in cities because of the heat produced by the decomposition of organic waste. Breakdown of organic waste leads to formation of a liquid called **leachate**. The leachate formed at city garbage dumping sites is very toxic in nature as it is a mix of organic, medicinal, electronic and other miscellaneous waste. The Leachate seeps down into the soil, polluting the ground water table of the area. This leachate if obtained in pure form is a valuable fertilizer. Leachate can be obtained in pure form if organic waste when composted is free from plastic, medicinal and other toxic waste. It is important to segregate waste and manage it at the point of generation, i.e. household,

restaurants, hotels etc. Wrongful waste disposal practices by waste generators are primary cause of unhygienic working conditions of garbage handlers, and it is another matter of serious concern. Absence of fines and punishments by law enforcing agencies on the use of polybags is another road block towards the dream of living in clean and clean green environment. In 2011 our team campaigned on raising awareness about the harmful effects of polybags, and its unmindful disposal by citizens. Use of polybags was just one challenge, the actual challenge was unmindful waste generation by households, and its wrongful transportation and disposal in mixed form by municipal authorities. I began my experiments with waste in order to understand the process of decomposition of organic kitchen waste to compost. Its practical application in urban context. Studying human response towards waste and real challenges citizens would face in managing organic waste in small spaces like balconies and terraces.

Citizens living in towns and cities depend on municipal authorities to manage their household waste. It is worrying to see that the same trend is being followed in villages. Villages were known to be waste free till few decades back when plastic bags flooded the market in eighties. Villagers used to mix their organic house waste along with the farm animal dung to make compost. This was used by them to enrich the soil and restore balance of nutrients before cropping. With

change in farming practices and dependance on chemical fertilizers and introduction of new technologies, we are facing problems of loss of moisture in soil, lowering and polluting the water table. With total shift on ease of doing things driven by market forces, we have ignored our personal responsibility towards the environment for too long. This has led to many problems, and out of all waste management has become a national and global challenge due to over dependance on packaged ready processed consumables. In this book, I will share my learnings to help you manage your kitchen waste by reducing, recycling, reforming the organic waste from the kitchen into valuable products like compost and natural cleaners for homes. Organic waste from our kitchen may be not be fit for human consumption, but it surely is food for lower organisms as it is a part of the food chain till it is reduced to dust.

To reduce dry waste, we must inculcate habits of pre-cycling which includes refusing, reducing, recycling, reforming, buying recycled goods supporting sustainable practices. Buying reusable goods eg carry your own bags for grocery shopping, replacing tissue with cloth napkins. Buy fresh, local and seasonal with minimum packaging or zero packaging.

COMPOSTING JOURNEY

Masjid Moth Phase1 projects: During my early days of trying to understand composting processes in depth, I began depositing organic kitchen waste in a discarded wash basin kept on my terrace, I would mix it with soil and dry leaves and kept it covered with a plastic sheet. After a week or so as I checked the contents, I found hundreds of white maggots eating away the dead decaying matter. The sight was repulsive! the gardener had observed that maggots were good, as they fed on the dead matter to turn the waste to compost. This meant that the organic waste had to be managed mindfully for maintaining a healthy ecosystem and best conditions for worms and micro organisms to function. This strengthened my resolve to look for solutions to manage waste at source in urban homes.

Later my college friend Dr Malini Shariff suggested that I try my hand at anaerobic composting. Anaerobic composting is the breakdown of organic matter in the absence of air. As my birthdate was nearing, my daughter asked me, what I would like as a birthday gift? It was a God sent timely offer and I jumped at the offer and asked my daughter to buy me an anaerobic composter (Bokashi method) as my birthday gift.

Anaerobic composter is a set of two buckets with a compartment at base of each bucket for collecting the

liquid content which is obtained due to the breakdown of organic waste. This set can be easily assembled at home by using two buckets. We need to make holes at base of first bucket to be put inside another bucket similar in size. The bucket should have a tightfitting lid as we don't want any air to go in. If aeration takes place we will be seeing lot of worms in our waste.

I began collecting the kitchen waste in the compost bucket and used the inoculum / activator provided with the kit for fermenting the waste. I searched the net to know more about anaerobic composting. This led me to Bokashi composting method being practiced in Japan. I learnt that the activator used to process waste leading to break down of organic waste anaerobically is made by treating wheat husk with lactobacillus bacteria. These are the same bacteria which our curd/yoghurt is made of. When dormant bacteria come in contact with wet waste, it starts multiplying by feeding on the sugars present in the waste matter. This causes pickling of organic waste. Pickling is a process in which the organic matter decomposes from within, without losing its actual form. During the process water content from the waste gets separated from roughage, this is called Leachate or liquid fertilizer. Armed with this knowledge from the internet, I adopted learning by doing method to understand the scientific parameters and processes required for composting waste anaerobically in urban homes. By following this process, within a span of ten days I successfully

extracted the leachate from the composter and diluted it with forty times with water before feeding it to my potted plants. This leachate is highly acidic due to fermentation of organic matter caused by the anaerobic bacteria. Once the first compost bucket was full, I left it to pickle for couple of weeks and began collecting daily waste from kitchen in second compost bucket. Stage two process in anaerobic composting is where pickled waste is mixed with dry matter like dead leaves, soil, old compost, saw dust, cocopeat (cocopeat is coconut husk in coarse powdered form). I shared my composting efforts with my friends and invited them to help me in emptying pickled waste for stage two process. We had almost emptied the pickled waste and extracted the leachate from the composter. My friend Iffat tried to empty the content fully by tilting the bucket further down. The loose set up fell from inside the bucket and Iffat's hands and arms got drenched in remaining leachate. Padma too got a splash of leachate on her clothes. We laughed as we washed our hands. This experience did not deter my friends from installing the same process in their homes. I am fully indebted to my friend Padma who sportingly agreed to install a much bigger anaerobic composter at her home, which I helped in assembling. Padma began collecting the waste from three households in her block. She placed the assembled compost bin neatly on a table in her lobby, neighbors would deposit organic waste in the composter daily and within a fortnight the bin was full. The challenge came when the bin needed to be emptied. We requested a

waste collector to carry it down to a park, dug a pit, deposited the pickled waste and covered it with soil. After about a month, we dug out the pit hoping to find compost but to our dismay we saw the pickled contents as we had deposited. There was no breakdown of matter at all.

Lesson learnt. **The pickled waste needs to be mixed with carbon matter and aeration is must for the process of breakdown of organic matter to begin.** In the absence of air, the composting stopped totally and the pickled waste lay in the same form as it was buried a month ago.

Encouraged by support from my friends and fueled by my own passion for finding solutions to tackle waste management at source, I installed aerobic compost bins in my colony parks. These plastic bins were mounted on bamboo frames for easy operation. Few children of the colony supported by raising some money from few residents for installing bins in all neighborhood parks. In one park we installed twin bins in the evening, and a resident staying nearby agreed to monitor the bins but another resident on same night dismantled the bins and threw them in another park. Her objection was that the waste would smell and would make their lives difficult. Her objection did have some ground, Understandably so! More than being discouraged I was little worried by the total lack of concern among people. This further strengthened my resolve to look for better solutions for processing waste. I began to realize that it was

important to change mindsets of citizens towards organic waste. To spread knowledge and awareness that daily waste coming out of our kitchens is a valuable resource. It could be easily transformed into compost and bio cleaners. The solution to the waste problem was to learn to lead regenerative lifestyle.

In another park, with the help of horticulture department, we dug small two feet by four feet long and two feet deep pits to deposit waste mixed with carbon matter. Soon enough a family staying close by objected and got the pits filled by MCD horticulture even before we could begin our project. Meanwhile I had trained garbage collectors in compost making. One garbage collector Pradeep began to collect waste enthusiastically in the bins fixed in one of the parks. He was happy that he was successful in making compost and was hoping to sell the compost to make extra money. Until, one fine day he came to complain that someone had stolen the compost. The garbage handler was demotivated as he was deprived of monetary benefits and stopped his efforts to segregate and compost waste.

In another park, house helps and MCD staff would fill the bins with plastic and paper waste collected from parks. Since the compost bins didn't belong to MCD the staff would not empty them. I had to remove the bins from the parks due to lack of support and cooperation from authorities as well as residents. People needed to be further sensitized on the issue.



Some important take aways.

1. Sensitization of the people by knowledge sharing was important. The pressing need to show them the manifold benefits of bio cleaners made out of fruit/flower waste. Benefits of starting a kitchen garden. Financial benefits of good health and savings on medical bills. Learning to live regeneratively.
2. The need of an easy to operate composter best suited for urban homes, keeping in mind space and time constraints.
3. Showcase Monetary benefits for garbage collectors for continuation of efforts to manage waste.
4. Support from municipality was mandatory in the form of providing space to process waste from households. To help create collection points of ready compost as not

many households wish to maintain kitchen gardens. Recently many initiatives have been started by local municipalities. Citizens are encouraged to separate plastic waste and take it to collection points and in return they get a bagful of ready compost.

DELHI STORIES:

SANGAM VIHAR

Site Number 1:

We Started few projects in different areas of Sangam vihar, Delhi. Sangam vihar is the largest unauthorized colony of Asia. In June 2016, we installed three two hundred lit capacity bins for six households near Asthal mandir. Women were trained, and one of them was made in charge of the project for monitoring the process. First few days things went well, but soon problems began to crop up. Few households began to throw mixed waste or they forgot to mix dry matter with the wet waste. This led to infestation of compost units with rats. Presence of too many Maggots and insects was a strong deterrent for the person managing the bin. After couple of months, the lady in charge of the project shifted the compost bins on her terrace and began to process her household waste and started a kitchen garden. I was happy that another success story had begun which in later years would be like a catalyst to motivate other households in the neighborhood. Some of the households had already been sensitized on the subject.

Site number 2:

One bin at another place was installed and trainings imparted to the household. The location was selected due to its proximity to a wood cutting unit. Easy access to much needed free wood shavings and saw dust (carbon matter) for processing waste was a huge motivating factor for the person in charge. The household managed to process waste successfully. They had successfully managed to compost the waste, and I had promised them that I would buy the ready compost. I paid them @Rs 5 a kg and bought four sac full of ready compost. Another challenge was transportation of manure and packaging.

This success in making and finally procuring compost was also due to availability of saw dust and wood shavings from the wood processing unit in close proximity to the house. Secondly, the couple jointly took responsibility and ownership of processing organic kitchen waste with an eye on financial gains.

Site number 3

Here two units were installed, anaerobic compost unit for collection of waste and aerobic composter for processing waste. Four households participated in the project.

Challenges faced: Presence of maggots in the anaerobic compost unit and stray cows attacking the aerobic composter kept in the common area.

Outcome was sensitization of households with a knowledge that kitchen waste can be composted in enclosed spaces. Few households continued to do so. Some even started to maintain kitchen garden.

Site number 4:

Two compost units of 200lit capacity were placed in the compound of a house. The project in charge Nirmala along with her husband managed the process well. They could produce good compost as they would also add cow dung in the compost bin. The family used the compost to maintain kitchen garden successfully. Here again they were not successful in motivating their neighbors to join the project.

Site number 5:

At another site nothing much was done as caretaker didn't take much interest in managing the kitchen waste and so did not motivate the neighbors also.

TRAINING THE VISUALLY CHALLENGED:

Often visually challenged inmates of a shelter home visited our colony for donations. One of them once said that they would like to earn with dignity instead of going from door to door for donation. Soon enough one fine day I visited their center and installed two compost bins on terrace. These compost units were funded by Mrs Rashmi Gupta resident of Vasant Kunj C block. Trainings were imparted and a compost marketing plan discussed. I floated the number of an inmate among

groups for compost orders. Few of them were able to raise money through this initiative. The project was well received by inmates but it needed long term hand holding.

We also approached few colonies for providing space so that the visually challenged could sell earthen lamps and cloth bags in colonies during Deepawali. This helped the visually challenged in finding new sources of income. We thank Ms Shifali RWA member of Sarvodhya enclave for supporting us in this initiative.

SAKET G BLOCK LANE PROJECT:

A pilot project for a group of households was initiated in Saket G block. This with help of my kitchen garden association friend Smt Kusum Gupta. Few meetings were held with RWA members and kitchen garden enthusiasts. It was decided that two compost units be installed, the responsibility of managing it was taken up by Mrs. Kusum Gupta. I assembled two compost bins, these were of 120 lit capacity each. The compost bins were mounted on iron stands and lids were fixed with a latch to lock the bins for proper monitoring. The lady is a kitchen garden enthusiast and she managed the compost in drums well but her gardener found it difficult to manage the contents for long as people unmindfully threw mixed waste or would throw big chunks of organic waste which took long to break down. Repeated failed request to participating household to mindfully deposit waste failed, finally this

led her to shift the bins on her terrace. She was successful in motivating many of her family members and friends to compost waste at source. Many participants individually began to compost their household kitchen waste in G block. The credit for motivating close to twenty households goes to Mrs. Kusum Gupta, her spirited participation was a huge motivating factor for me to carry on with my experiments on managing household waste.

SAFDARJUNG ENCLAVE

I requested my friend and colleague Shri Pankaj Aggarwal RWA member of Safdarjung development area to arrange for a meeting to address the members of their community and RWA on the issue of waste management.

A meeting was held in the community park early one morning in July of 2016. About ten people participated. A young girl took the responsibility of spreading the message in neighborhood. It was decided that we should install a tumbling bin in the park to raise awareness on the subject. Soon after installation of first unit, to our dismay we realized that residents of the area enthusiastically took part in the project, and we had not installed enough composters to manage all the waste getting collected. The young enthusiast had done the job well of raising awareness and sensitizing the households.

The effort was successful as we realized that many households were willing to segregate and were looking for solutions to manage the house waste at source.

The house waste management at source needed support and interventions at different levels.

1. Within the household
2. Within the community
3. At municipality level

A personal composter is needed for the households who wish to participate and maintain a kitchen garden.

Community leader in coordination with the municipality officials need to provide dedicated places for composting colony waste. This would significantly reduce the pressure on landfill sites across cities.

Soon the local representatives introduced me to few residents of B4 block. The initiative was led by the then president of RWA Mrs. Monica Bhasin. She arranged for a meeting in a fellow resident's house. About six households took part and all of them later decided to install composting units as per their needs and began processing house waste and some are successfully managing kitchen gardens till date.

A year later another meeting was organized by the RWA president Mrs Rachna Tiwari. She later went on to install community composting project in her colony and organized many meetings for benefit of residents in understanding the processes.

RWAs of few more colonies like Navjeevan vihar and Geetanjali organized sessions on the subject of waste management. Navjeevan vihar resident Dr Rama bhasin took special interest and till date continues to hold sessions in communities. People like her are catalyst in bringing about the environmental impact the world hopes to see.

One meeting led to another and it was heartening to see the slow meaningful impact of such repeated trainings of small gatherings. The message was seeping in slowly in communities and impacting the attitude of people towards waste.

Village Khampur stories:

During the later half of 2015 I was invited by team of MP Shri Udit raj to address the ladies of village to help them find alternate sources of income.

The ladies of village were trained in making cloth bags and managing kitchen waste to manure, armed with knowledge and eagerness to bring about a change the team was too willing to implement community composting project. Few households were provided with buckets for composting waste. Encouraged by individual successes six 200 lit drums were redesigned and installed in the lanes. At another place in village a 200 lit capacity drum was installed on iron stand with a handle for rotating the unit to mix kitchen waste with carbon matter. This project was partially funded by students of Jindal university.

Success of the project was the level of awareness which was raised among villagers. The project could not be monitored as it needed long distance travel and change in leadership resulted in lack of interest coupled with shortage of funds. Lack of interest of project manager was also due to absence of immediate monetary benefits.

Later on plastic bins of various capacity were mounted on Iron stands. A handle was fixed for churning the waste. The bins could not be operated successfully. The weight of the waste mixed with carbon matter made it difficult to rotate the handle due to increase in pressure of weight from the daily piling of waste.

Some women continued with their efforts, but later abandoned due to challenges faced and efforts needed for continuation of the project.

My learning again was that Composting Kitchen Waste should be individual responsibility just like cooking food for self or the family.

Composting in Clay pots.

Clay pots were installed on the terrace. Daily kitchen waste was deposited and dry matter mixed and sifted daily by hand to aerate the mixture. Soon enough the setup had to be discontinued as lizards began to inhabit the surrounding area. This was a huge deterrent for the family members. The clay pots became too heavy to lift and sometimes cracked due to weight of the decaying matter. However for first timers who wish to initiate the

process immediately without any investment, processing waste in clay pots and use of old clay water vessels (Matka) is a good idea. Still a person should first understand the scientific parameters at play to achieve fair amount of success in the initiative. Presence of too many maggots can discourage and lead to abandonment of the initiative.

Community Pits for composting:

Our team was requested by few RWAs to check out the community composting pits initiated with help of few NGOs and municipal authorities.

1. At some places the pits were dug too deep and it made difficult for the matter to be sifted.

2. Most community pits were not covered this led to loss of moisture and difficulty in maintaining the temperature needed for breakdown of matter. In summers the compost pits became too dry and during monsoon they got flooded by excess water.

At few colonies like Geetanjali and Safdarjung circular wire mesh enclosures were installed by IIT students. These were for collecting park, even after about a year the compost making process was painfully slow or just didn't happen.

In these community composting projects we found that the compost piles were not covered. Lack of moisture led to imbalance in temperature. This led to an inactive, cold compost pile.

3.I was invited by Kamla Nehru college environment wing to give guidance on their abandoned project on green waste management.They also informed me that the college had been fined by minicipality.

Community composting project in Defence colony Delhi and other RWAs.An activists approach.

Defence colony in Delhi has about 1600 plotted houses and close to five thousand households.Community composting was taken up by defence colony RWA in 2004 under able leadership of Mrs Shammi Talwar.The RWA started with pit composting.Later municipality took over the project.Presently the colony has thirteen mesh enclosures and six compost pits.The RWA has been very active in raising awareness and even issued red stickers to offending households. Currently about seventy percent households are sending segregated waste to dhalaos. According to Ms Talwar the MCD garbage vans sometimes carry mixed waste to the Okhla waste dumping site.Fines need to be issued to check this practice.She has personally guided many colonies and slums on waste segregation/management in South Delhi.Sarvodhya, Sarvpriya Vihar and few others being most successful RWAs among all.

A time table schedule for waste collection by municipalities would go a long way in solving the problem of mixed waste disposal by households. Dry waste and wet waste collection days should be separate.

This way it will be easy to identify, implement regulations and fines on offenders.



Kampala Uganada:



In 2016 I got an opportunity to visit Uganda for a month. I trained my daughter and four neighborhood gardeners in the complex to manage kitchen waste. They learnt to micro segregate waste. Pineapple is a major fruit crop in the region. The waste of fruit is not fit for animals also but is very good for making bio enzymes as it has high natural sugars and citrus content. The formulation has beautiful fragrance. The gardener said one day “I don’t look at fruits now I look at discarded peels at fruit juice shops and wonder how much resource is getting wasted unknowingly”. He and

his friends had successfully learnt to make Bio enzymes.

Just a few days before my return to India I was invited by coordinator of US aid partners to take a training session for ngo partners. The training session was a huge success and many partners observed that they had never thought about the value in kitchen waste. They wanted further trainings on the subject. Many saw it as financially viable project which was sustainable. I was successful in raising their interest in the subject and till date continue to be in touch with them.

Later John one of the gardeners contacted me and informed that a hospital had approached for his services as expert to initiate processes of composting in the hospital complex. The gardener took interest in assembling a 200lit compost bin for my daughter, which was later transported to Nairobi as they shifted base.

My daughter had already become an expert in the subject and she in turn trained her gardener and house helps in micro segregating waste. Especially in formulation and use of bio enzymes as cleaners.

By the time my daughter moved to Nairobi she had become an expert in formulating Bio cleaners and putting them to use. She has trained her gardener and house helps to wash utensils and clothes with bio enzymes. Once she called to inform that very tough stains on jeans and reflector jackets could be removed

by soaking the cloth in a solution of water and bioenzyme for few hours.

There are many individual success stories. Important lessons were learnt from each experiment. Once people realized the value in kitchen waste they showed lot of enthusiasm in managing it and reforming kitchen waste for personal use. There were also people who started enthusiastically but discontinued the process due to

Insufficient knowledge, lack of support and cooperation from family members and house helps.

On a recent trip to Kenya I took few sessions for locals in Nairobi and staff of Watamu beach resort. One of them informed me early this year that they had an accident as the bottle which had formulation of Bioenzyme burst as they forgot to release fermented gases from the plastic bottle. So now they have to start making it all over again.

One incident comes to mind where a senior citizen staying in affluent colony in south Delhi, enthusiastically reached out to us, seeking our help, to install the compost bins in his house. The gentleman started the initiative with lot of hope and positivity. Very soon due to mismanagement by his kitchen staff and indifference of family members he felt helpless. Initially we helped in managing the compost bins and to our dismay found that the staff was draining the valuable leachate in the drains. In fact it was good for the ecosystem of the drain. When the first batch of

compost was ready the gentleman began to call us frantically that we should help him to dispose the ready compost. When our team member reached him to pick ready compost, he informed us that his friend had happily picked up the ready compost.

WORKING WITH MCD

In October 2020, we installed ten compost bins in Kargil Veer Awaas complex, Dwarka, in coordination with South Delhi Municipal Corporation Asst Commissioner Rahul Singh, Najafgarh zone. Residents staying close to the waste management center objected. MCD workers were trained and as a pilot project ten RCB were installed. The project was successful as the president Urmila said the MCD gardeners have been using the compost made in the RCB compost units.



SOCIAL MEDIA OUTREACH AND SUCCESS STORIES



I started HARIT KACHRA KRANTI campaign on Whats app in 2016, and I Began to share my learnings on the platform. Vice principal of St Kabir school Rashmi Rajaora joined the group and implemented the learnings in her school. She asked the students to bring kitchen waste from their homes and arranged for drums in school to give hands on trainings to students on composting kitchen waste. She successfully trained students sensitized parents and sold the ready compost to parents in school environment event.

During Lockdown 2020, I saw it as a perfect opportunity to spread the message of importance of processing kitchen waste at source through social

media. People were free and there was enough concern and fear about pandemic and environmental issues.

Started a Facebook group **Freedom From Waste** with an aim to reach out to people across India. Began Taking sessions from second week of April. Sessions were in English, Hindi and Punjabi. Many people joined from other countries as well. A young lady from Pune and another one from Abu dabi got so inspired that they took further lessons from me on the subject and started their own brand of natural cleaners formulated from fruit peels and flower petals.

Necessity is the mother of invention.

Birth of **Ranju Compost Bin**



In 2017 the challenges faced and failed experiments in communities motivated me to design a Compost bin which was user friendly, affordable, long lasting and addressed all the issues faced by people in urban households while managing kitchen waste. My son Gurvir suggested that I name it after myself as it was my innovation, and I should take pride in it. My community experiments on composting gave me much needed insight into human outlook towards organic waste originating from kitchens. People found it difficult to handle even their own household waste at the end of the day as fresh waste begins to rot very soon in summer and rainy weather. Managing collective waste of few households in group failed badly and projects were abandoned.

The success rate where household managed their kitchen waste at home was 80%. A composter which could process the waste of a household for entire month was needed. A compost vessel of 50 to 60 lit capacity was needed for a family of four adults producing one kg of waste daily on an average. RCB was designed to take care of space and time constraints in urban lifestyle. It is sturdy light weight and designed in a way to maintain moisture, aeration and temperature required for effective composting with minimal need of human intervention.

Turning the invention into business model.

Along with repeated trainings on the subject came request from friends and family to help availability of a functional compost bin. For this project my daughter Jasdeep suggested the name of her friend Natasha. Since the youngster worked in a corporate office she was well versed in marketing processes. She became our first ambassador for promotion of Ranju Compost Bin. We were successful in field testing the model in more than fifty homes. This encouraged me to scale up my production and finally register the business as proprietorship.

MY LEARNINGS

Living Naturally (Mindful Consumerism)

Symbiotically

Living things plants or animals during their lifecycle produce organic biproducts. Their waste becomes food for the other living creatures in the food chains of nature.

Human being is the most intelligent of all living creatures inhabiting the planet Earth. We have used our intelligence to invent things to make our life comfortable. In the process we have not only over used finite sources of Earth but have polluted it by making things which are neither bio-degradable nor are part of the food chain for lower organisms. This has resulted in production of toxic waste which is floating in our environment and has polluted soil, water and air. Few decades back babies used to be toilet trained at a very early age, very few babies were bottle fed on formula milk. Searching for easy ready solutions has led to dependance on market driven products. This dependance has not only compromised on the human health but also on health of the environment. Over dependance on ready to use products is generating lot of plastic waste globally.

Co-existence with life on Earth

The pollution of natural resources has resulted in the imbalance of flora and fauna of our environment. Destruction of green cover by clearing forests and rivers by humans has further triggered the changes in weather patterns thus causing global warming. We are seeing its effects in the form of floods, disappearing of islands, melting of glaciers, forest fires resulting in high temperatures even in northern hemisphere. e.g., recent heat wave in Canada caused by forest fires.

Due to market driven modern lifestyle we are living very unnaturally. We eat packaged processed unseasonal fruits and vegetables to show our material wealth. This trend is against natural living which further causes sickness in human beings and pollution in environment.

Individual Responsibility

We have to conserve our health and health of environment by learning to live mindfully. In our daily routine we should make extra efforts to use things which produce minimum non-biodegradable waste. Some basic personal use products can be replaced by applying our knowledge of Ayurveda to formulate and use natural cleaners, learning to formulate skin moisturizers, disinfectants etc.

YOGIC CONNECTION

Yoga and Yog sadhna is a personal choice with manifold personal health benefits. A healthy mind and body spreads positivity in the community. A Yogi always focuses on Satvik ahaar and conduct to achieve optimum health benefits combined with yogic practice. Though it is individualistic approach yet a yog sadhak is able to instill natural way of life among the people he or she connects with. At primary level it can be family and immediate friends.

This Yogic approach stands to benefit if applied to check waste generation and management in present context. Satvik ahaar is fresh, local and seasonal. Organic refuse thus produced by such living is also organic. A person only needs to set up waste management processes in his home. The organic refuse produced when micro managed and transformed into manure and Bio cleaners will offer manifold benefits for self and conservation of environment. Health of living being is directly proportional to the quality of air water and health of soil. Health of all living creatures on Earth is representation of health of immediate environment. A yogi can be great influencers in motivating people to transform organic refuse to compost and help community in waste reduction. Thus highlighting the importance of an individual as a change maker.

ORGANIZING ZERO WASTE EVENTS

Organizing zero waste events sets a trend and sends a strong message in community and its members. A pristine environment should be a responsibility and priority for all.

1 BANNERS: Banners should be made in such a way that they can be reused repeatedly, or for one time use banners be made of cotton cloth which can be reused for making cloth bags.

2.WATER ARRANGEMENTS: Arrangements for water dispensers be made with disposable paper cups. An advisory be issued that people carry their own water bottles. Guests can be served water in reusable glasses.

3.FLOWERS: Fresh Flower bouquets should be free from any plastic coverings or decorations. Flower waste can be deposited in containers for making Bioenzyme or can be added to green waste or compost making unit in the event premises.

4.Crockery: reusable Bone China or Steel crockery to be used at waste free events.

5.FOOD WASTE: To check food wastage types of dishes should be few. It is seen that people tend to waste food as they take helpings of dishes for tasting just out of curiosity.

6.COMPOST BINS should be provided at the venue of events. This organic waste can be picked up by municipality trucks in completely segregated form.

7.CLOTH NAPKINS: Cloth napkins can be gifted to visitors with a message or logo about the event.

8.WELCOME KIT: Welcome kit should not contain any plastic items. One time use pens be replaced with pencils or re-useable pens. Plastic folders be replaced with card board folders or cloth folders.

WHY TRANSPORT WASTE? REDUCE CARBON FOOTPRINT.

Presently world over the segregated waste is being transported from one point to another. This transportation is leading to pollution, loss of finite resources and use of man power for managing the collective waste. In most cities of developing world it is still transported as mixed waste. A citizens responsibility is to check their contribution in this waste generation by living mindfully.

WASTE COLLECTION CENTERS IN COMMUNITIES.

Every colony should develop a segregated waste collection point. Citizens should responsibly deposit segregated waste in separate community bins. The segregated waste can be picked by municipal vans and taken to processing units. This way the pressure on garbage landfills will be reduced. Long distance transportation of waste can be done away with. The waste gets managed at community level, when transporting and depositing segregated waste becomes individual responsibility, it will put a check on waste generation by households. Too much waste would mean too many trips to waste collection points.

COORDINATION OF RWA WITH MUNICIPALITY ON SEGREGATION

Dhalaos or community waste collection area should be converted to only dry waste collection points. Bins be placed for collection of segregated dry waste only. Sale of dry waste will fund the salary of waste manager at the center. This will eliminate smell and unhygienic issues for residents staying in proximity to the waste collection center.

At places where municipality garbage van operates. A **weekly timetable on waste collection** schedule be

shared with residents. For eg on weekends plastic waste, glass waste, Sundays e waste. Wet kitchen waste only on weekdays. Trainings be imparted to residents to store and process organic waste. Leaves and park waste can be processed and provided to residents as dry matter. It will eliminate the need to transport dry leaf waste and help in recycling organic waste of households.

Municipal authorities should as a policy install leaf collection enclosures in each colony park. Provision for pit composting units in all colonies should be mandatory. There should be zero tolerance on transportation of wet waste. Trainings in communities be imparted for roof top garden/balcony garden keeping in mind the space constraints in urban homes. Most important is ensuring follow up of policy and issuing of fines to offenders.

UNDERSTANDING(KITCHEN) WASTE?

Kitchen waste constitutes of food scraps, leftover stale food, vegetable peels, flower waste, garden waste and fruit peels etc. It is bio-degradable as it can be transformed into valuable nutrient for soil i.e., compost. Presently in urban households our inability to use or transform it or dispose it in right manner turns it into toxic waste for the environment. This unmanaged or untreated waste pollutes the environment and impacts the health of all living beings. It is important to understand that anything produced Nature or man through using natural resources, manpower and energy is not waste but is raw material for another product or food for lower organisms in our food chain. In the following chapters we will learn to transform our organic refuse into valuable products.

Waste from our kitchens constitutes 80% of our total household waste. Most of this raw material can be used for making:

- 1.Compost/manure
2. Natural cleaners.

WHAT IS COMPOSTING?

Composting is recycling of organic matter done by mother nature constantly and naturally. It is the process of breakdown of plant organic matter into humus by decaying or is digested by microbes, fungi or worms which when added to soil increases its fertility.

There are two ways that we humans can facilitate composting in closed limited spaces either aerobically or anaerobically.

Aerobic composting is breakdown of green matter into humus in presence of air.

Anaerobic composting is composting by pickling the kitchen waste in absence of air.

With anaerobic effective microorganisms, e.g., Lactobacillus bacteria.

What is considered 'green waste'?

- ✓ Vegetable and fruit peels
- ✓ Egg shells, fish scales
- ✓ Tea bags, dry leaves
- ✓ Coffee grinds
- ✓ Food scraps
- ✓ Shredded cardboard pieces'
- ✓ Brown paper
- ✓ corn cobs
- ✓ flower petals

- ✓ cut grass
- ✓ saw dust
- ✓ coconut husk
- ✓ wood chips
- ✓ Wheat husk
- ✓ Rice husk
- ✓ Flower waste
- ✓ Dry crop residue
- ✓ Green Coconut shells

What cannot be composted should be handed over to recyclers:

- Plastic bags,
- wrappings,
- Glass,
- Cling film,
- Tissue paper,
- Newspaper
- Aluminium foils, etc.
- Clothes containing synthetic fibre.
- Electric wires.
- Rubber tyres&tubes
- Footwear.



All living things are generating waste on daily basis. Humans are primary consumers of whatever is produced in nature or is made in factories. Unlike other living things waste produced by humans is not fully organic in nature.

- 65% waste generated in homes is wet waste
- 25% is solid recyclable
- 5% to 10% is actual waste (cannot be recycled) This is accepted ratio.

PRESENT PRACTICES

As per latest Times of India newspaper TOI report out of total trucks loads dumped at Gazipur landfill site on September 25th 2016, 433 truckloads were of household waste, 67 truckloads of debris and 34 truckloads of silt. Most of the domestic waste is sorted at dumping sites by ragpickers. Recyclable material like cardboard metal paper plastic etc. is picked by them and rest which is wet kitchen waste is sent to landfills packed in polybags as discarded by households. This waste is hazardous as it lies buried mixed in polybags and continuously emits harmful gases. Decomposition of waste with polythene plastics makes the land infertile. The leachate from decomposing waste seeps down into the soil and pollutes the water table. We are also depriving the mother earth of nutrients which should as natural process go back into the soil. If we do not replenish the soil the future generations will face the consequences of our mindless actions. Poor soil leads to poor vegetation and disturbance in water cycle. A polluted environment is reflective of our own poor health and well-being.

UNDERSTANDING SCIENTIFIC PROCESSES IN COMPOSTING.

Since we are going to begin making compost, we need to understand the scientific principles we need to follow while making compost. **Making compost for soil is like cooking food for self.**

1. We decide on the container we will need for cooking this will depend on number of family members in the household. On similar lines we will choose a composter. For a family of four to six we will need a set of fifty to sixty lit capacity composter.
2. We cook food on fire but for cooking compost natural flow of air is required to generate heat in the pile for micro-organisms and worms to flourish.
3. While cooking food we ensure proper moisture in order to avoid food getting burnt. Moisture maintenance is must for a continuous process of composting to happen.
Moisture will help in growth of microbes and worms, who in turn breakdown organic waste and turn it to rich compost.
4. Maintaining temperature is must for cooking food. For composting we will need to maintain temperature within the composter. This by

maintaining proper ratio of Nitrogen content (green) and Carbon (dry matter) and maintaining optimum moisture.

5. We add salt to make food cook faster and make it tastier. For cooking compost, we will need to mix dry matter (dry leaves/cocopeat, wood shavings/saw dust) in our wet waste for breakdown of green waste.
6. Cooking food for self takes probably an hour, but compost cooking will take about three to four weeks depending on weather conditions. Remember we are just recreating optimum natural conditions for cooking compost.

It is important to train the individual members of household before the family decides to install composting processes at home. Mindful Segregation of household waste is responsibility of each and every member of household. It becomes easy to convert organic kitchen waste to compost if it has been properly segregated.

The management of segregated waste in a family should be under the care of a person who is trained and has knowledge of the work at hand.

Quite often it is seen that untrained staff of households leads to unsuccessful attempts at composting and finally abandoning the project. The interest and supervision of the houseowner plays an important part

in sustenance of the composting processes in household.

Importance of setting up processes towards successful organic waste management in urban homes.

One of the main challenges in achieving success in making Compost is failure in setting up of processes for smooth flow of waste management.

Arrangements need to be made for the meticulous micro segregation of waste to successful transformation into a new product, storage and learning to use it.

For Households

Setting Processes at homes, from kitchen to garden

House managers should arrange for placement of a small waste collection container (3 to 5 lit) for organic waste on right side of the kitchen shelf. This should be easily accessible for the person doing cooking for the family. Every day before collection of kitchen waste, the container should be layered with two-inch cocopeat husk to prevent rotting of waste and for absorption of liquid if it is too wet.

Before depositing the waste in the larger composter more dry matter should be mixed. This will eliminate the need to mix and churn the contents in larger main composting unit. The waste once mixed with dry matter should be emptied in the larger composter installed on rooftop/balcony/backyard or lawn.

Within first four weeks the contents would decompose and compost will be ready, it will smell of earth and the food waste would have totally disintegrated. Maggots disappear as compost ages but we do find beetles. The beetles come in ready compost to eat away any remaining dead wood pieces.

UNDERSTANDING THE MICRO ORGANISMS AND INSECTS IN THE COMPOST PILE.

When you start collecting vegetable and cooked food waste in the bin you will see appearance of maggots in the pile and this is a huge demotivating factor for person managing waste for the first time.

Always ensure that you put a layer of cocopeat or saw dust or dry leaves at the base before you begin collecting waste.

The organisms you see in compost pile or around, are maggots, worms, ants, snails, beetles etc. they chew away organic matter into smaller pieces. Other important organisms at work not visible to human eye are bacteria, fungi, actinomycetes. The layer of cocopeat at base will absorb the extra moisture and will take care of smell which comes due to rotting.

The aerobic bacteria break down the organic material and this break down of organic matter produces heat. This causes the compost pile to remain warm. The warmth in the pile creates perfect conditions for maggots to function and thrive. The worms nibble away the big chunks of waste thus breaking them down into smaller particles. The role of friend of farmer **THE EARTHWORM** comes later when the compost pile is

cold and the matter needs to be turned into fine nutrient rich soil. These can be added to composting pits, during hot phase the worms will dig deep into soil and during cooling phase they will come to do the job when the conditions are suitable for them.

- The compost bin should be light in weight for ease in handling.
- Availability of space.
- Choose type of Backyard Compost Bin as per volume of daily waste of household.
- You can use either compost pits, if you have garden or a compost bin for container composting.

TYPES OF COMPOST BINS

Clay pot, buckets with holes, some available options in market.

Clay Pots: Advantages of clay pots are that they are easily available ,affordable and absorb moisture well.

Disadvantages: They become too heavy to lift. One needs to manually aerate the contents every day. It becomes a safe haven for lizards as flies swarm around the containers. It is not durable as sometimes it cracks due to weight of the organic matter.

Plastic buckets or drums with holes: Advantage is that they are durable.

Disadvantages are that these bins with holes become messy as leachate oozes out from the holes and leads to foul smell and attracts insects and reptiles.

Anaerobic Bins: These are good for working couples who are too busy, still one needs to give two hours every week to manage and follow the complete process. The process involves two stages, first is collection of the waste anaerobically and second is processing of waste aerobically.

Finding a suitable location:

Composter Location should be such that it is easily accessible to family members and the staff entrusted with the responsibility of supervising the process.

Following Processes:

Before adding Kitchen and garden waste. Make sure to break down the bigger pieces into smaller pieces for easy and fast decomposition.

Continue to daily mix fresh waste with hand full of cocopeat before depositing it on the compost bin. Keep adding until the bin is full. Cover the contents with a layer of cocopeat and secure the lid tightly.

Take care of contents of your compost bin by maintaining the dry matter and green waste ratio.

Harvesting the Compost.

Proteins, Sugars, starches and organic carbon are first to break down, Cellulose takes time to decompose and big twigs are resistant to decay but eventually get eaten up by beetles.

The time taken for matter to turn to compost will depend on particle size, density, airspaces, temperature, moisture and Carbon (dry matter) and nitrogen (wet waste) ratio.

Ready compost will be dark brown in appearance, most of the organic matter would have disintegrated and is unrecognisable except for egg shells, some big seeds like mango seeds, twigs, coconut shells etc. Maggots would have disappeared except for few beetles. The compost can be aerated for a day by spreading it on the terrace. Sift it with hands to pick out big chunks and deposit them in second bin for a second cycle of

composting. One can just put the contents of composter in a jute sac or cardboard for aging. Secure the box tightly with a paper or cloth for ensuring continued aeration.

WHY SHOULD WE ALL COMPOST KITCHEN WASTE?

Cities across world are running short of land to dump waste. Due to absence of segregation practice at source of generation, we households play our part in polluting air, water and environment. The smoke mixed Methane gas which we often see in the form of fires on garbage hills. Mix waste produces toxic leachate which seeps down and pollutes the water table. Garbage dumping sites acutely impacts the environment up to a radius of five kilometers.

The primary unit of waste generation in cities are individuals and households. They are end users of products produced in factories. Lot of awareness has been generated about importance of waste segregation at source. We are yet to see hundred percent success in this. Majority population has failed to implement it in their homes or are careless at the time of disposal of waste.

The waste segregation by rag pickers happening in community dump sites in many colonies indicates that much needs to be done to ensure implementation of waste segregation process at homes.

Responsibility of ensuring good work conditions for waste handlers:

The failure to segregate waste at household level poses a great challenge for the waste collectors too. Along with generating unhygienic working conditions for waste handlers, the community dumps are a breeding ground for the outbreak of epidemics every rainy season.

Responsibility Of sharing knowledge to conserve nature for next generation of Earth dwellers.

The responsibility of sharing knowledge with new generation lies with the seniors who have seen and lived the regenerative life in villages. They have an understanding of importance of reforming and recycling organic and inorganic matter. Raising an awareness that anything produced or nourished by nature or by man uses up natural resources and Earth's natural resources are finite. We have to combine scientific knowledge and traditional ways to solve the environmental issues faced by people today:

Collecting Food scraps and vegetable waste in Kitchen:

As you begin to cook food in the kitchen you will be having some amount of organic waste to dispose. Keep three to five liters container with lid and a wide mouth for ease of collection of waste. Layer the container with two inches dry matter (cocopeat) daily before you begin depositing wet kitchen waste. The layering with

cocopeat will help absorb the excess moisture from the waste. Once it is full by evening or later, you may deposit the contents in larger composter on terrace, garden or balcony.

Poor soil; poor vegetation; disturbance in water cycle.

Manage majority of your waste at home!

How?

Compost bio-degradable waste at source

Can it be done at home?

Yes!

It can be successfully done in controlled conditions. A compost bucket/drum can be easily installed at homes and when procedures are followed correctly, it does not have any foul odour. Usually it takes about 4-6 weeks for waste to decompose and become nutrient rich compost to be used as fertilizer.

DESIGNING A COMPOSTER AS PER FAMILY NEED.

Things required for Aerobic composting

1. Two containers with a lid: 20 litres sized buckets or 40/50 litres capacity drums.

2. Dry matter: Dry leaves, grass, cocopeat, saw dust, shredded

cardboard paper, pizza boxes, hay and so on

3. Wet waste from the kitchen: Vegetable and fruit peels, egg

shells, tea leaves, coffee grains, left-over food or grass cuttings.

4. For moisture: water, diluted solution of yoghurt and jaggery or

brown sugar, rice water (obtained after washing rice) or a

diluted solution of cow dung (dung slurry)

5. A rake for aeration.

A family of four to five members would need a set of two composters of about sixty litre capacity. Composter should be such that it ensures proper aeration, maintains moisture and temperature. Ease of accessibility and

minimum operation will mark the success of composting process.

Sensitization and Trainings of family members

Awareness sensitization and training of family members and staff in segregation, composting process and its importance is must. Any lapse in depositing mix waste will lead to discouragement of the waste handler. This may result in total failure of the process. Household also must ensure availability and supply of carbon matter for ensuring smooth follow up of processes.

Selecting a Composter Selection of composter for home will depend on amount of money a family wishes to invest for the process of composting, availability of time, number of members and space available in a household.

Household with garden have an option of installing Pit composting processes or composting units meant for gardens. Our main focus here is composting solutions for households.

Anaerobic Bins: In anaerobic bins we have to ensure that it has a tight lid and pickling of waste happens in absence of air.

Assembling an anaerobic bin

Things needed: Two buckets, Bacterial Culture.

Setting up: Make holes at the base of one bucket and in second bucket attach a tap near the base. Insert the

bucket with holes in the bucket with tap. Your set up is ready.

Daily deposit the kitchen waste and food waste in the bucket and sprinkle some bacterial culture and cover the lid tightly. Ensure that lid is air tight.

Precautions: The lid should be securely fixed otherwise due to aeration maggots may appear in the waste.

Once the bucket is full extract the leachate from the tap fixed on the outer bucket. Use this liquid by diluting it thirty times with water to irrigate the plants.

Mix the pickled waste with cocopeat and put it in a sac or a carton for further breakdown of matter. It may take from two weeks to three weeks for compost to be ready for use depending upon the season. In winters it may take more time for compost to mature.

Precautions:

1. Do not deposit the pickled waste near the root of a tree as it is too acidic and this may burn the roots of the plant.
2. Do not dig a pit and bury the waste as the waste will need aeration for further decomposition.

Aerobic Bin

You may assemble an aerobic composter or buy a unit from the options available in the market. Your compost bin should have provision for aeration and moisture maintenance. For aeration drilling holes on the sides of

a composter is a common practice. Later on due to weight of compost the leachate begins to ooze out from the holes, thereby attracting flies and insects. An anaerobic bin explained above can be used for aerobic composting. One has to ensure aeration by mixing contents often. Compost bin should have a lid. Ensure proper ratio of dry matter(carbon)with the kitchen waste (Nitrogen). Approximately 1:3 by volume. (Ensure proper aeration by mixing the contents of the compost bin every few days. Three handfuls waste and one handful of cocopeat /saw dust/dry leaves.

As per need and requirement a family one can easily assemble a compost bin or buy from options available in the market.

COLLECTING WASTE ANAEROBICALLY STAGE-1

Households with office going members may install composters for collecting waste anaerobically. This they will have to process once the bins are full. They will have to devote one day in a month to mix pickled waste with dry matter and deposit it in a bigger aerobic composter.

The advantage of collecting waste anaerobically is that one can extract liquid fertilizer from the waste matter as early as ten days. The plants in their garden will grow well and it will attract bees and butterflies.

Design of anaerobic composter

Anaerobic Composting or Bokashi method

Stage One

Things needed:

1. Two buckets
2. Two taps
3. Two sieves
4. A piece of PVC pipe for supporting weight of wet waste
5. A dilute mixture of yoghurt, fermented rice water and jaggery or brown sugar.

Setting up procedure

1. Fix the tap at lower end of bucket about inch and a half inch above base.
2. Sprinkle some crushed jaggery or shakkar .
3. Place the piece of PVC pipe for support.
4. Put the sieve on top.
5. Your set up is ready

Preparing bacterial culture:

Things needed: 50 gm brown/white rice, one lit water, 50gm jaggery and spoonful of yoghurt.

(Curd/Dahi), plastic bottle

Wash raw rice with water and collect the water in the bottle. Add the ingredients in the bottle. Fix it with a spray pump.

Process:

Put a thin brown paper or newspaper on the sieve and empty wet waste from the kitchen container into the bucket compost bin.

Spray some yoghurt and jaggery solution. Place the lid firmly.

Keep adding waste daily until full.

After a fortnight you can harvest liquid collected at the base. This is leachate a very potent fertilizer for plants. Let the waste pickle for another fortnight till your second compost bin is full. This is a good liquid fertilizer.

How to use the liquid fertilizer?

To one liter liquid add forty liters water and irrigate your plants with this solution.

Liquid fertilizer can unclog drains. The beneficial bacteria in leachate kills the harmful microorganisms in pipelines and water bodies. It helps purify water in drains and rid rivers and water bodies of toxic chemicals.

Stage Two: Decomposing the pickled waste aerobically.

Things needed: A tub/bucket/carton/basket, newspapers, soil or old compost.

2. The container should be lined with newspapers, sprinkle a layer of soil or old compost. Add a layer of solid pickled waste and keep adding layers and finish with final layer of soil or ready compost. Cover it with a layer of newspaper, tie up securely with a rope to fix the newspaper and leave it to compost for another three weeks.

A word of caution:

Anaerobic set up can be placed indoors or under a shade to protect it from rain. Do not bury the untreated compost pickle near the root of a plant or a tree as it is extremely acidic in nature and will burn the roots of plants leading to drying up of the plant or tree.

AEROBIC COMPOSTER

A family of four to five members would need a set of two composters of about sixty litre capacity. Composter should be such that it ensures proper aeration, maintains moisture and temperature. Ease of operation will mark the success of composting process.

Training family members

Training on compost making of family members and staff is must. Any lapse in depositing mix waste will

lead to discouragement of the waste handler. This may result in total failure of the process.

Fixing responsibility

The household will have to fix the responsibility of monitoring the process on a staff or family member. This will fix accountability on one person which will lead to higher chances of success as it eliminates any omissions due to lack of knowledge.

FAQS

1.Why should I manage waste and compost? I pay house tax.

The amount of waste generated in cities is huge. The pollution caused at landfill sites is affecting all.

2.what will I do with Compost? I live in a flat.

Answer: You can grow herbs by doing vertical gardening or gift it to friends who maintain Kitchen gardens. You can sell or give it to gardeners.

3.I stay in a flat, organic waste will smell?

We have good composters available in the market. Another option is segregate and responsibly deposit waste in community composting pits.

4.We are working, we don't have time?

Train your house help or try anaerobic composting or segregate and support community composting project in your colony.

5.Why do I need a composter?

Organic matter decomposes on its own and turns to compost but due to lack of space and time in households a composter would be needed to maintain optimum aeration moisture and temperature.

6.Can I compost in winter?

Yes you can, the process will be little slower.

7.Can I store kitchen waste for composting later?

Follow Anaerobic composting.

8.I don't wish to invest in a composter, can I start composting kitchen waste?

Yes you can assemble your own composter Page Number

9.Can I add garden waste in my composter? Yes you can but shred it to pieces. Cellulose takes longer to break down.

10.Can I put weeds in my compost pile?

Yes you can shred garden waste and add weeds to compost. The temperature in the compost pile will kill the seeds and make them rot.

11.Should I use gloves to handle compost? Answer: It is safe to handle compost with bare hands. However a beginner can use gloves till one gets familiar with the processes and develops a relationship with soil.

12.Can coconut fiber be used directly for composting? Coconut husk will need to be shredded by hand for use as carbon activator. The fiber is good as it makes compost light and keeps it aerated for good temperature maintenance.

13.Do I need to buy Microbes or activator?

No you can add ready compost from previous batches as activator.

14.Can I add soil in composting?

You can few handfuls to introduce soil bacteria and microbes. You can add ready compost as activator from previous batch.

15.How do I know I am adding too much Nitrogen?

Compost pile will be too wet and smelly

16.How do I know I am adding sufficient Carbon matter? Compost pile will have earthy smell and is not too wet.

17.How often do I turn the pile to aerate?

It depends on the type of composter in use. In clay pots it needs to be aerated every alternate day. In pits every three four days.

18.My compost pile does not heat up.

It needs more cocopeat and needs aeration. Turn the pile and ensure the compost is covered.

19.The compost pile has too many worms.

Worms are good but they need to stay inside the compost bin.

20. My compost pile has ants.

Add more Carbon content and sprinkle water for moisture.

21. Compost pile smells.

Add more Carbon content

22. Worms crawl out of bin.

Compost is too moist add more cocopeat.

23. Contents of compost bin are too wet.

Add more dry matter(Carbon)

24. Can I add non veg food waste?:

Yes you can.

25. Can I add used oil?

No, you can use this oil for making soap.

26. Compost smells of rotten eggs.

It needs aeration.

27. Compost smells of ammonia

It has too much Nitrogen, add dry matter.

28. How can I speed up composting process?

Break down the organic matter into smaller bits. Ensure proper aeration and moisture control.

29. Can I compost in rainy season ? Yes you can, protect your composter from rain and excess moisture.

30. My compost bin is full, can I shift the contents to another box for aging?

Yes, you can put contents in a cardboard box after checking balance of Nitrogen and carbon matter or in any container but ensure aeration of matter regularly.

31. How do I know my compost is ready?

Compost will have earthy smell, organic matter would have disintegrated and turned dark brown. You may find few big chunks of decomposed organic matter. You can break it by hand or again put it back in the compost pile.

32. Do I need to sieve ready compost?

It is not needed, you may roll the compost with hand to pick up big undecomposed pieces.

33. Do I add fertilizers if I use compost?

You do not need to add fertilizers. You can add Potassium by adding banana peels in compost.

34. What if I make too much compost?

You can sell it or gift it to friends or deposit it in neighborhood parks

35. Do I need to sterilize compost?

No, sterilization should not be done as microbes and insects are needed for decomposition and disintegration of organic matter.

36.What herbs or plants can I grow on my terrace or balcony?

You can grow following plants in your terrace garden.

- 1.Thai Basil
- 2.Holy Basil Tulsi
- 3.Cinnamon
- 4.Indian Bay leaf
- 5.Spinach
- 6.Mustard
- 7.Coriander
- 8.Fenugreek
- 9.Ashwagandha
- 10.Aloe Vera
- 11.Asparagus Shatawar
- 12.Neem
- 13.Guava
- 14.Lemon
- 15.Tomatoes
- 16.Papaya
- 17.Moringa
- 18.Pomegrnate (Annar)
- 19.Betel leaf (Paan)
- 20.Sheesham
- 21.Tamarind
- 22.Hibiscus
- 23.Jasmine

- 24. Rose
- 25. Curry patta
- 26. Rosemary
- 27. Lettuce leaves
- 28. Marigold
- 29. Rose bushes
- 30. Lavender
- 31. Sage
- 32. Garlic
- 33. Lemon grass
- 34. Mint
- 35. Leafy greens and seasonal vegetables.
- 36. Seasonal flowers.

BIO CLEANERS FROM FRUIT AND FLOWER WASTE



MAKE ENZYMES FROM FRUIT PEELS and flower petals

What are Peel and petal enzymes? Peel or petal Enzyme is an organic solution

produced by the simple fermentation of fresh vegetable waste, brown sugar and

water. This is same process used for making wines. This fermentation creates

natural chains of proteins, mineral salts and enzymes.

Things needed:

1. One plastic container.
2. Ten parts WATER
3. Three parts Peels of pineapple, lemon, sweet lime, papaya, flower petals
4. One part JAGGERY/ GUR

Ratio

100 gm shakkar

300 gm fruit peels

1000 litres water

6. Make a solution of water and jaggery in plastic container. Keep adding peels till the desired weight is obtained.

Write a start date on the container.

Keep releasing gasses formed in the container. This should take a fortnight. In some fruits the fermentation state may last longer.

The enzyme will be ready after three months.

Precautions:

1. Use only plastic containers.
2. Leave some space in the container for fermentation, as a layer of white froth will appear overtime.

- 3.Loosen the lid every few days for gases to escape.
- 4.Do not use glass container.
- 5.Keep it in shady place.

ENZYME USES:

Think of using enzyme where ever you see dirt and grime. Some of the uses are as follows.

- 1.To remove foul odours, moulds and grime in the kitchen and toilet.
- 2.As an anti-bacterial and anti-viral agent.
- 3.To drive away insects.
- 4.To clean carpets and remove ticks
- 5.For laundry washing and ironing
- 6.For mopping floors
- 7.for cleaning cars
8. as fertilizer for plants.
9. Peel and petal Enzyme can be used as an alternative to bleach and other cleaning compounds.
- 10.Mix Enzyme with shampoo so that the toxic chemicals are neutralized by the fruit peel Enzyme.
11. Washing clothes
- 12.Washing fruits and vegetables
- 13.As a household cleaning liquid and as dish washer.

14. Add a capful of enzyme to 20 liters of water and spray in your garden to fertilize plants.

15. Balancing the soil PH.

16. For cleaning drains, river water and pond water.

17. As mouth wash, face wash, body wash.

18. As makeup remover.

19. As pet wash.

20. Car, auto, scooter wash.

21. Cleaning stains on doors and windows.

22. Cleaning glass window panes.

One must experiment with different fruit peels, herbs and flowers for a variety of uses. We should apply our knowledge of Ayurveda to formulate and get the maximum benefit.

HOW TO EXTRACT ENZYME EFFORTLESSLY:

Once the formulation is ready, you will see a white layer of fungus on top of formulation. Underneath it you will find a clear transparent yellow/light brown or red color enzyme. This will depend on peels or flowers used. It will smell like fermented fruit juice.

Without disturbing the formulation, insert a tube and siphon off the clear liquid in another container. Line the strainer with two three layers of muslin cloth to filter it further as you siphon the enzyme. The fruit waste at the bottom of container can be added to compost or crushed

to get a thick paste. This can be used as dish cleaner or toilet cleaner.

SOAPNUT SOLUTION (REETHA): Take 200gms of soap nuts, boil in two liters of water until soft, leave overnight. Crush soap nuts and filter the clear solution. Store it in a bottle

HOW TO USE ENZYMES EFFECTIVELY ON GREASY SURFACES

In half liter bottle mix water and enzyme in the ratio of 60:40. Add a spoonful of liquid soap or soap nut solution. Fix the bottle with a spray.

Sprinkle baking soda on the surface to be cleaned. Spray the enzyme solution and wipe the surface with wet cloth. Enzyme cuts into dirt and grime effortlessly.

USING ENZYME AS DISH WASH:

Mix Water, Enzyme and Soap nut solution in 50:30:20 ratio. If soap nut is not available add two teaspoons of liquid dish wash soap.

USING ENZYME AS LAUNDRY WASH.

Add half a cup of enzyme in full load of washing machine along with equal amount of soap nut solution or one capful of regular powder detergent.

FLOOR CLEANER

50 ml of Enzyme and soap nut solution in half a bucket of water.

DISINFECTANT SPRAY

PET WASH

CARPET WASH.

FRUIT VEGETABLE WASH

Enzyme works well in cutting the dirt in the carpet and rugs. Wet the carpet. Sprinkle enzyme soap nut solution and use brush to spread evenly. Leave it for ten minutes to half an hour and wash with plain water.

PERSONAL USE

Mix water and enzyme in the ratio of 60:40. Fill it in a spray bottle. Use it as mist spray to freshen up or use it as make up remover, few capfuls in bath water or as hand sanitizer.

Note: Enzyme can be safely used by diluting it with water for cleaning purposes. The ratio can be adjusted depending on the extent of dirt and grime to be cleaned.

Heavily soiled laundry can be soaked overnight for effectively removing stains on shirts bags socks etc.

Uses of Enzymes are manifold, Enzyme technology is the solution for the conservation of fresh water and a natural cleaner for problem of water pollution.

Happy formulating and experimenting

ACKNOWLEDGEMENTS

I would like to thank my colleagues Ms Padma, Iffat, Kusum Gupta, Babita, Meenu, and Jaishree who believed in the importance of my research and supported by participating in the pilot projects on No Plastic and composting. Dr Rama Bhasin of Navjeevan vihar, Shri Pankaj aggarwal, Rachna Tiwari, Monica Bhasin, Shifali for organising trainings and helping to connect with south Delhi communities. Delhi WoW team (Women of Wards) for participating in “No Poly Bag” campaign in 2012 by campaigning for use of cloth bags from waste materials. Social media campaign Harit Kachra Kranti success story of St Kabir school Hissar led by Mrs Rashmi Rajoura. The women team of Khampur village, garbage handler Pradeep, Ashok the mason for helping me install compost bins in colony parks. Huge thanks to Natasha K. Chawla working with KPMG who helped to turn my innovation “Ranju Compost Bin” into a business model. My younger daughter Sahiba and son in law Mark for creating opportunities for me to address the issue with international communities at grassroot level in East Africa. Special thanks to John our gardeners in Kampala and Ben in Nairobi who are now experts on the subject and are promoting the use of Bio enzymes in their communities. Mr Puneet Verma, founder of Mission green Delhi, in helping connect with youth in

educational institutions. Team CoRWA Hyderabad Convener Shri TP Tyagi and President Dr Rao VB Chelikani for unending support in connecting with RWAs nationally. Connecting with communities has helped me to understand the challenges faced by people and universality of challenges globally. Special thanks to my associate Ashish Singh who joined as a team member in Nov 2018, he helped in the research and guided many households to overcome initial reluctance and challenges they faced in turning their organic waste into compost. Thanks to Shammi Talwar for sharing her inputs on community project on kitchen waste composting in Defence colony Delhi. Mrs Shifali Talwar of Sarvodya enclave.

Last of all I thank my husband and older daughter Jasdeep who financed and tolerated my failed experiments and supported me all along. My grandson Simarvir who would accompany me to community meetings and events from a very tender age. My son Gurvir who would drive for long distances so that I could train communities. I am indebted to many others for supporting me to overcome the challenges I faced during my journey on understanding waste and in reaching out to people

My Learnings and work are my offerings to my Sikh Gurus. Preaching of the first Guru, Shri Guru Nanak Dev ji, inspired me to serve nature and humanity. He remains the greatest of all environmentalist and guiding light of humanity.

“Pawan gur

***u, Paani Pita, Mata Dhart Mahat. Diwas Raat Dou
Dahi Daya, Khele Sagal Jagat.”-Shri Guru Nanak
Dev.***

Shlok

“Air is the Guru, water is the father, and earth is the
Great Mother of all. Day and night are the two nurses,
in whose lap all the world is at play”.

Mitti dhundh jug chanan hoya

Darkness of ignorance gets dispelled with light of
knowledge.

NOTE:

REGENERATIVE LIFESTYLES WORKSHOPS

“Regenerative lifestyle is a lifestyle towards conservation of natural resources used by us in our daily lives for survival. Also ensuring that any waste created by us is organic in nature and becomes part of the food chains in our ecosystem.”

Our team has been consistently working since 2009 towards environment conservation and

safeguarding community interests and in the process strengthening them. The challenges faced in achieving our goals has motivated us to find and invent easy solutions to complex waste

management issue faced by municipalities and people. The only solution to the waste management crises is that the waste has to be managed at individual household level. Managing waste and its proper disposal should be the responsibility of waste generator. After lot of research we have devised a 60 lit composting unit “Ranju Compost bin” (RCB) named

after the innovator Mrs Ranju minhas and founder of the movement “Harit Kachra Kranti”. The RCB effectively converts green kitchen waste to valuable compost while keeping in check issues related to composting. The compost generated at household level

can be used by family in growing herbs and vegetables for family consumption. The organically grown herbs have multiple health benefits, which help check the rising medical expense of a family.

We have also worked dedicatedly to devise simple effective alternatives to check pollution of drain water of households. This is because 80% of water pollution is caused by households due to indiscriminate use of chemical laden cleaning products like laundry detergent, dish wash, shampoos, body washes etc. Our Regenerative lifestyle in urban homes consists of five modules, which are as following.

- a) Checking Consumerism.
- b) Wet Waste Management- Segregation, Management of Organic Waste.
- c) Rooftop/Kitchen Gardening.
- d) Water Conservation.
- e) Herbs for Healthy Life- Preventive and remedial measures to check illnesses by use of herbs and spices.

If you wish to hold a session on above issues in your institution to raise awareness and empower young minds to initiate action to halt climate change.

Thanking you.

Ranju Minhas

Secy CoRWA Delhi

Founder executive director- SHIELD CITIZEN'S
INITIATIVE

“Harit Kachra Kranti” , Freedom From Waste.

Owner “ PURE WASH’ (social business of handmade
soaps)

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COMPOSTING JOURNEY OF KARUNA KHAITAN

I'm so happy to share my journey of learning composting and the many exciting discoveries along the way.

I was first introduced to Ranju ji by Dr Rama Bhasin during a workshop at her farm. Dr Rama had been composting kitchen Waste since many years, when she moved into our colony, she realized very few people were aware of it. She organised a Regenerative Lifestyle workshop by Mrs Ranju Minhas and a live demonstration of composting processes in 2019. Being an avid gardener, I was instantly sold on the idea and jumped right in. I began segregating wet and dry waste. At first, it wasn't easy to get my staff to follow, but after patient reasoning and explanations, my staff started doing it meticulously.

The recyclable waste was collected by a company called One Step Greener, and the kitchen waste went into Ranjuji's bins — layering each day's waste with cocopeat. As the bins filled, I left them for a few more days to allow the leachate (the liquid that drains out) to run off before mixing the semi-composted matter with my garden waste and adding it to an open pit. Later we introduced a leaf crusher machine to break down garden waste. With this method the conversion happens in just

20 days, and after that we are able to harvest manure every day. I am deeply thankful to both Ramaji and Ranjuji for their passion and for holding my hand throughout this process.

Today, I feel empowered enough to start a composting drive in our colony of over 150 farm owners. We've already formed a core team who will be trained by myself, Ramaji, and Ranjuji. Each member of this team will, in turn, hand-hold other households to help them become garbage-free. We've already generated great interest in a small workshop held at my farm, where I showed live demonstrations of how I manage my waste. God willing, very soon, we too shall proudly call ourselves a zero-waste colony!

An Invitation

This is just the beginning. Each one of us has the power to make a big difference by managing our own waste responsibly. If you'd like to learn how to start composting at your home or farm, please join hands with us in this initiative. Together, we can transform our colony / city into a model of sustainability and inspire many more communities across India.



COMPOSTING JOURNEY OF DR. RAMA BHASIN

I had been composting kitchen Waste in old matkas. In 2017 I requested RWA to invite Mrs Ranju Minhas to introduce the concept of Kitchen waste management among residents of Navjeevan Vihar. RWA members later coordinated with MCD for provision of compost pits. Today Navjeevan Vihar is one among the few zero waste colonies of Delhi.



Later in 2019 I organised another Regenerative Lifestyle Workshop by Mrs Minhas at my farm in Ansal Villas. Close to forty neighbours attended and about twenty families acquired compost bins designed by Mrs Minhas.

Empowered by knowledge and encouraged by initial success of composting methods some friends have installed bigger units. One of them have installed a leaf crusher to quicken the process of composting in containers. Personally I continue to manage farm waste by traditional pit composting and kitchen Waste in RCB compost drums.

Now together with other farm residents we are aiming towards zero waste Ansal Villas at Satbari.

Chatarpur Delhi

Dr Rama Bhasin

COMPOSTING JOURNEY AT GARGI COLLEGE

Mrs. Ranju Minhas has been an integral part of the efforts to establish a sustainable and eco-friendly waste management system at Gargi College. Her association with the creation of the compost pit has been marked by her exceptional dedication and expertise. This significant project, which culminated in the inauguration of the compost pit on December 12, 2023, reflects her commitment to environmental conservation and waste management practices.

In addition to overseeing the establishment of the compost pit, Mrs Minas conducted a comprehensive training session in the college. Her session focused on the intricacies of composting, highlighting effective techniques, the importance of segregation of organic waste, and the benefits of compost.

Dr. Renu Soni
(Garden Committee Convenor-2023)
Associate Professor
Gargi College



BENEFICIARY OF COMPOSTING PROJECT: VINAY KUMAR

अंधेरे में रोशनी की तलाश – विने की आत्मनिर्भरता की कहानी

मैं विने हूँ, और मैं नेत्रहीन हूँ। मेरी ज़िंदगी कई चुनौतियों से भरी रही, लेकिन 2015 में एक मुलाकात ने मेरी दुनिया बदल दी। दिल्ली के सिवभानी नेत्रहीन कल्याण केंद्र में मैं पहली बार मैम रञ्जू मिनास से मिला। उस दिन मैं सिर्फ एक छात्र था, लेकिन उन्होंने मुझे एक कर्मयोगी बनने की राह दिखा दी।



मैम ने मुझे कंपोस्ट खाद के बारे में बताया—एक ऐसा विषय जो मेरे लिए नया था, लेकिन उनके शब्दों में ऐसा विश्वास था कि मैंने खुद को उस दिशा में आगे बढ़ते पाया। उन्होंने मुझे सिखाया कि आत्मनिर्भरता सिर्फ आर्थिक स्वतंत्रता नहीं होती, बल्कि यह आत्मसम्मान, आत्मविश्वास और समाज में अपनी जगह बनाने की भावना होती है।

उनका साथ मेरे लिए एक दीपक बन गया, जिसने मेरे भीतर की संभावनाओं को रोशन किया। मैम ने मुझे न केवल जानकारी दी, बल्कि मुझे अपने हाथों से काम करना सिखाया, मुझे महसूस कराया कि मैं भी समाज के लिए उपयोगी हूँ। उनके विश्वास ने मेरे भीतर वह शक्ति जगाई, जो मुझे हर दिन आगे बढ़ने की प्रेरणा देती है।

इस यात्रा में सोशल मीडिया ने भी मेरी आवाज को एक मंच दिया। मैं पहले मैं खुद को सीमित महसूस करता था, वहीं अब मैं अपने अनुभव साझा करता हूँ, लोगों से जुड़ता हूँ, और अपने काम को पहचान दिलाता हूँ। यह माध्यम

मेरे लिए एक पुल बन गया, जिसे मुझे समाधि से ढोड़ा और मेरी पहचान को विस्तार दिया।

मैं रज्जू मिन्यास के प्रति मेरा आभार शब्दों में नहीं समा सकता। उन्होंने मुझे सिर्फ एक राह नहीं दिखाई, बल्कि मुझे चलना सिखाया। मेरी कहानी उन सभी के लिए एक संदेश है जो अंधेरे में रोशनी की तलाश कर रहे हैं— कि अगर कोई विश्वास करे, तो हर बाधा पार की जा सकती है।

COMPOSTING JOURNEY OF ASHISH

I joined the start up Purewash By Ranju Minhas in 2018. Since I was already Lok Bharti UP State co-ordinator for Subhash Palekar Natural farming I understood the importance and impact of composting on the environment and people. Ranju Compost Bin designed by Ranju



madam is a perfect device for urban homes as it requires zero energy and minimum human intervention. It was an enriching experience to help implement the bin in homes, understand the challenges faced by people. Working on ways to overcome them. This book will help to spread awareness and learnings among masses.

Working with UNOPS as Banda (UP) District Coordinator

WOMAN EMPOWERMENT - JOURNEY OF SUNITA CHAUHAN

नमस्कार

आज मुझे यह अवसर प्राप्त हुआ है कि मैं आप सभी के समक्ष पर्यावरण संरक्षण के क्षेत्र में एक अत्यंत प्रभावशाली व्यक्तित्व — रंजू मिन्हास जी — के साथ कार्य करने के अपने अनुभव साझा कर सकूँ।

रंजू मिन्हास जी न सिर्फ एक समाज सेविका हैं बल्कि एक अत्यंत धर्मात्मा एवं सौम्य मुस्कुराती हुई और हमेशा मदद करने में प्रयासरत हैं बिना किसी भेदभाव के महिला सशक्तिकरण का पीता पीता उदाहरण हैं रंजू जी एक सक्रिय पर्यावरणविद् हैं, जो घरेलू कचरे के माध्यम से प्लास्टिक खाद निर्माण को न केवल स्वयं अपनाती हैं, बल्कि समाज को भी इस दिशा में प्रेरित करती हैं। उनके साथ कार्य करते हुए मुझे यह अनुभव हुआ कि स्थायी जीवनशैली (Sustainable Living) केवल एक विचार नहीं, बल्कि एक व्यवहार है जिसे हम सभी अपने दैनिक जीवन में शामिल कर सकते हैं।



रंजू जी के मार्गदर्शन में हमने सीखा कि कच्चे रसोई से निकलने वाले प्लास्टिक कचरे — जैसे फल-सब्जियों के छिलके, चाय की पत्तियाँ, बासी भोजन आदि — को जिम्मेदारीपूर्वक एक संसाधन में बदला जा सकता है। उन्होंने खाद बनाने की संपूर्ण प्रक्रिया को बेहद सरल, वैज्ञानिक और व्यावहारिक रूप में समझाया, जिसमें अपघटन की गति, नमी का संतुलन, और सही सामग्री का चुनाव मुख्य बिंदु रहे।

इस कार्यशाला के दौरान उनकी नेतृत्व शाली विशेष उल्लेखनीय रही — वे अत्यंत विनम्र, प्रेरणादायक एवं ज्ञानवर्धक ढंग से हर व्यक्ति को प्रक्रिया में शामिल करती रहीं। उन्होंने केवल प्रक्रिया नहीं सिखाई, बल्कि उस सोच को भी विकसित किया जिसके माध्यम से हम 'कचरा' नहीं, बल्कि 'संसाधन' देख पाते हैं।

उनके साथ कार्य करना मेरे लिए न केवल एक शिक्षाप्रद अनुभव रहा, बल्कि यह एक सामाजिक परिवर्तन का हिस्सा बनने का क्षण था। इस पहल ने मुझे और मेरे साथ अनेक लोगों को यह समझने का अवसर दिया कि पर्यावरण की रक्षा केवल सरकार या बड़ी संस्थाओं का काम नहीं है। बल्कि यह हर नागरिक का नैतिक उत्तरदायित्व है। इसी के साथ वेस्ट कपड़े से थले बनवाकर पॉलिथीन मुक्त शहर बनाने में काफी प्रयास किया है।

अंत में, मैं रंजित मिन्हास जी के प्रति हार्दिक आभार प्रकट करती हूँ, जिन्होंने न केवल हमें शिक्षित किया, बल्कि हमें एक पर्यावरण-अनुकूल भविष्य की दिशा में अग्रसर किया। उनके प्रयासों से प्रेरणा लेते हुए, मैं सभी से निवेदन करती हूँ कि हम अपने घरों से ही इस परिवर्तन की शुरुआत करें।

परिवर्तन की शुरुआत वहीं से होती है जहाँ से हम खड़े हैं।"

धन्यवाद

सुनीता चौहान (राष्ट्रीय अध्यक्ष)

ममता वेलफेयर सोसाइटी NGO

REVIEWS



Green Waste Revolution

Joining hands with the Green Waste Revolution is like giving your best contribution in the field of waste management. I joined this campaign through social media where there was active involvement of people across various parts of India. I participated in this Campaign on the behalf of Saint Kabir's School in 2014 and replicated the protocol of composting among the students from pre- primary classes to senior secondary. Each student was assigned one bin to do composting per month. So we have produced 500 kg of composting per year. The composting was regularly used in the school garden. I would call this as an active learning process where the students learn by doing and by applying learnings for creating better surroundings. This great initiative was undertaken under the guidance of Ranju Minhas who is an inspiring identity for me. I am impressed by her deep involvement in creating Green India vision. I thank her for being a great inspiration to me and the students. I also thank our Director, Ms. Neha Singh and Principal, Ms. Neeru Mehtany to the students to be part of such great mission

Rashmi Prabha Vice Principal Saint Kabir school



Mrs Ranju Minhas through her humble kitchen waste has created a movement which has great potential for environment conservation, halting climate change and saving the soil. Her actions speak louder which is need of the hour. She is working on similar lines like our amazing mentors like Sadguru and Dr Daisaku Eked.

Kiran Bhatia Banker

Kalkaji RWA President



Shammi Talwar Jt Secretary Defence Colony Delhi

Waste should be decentralised in big colonies and space for pits be provided by municipalities. RWA will help in continued supervision to ensure success of project. Due to limited tenure of RWA members, activists already working on composting should be empanelled to monitor for the success of initiative. It is big achievement that a housewife has understood the concept fully and has successfully shared her decade long experiences and knowledge. My best wishes to Mrs Ranju Minhas and I look forward to working together.



Anju Mahajan Air Hostess

Segregation of waste, making manure out of wet kitchen waste and making bio enzymes was my dream. I learnt from that from Mrs Ranju Minhas on the Freedom From Waste Facebook group in 2020 during Covid lock down. She is a great environmentalist and mentor. She is great inspiration for many who are now actively following her footsteps to make world free from waste and problems associated with it. My best wishes to her on her mission for a clean environment.



I have been composting my household kitchen waste since many years. I am also a member of All India Kitchen Garden Society since the past two decades. I got more clarity about composting after receiving practical guidance from Mrs Ranju Minhas . I learnt the concept of micro management of organic waste by learning to make and use Bio cleaners made out of fruit and flower waste. I wish more people benefit from her expertise and knowledge.

Mrs Kusum Gupta Saket



On Journey about Bio enzymes. It was in March 2020 I was introduced to Mrs. Ranju Minhas by a friend who himself is creating a lot of awareness on environment protection. Ma'am has started a series of classes on Bio - enzymes: How to prepare and what are their uses and benefits. I found that quite interesting and this opened up one more ways to manage our waste in a very fruitful manner. I prepared my first bio enzyme from Mango peels. The smell was so good and results of it as a cleanser was amazing. Explored more about this miraculous enzyme, prepared home cleaning products and hand wash initially. Major breakthrough that

lead me to take it up at a bigger level was with hair wash elixir that I prepared under the guidance of Ranju Ma'am. I myself couldn't believe the results, thus started the journey of entrepreneur. Today I have a complete range of personal care as well as home care products bases on bio enzyme under the brand name - Mahi Tatva

PEOPLE FOR THE ENVIRONMENT

2 ENVIRONMENT | ENTREPRENEUR | 29 JANUARY 2020

Ranju Minhas -Green Crusader of Greater Kailash

It is possible to change people's lifestyle and make them more responsible towards the environment. Ranju Minhas, an environmentalist, is working towards making Greater Kailash a greener place. She has been working on this for the last 10 years. She has been working on this for the last 10 years. She has been working on this for the last 10 years.



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PROCESS
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To support the movement join our Facebook group **Freedom From Waste**
<https://www.facebook.com/groups/506872310089513/?ref=share>
www.purewash.co