



BROWN LEAF

"Not a single dry leaf should be burnt in India"

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What is Brown Leaf?

Brown Leaf is a forum for nature-friendly solution for management of dry leaves.

Vision: “Not a single dry leaf should be burnt in India”

Why Brown Leaf?

Around November to March is the time when deciduous trees shed leaves. A large quantity of leaf litter is generated. Trees lose water through the leaves by the process of evapotranspiration. Leaf fall is the adaptation by trees to conserve water during summer months.



Ground remains covered with these fallen leaves. They form a layer over the soil, protecting it from harsh sun during summer. Due to this, soil retains moisture. Various insects find shelter under these leaves.



Some proportion of the nutrients that a tree absorbs is present in the fallen leaves. In the monsoon, leaves decompose, and nutrients are returned to the soil, thus completing the cycle.



In urban setup, this natural, essential process has turned into a nightmare.

In cities, majority of the soils are capped with buildings, roads, pavements etc. Even when open soil is available, heaps of leaf litter do not fit into our idea of aesthetics. There is just no scope for natural decomposition of leaf litter.

Burning seems a convenient way to get rid of the leaf litter.



Burning of dry leaves is banned in many countries. It leads to air pollution. It is a major health as well as fire hazard. The smoke contains several toxic particles and gases.

Burning of dry leaves generates a large quantity of particulates that can reach deep in lung tissue and cause

- Coughing
- Wheezing
- Chest pain
- Shortness of breath
- Long-term respiratory problems

For the people who suffer from asthma or other breathing disorder, leaf burning is extremely hazardous.

Complete burning results in production of Carbon dioxide, while Carbon monoxide is released from incomplete burning, such as with smouldering leaf piles. Carbon monoxide is absorbed in blood where it reduces oxygen-carrying capacity of the Red Blood Cells (RBCs). It also is one of the greenhouse gases.

Fallen leaves contain 50-80% of the nutrients that trees extract from the soil during a growing season. When we burn dry leaves, we not only create pollution but also destroy the valuable nutrients that should go back to the soil.

How did Brown Leaf start?

I, Aditi Deodhar, started Brown Leaf in Pune in February 2016.

Sight of burning leaves always bothered me. I decided to stop this practice in my building. We have a large tree in the building premises. I instructed the lady who sweeps the building premises, not to burn those leaves.

Then one day she came to me and told me it is really a large heap now, what to do with it. I was clueless what to do with such a large heap of leaves. I realised, telling somebody not to burn leaves is not enough, we need to provide option. I started inquiring on various whatsapp groups. One lady, Sujata Naphade, replied to me. She cultivates vegetables for 3 families in a

patch of land near her house. She said she can accommodate all the leaves from my tree in her plot.

I collected leaves in gunny bags. She came in her car, took 5-6 gunny bags in first trip. I got curious. What is commonly perceived as waste, was wanted by somebody. And that person took trouble of driving all the way to collect it.

I visited her plot to see what she does with dry leaves. What I saw was amazing.



Her plot used to be a dumping site for construction debris and hence lacked necessary organic matter. She needed to create soil layer on all that concrete. Buying that quantity of soil is very expensive and not viable. She creates organic matter using dry leaves. She needs dry leaves in large quantity and did not know where to get them.

Discussing this matter with other gardeners, I realised this was a challenge for many. In Pune city, there is a trend towards "grow Your Own Food". Many people are utilizing their terraces to cultivate vegetables, medicinal herbs and other plants. Not all of them have large trees that shed leaves. Getting dry leaves is a major problem for them.

This was an eye-opener. There are people who have dry leaves and there are people who want dry leaves. Availability and requirement, both exist in the same city. Necessity is to connect the two. If they both connect, then this major problem is solved.

I realised since we live in such a connected world, thanks to Internet, this can be achieved through an online forum. That is how I decided to create Brown Leaf website, facebook page

and whatsapp group where people with availability and requirement can communicate and help each other.

How exactly Brown Leaf works?

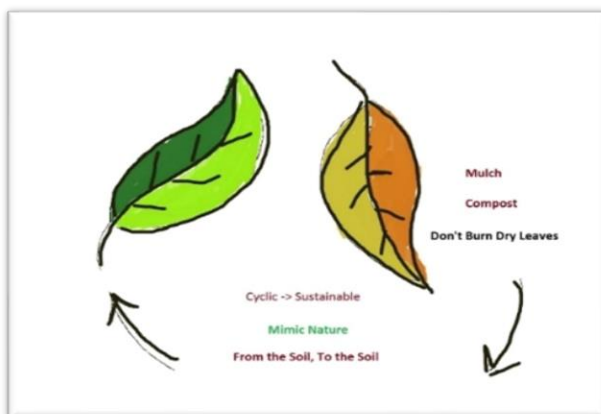
At Brown Leaf, we advise these 3 options for management of dry leaves. Options are mentioned in the order of their priority.

- **MULCH**
- **COMPOST**
- **DONATE**

We advise people to practice mulching and composting. If composting is not possible for some reason, or there is surplus quantity of dry leaves, then there is the option of donation. Person who has dry leaves donates them to the person who wants them.

MULCH

In the forest, dry leaves fall to the ground during winter. Whole of summer, they remain on the ground, which reduces evaporation and helps retain soil moisture. In rainy season, these leaves decompose and returned to the soil, adding nutrients to it.



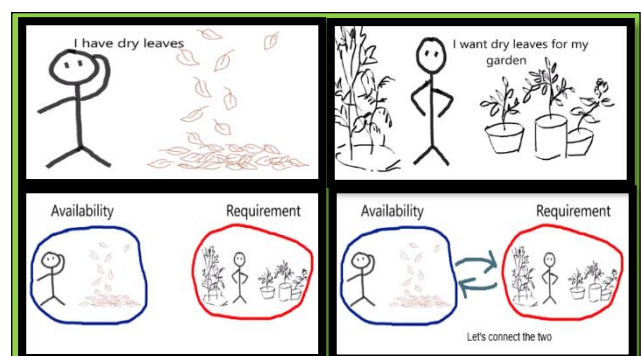
COMPOST

Fallen leaves contain some proportion of the nutrients that trees extract from the soil during a growing season. When these leaves are thrown away or burnt, those nutrients lost by the soil are never returned to it.

DONATE

As there are people who have dry leaves, there are people who want dry leaves. People who have gardens/ terrace gardens are always in need of dry leaves.

Availability and Requirement exists in the same city. The need is to connect the two.



We have a whatsapp group where both leaf-donors and leaf-takers are present. The person who has dry leaves, collects them in gunny bags and drops a message on the group providing quantity and address. The person who wants dry leaves and for whom the mentioned area is convenient, responds and arranges for the pick-up.

By now, the Brown leaf community has prevented more than 50,000 gunny bags of dry leaves from getting burnt in Pune city.

Does Brown Leaf arrange pick-up and drop of dry leaves?

No. The objective of Brown Leaf is to bring about a change in the attitude towards dry leaves. When a facility for pick-up and transportation is provided, the mentality that perceives dry leaves as waste does not change. Facility simply serves as a convenient way to “get rid of the waste”. If for some reason, leaves are not picked up as scheduled, people simply go back to burning the leaves because the mindset is not changed.

At Brown Leaf, we attempt to change the perception and view dry leaves as “resource” and not “waste”. It is a lengthy process, but it is the only sustainable way going forward.

At Brown Leaf, the very fact that somebody wants the dry leaves that are normally perceived as waste, helps change the attitude. When donors and takers communicate with each other, it results in exchange of ideas and knowledge. Many members, who initially joined as donors, now utilize their dry leaves for composting. Some societies, previous donors, have started compost project. Drawing inspiration from the expert gardeners in the group, have started gardening.

Brown Leaf forum has turned in an active, vibrant community of people with the singular objective **“Not a single dry leaf should be burnt in India”**.

Any case-studies for large-scale utilization of dry leaves?

- Millennium School in Pune has developed a vegetable garden for its students using canteen waste and dry leaves. They cultivate all kinds of vegetables, fruits in this garden. An organisation nearby has a lot of leaf litter. I suggested them the model of partial compost and donation. Surplus leaf litter was collected by school from them and from a few other sources. The vegetable garden till now has utilized 20 tons of dry leaves which otherwise would have been burnt. Mulching is the process of crushing leaves and spreading in the plant bed. Because of this layer, soil retains moisture and water gets conserved. This vegetable garden has conserved around 80% of water due to dry leaf mulching.



Vegetable garden (Annarai) at Millennium School, Pune

him cultivate and harvest very healthy vegetables. He shared photographs with the whole Brown Leaf group further emphasizing usefulness of dry leaves.

- There are two groups, Vasundhara Abhiyaan and Vasundhara Swachhta Abhiyaan working for greening of hills in Baner, Pashan and Sus area of Pune. These hills are barren. Soil is eroded. Buying soil is very expensive. They use dry leaves to create organic matter. Dry leaves are also used for mulching for young plants. Since soil retains moisture, it increases chances of survival for the young plants, especially in summer months. Getting such a huge quantity of dry leaves is a challenge. I connected societies that had surplus leaves after composting with these groups. Hills received truckload of dry leaves which are helping plants survive.



Is Brown Leaf limited to Pune city?

Not at all. It started in Pune, but it is certainly not limited to Pune. I wish to spread the concept and replicate this model in all places in India, all places that face the challenge of dry leaves.

Individuals from various cities have contacted me. We are currently working out the strategy to replicate this model all over India. Watch this space for more updates.

Can I set up such a system in my city?

Yes, Certainly.

We suggest, start small, gain confidence and then scale up.

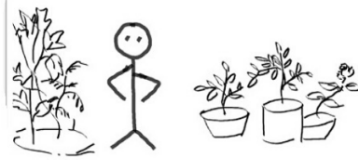
You can check our website for step-by-step guidance.

<https://brownleaf.org/how-can-we-help-3/>

There is Miss X.

She is creating a soil-less garden using dry leaves.

Her challenge?
Where to find dry leaves??



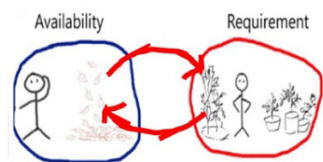
X and Y connect on Brown Leaf forum

They realise they stay close by. X starts collecting dry leaves from Y

Problem is solved for both and so many leaves are saved from burning

There is Madam Y. She has 5 large trees..

Her challenge?
What to do with all these dry leaves??



Today, Miss X collects dry leaves from madam Y and many other donors in her area.

. Was that exceedingly difficult?
No!! What needed was a communication channel
And creating such channel is easier than you imagine.

Yes, believe me 😊



I have some questions; how can I get help from Brown Leaf?

For last 4 years, we have received a lot of queries. From these queries, we have identified some common questions that are asked, and accordingly, we have chalked out USER-JOURNEYS.

Here is the link, <https://brownleaf.org>

Here, there are journeys mapped for 6 type of questions. Select the one that suits you the best. We are confident, you will find answer to your query.

If not, then remember you are just a click away. Feel free to write to us at pune.brownleaf@gmail.com

What other activities have been conducted by Brown Leaf?

DEMO VISITS

Theory does not bring about a change in the mindset. Just telling somebody dry leaves are valuable is not enough to convince them not to burn them. Hence, we launched the concept of DEMO VISIT. They all were arranged to the places where dry leaves were being utilized in the heart of the city.

Demo visits: A Glimpse



Demo visit to Sujata Naphade's vegetable plot



Demo visit to Bharati Kulkarni's garden

one to vegetable cultivation plot and a household garden..



Demo visit to Neela Panchpor's terrace garden



Demo visit to Suchitra Diwan's terrace garden

one to the society-level, revenue-generating dry leaf composting project



Anuradha Ganu's society-level dry leaf compost project

Two demo visits cum donation drives to the hills where 2 voluntary organisations are working for greening of the hills..



Leaf donation drive to the hills.
Voluntary groups, Vasundhara Abhiyaan
and

Vasundhara Swachhta Abhiyaan
work here for greening of the hills.

Citizens brought gunny bags of dry leaves, helped in mulching and watering of plants. Mulching keeps soil moist, conserves water and increases chances of survival for the saplings.

MULCHING AND COMPOSTING GUIDANCE SESSIONS

Sessions were organised at various societies, organisation, institutions to guide them and help them get started in eco-friendly management of dry leaves.

Around 40 odd lectures and sessions have been conducted till now.

Some of the organisations are

FTII, Pune



Rupa Rahul Bajaj Centre for Environment and Art, Empress Garden, Pune



Housing Societies



Katraj Dairy, Pune





BROWN LEAF PROJECT

Background: Through this project I will work with the municipal waste management personnel in my lane. Currently, due to insufficient human resource and infrastructure, dry leaves that get collected in the street in the lane daily, are either burnt or dumped somewhere.

Last year I collected all these leaves daily from the municipal personnel and set up a compost project in my building premises. I could accommodate around 100 gunny bags of leaves in it. In July, I got a very good quality compost that I and other people are utilizing for the gardens.



Pilot Project: With this experience and expertise at hand, I wish to carry out a pilot project on large scale this year. This project comprises of the following

1. Set up 4 metal composters in the lane.
2. Deposit the dry leaves in the street in the lane daily in these composters.
3. Once a week, add water and "culture" to it which will provide bacteria to speed up the decomposition process and maintain required moisture.
4. At the end of 4 months, harvest the ready compost by inviting the local corporator to felicitate the municipal personnel working on ground, with the residents in the lane present.
5. Pack and sell the compost with earnings distributed to the municipal personnel who have worked. Sweeping the street is part of their job, but they would be felicitated because they are going extra mile in composting it when just dumping it somewhere would have been easy for them.

Rationale for this pilot on the street-scale: Pune is a green city. Brown leaves is the other side of this greenery. From November to April, streets, societies are drowned in leaf litter.

Municipal corporation has a system in place to pick up these dry leaves, but no system for its utilization. Hence these leaves are sent to the dump site. Also, infrastructural and human resource problems, collection of dry leaves too is not regular. Hence burning of dry leaves is rampant in the city.

Dry leaves are not "waste", they are a "resource". Through Brown Leaf forum, I connect the people who have dry leaves with the people who want dry leaves. Yet, huge quantity of dry leaves poses a great challenge.

With this pilot, I wish to demonstrate that

1. A distributed model will be able to solve the problem.
2. It will also be a good example of public participation with the local governing body.
3. Instead of creating a parallel system, citizens can collaborate in the existing municipal process
4. This is easily scalable model. Taking lane as the unit, it can be replicated in the entire Pune city and other cities as well.

How can I start Dry Leaf Composting? Where can I learn the process?

While working with many people, I realised the most challenging part in composting is “getting started” 😊.

To help people overcome this step, we have developed,

- Downloadable Guide (<https://brownleaf.org/how-can-we-help-4/>)
- Video Series (<https://brownleaf.org/how-can-we-help-4/>)
- Paid Online Course (<https://brownleaf.org/how-can-we-help-5/>)

Media Coverage and Recognition

SPECIAL INVITATION FOR LECTURE AT IIT POWAI ON WOMEN’S DAY





For more, <https://brownleaf.org/media-coverage/>