

MANAGEMENT OF FOOD WASTE AND EXCESS FOOD:

Any food can be reused

B.C.Dhevesh

Department of Computer Science
Panimalar Engineering college,
Chennai , India
iltdevesh@gmail.com

M.P.Dinesh Kumar

Department of Computer Science
Panimalar Engineering college,
Chennai , India
dineshmariappan12@gmail.com

Mrs.R.Devi

Department of Computer Science
Panimalar Engineering college,
Chennai , India
deviramakrishnanpec@gmail.com

Abstract—An important goal in our world today is to eliminate food waste by reutilizing available food sources within local communities: leftover food items in homes, restaurants, stores and food distribution centers that may be approaching expiration; and any perishable items not used in entirety within their desired period. Earlier an app was developed for donating the excess food to the hunger and needy people in pandemic situations before it gets wasted , but in actual reality some food might get spoiled , large amount of leftovers and even kitchen waste. A website is created for managing the food waste and excess food by converting the food waste into natural fertilizer and providing the excess food to hunger-needy people or to nearby orphanage homes. This website has the information to do the process , either you can do the process or book an agent in this website , one of our members collects from your place.

Keywords— *Web Development; Food Waste Management; Excess Food Management; Hunger Alleviation; IoT; Smart Living;*

1. INTRODUCTION

A) FOOD WASTE:

Food loss and waste is food that is not eaten.[1] The causes of food waste or loss are numerous and occur throughout the food system, during production, processing, distribution, retail and food service sales, and consumption. Overall, about one-third of the world's food is thrown away.

Categories of food waste than can be separated as: -

1. Kitchen waste
2. Dining waste
3. Non-edible/Spoiled food

These can be seen in homes, marriage halls, when a function takes place at home and any place where cooking or dining takes place

Kitchen wastes:

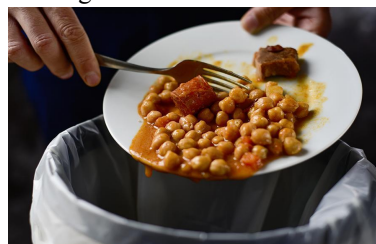
Kitchen wastes include: -



1. Rotten vegetables and fruits
2. Peels of vegetables and fruits
3. Egg shell

4. Scraped portions of vegetables/fruits or slurries.
5. Non-veg waste before cooking (NOTE: HAS TO BE ADDED TO NON-EDIBLE)
6. Even bread waste

Dinning waste:



Dinning waste includes:-

1. Inedible parts of a meal that we separate (both veg and non-veg)
2. Small amount of the leftovers in meal

Non-edible/Spoiled food:



Non-edible/Spoiled food includes:-

1. Spoiled cooked food
2. Non-veg waste before cooking
3. Non-veg waste after dining

Spoiled dairy products , oil.

B) Excess food:

Excess food means any remaining unexpired, unopened, and unconsumed food intended to be served as part of a reimbursable meal that was unable to be utilized for a current or future meal provision after a school has served breakfast and lunch to students during a school day. [2]

Leftovers are surplus foods remaining unconsumed at the end of a meal, which may be put in containers with the intention of eating later. Inedible remains like bones are considered waste, not leftovers. Depending on the situation, the amount of food, and the type of food, leftovers may be saved or thrown away.

Excess food means any remaining unexpired, unopened, and unconsumed food/meal that was unable to be utilized for a current or future meal provision.

This includes: -

1. Small number of leftovers at home.
2. Large amount of leftovers in home functions, marriage halls and in any place where large amount of cooking or dining takes place.
2. Management: 'Self-manage' or 'Book an Agent'

*What to do
with
kitchen
Waste?*

Nearly all food waste go directly to the trash can or garbage disposal; a practice that is essentially wasteful especially considering that these products can be turned into something really useful: fertilizer.[3] Food waste is composed of organic matter which can be used for composting to make fertilizer. It is an effective and eco-friendly way of disposing food waste in your kitchen

Composting is when food and plant waste materials decomposes biologically. There are three main types of composting methods,

1. aerobic(with oxygen)
2. anaerobic(without oxygen)
3. using vermicompost (using worms instead of bacteria).



These process can be done within your garden by implementing these following steps:

1. *ADD KITCHEN WASTE IN A CONTAINER*

Add kitchen waste like fruit peels, vegetables, eggshells, coffee or tea powder to a container (bucket, drum, terracotta pot) but don't fill the container completely rather add some small layer of these wastes. Add some soil over the kitchen wastes filled (Alluvial soil is preferable). After layering pour some water and repeat this process to several layers until the container is filled. For a continuous cycle maintain two containers so that if one is filled, you can continue the process in the other

2. *Add the Browns for better fertilization*

Arrange for the browns like dry shredded leaves, sawdust or cocopeat to control the moisture and add them to the wet garbage. Carboards wastes without any stickers or

tapes can be added for better and fast fertilization. Aside from wood ash, you can also add sawdust to the compost to help speed up the composting process. If you have some livestock, you can add the excess manure to the compost. If you don't have sawdust or manure readily at home, you can buy them from a gardening supplies store.

3. *Collect some garden waste*

To come up with a nutrient-rich fertilizer, you will also need to add some natural waste to your compost. You can do this by collecting grass clippings and leaves from your lawn. When you mow your lawn, all the organic waste will be sucked and mixed into the lawnmower bag. Remove all the contents from the lawnmower and place them into your compost bin.

Abbreviations and Acronyms
Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, sc, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

4. *Layering*

Layer with soil and repeat the process for two more times. If the mix becomes soggy, add more browns to maintain the ratio.

5. *Provide Oxygen and water*

In aerobic composting, providing oxygen is very crucial for a smell-free composting cycle and to avoid crawlies like maggots. Either you can make perforated holes in your container or churn the pile of waste once every four days. Pour water after composting for every 2 to 3 days. If the mix becomes soggy, add more browns to maintain the ratio.

6. *Apply to your garden*

Wait for your compost to achieve a soil-like mixture that is dark in colour. Once the compost reaches this appearance, it is ready to be spread. Use a garden fork to spread the compost on the garden fields you want to fertilize. Apply the right amount of compost and wait for the fertilizer to seep in and see some effect on the areas applied before you adding more. Aerobic composting will prepare manure in 40-45 days. All you have to do is keep adding kitchen waste daily and ensure oxygen flow.

Composting your kitchen waste offers several benefits which include getting rid of unwanted rubbish and having some fertilizer you can use on your lawn. Before throwing your leftovers and other food remnants, determine if they will work great as compost materials first.

What we do with dining waste?

Veg dining waste can be added to KITCHEN WASTE. That can be further processed to manure. Non-veg dining waste can be either given to some kind of pets or can be added to NON-EDIBLE

What to do with non-edible/ spoiled food?

Sadly these cannot be reused. May be they also be composted but it is not advised because spoiled cooked

rice/food , raw and cooked meat waste can contain harmful bacteria, which could spread through your compost and later contaminate your crops. Oil and Dairy products like milk, sour cream, yogurt, cheese, and butter should not be composted because they also attract pests. So as these are completely waste , they have to moved to the trash i.e. disposed properly.

What to do with the Excess food?



Since the leftovers at home is very small amount , it can either be consumed afterwards or can be added to Spoiled food and further it will be We highly recommend you to consume afterwards.[4]For Large amount of leftovers , those can be given to the hungry-needy people or orphanage homes. Search for nearby orphanage homes in our website and give the food or book an agent in our website for the process

If you book an agent :

The above processes shall be carried out by one of our agents if you book an agent in our website , once you selected which of them you want to manage and provide the details, an agent will be assigned to the place you mentioned to collect the resources and do further processes.

3. WEB DEVELOPMENT: 'TO VIEW' OR 'BOOK AGENT' FOR MANAGING



Html , css and javascript are used for this webpage.[5][6]
The HyperText Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets and scripting languages such as JavaScript.[6][7]

Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

JavaScript, often abbreviated as JS, is a programming language that is one of the core technologies of the World Wide Web, alongside HTML and CSS. As of 2022, 98% of websites use JavaScript on the client side for webpage behavior, often incorporating third-party libraries.

Mechanism of the webpage:

By selecting which one you want to manage and how you want to manage, the page will lead to you respectively to a page to either self-manage or book an agent for managing the resources

The further pages it lead according to you selection: -

1. Food waste and self-managing
2. Excess food and self-managing
3. Both and self-managing
4. Food waste and book an agent
5. Excess food and book an agent
6. Both and book an agent

4. CONCLUSION

This page says that most of the food wastes can be reused for providing good nutrition to plants as a natural fertilizer by composting them. But some should be disposed in a proper way . This page also says that the excess food especially the larger amount of excess foods can to given to the hungry-needy people or nearby orphanage homes.

Therefore this webpage helps to be eco-friendly and to be good as humans with humanity by providing food to the needy people.

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