

Study of Briquettes Manufacturing and Its Analysis

Nishant Ambanna Pujari¹, Prof. Sagar M. Gawande², Dr. S.B. Thakare³

¹²³Anantrao Pawar Collage of Engineering & Research Parvati, Pune, India

¹nishantapujari@gmail.com, ²gawande.sagar@gmail.com, ³pro_sbthakare@rediffmail.com

Abstract - As we know in last two years death rate is increased due to covid-19. Vaikunth Smshan Bhumi is largest and most polluted crematorium in Pune. For wood cremation process large amount of wood and cow dung cakes are used. Due to burning of dead bodies in woods creates air pollution. We made a briquette by using garden waste of APCOER college premises. The waste collected were further segregated, crushed mixed with binder and compacted with pressure it gets briquettes. These briquettes are lower in cost, reduces garden waste and lesser the carbon emission than wood burn. The objective of this project is reduced garden waste, generate income source from waste, reduce pollution and save tress.

Key words: - Vaikunth Smashan Bhumi, wood cremation, Air pollution, garden waste, Briquettes, save tree.

I. INTRODUCTION

India is second largest populated country in the world. The population of India is around 125 crores. Pune city is one of the metro cities and most densely populated city in India. PMC population according to census is 31, 24,458. The area selected for this project is premises of APCOER College Pune and Vaikunth Shamshan Bhumi, Navi Peth Pune.



Fig No1:- Actual field photos during visit

Table No.1 Number of dead bodies cremated in Vaikunth Smashan Bhumi in years

Sr. No.	Year	Total number of dead bodies cremated
1	2015	4282
2	2016	4926
3	2017	4652
4	2018	5001
5	2019	5485
6	2020	6188

In Vaikunth Smashan Bhumi there is 1 gas crematorium, 3 electric crematoriums and 24 wood crematoriums present. Every year around 1500-2000 dead bodies were cremated in wood crematoriums. Every dead body needs 600 kg of wood and 200 cow dung cakes for cremation. Therefore

large amount of wood required trees cut every year. The number of trees cut is very large. Due to this oxygen level reduced very much and CO₂ level increases. Because of greenhouse gas increases air pollution is more and it causes rise in global temperature uneven rainfall. Our objective of this project is to manufacture briquettes from garden waste which is cheaper than the wood and reduces the garden waste in Pune city gardens. The briquettes are ecofriendly and less carbon produces after burning of briquettes.

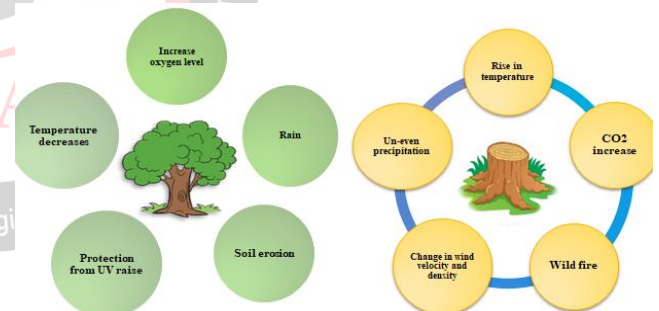


Fig No2:- Showing importance of trees

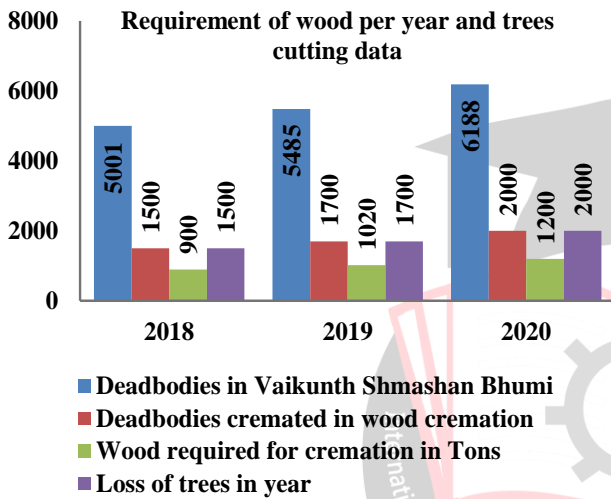
II. LITERATURE REVIEW

- 1 According to the WHO the average life of a normal Indian person is about 70 years.
- 2 Amount of oxygen required for a person for breath. Every person in his life required 740 kg of oxygen for breath. This literature shows the dead bodies are cremated in crematorium. In cremation process many gasses generated like carbon dioxide, nitrogen oxide, sulphur dioxide, PM 2.5 and PM 10 because of this CO₂ level is increased.
- 3 The dead bodies are cremated in wood cremation so that cost of wood is a higher. In this literature shows and by

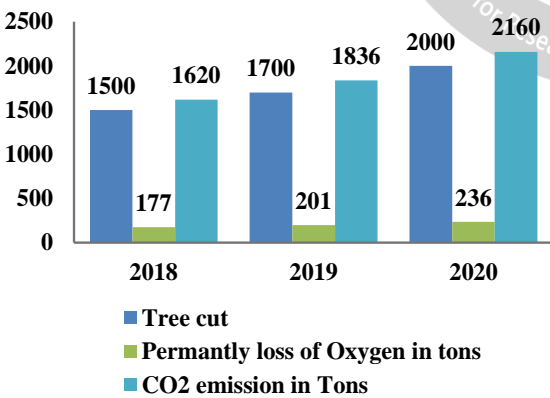
burning of wood the carbon dioxide release in air in very large amount. It effects on human body and environment. Our aim is to manufacture the briquettes by using garden waste in this literature the methods and the processes of manufacturing of briquettes are studied.

III. NEED OF STUDY

As per data of death rate of people and body cremation in Vaikunth the death rate increases 9.67 %. Generally, a body requires 600 kg of wood. That means every year around 1200 tons of wood required in just one single crematorium. In India there are thousands of crematoriums. This much of wood burns in crematoriums increases the air pollution and cutting of trees losses oxygen production permanently. This paper will adverse the environmental issue and need to save the trees and gives alternative solution for wood.



Graph no 1. Requirement of wood per year and trees cutting data



Graph No.2 losses of oxygen and increasing of CO2 level due to tree cutting

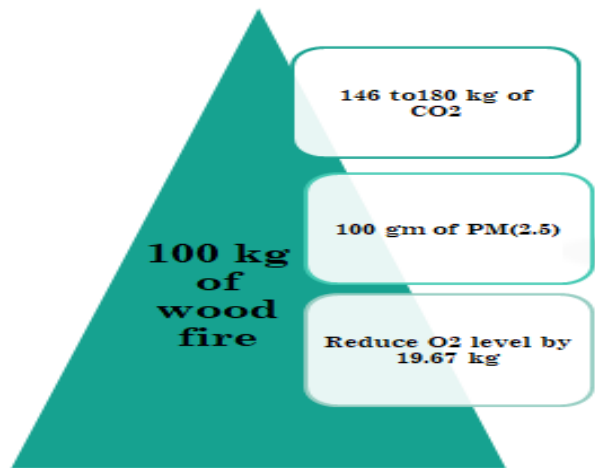


Fig No 3.Amount of gasses produced from 100 kg of wood fire

IV. ANALYSIS AND SETUP



Fig No 4.Collected garden



Fig No5 Crushed material waste



Fig No.6 Manufactured Briquettes

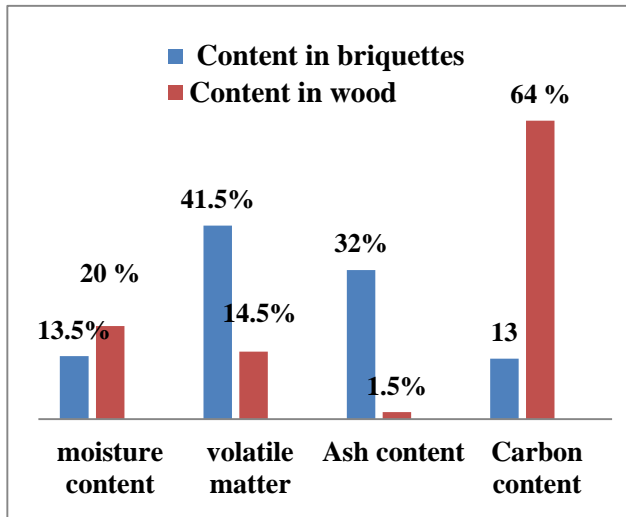


Fig No.7 Final product

This experiment setup is on 26 July 2021 to 31 October 2021. During the experiment it is observed that CO2 emission in atmosphere due to cremation is very high. Also, tree cutting for wood cremation is very high. In APCOER college campus area there are lots of trees present. Due to lots of trees waste generated form trees contains leaves, stems, barks, flower and some fruits. All waste collected and find out the moisture content in it. After that it crushed in very small particle. After that in crushing material binder is added. Then is compacted with mechanical pressure .After removing the force the briquettes are in its shape. Briquettes were sun dried for 4-5 hours for removing the excess moisture in it. The carbon content in briquettes is 5 times lower than the wood and cheaper than wood cost.

V. RESULT

Form the laboratory analysis of briquettes observed that briquettes sample around 2 gm. weighted and put it into dry oven at 105 ± 5 °C for 1 hour got the moisture content in briquettes is 13.5 % after that the sample put it into muffle Furness at 925 ± 20 °C in silica crucible with lid for 7 minutes .After that got the volatile matter is 41.5% and for ash content sample took in silica crucible without lid and put it into Muffle Furness at 750 ± 50 °C got 32 % of ash content in briquettes and find out the fixed carbon which is 13 % which is 5 times lower than the wood.



Graph No.3 comparison of content in wood and briquettes

VI. CONCLUSION

Population is increases and the death rate is also increases. For cremation large amount of wood required every year therefore tree cuts down and it effect on environment. There is need to use the briquettes that are made by garden waste so that pollution is less, the waste utilization, cost effective and additional income source for people.

VII. REFERANCE

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