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OBJECTIVES

HYPOTHESES

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MANAGEMENT OF DOMESTIC BIODEGRADABLE WASTE: A STUDY OF COMPOST PRACTITIONERS IN KOLHAPUR

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ABSTRACT

Inadequate Management of Solid Waste is one of the most serious environmental and health problems in many cities of developing countries. The disposal system has four aspects. (a) Control of waste at source (b) Segregation of waste at source (c) Collection and transportation system (d) Final disposal. There is opposition by villagers against dumping grounds/garbage processing plants. With increasing population and industrial developments, the collection, transportation and disposal of generated solid waste is a challenging task before Kolhapur Municipal Corporation where 1,10,000 households produce 40 MT solid waste per day. On this background the study was conducted of the practitioners who were managing domestic biodegradable waste. The objective was to study the domestic biodegradable compost practice, difficulties, benefits, and their suggestion to spread this eco-friendly practice. The study is based on primary and secondary data. The primary data were collected from 21 domestic biodegradable waste compost practitioners. The interview schedule was used to collect data. The practitioners were contacted with the snowball sampling. If the comparison is made with the households of 1,10,000 in Kolhapur, the number of households covered under the study practicing management of biodegradable waste is very less. But the domestic biodegradable waste has been successfully managed daily by these practitioners. It has been used for the garden and subsequently its share in the total garbage of the city Municipal Councils has been reduced.

KEYWORDS

Compost practitioners, Domestic biodegradable waste, Eco-friendly practice, Kolhapur, Management.

INTRODUCTION

Waste collection and disposal is often seen as being the responsibility of the government or municipality. In many cases the municipality is unable to fulfil this role either due to financial constraints, lack of will or lack of organisational skills. In many cities, collection and separation of waste by the private or informal sector is seen as being too time consuming because of the content of the waste, often a mixture of organic and non-organic substances, such as plastic film. For there to emerge a successful organic waste reclamation process, it has been noted that it is of great help if the organic and non-organic waste is separated at source. It is here that the responsibility is thrown back onto the generator of the waste, the public (<http://www.practicalaction.org>).

The following are the major problems associated with present system of waste management.

1 Lack of awareness: The major problem to be addressed is lack of awareness among the community. It is because of lack of awareness; people are mixing up the hazardous waste and nonhazardous waste at source itself and also because of no civil information dissemination system on waste minimization techniques or procedures.

2 Lack of infrastructure: Collection, storage, transportation, processing and disposal: noticeable short comings like improper collection and disposal system, no house to house collection system, inefficient waste collection and handling by the staff. Improper or no storage at household level, haphazard dumping by citizens, improper design of community collection bins, no quantification of waste, lack of infrastructure for processing the waste and finally absence of scientific disposal site like, engineered land fill facility (Y. Voegeli and C. Zurbrugg, 2008).

The general composition of solid waste being generated from the cities of India is 40% Food & Garden waste, 5% glass & Ceramics, 3% Metal, 15% inert, 4% Plastic/ Rubber, 6 % Textile, 27 % Paper. The disposal system has four aspects. (a) Control of waste at source (b) Segregation of waste at source (c) Collection and transportation system (d) Final disposal. The volume of solid waste will be greatly reduced if conscious people compost and utilise the daily organic waste in their kitchen-garden as manure. The domestic biodegradable waste is usually made up of food scraps, either cooked or uncooked, and garden waste such as grass cuttings or trimmings from bushes and hedges. How the domestic biodegradable waste (dbw) can be managed is the issue addressed in the paper.

REVIEW OF LITERATURE

The section deals with the attempts made for the management of solid waste particularly in cities. In Pune, Magarpatta is a self-contained residential cum Industrial / Corporate settlement spanning over 700 acres of land. Magarpatta City has also won accolades for eco-friendly features and pollution free environment. Satish Magar, CMD, Magarpatta Township Development Corporation said "We convinced them that cleanliness is very important. Garbage has to be separated at the source. We have our own garbage disposal system. It is working very well" (<http://www.rediff.com>).

Daily Dump is the brand of a company called Playnspeakbased in Bangalore. As a service, Daily Dump helps to manage household waste and convert it to useful high-quality compost. The Daily Dump products are designed to compost at home, conveniently and hygienically (<http://www.dailydump.org>).

Nirmala Lathi from Pune has devised a method of vermiculture that enables plants to grow healthily using properly treated organic waste. The wet garbage is being used to nourish flower beds and pots, and kitchen gardens. Papayas, pomegranates, coconuts, sugarcane, betel nuts, roses, lotuses, ferns, lawns, house plants, leafy vegetables, tomatoes, chillies... they are all out there, growing healthily in treated wet household waste. That's Nirmala Lathi's method of vermiculture. Using no soil whatsoever, and using organic garbage treated with a specific type of bio-culture, she has developed a process that not only helps cultivate a bountiful garden, but which also effectively deals with the garbage generated (Dhavse Rasika, March 2004).

The disposal of waste presents an increasing challenge to the administrative bodies of megacities. The Municipal Corporation of the Indian city Pune has introduced source separation systems and onsite organic waste composting. The citizens concerned are looking for practical ways to treat their organic wastes and they have found city farming to be a viable solution. An information exchange on innovations of waste-recycling techniques together with these new initiatives could benefit all types of city farming activities and broaden the effects of a decentralised disposal of organic wastes (Behmanesh Sohal, 2010).

IMPORTANCE OF THE STUDY

Most of the municipal solid waste in low-income Asian countries which is collected is dumped on land in a more or less uncontrolled manner. Such inadequate waste disposal creates serious environmental problems that affect health of humans and animals and cause serious economic and other welfare losses. Composting is an excellent method of recycling biodegradable waste from an ecological point of view (Christian Zurbrugg, 2002).

Many cities in developing Asian countries face serious problems in managing solid wastes. The annual waste generation increases in proportion to the rises in population and urbanization, and issues related to disposal have become challenging as more land is needed for the ultimate disposal of these solid wastes (Azni Idris · Bulent Inanc · Mohd Nassir Hassan, 2004).

The Table on MSW Generation Sources in Kolhapur city (per day) in 2008-09 is given below:

TABLE 1: MSW GENERATION SOURCES IN KOLHAPUR CITY

Generation Source	Numbers	Quantity in MT
House hold	1,10,000	40
Slums	10,447	15
Shops and commercial Establishments	11,286	15
Street Sweeping	-----	20
Markets	31	20
Restaurants, Hotel, Eating place	1053	10
Stables (number of animals)	16,181	20
Garden and Parks	52	10
Industrial waste Building site	-----	10
Slaughter house	2	3

(Source: Kolhapur Municipal Corporation and Ramkey Group Pvt. Ltd.)

The table shows that the highest quantity of solid waste is generated in the households. Municipalities, which are responsible by law for adequate solid waste treatment and disposal, are increasingly under pressure to solve the waste problem in their cities. As land filling is prohibited, the other options need to be found. At the family level, if the food and garden waste this constitutes 40 MT of the solid waste per day needs to compost. The significance of the study lies in the fact that it shows the experiences of the Domestic biodegradable waste compost practitioners in Kolhapur who are following the eco-friendly way.

OBJECTIVE

The general objective is to study the domestic biodegradable compost practice, difficulties, benefits, and their suggestion to spread this eco-friendly practice.

RESEARCH METHODOLOGY

The study is based on primary and secondary data. The newspapers have reported the experiments carried out in this field. The practitioners were contacted and the snowball sampling was used for collecting data from such other practitioners. The assistance of NGOs working in the field of environment has been taken. The primary data have been collected from 21 domestic biodegradable waste compost practitioners who manage household waste and convert it to useful compost. The interview schedule was used to collect data. The data collection was also done in the places nearby Kolhapur city Municipal Area like Nerli-Tamagaon, Ratnappa-Kumbhar Nagar, and Ujalaiwadi. The entire data for the Project were collected by Ms. Jagdale Rucha, Project Fellow, UGC- SAP-DRS-Phase II. The secondary data from website material, books and journals have been used.

RESULTS & DISCUSSION

PERSONAL BACKGROUND

The data indicates that nearly half of the respondents were from the age group of 41-50 years. The number of respondents of 61+ age was also significant. One of the significant facts is that more than ¾ of the respondents were graduate and post-graduate. The other qualification includes ITI, Diploma or certificate courses. Majority of the respondents were employed in the government or private sector or doing their own business. The remaining respondents were housewives or retired from service. Majority of the respondents had up to 5 members' family and few had more than 6 members' family. Majority of the respondents were having monthly income of Rs. 21,000+ and 1/3 of them were having Rs. 31,000+. Majority of them were vegetarian. The details show that 3 (14.3) each respondents were having non-veg. food once/twice in a week. 2 (9.5) each respondents were having non-veg. food fortnightly/ once in a month. The majority of the respondents had garden of 500 + square feet.

INFORMATION ABOUT GARDEN The Table 1 shows the area of sq. ft. and types of plants in the garden.

TABLE 1: AREA OF SQ. FT. AND TYPES OF PLANTS IN THE GARDEN

Area Sq ft	Fruit	Flower	Medicinal	Kitchen Usable	Decorative
100-200	Yes02 No 1	Y03 N 0	Y03 N 0	Y03 N 0	Y02 N1
201-300	Yes06 No 0	Y 06 N 0	Y06 N 0	Y05 N1	Y06 N 0
500+	Yes 09 No 3	Y 11 N1	Y 11 N1	Y 11 N1	Y12 N 0
Total	Yes 17 No4	Y20 N1	Y20 N1	Y19 N2	Y20 N1

The table shows that the respondents were having fruit, flower, medicinal, kitchen usable and decorative plants. The flower, medicinal and kitchen usable plants have been reported by almost all the respondents. The table shows that majority of the respondents were having more than 500 sq. ft. space available and so due to larger space, these respondents had planted different types of plants.

Number of Trees in Garden

Majority of the respondents had fruit (13), medicinal (14) and Kitchen usable plants (15) numbering 1-10 trees in their gardens. The 7 respondents had more than 51 plants which show that quantitatively also this is good number.

TYPE OF MANURE USED The question was asked what type of manure is being used by the respondents. As the respondents were having their biodegradable waste composed, 17(81.0) respondents reported that they use only organic manure. The 4(19.0) respondents were using chemical manure also because the area of garden is more and the biodegradable compost is not sufficient.

AVERAGE WET GARBAGE USED FOR GARDEN The data regarding this aspect are presented in Table 2.

TABLE 2: AVERAGE WET GARBAGE PRODUCED

Average wet garbage in Gms.	No. of respondents	Percentage
100-200	5	23.8
201-300	2	9.5
301-400	1	4.8
401-500	5	23.8
501+	8	38.1
Total	21	100.0

(Average per person per day 500gms.)

The table indicates that majority of the respondents 13 (61.9) were using 401+gms. average wet garbage for their garden. This indicates that the garbage created daily has been used for the garden and subsequently its share in the total garbage of the city municipal Councils has been reduced.

WATER MANAGEMENT AND ANNUAL EXPENDITURE: The question was asked regarding water management for garden and it was reported that 17 (81.0) of the respondents were making reuse of water for the garden. For the remaining respondents it was not applicable. The details on annual expenditure on garden are presented in Table 3.

TABLE 3: ANNUAL EXPENDITURE ON GARDEN

Amount Rs.	No. of Respondents	Percentages
100-500	4	19.0
501-1000	4	19.0
1001-3000	4	19.0
3001-5000	7	33.3
Not Appli.	2	9.5
Total	21	100.0

The table indicates that the annual expenditure is very less. Nearly 1/5 of the respondents had annual expenditure Rs. 100-500 only. The practice of garbage management at domestic level is eco-friendly and the annual expenditure is also very less if we take into account 365 days in a year.

BENEFITS OF DOMESTIC BIODEGRADABLE WASTE MANAGEMENT: These are presented in the table 4.

TABLE 4: BENEFITS OF DOMESTIC BIODEGRADABLE WASTE MANAGEMENT

Benefits	Yes	Percentage	No	Percentage	Total
Financial	15	71.4	6	28.6	21
Fruits	14	66.7	7	33.3	21
Vegetables	13	61.9	8	38.1	21
Vermicompost	12	57.1	9	42.9	21
Mental Satisfaction	21	100.0	--	--	21
Own creativity	18	85.7	3	14.3	21
Hygienic practice	19	90.5	2	9.5	21
Environmental	21	100.0	--	--	21

The table clearly indicates that majority of the respondents have reported benefits of domestic biodegradable waste management which are in financial terms and also getting fruits, vegetables and vermicompost. Apart from this majority of the respondents have reported benefits of own creativity and hygienic practice. All the respondents have reported mental satisfaction and also environmental benefit by reduction in solid waste of Municipal Corporation.

COMPOST PRACTICE: The methods used by the respondents are presented in Table 5.

TABLE 5: METHODS OF COMPOST PRACTICE

Compost Practice	No. of respondents	Percentages
Comp. Artificially	3	14.3
Vermicompost	12	57.1
Bhawalkar's Method	2	9.5
Other	3	14.3
Bhawalkar's + Other	1	4.8
Total	21	100.0

The table shows that majority of the respondents use vermicompost practice followed by compost artificially and by other methods. One of the methods is of Bhawalkar's. It has Earthworm Research Institute at Pune. The Institute has done work in Vermiculture biotechnology and farm-scale vermicomposting. Nature knows better how to manage organic/inorganic residues in an eco-friendly manner. Healthy soil that has earthworm activity, can process the wastes effectively. In such vermiculture ecosystems, wastes become feed for the soil-processing earthworms that produce balanced plant nutrients, in a need-based manner. Plants show healthy growth when they get balanced nutrition. During such eco-processing, there is no production of heat, greenhouse gases and toxic leachate that is common in unscientific waste management. This system also produces value-added vermicast with biosanitizer properties.

TIME SPENT FOR WASTE MANAGEMENT: Majority of the respondents 15 (71.4) were spending upto 30 minutes only in a day for compost process. Thus the time required for biodegradable waste is not much.

MOTIVATING FACTORS FOR INITIATING PRACTICE: More than 1/3 of the respondents (8 i.e.38.1) have started the biodegradable waste management at the domestic level through their own initiative. Apart from this, 3 respondents were having motivating factors of own, readings from Newspaper/ Book and relatives as motivating factors for this practice. All the respondents have reported that there were no difficulties experienced at various stages of domestic biodegradable waste management.

MOTIVATION TO OTHERS: The question was asked to the respondents whether they have motivated others to do such waste management? 9(42.9) respondents told that they had motivated others to do such a practice. Majority of the respondents 12 (57.1) were unable to motivate others to follow such practice. But at the same time it shows that 6 of respondents (28.6) motivated to follow this practice to 1 to 3 persons. 2 respondents (9.5) motivated to follow this practice to 7+ persons. Thus they are motivating others to follow this practice.

DIFFICULTIES REGARDING BIODEGRADABLE WASTE MANAGEMENT FOR GARDEN

5 Respondents reported no difficulties. The total of 26 difficulties has been reported as some of the respondents have reported more than one difficulty. The problems of extra vermicompost culture and decompose problem and lack of place was reported by 3 respondents each. The problem of mosquito and bad odour and complaints by neighbour was reported by 2 respondents each. All the remaining difficulties were reported by one respondent and these were: sorting problem for waste collected from neighbours, difficulty in doing heavy work during garden work, lack of manpower, wastage of meal & water due to lack of knowledge about waste management, no cooperation from neighbours, problem of insects and flies, problem of fungus, plant decompose problem, problem of *mongoose*, ants and labour charges and garden doesn't look clean & beautiful.

CASES OF SOME PRACTITIONERS

The following section presents cases of some respondents who were practicing different methods of composting for biodegradable waste at the domestic level.

1. MRS. SHEELA KRISHNAJI JOSHI

Mrs. Sheela Joshi a housewife from Ruikar colony, Kolhapur. She is 65 years old--a senior citizen. She has degree of Bachelors of Arts. The family members are vegetarian. She is living with her husband advocate by profession, now retired. Her son is well settled in Goa, and daughter got married and living in Pune.

Mrs. Sheela Joshi wanted to do something. One day 10 years ago their neighbour took her to attend a workshop of household waste management arranged by their society members in a society hall. The workshop motivated Mrs. Sheela Joshi to do the waste management. She called the expert to establish the unit at their home. That was starting point for doing biodegradable waste management. Then slowly Mrs. Joshi started doing the process. After three months the result was so good that till now the process is ongoing. She did the process into two small size drums in her house backyard. She uses compost for garden of 300 sq.ft. She also sends compost to her daughter at Pune.

She has got much more profit from fruit plants/ trees. She gets coconuts thrice in a year. The flowers are always blossom on the decorative plants. The main thing that was happened in her life was she is now so free and confident that she is now motivating others to do the same. Now she has joined the non- formal school called 'Surujan Anand' in Mukta Sainik Vasahat.

2. MR. ANIL DNAYNDEV CHOUGULE Mr. Anil Chougule, a social activist in environment is living in Mahalaxmi Nagar. He is 39 years old with a degree of Bachelor of Commerce. The total members in family are 11. All members are non vegetarian. Best thing of him was that every member in the family is involved in the process of biodegradable waste management. The monthly income of his family was Rs. 15,000 to 20,000. He is not just a social activist but by profession he is a Gokul Milk distributor, small nursery owner and running a mess for college students. Mr. Anil is a multi talented personality. He is working in environment protection work for about 10-12 years.

He motivates and creates awareness in almost every field. While doing motivational work he came to know that the household waste management/ wet garbage disposal process and making compost out of it. Thus it started the wet garbage compost. Mainly, he is running a mess, many a times food gets waste. He started collecting all the wet waste into a pit of 2ft.X4ft. in front of his house for creating compost.

As he is a milk distributor he started collecting empty milk bags from the customers and in exchange of 350bags, he gives 1 liter milk free. The reason behind this was he wanted to start his own small nursery of rare plants, fruit, flower etc. Mr. Anil and his wife started making saplings with the help of compost and reuse of milk bags. The result is so much good that the economic level increased and they got mental satisfaction.

3. MRS. JAYASHRI SUDHAKAR TODKAR Mrs. Jayashri Todkar a business women living in Shukrawar Peth. She is 42 years old with degree of commerce. The total members in family are four with monthly income of Rs. 40,000/- . All the family members are pure vegetarian. Mrs. Jayashri Todkar has started working on household waste management 5 years back. She has studied the method of scientist Bhavalkar and practicing on it. She also discovered her own method for decomposing the waste with the help of bacteria. She has studied much on bacteria.

The method of Mrs. Todkar's waste decompost is different from others. She uses seven plastic drums with naming week days Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday. She collects biodegradable waste from her neighbours and in each drum the waste is collected for particular day. The bacterial culture is being added that makes the waste to decompose faster within 15 days. Thus process doesn't take much time to decompose in comparison to other waste compost methods which results in creating more organic manure out of it.

She has planted sugarcane, bajra, medicinal plants, fruit plants, flower plants, vegetable plants and almost all type of decorative indoor and outdoor plants.

She is also social worker. From 3 years she is motivating the housewives working women, students from nearby areas. She delivers lectures on wet garbage management for various classes, colonies, societies, colleges. Every Monday from 3.00 p.m. to 6.00p.m. she and her daughter-in-law takes motivating and awareness creating lectures free of charge for women from all classes at her home.

4. CHITRA AJIT DESHPANDE Mrs. Chitra Deshpande a housewife living with her husband and two children at Khari Corner, Kolhapur. She is 45 years old with degree of commerce. Her family monthly income is about Rs.30, 000/-. She belongs to Brahmin family therefore all the members are vegetarian. The main reason in developing the terrace garden and doing waste management is for stress management, to get mental satisfaction and to reduce the responsibility on KMC.

Mrs. Deshpande lives in apartment where she has purchased the terrace about 800-850 sq.ft. coming right above on her flat. She had built the brick beds of 1.5ft of height along the sides on terrace.

Her method of waste decompost is different from others. She has prepared the necessary material in the bed. Then she started collecting all the kitchen waste in it. After the proper decomposition and the vermiculture is done, and then she started planting the plants/ trees in it. She is continuing with using direct waste to the plants which are very much useful to preserve the moisture needed for plants to grow healthy.

She has planted various kinds of flower plants, fruit plants, vegetables plants and decorative indoor and outdoor plants on terrace. While developing the terrace garden she has made use of all the reusable things like broken tea cups/ mugs, earthen pots, plastic box, coconut covers, shells etc. She had also grown a lawn on terrace in a corner. She is also going in Gokhale College as visiting teacher for gardens course students on tray gardening, terrace gardening. She also helps people in developing their ground level gardens and terrace gardens.

FINDINGS

Nearly half of the respondents were from the age group of 41-50 years. More than ¾ of the respondents were graduate and post-graduate. Majority of the respondents were employed in the government or private sector or doing their own business. Majority of the respondents had up to 5 members having monthly income of Rs. 21,000+. Majority of them were vegetarian and had garden of 500 + square feet. Thus the personal background factors show that the graduates with better financial conditions with garden space have been engaged in this composting of domestic waste at their own places.

The respondents were having fruit, flower, medicinal, kitchen usable and decorative plants. Majority of the respondents were having more than 500 sq. ft. space available and so due to larger space, these respondents had planted different types of plants. Majority of the respondents had 1-10 fruit, medicinal and kitchen usable plants in their gardens and they reported that they use only organic manure.

Majority of the respondents were using 401+gms. average wet garbage for their garden. This indicates that the garbage created daily has been used for the garden and subsequently its share in the total garbage of the city municipal Councils has been reduced. The volume of garbage by vegetarian is more while the weight of garbage by non-vegetarian is more. Majority of the respondents were making reuse of water for the garden.

The practice of garbage management at domestic level is eco-friendly and the annual expenditure is also very less. Majority of the respondents have reported benefits of domestic waste management which are in financial terms and also getting fruits, vegetables and vermicompost. All the respondents have reported mental satisfaction and also environmental benefit by reduction in solid waste of Municipal Corporation.

Majority of the respondents use vermicompost practice followed by compost artificially, Bhavalkar's method and by other methods. Different sizes of pits have been made by the 9 respondents and it was dependent on the area in garden available. Apart from the pits the respondents were also using plastic buckets and PVC tanks to make composting. Majority of the respondents were spending up to 30 minutes only in a day for compost process. Thus the time required for biodegradable waste is not much.

More than 1/3 of the respondents have started the waste management at the domestic level through their own initiative. Majority of the respondents were unable to motivate others to follow such practice. They have reported difficulties and given suggestions for eco-friendly practice.

The cases of some respondents who were practicing different methods of composting for biodegradable waste at the domestic level confirm the eco-friendly practice of management of solid waste management in Kolhapur city.

SUGGESTIONS

There were 56 suggestions as some of the respondents have given more than one suggestion. There were no suggestions from 2 respondents. Sorting of wet and dry garbage has been suggested by the highest number of 3 respondents. Composting wet garbage at home itself & planting trees, everybody should try to keep environment clean, making use of all types of wet kitchen garbage, Corporation should give educational & awareness creating lectures/messages, making compost of wet garbage, education to women was suggested by respondents twice.

All the remaining suggestions were suggested once which includes: use less plastic, use cotton carry bags, produce vermicompost & use for producing fruits & vegetables, give information to other, keep surrounding clean & plant usable trees & grow, think it as responsibility & not as a work, understand the benefit of biodegradable waste management, get habitual to separate dry & wet garbage, don't make issue of insects or flies, they are element for fertility, involve every family member into process of bwm, keep waste into closed situation, make use of all types of wet kitchen garbage, use dry leaves for making compost fertilizer, there should be compulsion from corporation, corporation should create awareness through lectures/messages, make compost under tree as it requires less transport, litter cover protect moisture, everyone should do bwm at home, bwm should done with community and not alone, it is necessary to take initiative of women's self help groups, the concept of methane + compost should be implemented, bwm is profit giving work, the waste water of utensils and cloths should be used for garden/ plants, continuous message/information should be passed for bwm, while developing garden fruit trees should be planted, rain water harvesting and use of water for garden/ plants, housewives from apartment should start doing bwm, collect wet garbage into pots and plant rose plants, neighbours should cooperate, collect milk bags and give for recycling, there should be positive process book on bwm, proper bwm practitioners should be

exempted from house tax, for bwm project there is no need of hectic work & financial tension, proper training for bwm will give more benefits, it takes time but it gives more fruits, flowers, bwm is the need of today's world, it should be understood by everyone.

CONCLUSIONS

The Management of Solid Waste is one of the most critical environmental issues in Indian cities. Along with the increasing population, the solid waste is going to be increased in that proportion. The Municipal Corporations are finding it difficult to find out places for disposal of solid waste and unable to transport all the wet garbage to process it into bio fertilizers through contract. So the issue of MSW which is related to the health of the people, if not treated properly may lead to serious health issues.

If the comparison is made with the households of 1, 10,000 in Kolhapur, the number of households covered under the study practicing management of biodegradable waste is very less. But the domestic biodegradable waste has been successfully managed daily by these practitioners. It has been used for the garden and subsequently its share in the total garbage of the city Municipal Councils has been reduced.

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