

GOVERNMENT DEGREE COLLEGE

LUXETTIPET, DIST. MANCHERIAL

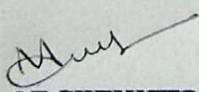
STUDENT STUDY PROJECT

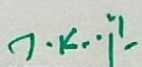
DEPARTMENT OF CHEMISTRY

2019-20

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GOVERNMENT DEGREE COLLEGE, LUXETTIPET

STUDENT STUDY PROJECT-2019-20

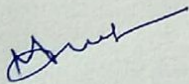
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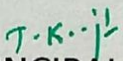
CERTIFICATE

Certified that the following students team conducted student study project on the topic "SURVEY ON USE OF POLYTHENE BAGS IN LUXETTIPET" under the supervision of ,T.MANJULA, Asst.prof of Chemistry, Government Degree College, Luxettipet.

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ABSTRACT:

Polythene bags or polybags are used in various fields such as packaging, carrying etc. This widespread utilization is attributed to their cheapness and convenience to use. But it is a non-biodegradable species and creates great environmental pollution through many ways. These wastes are concern for death of many domestic and wild animals. Blockage of sewerage systems is becoming a common problem in cities and towns of developing countries. Instead of many efforts from government/public sectors, the use of polybags spreading out rapidly and therefore it is urgent to survey its use and take necessary steps to stop use of such materials. In this project, we surveyed the use of polybags at Luxettipet market which is situated in Luxettipet muncipalty of mancherial district of Indian state Telangana. The details of environmental pollution caused by polybags along with the sources of polybags and awareness were studied.

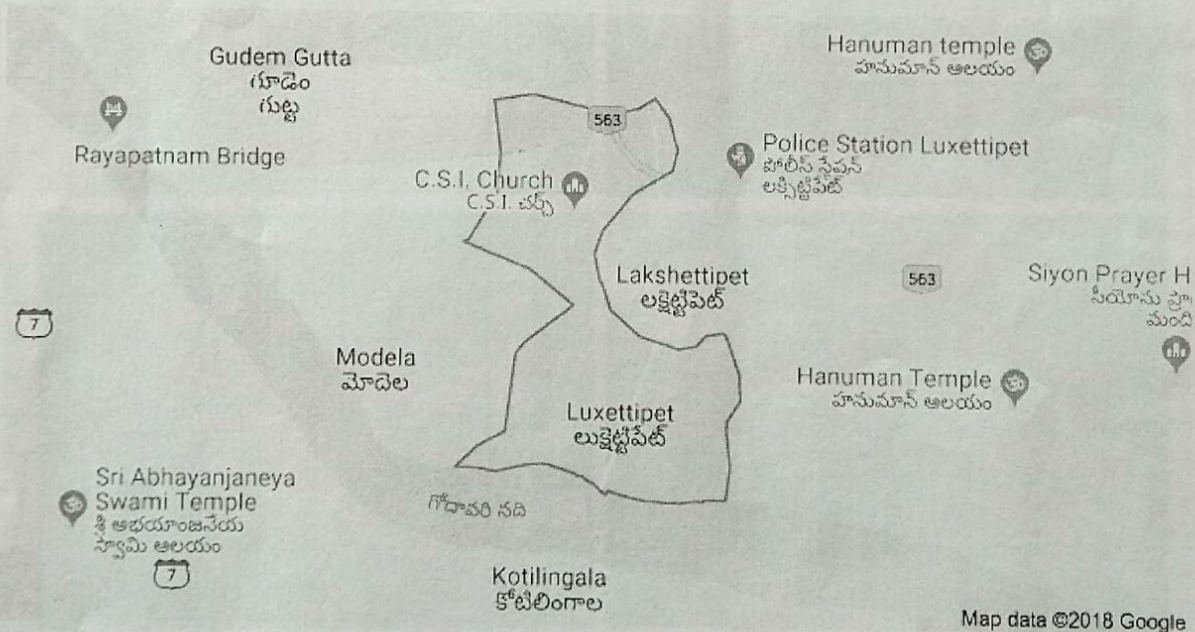
1. INTRODUCTION:

Plastic is an organic material manufactured from petroleum derivatives. It is composed of one organic substance or more. It can be shaped into any form or shape as desired. Polythene bags have been introduced in 1970's and gained an increasing popularity amongst consumers and retailers. It is used in various fields such as packaging, carrying etc. This widespread utilization is attributed to their cheapness and convenience to use. The vast majority of these bags are discarded as wastes usually after a single use. It is also believed that after their entry into environment, plastic bags can persist up to 1000 years without being decomposed by sun light and/or microorganisms. Accumulation of plastic bag wastes causes environmental pollution that can be manifested in number of ways. One of the problems is deterioration of natural beauty of an environment (1). Another common problem associated with these wastes is death of domestic and wild animals. This necessitates for proactive measures in order to safeguard animal species against extinction (2-3). Blockage of sewerage systems is becoming a common problem in cities and towns of developing countries. This, in turn, creates foul smells and favourable habitats for mosquitoes and other vectors that could spread a large number of diseases such as encephalitis, dengue fever and malaria (4). If plastic bags get access to agricultural fields, they reduce percolation of water and proper aeration in soil. This results in reduction of productivities of such fields (5). Furthermore, in several poor and developing countries, these bags are frequently used to carry food items. This practice can cause serious health problems since some carcinogenic agents could be

generated during the chemical reactions that take place in plastic materials (for example, colouring agents) and the food items due to temperature variations (3). In recent reports, it has been mentioned that reuse of plastic bags can cause cross contamination of foods by microorganisms (6). Moreover, plastic bags are also used for disposing of human and other domestic wastes which makes human health more risky as compared to “open” disposal of these wastes (7).

Herein, we surveyed the use of polybags at Luxettipet market which is situated in Luxettipet. The details of environmental pollution caused by polybags along with the sources of polybags and awareness were studied.

2. DESCRIPTION OF THE STUDY AREA:



3. DETAILS OF STUDIES CARRIED OUT ON THE AREA:

3.1. ENVIRONMENTAL POLLUTION ON THE STUDY AREA DUE TO POLLYTHENE BAGS:



Figure 4. Pictures showing the source of polybags and the environmental pollution caused in the study area due to polybags; (a) Selling fish in polybag at Luxettipet market, (b) Selling meat in polybag at Luxettipet market, (c) Gathered polybags in pond & surroundings on Luxettipet road, (d) Gathered polybags blocking drainage system, (e) Garbage of polybags blocked the canal flow (f) Garbage of polybags disposed near Luxettipet market.

Plastic bags are used by everybody. People get them right from a vegetable vendor to a designer store. They are convenient and easy-to-use. But, it is most dangerous to living species and for the environment. A brief signature of environmental impact of use of polybags at Luxettipet is given in **Figure 4**. It was seen that people were buying fish, meat and other daily essential commodities using polybags and were disposed on their surroundings. From **Figure 4**, it is seen that the gathered polybags create havoc on environment by blocking drainage & canal flow. The pictures found in other parts of Luxettipet were same.

3.2. SOURCE OF POLLYTHENE BAGS IN THE STUDY AREA / DETAILS OF POLYTHENE BAGS USED IN LOCAL SHOPS:

3.2.1. LIST OF SHOPS & NATURE OF ITEM SOLD

The total number of shops surveyed was 143 with different items sold from those shops. All the shops were in Luxettipet market. Below is a list of shops where the survey was carried out (**Table 1**).

Table 1. List of shops surveyed on the area.

Sl. No.	Shop Name	Nature of Item Sold
1.	Savitri furnitures	Furniture
2.	Devi biryani center	Aluminium & steel pots, plates etc
3.	Appolo medical hall	Medicine
4.	Das hardware	Rod, cement, building materials
5.	Madan gopal hardware	Building materials
6.	Manjusha machinery	Machine parts
7.	Maa homeo hall	Medicine
8.	Gopal pharmacy	Medicine
9.	Kali pharmacy	Medicine
10.	Life medical	Medicine
11.	Pavan medical stores	Medicine
12.	Harekrishna Xerox centre	Xerox
13.	Apollo pharmacy	Medicine
14.	Das medical	Medicine
15.	Meta medical stores	Medicine
16.	Kalaniketan	Dresses
17.	Devi fish centre	Fish
18.	Venkateshwara shopping mall	Dresses
19.	Bhvani book shop	Stationary
20.	Fish shop	Fish
21.	R. P. Xerox	Xerox
22.	Shankar bakery	Dry foods
23.	Bablu meat shop	Meat
24.	Kiran meat shop	Meat
25.	Das meat shop	Meat

	Kiran shoe house	Shoe
27.	Maa kali broiler centre	Meat
28.	Das shoe	Shoe
29.	Ramesh meat shop	Meat
30.	Mallick meat shop	Meat
31.	Monirupa	Others
32.	Mondal shoe house	Shoe
33.	Munni broiler centre	Meat
34.	Suruchi hotel & restaurant	Foods and meals
35.	Bharat shoe house	Shoe
36.	New gandheswari	Grocery goods
37.	Mampi jewellery works	Jewellery
38.	Rajkumar shoe house	Shoe
39.	Bihari bhaja dokan	Dry foods
40.	Shyamashree phool bhandar	Flower
41.	Maa kali phool ghar	Flower
42.	Chandimata flower house	Flower
43.	Sonali phool ghar	Flower
44.	Samanta flower house	Flower
45.	Laal cabin	Snacks foods
46.	Chhaya enterprise	Hardwires
47.	Paruya chaal dokan	Grocery goods
48.	Bargabheema phool ghar	Flower
49.	Milan fruit stall	Fruits
50.	Red chilli	Foods
51.	Raj gift house	Others
52.	Desopriyo sweets	Sweets
53.	Quality sweets	Sweets
54.	Shaktimoyee mistanna bhandar	Sweets
55.	Shontosh mistanna bhandar	Sweets
56.	Shaktimoyee bhandar	Others
57.	Bondhu sweets	Sweets
58.	Bengal sweets	Sweets
59.	Tasty sweets	Sweets
60.	Mahapatra	Stationary
61.	Nandan sweets	Sweets
62.	Maa gouri mistanna bhandar	Sweets
63.	Das variety stores	Stationary
64.	Parul sweets shop	Sweets
65.	Maa sarbamongala	Stationary
66.	Mahapatra meat shop	Meat
67.	Soumi gift house	Others
68.	Abhisek gift house	Others
69.	Sau broiler	Meat
70.	Suman meat shop	Meat
71.	Bharat meat shop	Meat
72.	Bharat gift house	Others
73.	Aadi maiti sweets	Sweets

	Student's home	Book
75.	National tobacco tea	Others
76.	Das book stall	Book
77.	New book stall	Book
78.	Aashirbad book stall	Book
79.	Student's emporium	Book
80.	Alahi bharasa meat shop	Meat
81.	Samanta stationary	Stationary
82.	Ghorai stationary	Stationary
83.	Maa laxmi stores	Stationary
84.	Krishna stores	Stationary
85.	Milan electronic store	Electronics
86.	Srijoni collection	Stationary
87.	Mahapatra stationary	Stationary
88.	Labonya stationary	Stationary
89.	Maloyee stores	Stationary
90.	Aamantran and poribeson variety	Stationary
91.	Monihari stationary	Stationary
92.	Pal variety	Stationary
93.	Sen stationary	Stationary
94.	Biswakarma masala bhandar	Grocery goods
95.	Chhaya masala bhandar	Grocery goods
96.	Shreekrishna masala bhandar	Grocery goods
97.	Aadarsha masala bhandar	Grocery goods
98.	New gandheswari bhandar	Grocery goods
99.	Bappa masala bhandar	Grocery goods
100.	Hindu masala bhandar	Grocery goods
101.	Aadak masala bhandar	Grocery goods
102.	Masala bhandar	Grocery goods
103.	Dasakarma bhandar	Grocery goods
104.	Das masala bhandar	Grocery goods
105.	Tanushree bastralaya	Dresses
106.	Puja ladies tailors & dress	Dresses
107.	Ms Avishek	Dresses
108.	Laxminarayan bastralaya	Dresses
109.	Priya bastralaya	Dresses
110.	Maity bastralaya	Dresses
111.	Ultimate choice	Dresses

112.	Sri gopal bastralaya	Dresses
113.	Sun tailors	Dresses
114.	Tanishree bastralaya	Dresses
115.	Bithika creation	Dresses
116.	Samanta beauty fashion	Dresses
117.	Jayashree blouse kornar	Dresses
118.	Maiti bastralaya	Dresses
119.	Maya dresses	Dresses
120.	Apsara	Dresses
121.	Aannapurna bastralaya	Dresses
122.		
123.	Das sobji bhandar	Vegetable
124.	Golap flower	Flower
125.	Prasanta sweets	Sweets
126.	Milan fall dokan	Fruits
127.	Maity meat shop	Meat
128.	Maity sobji bhandar	Vegetable
129.	Pal pharmacy	Medicine
130.	Jana vegetable	Vegetable
131.	Maa durga sobji bhandar	Vegetable
132.	Aadak vegetable shop	Vegetable
133.	Fall dokan	Fruits
134.	Fruit shop	Fruits
135.	Maity sobji bhandar	Vegetable

	Fruit dokan	Fruits
137.	Aadi maiti sweets	Sweets
138.	Ganesh sobji bhandar	Vegetable
139.	Tarun sobji bhandar	Vegetable
140.	Maa tara mistanna bhandar	Sweets
141.	Biswanath meat shop	Meat
142.	Maa shetala mistanna bhandar	Sweets
143.	Maity fish shop	Fish

3.2.2. PERCENTAGE OF DIFFERENT SHOPS

Based on the nature of item sold, the total number of shops is classified into the following groups: Book shop, Dress shop, Fish shop, Flower shop, fruit shop, Grocery shop, hardware shop, Meat shop, Medicine shop, Shoe shop, Stationary shop, Sweet shop, Vegetable shop and Other shop. The Other shop includes Hardware, Xerox, Dry food shop etc. The percentages of different shops surveyed are given in **Figure 5** where the Dress shop & Stationary shop were in higher percentages.

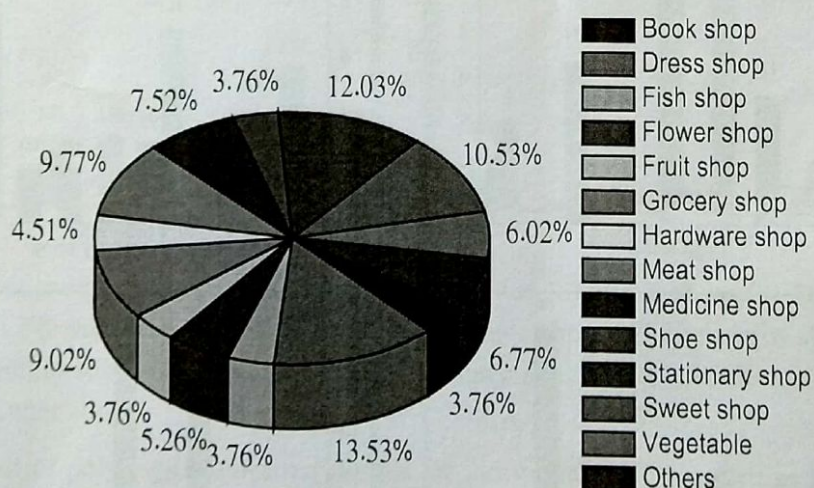
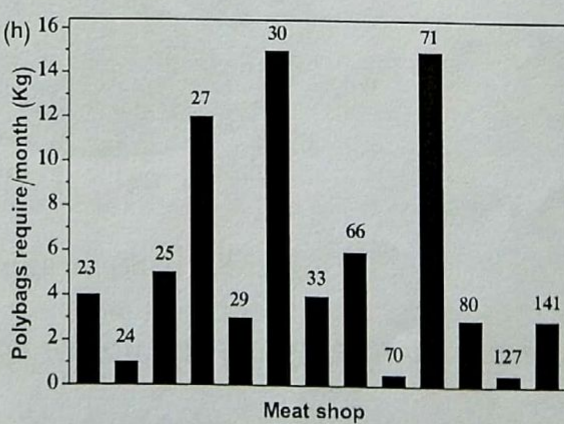
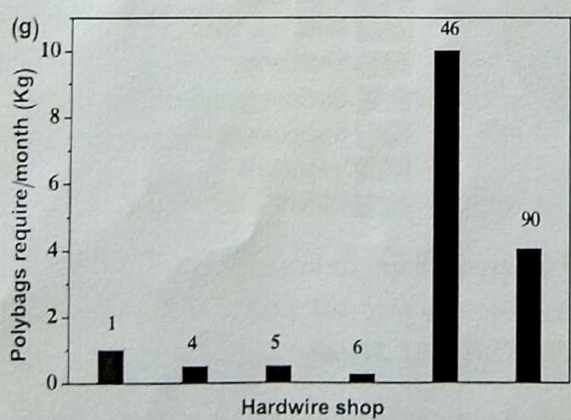
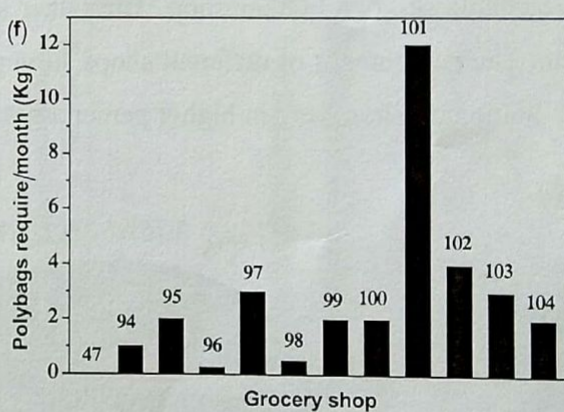
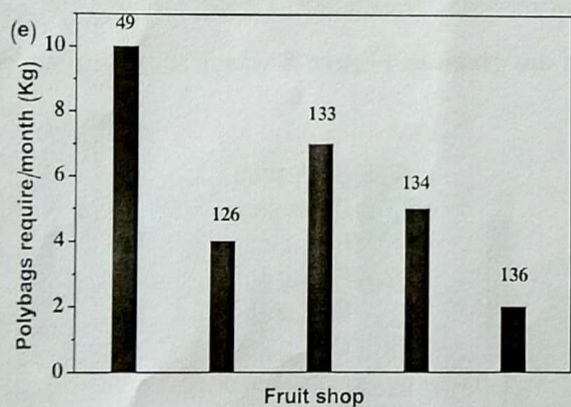
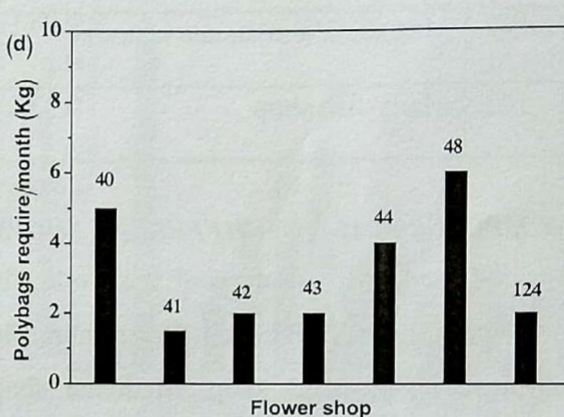
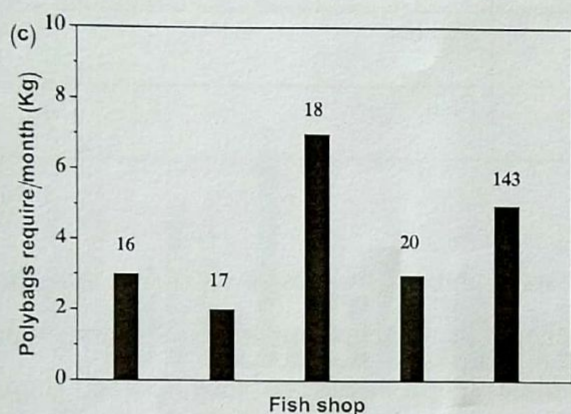
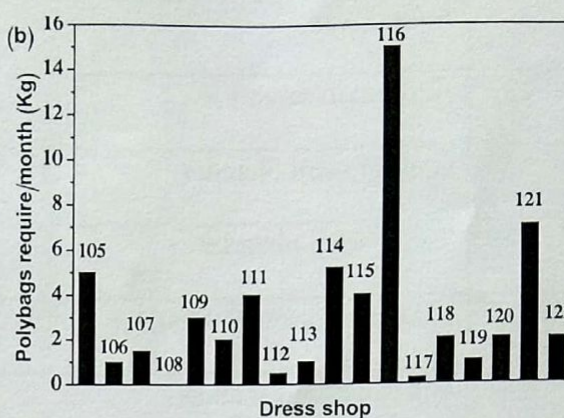
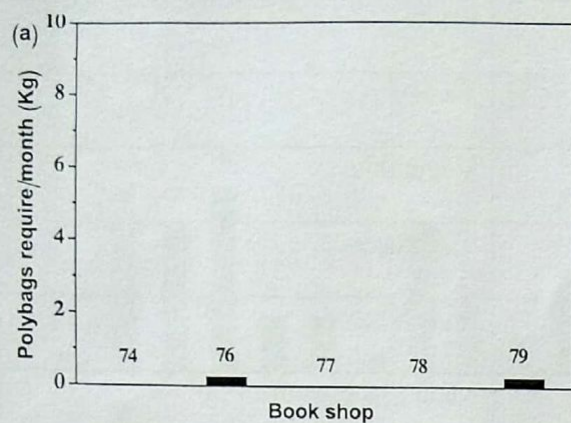


Figure 5. The percentages of different shops surveyed.

3.2.3. POLYBAGS REQUIRE PER MONTH FOR INDIVIDUAL SHOP



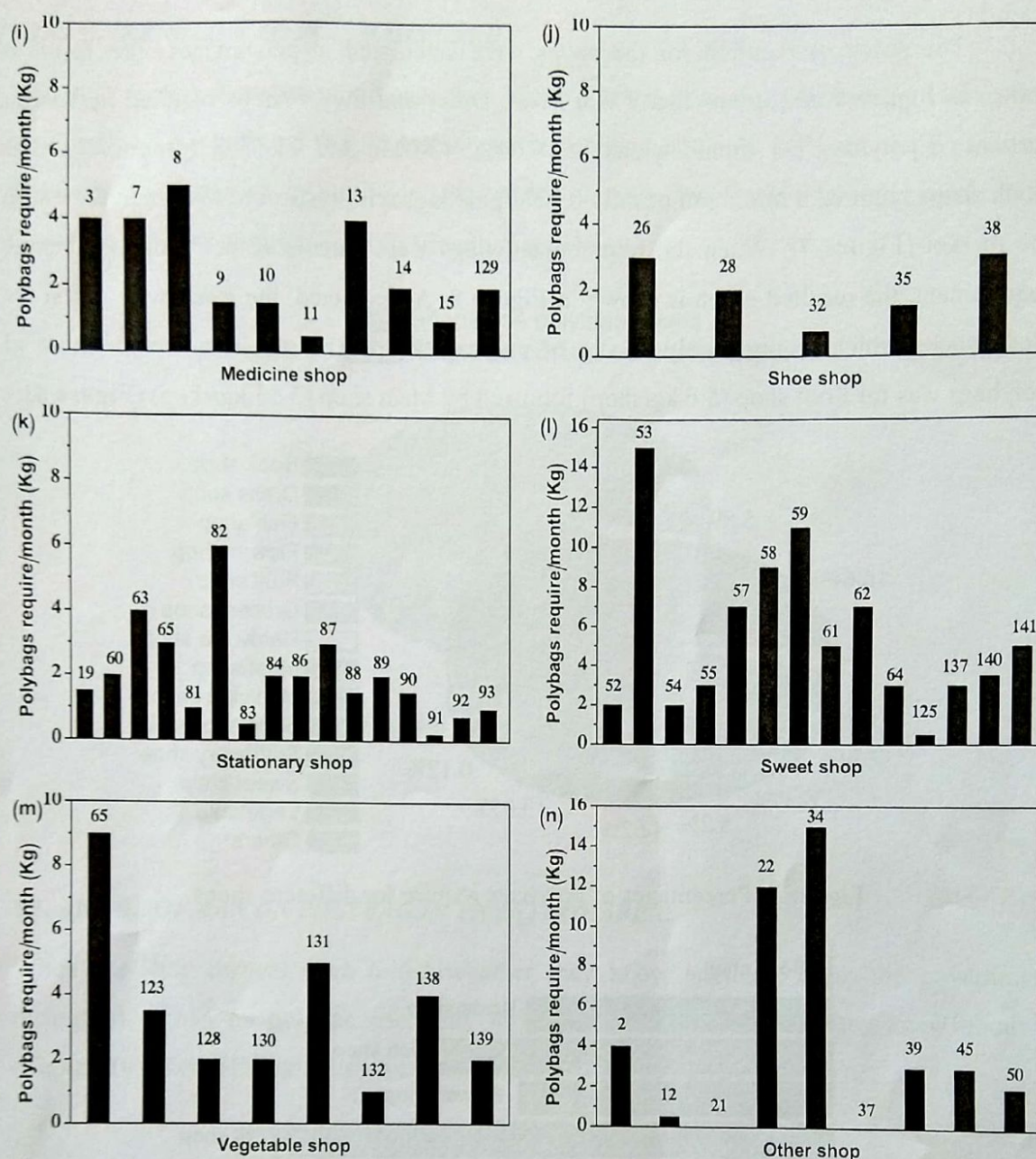


Figure 6. Plots showing the polybags require/month for (a) Book shop, (b) Dress shop, (c) Fish shop, (d) Flower shop, (e) Fruit shop, (f) Grocery shop, (g) Hardware shop, (h) Meat shop, (i) Medicine shop, (j) Shoe shop, (k) Stationary shop, (l) Sweet shop, (m) Vegetable shop and (n) Other shop.

A detail of polybags require per month for individual shop is given in **Figure 6**. The graphs were plotted for a group of same kind of shops. The details identities of individual shop are given within the plot as numbers which come from **Table 1**. It was found that the use of polybags was lowest in Book shops where as high for Meat, Stationary and Sweet shops (**Figure 6**). In some of the book shops, the use of polybags was practically zero. The shops used polybags of different sizes, different thickness and several color.

The polybags required for the shops were calculated in percentages. The result is shown in **Figure 7** and it was found that Meat, Dress and Sweet shops required maximum amount of polybags per month which is 16.64%, 13.05% and 13.17%, respectively. The Book shops required a minimum of only 0.12% polybags with respect to total requirement in the market (**Figure 7**). When the required polybags were calculated per shop ie, average requirement, the resulted graph is shown in **Figure 8**. As expected, the result was lowest for Book shops which required only 0.1 kg of polybags/shop. The maximum requirement of polybags was for Fruit shop (5.6 kg/shop) followed by Meat shop (5.53 kg/shop) (**Figure 8**).

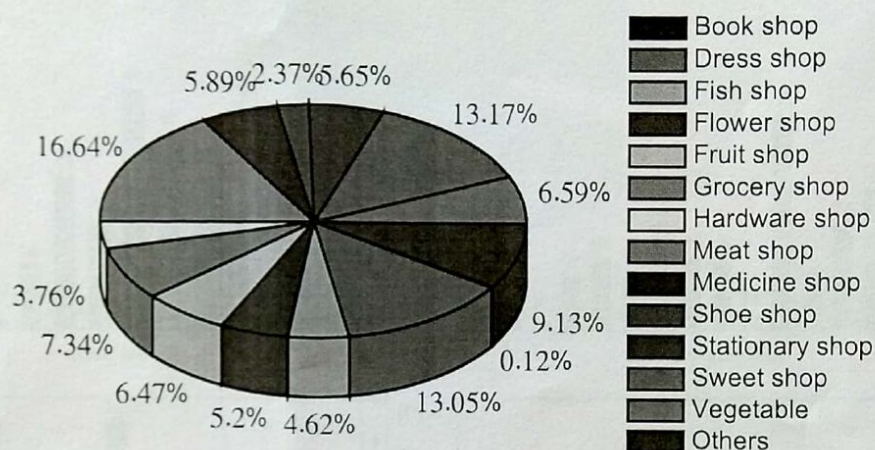


Figure 7. Percentages of polybags require for different shops.

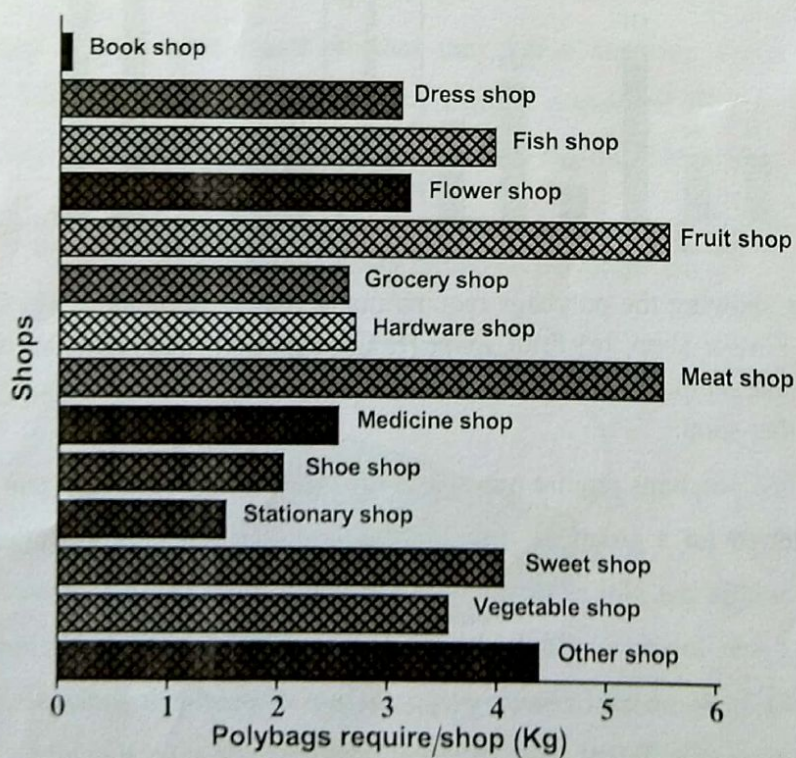


Figure 8. Plot showing the polybags require/shop.

3.2.4. ALTERNATIVE TO POLYBAGS USED

The shop owners were asked whether they use any alternatives to polybags for selling their commodities. It was found that 95.1% shops use polybags and only 4.9% shops use paper and jute bags as alternative to polybags (**Figure 9**). Notably, the Book shops and some of the Grocery shops use environmentally friendly paper bags.

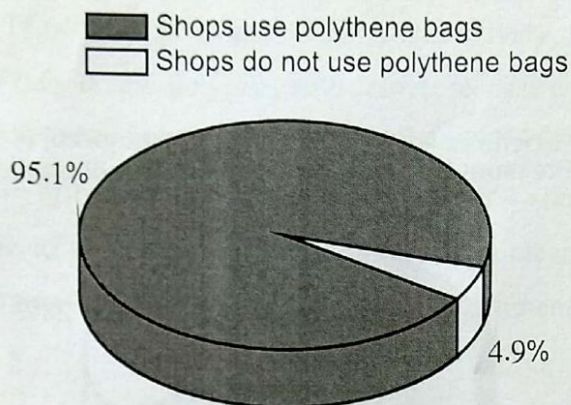


Figure 9. Plot showing the percentages of shops do not use polybags.

3.3. AWARE OF BAN ON POLYBAG IN THE STUDY AREA:

When the shop owners were asked whether they know anything about the government restriction or ban on polybag use, only 49% owners responded that they knew about it (**Figure 10**). Rest 51% said they were not aware of such ban on polybags.

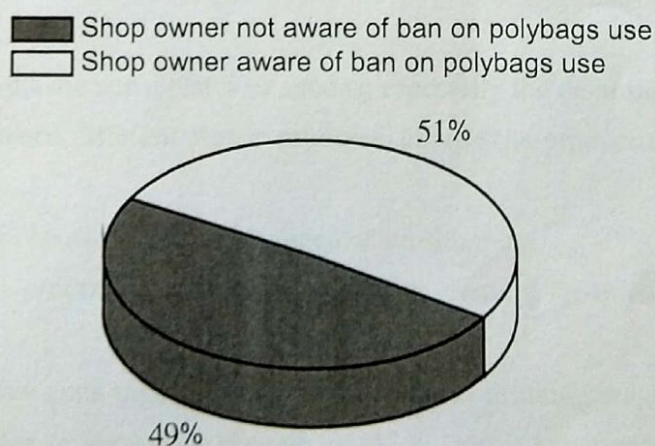


Figure 10. Plot showing the percentages of shop owners aware of ban on polybags use.

3.4. PRESSURE FROM GOVERNMENT/PUBLIC TO STOP USE OF POLYBAGS:

In many cases, government/public bodies are trying to control the use of polybags. So, the shop owners were asked whether they feel any pressure to stop use of polybags. About 28% shop owner said they were given pressure from government/public to stop use of polybags whereas rest 72% felt no pressure on such issue (**Figure 11**).

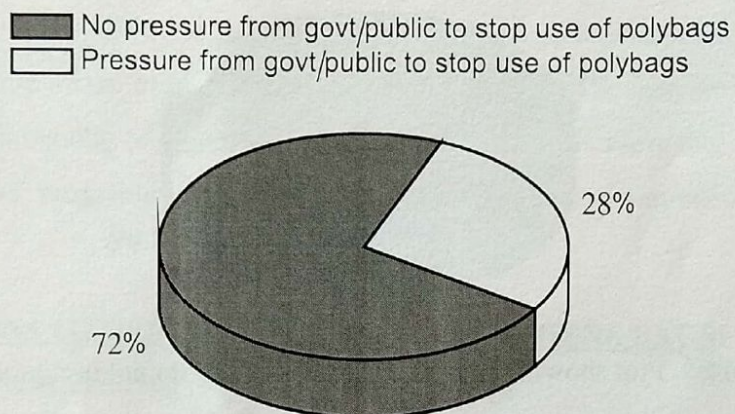


Figure 11. Plot showing the percentages of shop owners agreed of pressure from govt/public to stop use of polybags.

4. CONCLUSION:

Total 143 shops were surveyed in Luxettipet market. Different shops namely, Book shop, Dress shop, Fish shop, Flower shop, fruit shop, Grocery shop, hardware shop, Meat shop, Medicine shop, Shoe shop, Stationary shop, Sweet shop, Vegetable shop and Other shop were surveyed. Meat, Dress and Sweet shops required maximum amount of polybags per month which was 16.64%, 13.05% and 13.17%, respectively, whereas the Book shops required a minimum of only 0.12% polybags with respect to total requirement in the market. Out of all shops, only 4.9% shops use paper and jute bags as alternative to polybags although 49% owners were aware of ban on use of polybags. Only 28% shop owners faced pressure from government/public to stop use of polybags. Hence, it is clear that we need more and more awareness programs and more pressure from government/public to stop use of polybags.

5. SUGGESIONS TO REDUCE THE USE OF POLYTHENE BAGS:

1. Use paper, jute or cloth bags instead of polythene bags.
2. Reuse plastic bags for many times to reduce consumption, and hence their production.
3. Use glass containers such as Pyrex.
4. Use of polythene bags can be reduced through imposing heavy taxes on the production.
5. Compliance with proper criteria and standards on the production of plastic bags makes the bags thicker, more durable and biodegradable.
6. Reduce the use of plastic-wrapped products.
7. Do not keep eatable items directly in contact with polythene bags.
8. Do not buy plastic toys which children can chew, and replace them with toys made of natural materials.
9. Do not buy or use plastic cups, plates or spoons, especially the disposable single-use ones.
10. If you select between different plastic products, choose the product that can be reused or recycled.
11. Do not take more plastic bags than you need when shopping.
12. In case you buy a product in a plastic can or bottle, reuse it for other purposes instead of disposal.
13. Avoid using plastic cups made of rigid polystyrene in drinking tea, coffee and other hot drinks. Use paper, stone or glass cups instead.
14. More and more awareness camp from government/public sectors against the use of polybags.

6. REFERENCES:

1. Anthony A (2003). *Plastics and the environment*. New Jersey: John Wiley & Sons, Inc. Hoboken, New Jersey, pp. 379-397
2. Brown S (2003). 'Seven Billion Bags a Year'. *Habitat Australia*, 31(5): 28.
3. Narayan P (2001). *Analysing plastic waste management in India: Case study of poly bags and PET bottles*. Lund: Lund University, pp. 37-49.
4. Ellis S, Kantner S, Saab A, Watson M (2005). Plastic grocery bags: The ecological footprint. *Environmental changes are spreading infectious diseases-UN study*, Victoria, pp. 1-19.
5. Njeru J (2006). The urban political economy of plastic bag waste problem in Nairobi, Kenya'. *Geoforum*, 37: 1046-1058.
6. Cliver DO (2006). Cutting boards in *Salmonella* cross-contamination. *JAOAC Int.*, 89: 538-542.
7. Adane (2011). Survey on the usage of plastic bags, their disposal and adverse impacts on environment: A case study in Jimma City, Southwestern Ethiopia. *Journal of Toxicology and Environmental Health Sciences* Vol. 3(8) pp. 234-248.