

**The Clean and Green Karachi, Prime minister's program of Green
Youth Movement Club
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Scrumptious Edible Cutlery: A Biodegradable Alternative to reduce plastic waste.

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1. INTRODUCTION

In Pakistan, plastic pollution is a big problem for the environment because it poses a risk to human health and disturbs the natural environment. However, the use of plastic cutlery has a detrimental effect on human health as well as on the environment. Because plastic cutlery may contain potentially harmful chemicals like bisphenol A (BPA) or phthalates, which can leach into food or beverages, particularly when exposed to high temperatures. According to scientists, plastic forks, knives, and spoons need around 200 years to decompose. And this is only possible under strong sunlight. Edible cutlery can help to replace plastic cutlery. Edible cutlery is a cutlery that can be used to consume food and that can be consumed after use is called edible cutlery. Sorghum, rice and wheat flour cutlery is an innovative and eco-friendly alternative to traditional plastic cutlery. It is made up of the flour of wheat , rice and sorghum. It can easily be disposed of between 4 to 7 days. The main advantage of this cutlery is that it is edible, sustainable, durable and eco-friendly and these cutlery are super crunchy and can be made in different flavors like sweet, spicy and salty. On the other hand it is rich in various nutrients which are essential for the human body.

2. PROBLEM TO BE SOLVED:

Plastic cutlery is a significant contributor to plastic pollution. It does not biodegrade, and when improperly disposed of, it can persist in the environment for hundreds of years. Plastic waste poses a risk to wildlife, ecosystems, and human health due to its

accumulation in landfills, oceans, and other natural habitats. Plastic contains harmful chemicals, such as phthalates, bisphenol A (BPA), polychlorinated biphenyls (PCBs), and heavy metals, which can leach into food, water, and the environment. Prolonged exposure to these chemicals has been associated with various health risks, including endocrine disruption, developmental issues, and certain cancers. Over time, plastic cutlery can break down into smaller pieces called microplastics. These microplastics have been found in various ecosystems, including soil, water, and even the air we breathe. These tiny particles can accumulate in the environment and can be ingested by marine organisms, entering the food chain. Plastic is derived from fossil fuels, such as petroleum and natural gas, which are non-renewable resources. The extraction and production of plastic contribute to greenhouse gas emissions and climate change.

3. THE IDEA (HOW TO SOLVE THE PROBLEM):

We offer a ground-breaking idea: biodegradable and edible cutlery produced from wheat flour, rice flour and sorghum flour, in response to the global shift towards a plastic-free future. By making use of these plentiful natural resources, we reduce waste while simultaneously embracing their vast potential. In order to enrich the eating experience with amazing flavors and scents, our wheat, rice and sorghum cutlery is infused with an alluring blend of aromatic spices. By reducing the environmental impact of traditional disposable tableware, this creative strategy provides environmentally conscious consumers with a delectable and sustainable option. Join us on this incredible journey as we make use of nature's bounty and add something special to every meal.

4. HOW WILL THIS SOLUTION BENEFIT?

- Our Edible Cutlery will reduce plastic pollution.
- The Pakistani lifestyle is filled with heavy carbs and oily food; this edible cutlery will provide us with natural dietary fibers that help reduce cholesterol and has antioxidants.
- Edible cutlery can be flavorless or flavorful (personalized choice).
- The discarded edible tableware can be utilized as a feed for cattles.

- Replacing disposable plasticware products in local restaurants, food courts, & other eateries will reduce plastic wastage significantly and help the economy by establishing waste upcycling businesses.
- It can be degraded by microorganisms and insects, fertilizing the soil and hygienic environment.
- This process can further be established to upcycle agricultural waste into more biodegradable products such as cups, bowls, plates and more tableware.

5. FUTURE MILESTONES:

Our product will provide a safe, sustainable alternative to plastic. The aim is to eliminate plastic cutlery and introduce edible cutlery that can be ingested after use and readily destroyed. Our product will contribute to global environmental conditions. Producing eco-friendly biodegradables is one strategy to reduce the waste caused by plastics, especially disposable ones. This product also concludes that the prepared cutlery is tasty, healthy, and environmentally beneficial. It also reduces plastic usage, which lessens the amount of chemically hazardous substances released into the environment as plastic degrades. Test and quality assurance of our product by biodegradability testing and water absorption capacity, by ditching disposable plastic utensils, you can help reduce greenhouse emissions, water pollution, and littering in our oceans. By using wheat flour, rice and sorghum that could be biodegradable cutlery which would feature a long life. Edible cutlery helps to achieve sustainable development. Furthermore, discarded tableware will fertilize the soil by being degraded by microorganisms and insects and can be utilized as fodder for cattle. It will make the environment healthier and eco-friendlier. Plastic cutlery is often used as a low-cost, convenient option for business or personal use. These utensils are lightweight, easy to transport, and can be disposed of instead of cleaned and reused. According to Allied market research, the edible cutlery market is projected to grow at a compound annual rate of 11.1% between 2019 and 2026. On the other hand, our product biodegradable cutlery is made from natural materials that do not release harmful chemicals. This makes it a healthier option for animals and humans.

6. COST

We are thrilled to present our innovative line of biodegradable kitchenware, created to substantially cut production costs while minimizing plastic waste. We have developed a reasonable substitute that doesn't sacrifice quality or sustainability by utilizing the plentiful resources of sorghum flour, rice flour and wheat flour. Our cutlery, which is made from sorghum and wheat flour, embodies both affordability and environmental awareness, enabling people and businesses to adopt a greener lifestyle without breaking the bank. Everyone can now choose sustainably without compromising their financial security thanks to our low-cost option.

7. EXECUTIVE SUMMARY:

Our innovative idea is "Scrumptious Edible Cutlery" a Biodegradable cutlery, this cutlery is made of wheat, rice and sorghum flour and has appealing, delicious spices. Since Plastic cutlery hurts human health and the environment, biodegradable cutlery has become a useful replacement for plastics. Our wheat, rice and sorghum cutlery is infused with an alluring blend of aromatic spices, an inventive and sustainable substitute for conventional plastic which causes the environment to be exposed to dangerously high quantities of CO₂ & other greenhouse gasses. This cutting-edge technology not only lowers the environmental damage caused by conventional disposable cutlery but also adds a unique and memorable touch to each meal. As a result, we can offer our customers a reasonable choice without compromising on sustainability or quality. It can be degraded by microorganisms and insects, fertilizing the soil and hygienic environment. Sorghum, rice and wheat flour cutlery is an innovative and eco-friendly alternative to traditional plastic cutlery. It can easily be disposed of between 4 to 7 days. The main advantage of this cutlery is that it is edible, sustainable, durable and eco-friendly.

8. THE TEAM

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