

# Cutlery You Can Eat



Plastics are a menace the world over. According to the World Economic Forum, global plastic production has increased from 15 million tonnes in 1964 to 311 million tonnes in 2014, and is expected to triple by 2050. It is this problem of rising plastic consumption that prompted Narayana Peesapaty, a Hyderabad-based entrepreneur, to come up with an innovative and eco-friendly alternative—edible spoons. Containing no preservatives, these spoons have a long shelf life and can be a healthy substitute to plastics.

**T**HE WHOLE concept of edible cutlery struck me quite accidentally. During a flight, I noticed some people scooping out food with khakra pieces instead of the plastic spoons provided because those would bend easily. I was then working as a researcher at the International Water Management Institute in Hyderabad; this incident prompted me to conduct a study on jowar and I found rotis made out of it were as hard as khakras. I combined my in-flight experience with this insight to come up with the concept of edible cutlery. I soon realised how difficult it was to find the machines and the technology needed to transform the idea into a product, but this did not deter me from pursuing the idea. In fact, it encouraged me to create something unique—a custom-designed machine to make edible spoons. It was initially difficult to manage with limited financial resources though.

## INSPIRATION

Further research brought to the fore the fact that sorghum fetched low prices in the market and hence many farmers were not ready to cultivate this millet. But sorghum is a highly nutritious and water-saving crop. I felt that it was the ideal material to make the spoons hard and crispy. By using sorghum for my venture, I could create a big market for those who grew it, helping them get best minimum support price without involving middlemen. I could also present people with an option to eat sorghum in a unique form.

## VARIOUS PHASES OF DEVELOPMENT

Till date, we have tried 20-odd combinations of grains and millets to identify how many of them will turn hard when baked. We have explored how they would taste after the other ingredients are added and are baked at a very high temperature.



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As of now, we have made only lunch spoons in one particular shape—plain spoons; savoury spoons with added ingredients such as jeera, ajwain, rock salt, and black pepper; and sweet spoons containing sugar. We do not add any preservatives, chemicals, fat, or emulsifiers. The shelf life of these spoons can be up to two years if kept in ideal dry conditions, not touched often and not exposed to dust/pollutants. However, they are meant only for one-time use. Once used, the spoons disintegrate within a few days. These spoons, broken or intact, can also be placed in salt, dry masalas, tea, and coffee powder containers, as they will absorb the moisture and keep them dry.

As far as product design, shapes, processes, and technology improvement are concerned, research is still being conducted. Options such as soup spoons, chopsticks, dessert spoons, and forks have already been tried out.

We are at present a small set-up and plan to expand once we get our automation in order. Once things get streamlined, we will go for ISO standards.

## CHALLENGES

Being a first-of-its-kind venture, I had no tried-and-tested methods to fall back on. The entire development phase left me tackling a number of issues—what ingredients to add and in what quantity, the degree of temperature ideal for baking, costing structure, packaging, storage,





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website design and content, online sale, etc.

Creating awareness about the benefits of edible cutlery was not easy. Media coverage helped us achieve some sales, and we participated in organic markets and exhibitions. But not many were enthusiastic about it because they felt our products were costly and meant for only one-time use, whereas plastic spoons were cheap and readily available. We also tried door-to-door selling in apartment complexes, but sales were not significant enough and it was not easy going, financially. By 2012, the scenario was better in terms of better public awareness, but we realised what stood in our way was the high cost. Recently, a video on us was released by 'The Better India' in their 'India Innovates' series, which received five million views. This catapulted us to a global platform and the demand for edible spoons has gone up considerably since then. We have been flooded with orders from many countries, but we will not be able to cater to this unprecedented demand because there are no readymade technologies or machines to manufacture at mass scale.

We have designed a unique machine capable of manufacturing almost 50,000 spoons daily. However, it is still in the experimental stage and is producing only 12,000 spoons, of which some are defective too. Once the prototype reaches 100% efficiency with least amount of flaws, we will multiply the machines and fulfil all the orders that we have received. Meanwhile, we will also take up machine fabrication for 2-3 other shapes so that by the beginning of 2017 we can come up with other cutlery shapes too. The technology has been developed locally and not imported.



## FUNDS

We relied on our own resources as well as personal loans to create the initial corpus of funds. On March 18, 2016, we also launched 'Eat your spoon,' a crowdfunding initiative on Kickstarter. We hoped to raise US\$ 20,000 but within days, the project received an overwhelming response—by April 17, we raised US\$ 278,874 from 9,293 backers globally. A parallel initiative was launched on Indian crowdsourcing platform Ketto, with the aim of raising ₹1 lakh, but has already exceeded 25 times the amount. Once we receive the full amount from both these sources, we will start the deliveries. Right now, we are fulfilling the orders that have come through our website.

## THE FUTURE

By mid-2017, we hope to create the rest of the cutlery shapes. We also plan to make small dip cups, stirrers, and prick sticks. We also wish to launch jowar-stuffed parathas, which will be smooth unlike normal jowar rotis. This will be a women-run enterprise that makes and sells them as a healthy, nutritious takeaway. I have also created a pizza base with jowar, which may be introduced in 2017.

## LEVELLING THE PLAYING FIELD

To me, innovation is something that is created for the common good of people as well as the environment. An innovative concept can be pursued and achieved only by a mind that is creative, persistent, and focussed, and has faith in what is being pursued as a dream project.

There are several people coming up with both small and big inventions that are simplifying life, but the success of these depends on who gets noticed at the right time. The kind of support one receives on social media is crucial as it has now become a popular medium of influencing people's minds. Many talented people come up with great products/services under a minuscule budget, but are not getting due recognition. Innovators need to be encouraged, nurtured, and offered social and financial support. It is also essential to create funds for manufacturing-based innovations as they operate on a trial-and-error method, unlike in service or IT sectors.

It is best if the education system is designed in such a way as to foster innovation. With the various initiatives being planned by the Government of India towards this end, it is possibly the best time to be an innovator in India. ■

*As told to Ranjan Mukerjee*