


Portugese Nonprofit Commits Over \$5M To Research And Develop Plastic Bottle Replacement



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Food & Drink

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On board the first ever single use plastic-free flight by Hi Fly, food is served in plant based compostable containers with bamboo cutlery PHOTO COURTESY OF THE MIRPURI FOUNDATION

“We are just waiting for the weather to improve a bit,” Dr. Paolo Mirpuri tells me over the phone from Punta Arenas in southern Chile, on his way to an expedition in the Antarctic to study ocean acidification and pollution. President of both the Hi Fly airline and Mirpuri Foundation non-profit, Dr. Mirpuri found a good phone connection for a few minutes last Monday to explain the plans that are underway to get rid of single use plastic altogether on board aeroplanes.

Hi Fly’s announcement to be completely plastic free by December 2019 is backed up by a substantial financial investment in research and development by the [Mirpuri Foundation](#). “We recently launched a five million euro (approx \$5.7M) research and development program with the University of Minho in northern part of Portugal, to develop a good alternative to plastic that could be inexpensive, the same weight as plastic, at the same time is one hundred percent recyclable - and does not have any harmful effects on human health or the environment,” Dr. Mirpuri told Forbes.

Hi Fly began their trial run of the first ever single use plastic free flights two weeks ago, replacing typical plastic items like “cups, spoons, salt and pepper shakers, sick bags, packaging for bedding, dishes, individual butter pots, soft drink bottles and toothbrushes”, on board four of their flights from Portugal to Brazil. The test flights will avoid the use of 350 KG of single-use plastics.

New items on board replacing plastic include bamboo cutlery and plant based catering containers made from renewable low carbon recycled materials that can be commercially composted with food waste. Blankets, pillows and headsets were also not wrapped in plastic, Dr Mirpuri told Forbes. “A lot of the plastic that you see on an aircraft is completely avoidable”, Dr Mirpuri said, "People use it because they have been using it since the 60's and 70's. But there are already readily available alternatives on the market. And we are working on better solutions for the ones that are more difficult to replace."



Crew members hold a sign welcoming passengers on board the first ever single use plastic free flight by Hi Fly airlines PHOTO COURTESY OF THE MIRPURI FOUNDATION

One of those more difficult items to replace is the plastic water bottle, Dr Mirpuri told Forbes. Hi Fly decided to only carry enough water on board as they estimated their passengers would consume, with a slight margin. “The only good alternative for it at the moment is glass, if you want to preserve health of your passengers. So the glass adds more weight, that was the main obstacle - everything else we were able to sort out pretty easily,” Dr Mirpuri explained. By replacing plastic with other materials, they have to be careful not to increase the weight on board the aircraft, because that would obviously have an effect on the carbon emissions. The polymer that Dr. Mirpuri's team is currently developing could also help reduce the more permanent plastic on board.

While the Mirpuri Foundation is committed to research and develop a replacement for plastic bottles, Hi Fly's aim is to get other airlines on board with getting rid of plastic altogether, and they are in a unique position to do so. Hi Fly is an airline that also supplies aircrafts to other airlines, with 140 airlines in their customer base, so they hope that it would be relatively easy for them to introduce the concept to other airline companies. “A number of airlines have already asked to come to Lisbon and understand better how we did it,” Dr Mirpuri said, “How we managed the waste, how much plastic we saved. So all the metrics that we have available, we will make available to them.”

Dr Mirpuri envisions a near future where the airline industry is plastic-free within the next three to five years. [Delta](#) has been removing single use plastic from their flights and American Airlines has [estimated](#) they will reduce 70,000 pounds of plastic annually.

Countries around the world are banning single use items like plastic straws, however people like climate change activist [Greta Thunberg](#) are also outspokenly committing to reducing their carbon footprint according to a carbon budget - which obviously means less travel by aeroplane. Could getting rid of single use plastic on board convince people to keep flying?

“We believe that once 20-25% of airlines are offering plastic free flights, passengers will have a choice between flying on an airline that has everything wrapped in plastic, and an airline that is plastic-free,” Dr Mirpuri said, “Once the customer has a choice, we believe that they will be a strong motivation for other airlines to follow the lead.”