

U.S.

'Generator' Turns Plastic Trash Into Edible Protein

BY **GEORGINA JADIKOVSKAALL, ZENGER NEWS** ON 7/25/21 AT 9:00 AM EDT



U.S. **SUSTAINABILITY** PLASTIC EARTH



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Two U.S. scientists have won a 1 million euro (\$1.18 million) prize for creating a food generator concept that turns plastics into protein.

The [2021 Future Insight Prize](#) went to Ting Lu, a professor of bioengineering at the University of Illinois Urbana-Champaign, and Stephen Techtmann, associate professor of biological sciences at Michigan Technological University, for their project. It uses microbes to degrade plastic waste and convert it into food.

The German science and technology company Merck sponsors the prize. Global plastics production totaled 368 million metric tons in 2019. The only decline in the past 60 years came because the COVID-19 pandemic choked production of goods worldwide as factories sputtered and shipping slowed down.

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Japan alone produces around 10 million tons of plastic each year, and three-quarters of it is discarded within 12 months. A new discovery could use microbes to turn it all into food.

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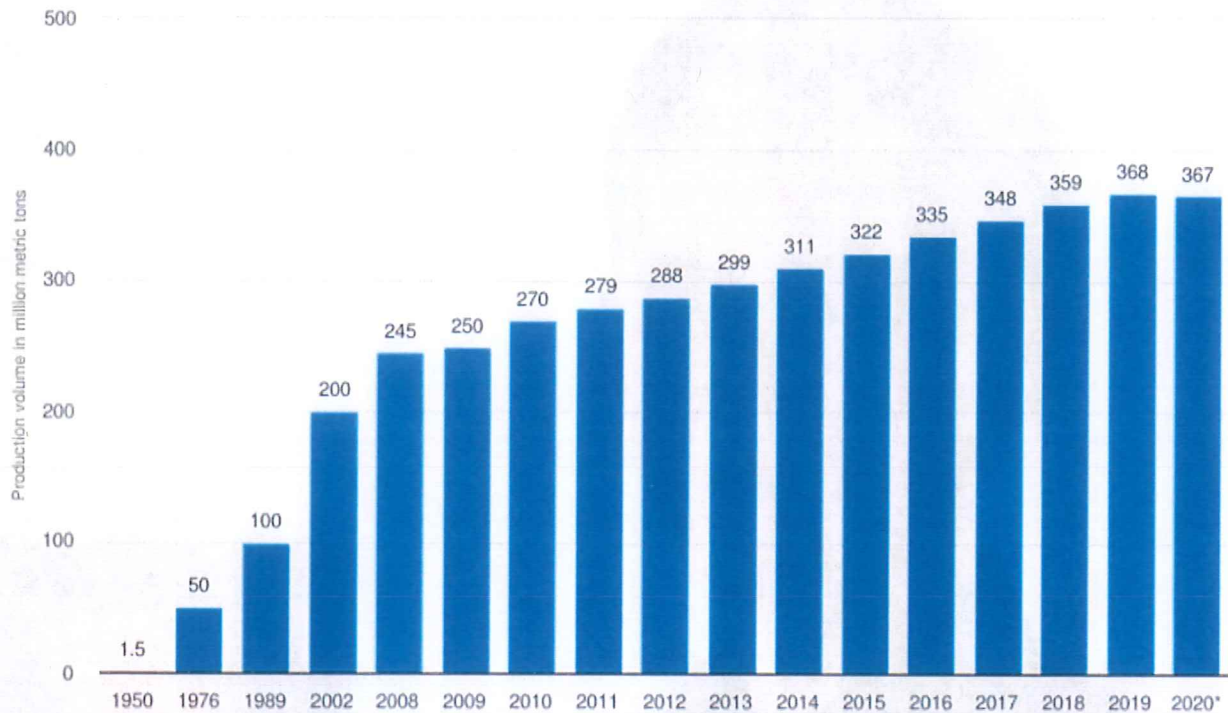
At least 8 million tons of plastic are dumped into the world's oceans every year, according to the International Union for the Conservation of Nature.

"The winners of this year's Future Insight Prize have created a ground-breaking technology with the potential to generate a safe and sustainable source of food, while reducing the environmental harms associated with plastic waste and traditional agricultural methods," said Belen Garijo, Merck CEO and chair of the executive board.

"We congratulate Ting Lu and Stephen Techtmann for their promising research and hope that the Future Insight Prize will help to accelerate their efforts," she said.

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Annual production of plastics worldwide from 1950 to 2020 (in million metric tons)



Sources

PlasticsEurope (PEMREG); Consultic
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Additional Information:

Worldwide; PlasticsEurope (PEMREG); Consultic; 1950 to 2020

Global plastics production totaled 368 million metric tons in 2019. Only the COVID-19 epidemic has been able to slow it down.

STATISTA

The two scientists, who call their project a food "generator," focused on finding an efficient, economical and versatile technology that finds a use for plastics that are at the end of their useful life and would otherwise end up in landfills or oceans.

The resulting foods "contain all the required nutrition, are nontoxic, provide health benefits and additionally allow for personalization needs," according to Merck.

The scientists learned to exploit synthetically altered microbes, programming them genetically to convert waste into food.



Champaign, shared the 2021 Future Insight Prize with his research partner Stephen Techtmann, associate professor of biological sciences at Michigan Technological University, for their technique that converts plastic trash into edible protein.

MERCK KGAA/ZENGER

Lu calls it "[microbial synthetic biology](#)." He said "engineered gene circuits" can advance a wide range of biotechnology solutions to future global problems.

"Environmental microbes are capable of catalyzing a wide array of chemical reactions, many of which may have industrial applications," said Techtmann. "My lab studies how complex microbial communities can cooperate to perform functions of industrial interest."

The two scientists say their joint research will allow them "to take the plastic waste generated in the world and turn it into something valuable: food and fuel."

The first winners of the Future Insight Prize, established in 2019, were Pardis Sabeti from Harvard University and James Crowe from Vanderbilt University, for research on how to detect and treat pandemic infectious diseases.

This story was provided to Newsweek by [Zenger News](#).

Correction 08/25/21 11:30 a.m. ET A previous version of this story referred to Belen Garijo as "he" instead of "she."

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B **Ballmerboy** ...
 26 July, 2021
 I'm more than willing to go an extra mile to do my part to cut down in the horrendous level of plastic pollution. But EAT it? No, uhuh, that ain't gonna happen.
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G **Gammagirl** ...
 25 July, 2021
 Fuel yes. Food, not a chance!
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G **Guest** ...
 25 July, 2021
 Great and smart effort but I wish they could have made it into something else. I would rather eat insects for protein instead of recycled plastic
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s **Sure** ...
 26 July, 2021
 A while back a scientist was trying to make it so we would be allergic to eating meat for environmental reasons. Fingers crossed the vaccine allows us the ability to eat recycled plastics. I'm unsure if its true but they have how to make estrogen out of plastics online for those who are unable to a...**See more**
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26 July, 2021

Keeping an open mind-let time tell us, rather than speculating hostility to new ideas

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FN Food Nah!

...

26 July, 2021

Would you like to have garbage bag burger with Ziploc fries? Or a milk can pizza topped with fresh plastic pepperoni?

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A alpha1six

...

26 July, 2021

What does it taste like and is this kind of like the idea of turning lead into gold?

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U Unbelievable

...

25 July, 2021

Wow if this doesn't cause cancer nothing will.

Unbelievable and sad.

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↩ 1 reply

TK Tom K.

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27 July, 2021

A brilliant idea! Cool to address two global problems in one effort.

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IR In LEW of reason

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25 July, 2021

So the first award went to someone studying pandemic infectious diseases? In 2019? Super crazy timing.

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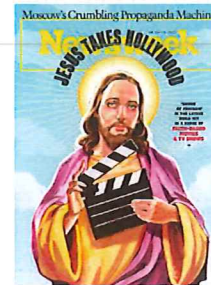
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