



What if all those piles of delivery boxes could be turned into fuel? | Photo source [Alex Mecl on Unsplash](#)

[Innovation](#) > [Science](#) > [Cardboard turned into biodiesel](#)

CARDBOARD TURNED INTO BIODIESEL



A Korean researcher has developed a way to turn cardboard delivery boxes into fuel

Spotted: Almost everyone has had the experience of ordering a small item from Amazon and having it arrive in a huge box. This issue has become especially noticeable since the start of the pandemic, as more people are ordering items for delivery. While most of us put those pesky cardboard boxes out for recycling, many recycling centres simply throw them away. Now, a Korean researcher may have an answer.

Sun-Mi Lee, a research scientist at the Clean Energy Research Center of the Korea Institute of Science and Technology, has developed a way to turn cardboard into fuel. Her team has developed a microorganism that can turn cardboard into biodiesel. The yeast is able to convert the glucose and xylose sugars in the cardboard into combustible fats that can be used as biodiesel.

Lee's team redesigned the metabolic pathway of the microorganism using genetic techniques to effectively control the process of evolution, for example, by selecting and cultivating only those microorganisms capable of converting the sugars into bio-diesel precursors.

According to Dr Sun-Mi Lee, "We developed a core technology that can improve the economic efficiency of biodiesel production. At a time like this, when we feel climate change in our bones due to frequent typhoons and severe weather phenomena, expanded supply of biofuels that help us cope with climate change most quickly and effectively will facilitate the expansion of related industries and the development of technology."

Biofuels are considered a greener alternative to fossil fuels, but they come with a number of drawbacks. However, at Springwise, we have recently seen several innovations aimed at creating biofuels from other waste products. These include a process to turn waste [cooking oil](#) and old batteries into biofuel and the use of [agave](#) plants for making bio-fuel.

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Takeaway:

Currently, biofuels are made from fermenting food crops like corn and soy to produce ethanol, or by using corn or soybean oils. However, the process for doing this is not efficient, and it uses a food source for energy, with the effect of driving up food prices. Lee's process uses waste products instead, and could potentially reduce the amount of food diverted to producing biofuel. Of course, this does not mean that we will be shoving those Amazon boxes into our fuel tanks, but once scaled up, it could help to lower food prices, as well as make fuel more sustainable.