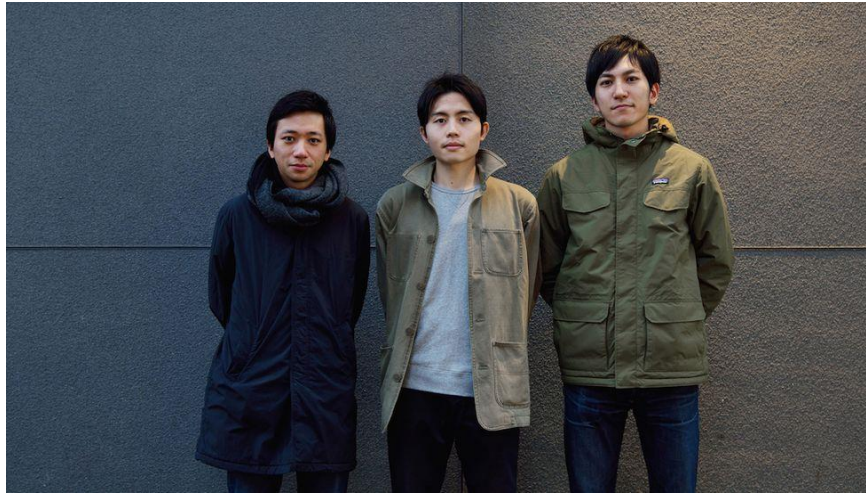


New Seaweed-Based Material Could Replace Plastic Packaging

Source: good.is

Published: March 9, 2016



The designers behind Agar Plasticity

The project is one of four finalists for the 2016 Lexus Design Award.

[DJ Pangburn](#)

Plastic is ubiquitous in packaging for food, toys, and every type of product in between. And even with significant recycling efforts, plastic cannot—unlike aluminum and glass—be recycled over and over again. Plastic is also notorious for its resistance to decomposition, with estimates placing its life cycle somewhere between 500 and 1,000 years.

Concerned about the implications of using so much plastic, a new Japanese design company, AMAM, is developing a more earth-friendly way to package goods. Called Agar Plasticity, the product is derived from agar, a gelatinous material that can be readily found in red marine algae. The design team's project is one of four finalists for the 2016 Lexus Design Award, which is pairing each team with a design mentor to bring a prototype to life for Milan Design Week.



The trio behind AMAM, Kosuke Araki, Noriaki Maetani, and Akira Muraoka, are all working designers, and they teamed up in 2015 to create things beyond their respective areas of interest. Araki tells GOOD that Agar Plasticity is the group's first collaborative project.

“We were attracted to the materiality of agar—the delicacy in its texture and beauty in its appearance—at a local supermarket,” Araki says. “Relatively soon after that, we thought its delicate and light structure would be suitable for cushioning material. Then, we did some experiments and found agar was moldable, so we decided to send our proposal to LDA.”

Araki says that agar has a long history as a food ingredient in Japan, where it's typically sold dried. People ordinarily melt the agar in hot water to make traditional Japanese sweets and desserts. The process of making agar-based packaging is fairly similar.

The agar plastic process starts with agar powder being dissolved in simmering water and then poured into a mold, says Araki. Once the agar sets into a kind of jelly, the mold is frozen for approximately two days. This freezing process forms the agar into a structure that can provide cushioning for a packaged item. After two days, the frozen agar solution is thawed and completely air-dried.

“We are currently designing a box-like package, which has a cushioning structure derived from the freezing process for delicate objects (like a fragrance bottle), cushioning sheets for wrapping, and nugget-like cushioning,” Araki says. “We are ultimately dreaming of replacing disposable plastic products, such as shopping bags, amenity goods prepared at hotels and so forth, with agar-derived plastic.”

He adds, “We believe in that possibility, but unfortunately that is beyond our ability—[it's] too technical and chemical for us to achieve by ourselves. So we hope some researchers become interested in our project and get in touch with us for a possible collaboration.”

As for Agar Plasticity's life cycle, Araki says that it can be disposed of in an environmentally friendly way, as agar absorbs and retains water quite well. In fact, it can be used to improve water retention by mixing it with soil in a garden. Should the agar plastic end up in the oceans, it wouldn't be harmful to the environment, given its original incarnation as marine material.



If a company wanted to scale up production of agar plastic, the process would depend on the size of the item that needed to be packaged or cushioned, Araki says. If AMAM had a large enough freezing facility, they could produce big sheets of cushioning. And if AMAM did, in fact, scale up, the supply chain would not be a problem:

“Agar is extracted from two specific kinds of red algae by boiling,” Araki says. “One of them—the one used to produce agar powder—can be aquacultured. The other seemingly cannot. The one that can is actually currently cultured and harvested worldwide in Chile, Egypt, Asia,” and other places around the globe.

“So, I think even if the agar package is widely used, there would be a possibility to supply the raw material constantly,” he adds.

While Araki emphasizes that Agar Plasticity is still in its prototyping phase, it's certainly encouraging to see such a relatively simple alternative plastics packaging. This is the type of outside-the-box thinking needed to battle modernity's plague of disposable culture. At the very least, the attention Agar Plasticity has received should encourage other enterprising designers to develop similar eco-friendly solutions for packaging our stuff.
