TEXTO 1

Publicado na edição online da revista Forbes em 23 janeiro de 2019.

Five Innovative Fashion Materials Made from Food By-Products

The fashion industry has been using the same limited range of fabrics for centuries.

Cotton, silk, leather and wool are undeniably great materials for making clothes but the surge in clothing production in recent decades has put enormous strain on these limited resources. The number of garments produced each year has doubled since 2000 according to McKinsey calling the sustainability of fabric production into question.

The production of cotton, in particular, has been linked to soil erosion, soil degradation and water contamination as a result of pesticides and the 20,000 liters of water it requires to produce just one kilogram of cotton, enough to make a single t-shirt.

Synthetic fabrics, such as polyester and acrylic, were hailed as a revolution for cheaper, easier to clean clothing in the early 20th century but we now understand the negative impact they have. Polyester is known to produce carcinogens such as terephthalic acid and ethylene glycol in its production and hundreds of thousands of plastic microfibers enter our water supply with every wash of it.

Thankfully, a new revolution in material innovation is underway.

The Future Fabrics Expo, the largest trade show focused on sustainable materials, in London this year has moved to a bigger venue to meet demand. Over 100 mills exhibited their products which cut a new cloth for a more sustainable fashion system.

Nina Marenzi, founder and director of The Sustainable Angle who organize the Future Fabrics Expo, told Forbes, "The overreliance on conventional cotton and virgin polyester, both reliant on finite resources and polluting in its production, needs to change. Sourcing materials from a wider variety of fibers, including innovations appearing now made from food waste, algae, regenerate cellulose, recycled sources are the way forward."

Some of the most exciting new fabrics have been developed from agricultural waste. Solving two problems in one, these fabrics are solving wastage caused by our food consumption and turning it into natural, resourceful fibers for the fashion industry.

Here's five such companies to know from The Sustainable Angle's network of innovators:

Piñatex

One of the most famous fruit-based vegan leathers on the market, Piñatex, is made from pineapple leaf fibers and has even been spotted on the red carpet of the Met Gala in 2017. By turning the part of the fruit that cannot be eaten, and is usually discarded, it provides an additional income for farmers and is a cruelty-free option for shoes, bags and clothes.

Ananas Anam, the company behind Piñatex, was founded by Dr Carmen Hijosa, whose background in the leather industry inspired the change to a more sustainable alternative.

Last March, Ananas Anam released a new generation of Piñatex which will up its sustainability factor by using a bio-based resin, rather than PU, and will also include new metallic pigments made from minerals.

Orange Fiber

Orange Fiber aims to rescue some of the 700,000 tons of orange peel that are discarded to create juice in Italy every year and transform it into a soft and silky fabric, ideal for clothes. The patented material is similar to viscose in that it is made from cellulose, and can be blended with silk and cotton, but doesn't involve the cutting down of trees.

Salvatore Ferragamo has recently created a capsule collection using the material which has a premium finish to it, making it an ideal fit for the Italian luxury brand.

Parblex

Chip[s] Board make a range of materials from potato waste suitable for the interiors and fashion markets. Parblex is their bioplastic recommended for fastenings, buttons and accessories in the apparel world. With a beautiful textured finish Parblex comes in three colors, 'smoke', 'tortoiseshell' and 'snow'.

Their waste is currently sourced from McCain and one of the chip brand's retired regional CEOs acts as an advisor to the company in manufacturing and operations.

Chip[s] Board has a zero-waste production system where even the offcuts from material production are reincorporated back into the process.

Agroloop BioFibre

Winner of the H&M Foundation's Global Change Award, Circular Systems creates material from crop residue caused by the farming of hemp, flax, pineapples, bananas and sugar cane. They claim that the leftovers from these five crops alone could produce 250 million tons of fiber, more than two and a half times the current demand.

Without turning this waste into a new product, they are left to rot, producing alarming amounts of methane, or set on fire creating further air pollution.

Circular Systems is making a range of new materials from them instead including packaging, organic fertilizer, biofuel and their textile-grade Agroloop BioFibre.

Vegeatextile

Another fruit-byproduct-turned-leather, Vegea makes leather from grape marc (the skins, stalks and seeds discarded in the winemaking process).

Resulting in a beautiful, wine-hued, leather without the need for killing animals or toxic tanning, Vegea has received funding from the EU to continue to research and grow its business.

A couture dress made from Vegea by designer Tiziano Guardini was recently exhibited at the V&A Museum's Fashioned from Nature exhibition in London.

Adaptado de: <https://www.forbes.com/sites/oliviapinnock/2019/01/23/5-innovative-fashion-materials-made-from-food-byproducts/#26b131e65749>. Acesso em: 10 maio 2019.

As questões de **1 a 5** se referem ao texto 1.
As questões objetivas possuem apenas uma alternativa correta.

1) Leia as afirmações e escreva **V** (para as verdadeiras) e **F** (para as falsas), de acordo com o texto. Em seguida, assinale a alternativa que contém a ordem correta, de cima para baixo.

1. ( ) O crescimento da produção de roupas, nas últimas décadas, não afetou a produção de materiais como algodão, seda e couro, nem mesmo impactou o meio ambiente.
2. ( ) São necessários 20.000 litros de água para a produção de 1kg de algodão.
3. ( ) Cada vez que uma peça de poliéster é lavada, centenas de milhares de microfibras plásticas são lançadas na água utilizada.

a) F F V
b) F V V
c) V F V
d) V V F

2) Assinale a alternativa correta de acordo com o texto.

a) Atualmente os tecidos sintéticos, como poliéster e acrílico, são considerados uma revolução na área têxtil devido à facilidade de limpeza e ao baixo custo.
b) Os tecidos sintéticos, como poliéster e acrílico, são, atualmente, considerados como uma positiva revolução na área têxtil, apesar do impacto negativo que produzem no meio ambiente.
c) Em entrevista à Forbes, a organizadora do *Future Fabrics Expo* disse que a situação de dependência do algodão e do poliéster virgem precisa mudar, pois esses tecidos são feitos a partir de recursos finitos e sua produção é poluente.
d) Algodão, seda, couro e lã ainda são considerados os melhores tecidos para a fabricação de roupas, e seu uso na indústria da moda vem sendo duplicado anualmente desde o ano 2000.

3) Traduza, para a Língua portuguesa, o seguinte fragmento, fazendo as adequações linguísticas necessárias.

Some of the most exciting new fabrics have been developed from agricultural waste. Solving two problems in one, these fabrics are solving wastage caused by our food consumption and turning it into natural, resourceful fibers for the fashion industry.

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Responda, em Língua Portuguesa, as seguintes questões de acordo com o texto.

4) A partir de quais materiais, a empresa Circular Systems cria seus produtos? O que aconteceria com esses materiais se a Circular Systems não os usasse como matéria-prima?

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5) Explique o que faz a empresa Orange Fiber.

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TEXTO 2

Publicação de Yale School of Forestry & Environmental Studies em 16 de maio de 2019.

Scientists Find 238 Tons of Plastic Waste on Remote Indian Ocean Islands

The Cocos Keeling Islands, a remote archipelago in the Indian Ocean, are covered with an estimated 414 million pieces of plastic pollution, weighing 238 tons, according to a new study published in the journal Scientific Reports. The islands are home to fewer than 600 people and sit 1,300 miles off the northwest coast of Australia. The plastic buildup, scientists argue, is emblematic of just how much plastic waste is circulating in the world's oceans.

Researchers measured plastic pollution on seven of the archipelago's 27 islands, marking off transects and counting all the plastic pollution inside each one. They also dug down 4 inches into the sand to measure any waste buried under the surface. They then multiplied their findings by the island chain's total beach area. Of the estimated 414 million pieces of plastic on the islands, 380 million were found buried in the sand. The most commonly found waste were single-use items such as bottle caps and straws. Scientists also estimated that some 977,000 shoes and sandals and 373,000 toothbrushes litter Cocos Keeling's beaches.

The scientists said their numbers are conservative estimates since they couldn't gain access to some of the island chain's known plastic waste hotspots.

"An estimated 12.7 million tons of plastic entered our oceans in 2010 alone, with around 40 per cent of plastics entering the waste stream in the same year they're produced," Annett Finger of Victoria University, a co-author of the new study, said in a statement. "The only viable solution is to reduce plastic production and consumption while improving waste management to stop this material entering our oceans in the first place."

Adaptado de: <https://e360.yale.edu/digest/scientists-find-238-tons-of-plastic-waste-on-remote-indian-ocean-islands>. Acesso em: 22 maio 2019.

As questões **6 e 7** são sobre o texto 2. Responda, em Língua Portuguesa, as questões, de acordo com o texto.

6) Explique o processo usado pelos pesquisadores para calcular a quantidade de plástico que polui o arquipélago Cocos Keeling Islands e diga qual foi o resultado estimado.

7) Segundo o texto, qual é a única solução viável para esse grande problema ambiental, que é a poluição por plásticos?

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TEXTO 3

Publicação de Harvard Graduate School of Education em 23 de janeiro de 2019.

Making Time for Mindfulness

Not knowing the answer to a question when you're called on in front of the entire class. Forgetting your homework. The kid behind you pulling your hair. School poses a lot of stressful moments, but how children (and teachers) react to them can make all the difference.

A new study suggests that mindfulness education — lessons on techniques to calm the mind and body — can reduce the negative effects of stress and increase students' ability to stay engaged, helping them stay on track academically and avoid behavior problems.

While small, the study of sixth-graders at a Boston charter school adds to a still-growing body of research about a role for mindfulness in the classroom. In recent years, the topic has excited researchers and educators alike as a possible tool to help students face both behavioral and academic challenges by reducing anxiety and giving them a new way to handle their feelings and emotions.

The Findings

After finding that students who self-reported mindful habits performed better on tests and had higher grades, researchers with the Boston Charter Research Collaborative — a partnership between the Center for Education Policy Research at Harvard University (CEPR), MIT, and Transforming Education — wanted to know if school-based mindfulness training could help more students reap similar benefits.

They designed a study focusing on sixth-graders in another Boston-area school. The study, published by a team including Martin West of the Harvard Graduate School of Education, showed that sixth-graders who participated in an eight-week mindfulness were less stressed out than their classmates who hadn't. Practicing mindfulness had helped hone the ability to focus in the moment, expanding students' capacity to learn and regulate their emotions.

Four times a week, instructors from Calmer Choice, a Massachusetts nonprofit specializing in mindfulness education, taught the group techniques and led them through practices, like focusing on a rock for a minute, then discussing when their mind wandered and refocused on the rock. Another group of sixth-graders took computer coding during that time instead. The students were randomly assigned between the groups.

At the end of the eight weeks, the mindfulness group reported being less stressed than they had been before the mindfulness education, and better able to practice self-control. About half of the students also volunteered for brain scans, and those revealed positive effects for the mindfulness group, too: their amygdalas — the part of the brain that controls emotion — responded less to pictures of fearful faces than they did prior to the mindfulness work, suggesting their brains were less sensitive to negative stimuli, or, in other words, that they were less prone to get stressed out and lose focus. The group who attended coding classes didn't see the same benefits.

The findings suggest that the mindfulness instruction helped boost students' attention skills, as well as develop coping mechanisms for stress. The authors maintain that this kind of evidence could be especially

useful in efforts to support students suffering from trauma and other adversities that trigger stress in the body, hurting students' ability to succeed.

Adaptado de: <https://www.gse.harvard.edu/news/uk/19/01/making-time-mindfulness.>. Acesso em: 10 maio 2019.

As questões de **8 a 10** são sobre o texto 3. Responda, em Língua Portuguesa, as questões, de acordo com o texto.

8) Qual foi o objetivo do trabalho desenvolvido pelo grupo de pesquisadores?

9) Quais foram os achados, a partir dos exames de escaneamento cerebral em alguns alunos?

10) Qual é a conclusão da pesquisa realizada na escola de Boston?