

Biosynthetic Production: Milk Fabric vs Orange Fiber

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Just take a quick second to think about the population on earth which is recorded to be about 7.53 billion people. It's certain that there is a significant amount of these people that have more clothes than they need. Many of these clothing items are produced in factories that spew out fossil fuels into our atmosphere. Not only this but put many animals through tortuous stages to produce such fibers. Although it may not be obvious to all, there is a clear problem here. It's the fact that for many years now humans have been negligent of their approach on how they produce their fabrics. There is a clear window here for better production of fabrics, a more sustainable approach. One that doesn't hinder performance and quality of the fabric.

A more sustainable approach that has been taken is creating bio-synthetic fibers. It has been gaining support for some time now, considering that in the recent years the move to a more sustainable future has become exceedingly more urgent. These synthetic fibers can be used to create multiple garments, including articles such as footwear, active wear, evening wear and outerwear. Brands are recognizing the importance and resourcefulness of being sustainable. Although these technologies are still in development, biosynthetic fibers are on the rise to make the world a more ethically improved atmosphere.

An Italian designer by the name of, Antonella Bellina, is taking a quite interesting approach. She collects expired milk from farms to create bio-synthetic fibers. Though this approach is not new, due to scientific and technological restrictions in the 1930s process used too many harmful chemicals and a sour odor. That is until now, where science and technology have been able to progress to great lengths. This allowed Bellina to take the same approach in a more earth friendly manner. Where the negative effects of the process were reduced to zero while the benefits of the process are a huge step to a more sustainable future. Her company, Duedilatte even goes as far as using solar energy to power their factory. They also use natural dye from

leftover coffee, blueberries and red onions. Their mission is to reduce their carbon footprint not only as a company but even with their products which she hopes to expand out to bedding and even badages.

The process is the following, the expired milk is heated to 50 degrees Celsius and then mixed with citric acid. This allows for the separation of the milk from the protein known as keisine. It's this protein that is used to create the fabric. The protein is then dried and placed into a cotton like candy machine and then spun into a cotton like fiber then woven into a fabric.

Bellina doesn't explicitly explain the entire process because it's her little secret. This fiber relative to the production of regular cotton fiber reduces water waste, it is said that in order to produce the fiber it takes only 1 liter of water while for cotton uses about 50 liters of water. The product is not only environmentally friendly, but it is also hypoallergenic, can even moisturize the skin and is anti-bacterial.

Another approach used by Orange Fiber and its collaboration with Salvatore Ferragamo, creates a similar fabric to that of Duedilatte a silk like fabric. The company was founded in 2014 by Adriana Santanocito and Enrica Arena. They use citrus juice byproducts to create the fabric. It is stated in the article that Santanocito developed the proposal when she thought why not use the remains that result from squeezing oranges for juice to create a fiber. The goal for this company is to find alternative methods to create fabrics that are sustainable. Thus, in the grand scheme of things creating reducing their carbon footprint and creating a better reputation to the fashion industry in terms of sustainability.

They can achieve such goals by converting the citrus waste into fabric that can be used a multitude of blends. The first fabric prototypes can imitate the texture and look of both silk and that of satin. To start the process the citrus cellulose is extracted in Sicily, by industrial pressing

and processing techniques. The raw material left over is sent to be spun to create a fiber. The company's website states that using nanotechnology techniques, the fiber is enriched with citrus fruit essential oil, thus resulting in a textile that may nourish the skin. Its final destination is in Como, Italy, where another partner takes the fiber and converts it into an unique textile.

It's hard to say which fiber source is more sustainable, since both are extremely earth friendly and natural resources. Both being waste products turned into magnificent works of art. To a certain extent the Orange fiber is more sustainable because the overall process is less harmful. Through the process more is given back to the earth then taken using plants and natural byproduct of fruits. Where on the other side the use of expired milk is resourceful, the milk comes from animals, thus creating more waste and not such an earth or animal friendly process. It appears both products perform well enough to sustain wear and tear. It is noted that to the average consumer the shirts from Duedilatte is more affordable, with each shirt coming to about \$60. While on one side we have a company that devotes its entire process to ensuring that all of it is green, we have another that produces the fabric but does not focus on creating natural dyes. Duedilatte goes the extra mile and uses waste products even for its dye. While Orange Fiber may run into a partner whom which doesn't care much for the dye process. In the long-term orange fiber has a greater chance of handling large output. Considering that they use a more generic source for their fiber that being citrus which can come from a variety of products. Duedilatte is a company that aims more towards the general consumer while orange fiber target market is the upper class. While both companies have aims to go beyond that of just apparel and into development of products such as bandages and other items as such. The products from Duedilatte are made for ready to wear whilst once more the orange fiber is more towards the haute couture side.

Though both companies use very innovative approaches to resolve a major issue in the fashion industry. They each have their faults, but it is a necessary step in the right the direction for the industry. This may be the push the industry needs to a more sustainable future. Not only delving into the luxury fashion world but even the more accessible one for the common person. These companies share their similarities and differences but, in the end,, they may be the drops of water in an ocean that can create the biggest waves.

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