



Name of the Good Practice:	Contact:
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Domain concerned:  ☐ Good Practice - General ☐ Good Practice - Collection ☐ Good Practice - Valorization	Good Practice - Sale Good Practice - Sensitization

# Implementation context (territory, starting point, ...)

The first milk fiber was born in Italy in the '30s, from the transformation of casein, a milk protein, thanks to the discovery of the engineer Antonio Ferretti. The yarn was called Lanital and partly replaced wool in the production of fabrics, given the over milk production in Italy at that time. In the '60s synthetic fibers derived from petroleum decreed the disappearance of Lanital but today, the growing sensitivity to sustainability, innovation, creativity but also the problems caused by the disposal of some production waste, bring us to evaluate alternatives, such as DueDiLatte, which, thanks to innovative bioengineering techniques, derives a natural fiber from the dairy and cosmetic industrial surpluses.

#### Practice, method of intervention and objectives of the approach

DueDiLatte is a startup in Pisa (founded in 2013) that makes designer t-shirts from the casein. The milk waste becomes a soft and moisturizing fabric, giving wellbeing and protecting the skin, even the most delicate. A DueDiLatte fabric does not smell like milk but has a pleasant perfume, because it is free of chemical treatments or bleaching and because it nourishes the skin.

The starting point is the collection centers for production redundancies, where there are food surpluses to dispose of. Here the milk from which the casein is extracted will be recovered, which will be transformed from food protein to textile fiber, thanks to the use of bio-engineering techniques and a sustainable and eco-friendly recycling process, which provides a very low level of chemical compounds and guarantees a considerable water saving (less than two liters of water to make one kilogram of milk fiber). This process involves a change of form of the molecules of the casein: initially they are like small spheres of a blackberry which then disaggregate and arrange themselves on a line. At this point they are dried to become powder from which the wet spinning process starts, which generates a small bubble similar to the icing sugar. It follows the weaving on the machinery, to obtain the fabric that is then purged from the raw processing, through a washing without detergents, and finished to have its most classic appearance: milky white, light and very soft. The personalization of the fabrics takes place using natural pigments and precise temperatures



















for drying. Each phase of the process is entrusted to the best workers and packaging workshops in Tuscany, and is monitored in every detail, because it must leave the casein alive and active, to give the skin moisturizing properties for the skin and a thermoregulatory power.

From the creation of the first tuft of milk fiber to today, there has been a long process of experimentation of the product on the field but in 2018 the focus will be on consolidating the sales network, starting from Milan, then moving on to the opening of an e-commerce.

# Results (impacts on the public, the territory, ...)

- environmental protection thanks to the use of an existing element/product otherwise destined to be disposed of as waste: milk waste (casein)
- the processes developed to extract the fiber have **less pollution**: no chemical agent and zero final waste or waste of production
- sensitivity towards **sustainability**, **innovation and creativity**
- milk aminoacids that remain inside the fiber, take care of the skin, nourishing and moisturizing it.

### **Target audience:**

• all people, but especially **just born** babies and kids.

## Perspective of use and dissemination:

• Transfer the experience to other European countries













