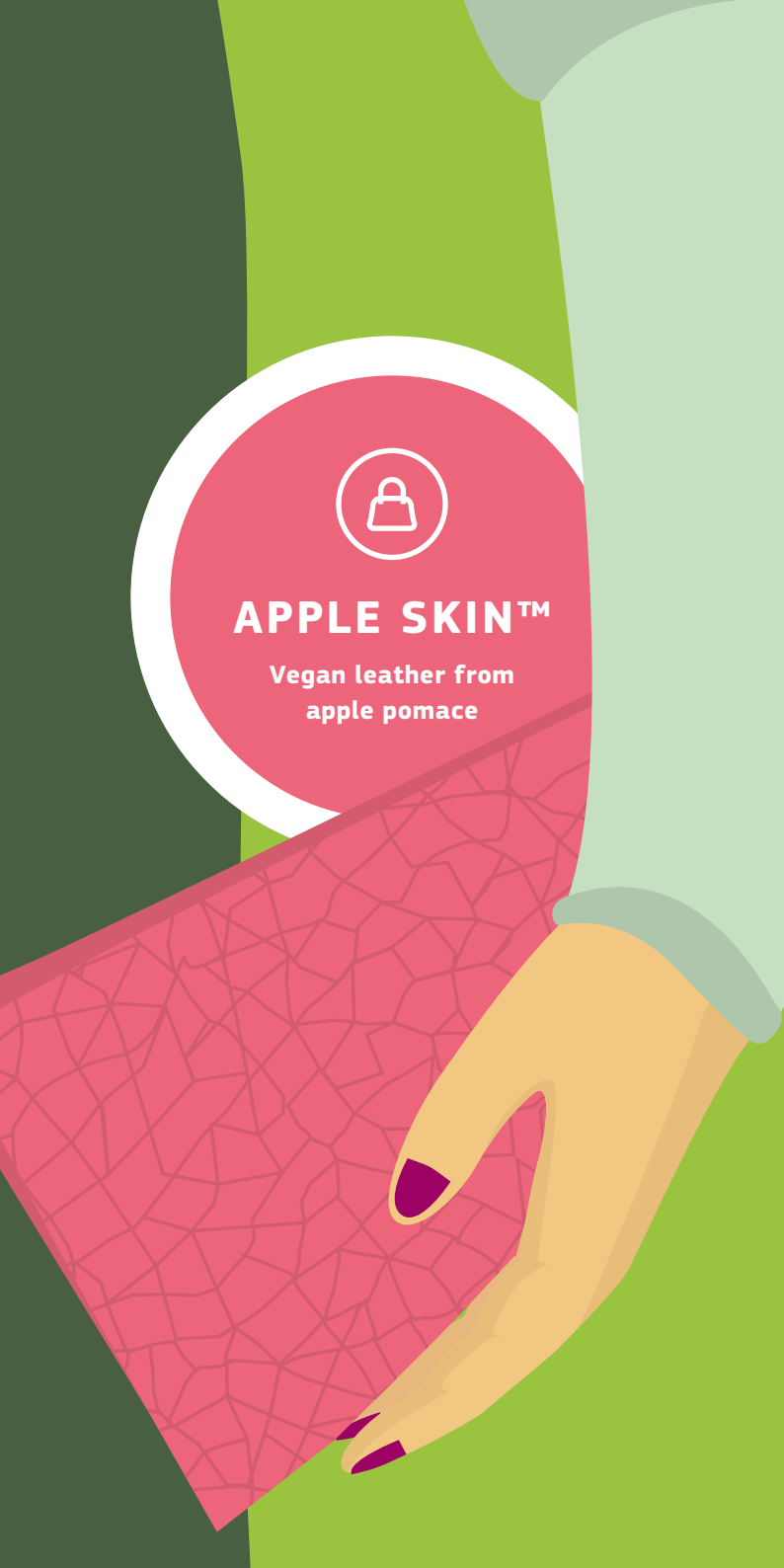

APPLE SKIN™
Vegan leather from
apple pomace

ORGANIC WASTE BECOMES FASHIONABLE

AppleSkin™ is a bio-based alternative to leather, combining performance and circularity with ‘Made in Italy’ quality.

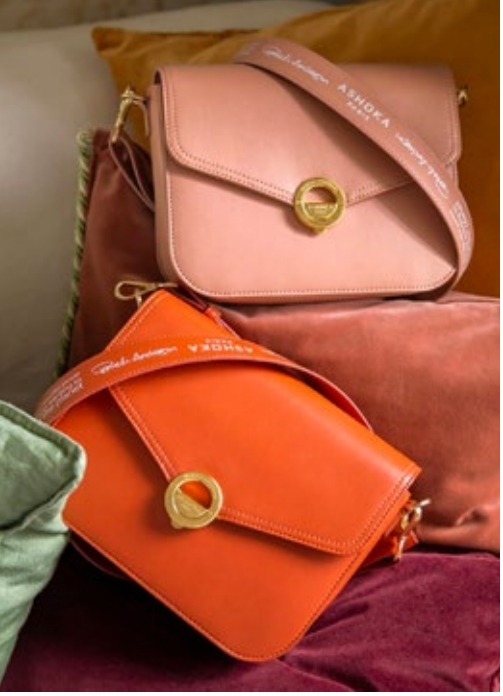
PLANT-BASED LEATHER ALTERNATIVE WITH A LOW CARBON FOOTPRINT

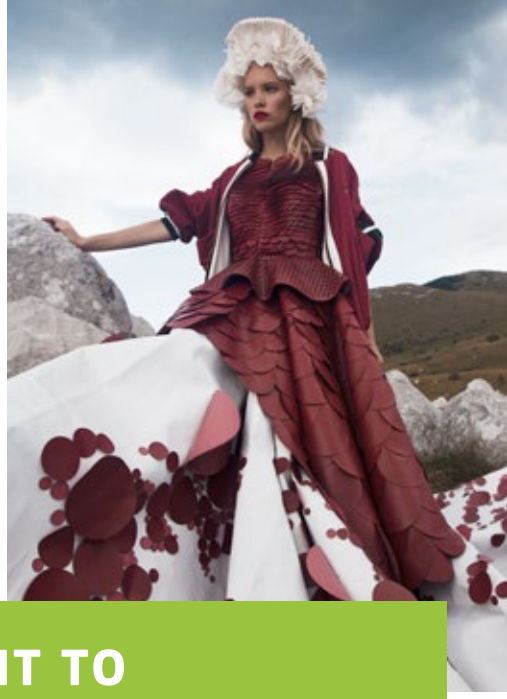
According to figures from the German Federal Ministry for the Environment (2016), consuming **one kilogramme of fresh pork** releases around **3.25 kg of carbon dioxide** into the atmosphere; for **beef**, it is even more – **13.31 kg** of Greenhouse Gas emissions. To reduce CO_2 emissions, it is therefore recommended to reduce meat consumption. This development also affects some of the by-products of the meat industry, such as leather. In recent years, a completely new industrial sector for the production of **vegan leather alternatives** with high growth rates has been established in the EU. One of the protagonists of this new sector is the company Frumat from Bolzano in South Tyrol.

The region in north Italy is renowned for its apple processing industry which is faced with a significant amount of organic waste. Frumat's founder Hannes Parth came up with the idea to develop a plant **leather-like alternative** from apple pomace. AppleSkin™ consists mostly from organic residues such as stems, seeds, apple peels and fibers. The residues are first dried, transferred to a fine cellulose powder, mixed with a **bioplastic** and applied in layers to a carrier such as cotton.

Frumat® was born out of the idea of recycling industrial organic waste and transforming it into raw materials.

Hannes Parth, CEO Frumat





At temperatures of around 130 °C, the materials fuse together. A variety of textures and thicknesses are achieved by final embossing or laser processing. AppleSkin™ can be easily personalised and produced on demand. Currently, the material is being used in the **fashion and furnishing industries**.
A particularly thick variant of the material from 50 % recycled apple pomace and 50 % polyurethane is used in shoe manufacture, for bags and upholstery. At the moment, Frumat is working on a cellulose-based leather alternative for the **automotive sector**.

More benefits
Hannes Parth offers an ecological, high performing alternative to animal leather. The new raw material answers both the **local apple-waste issue** and the increasing demand for vegan leather alternative with a **low carbon footprint**.

WANT TO LEARN MORE?

Producer
Frumat Srl
Via T. A. Edison 15
39100 Bolzano
Italy

Hannes Parth
Phone: +39 471 052635
E-mail: hannes.parth@frumat.it
www.frumat.it

UNFOLD ME

Materials impact the environment, society and economy. Under Horizon 2020, the EU's research and innovation programme, about €2 billion in EU funding, has supported research in advanced materials.

More information on EU funding:
https://europa.eu/!MJ49rK

European Commission

European Commission
www.ec.europa.eu/info/research-and-innovation_en

Concept & Design
www.lekkerwerken.design
www.haute-innovation.com

Realisation
www.triplea.be

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“We recover the industrial waste of the apple juice production and transform it into new raw materials.”

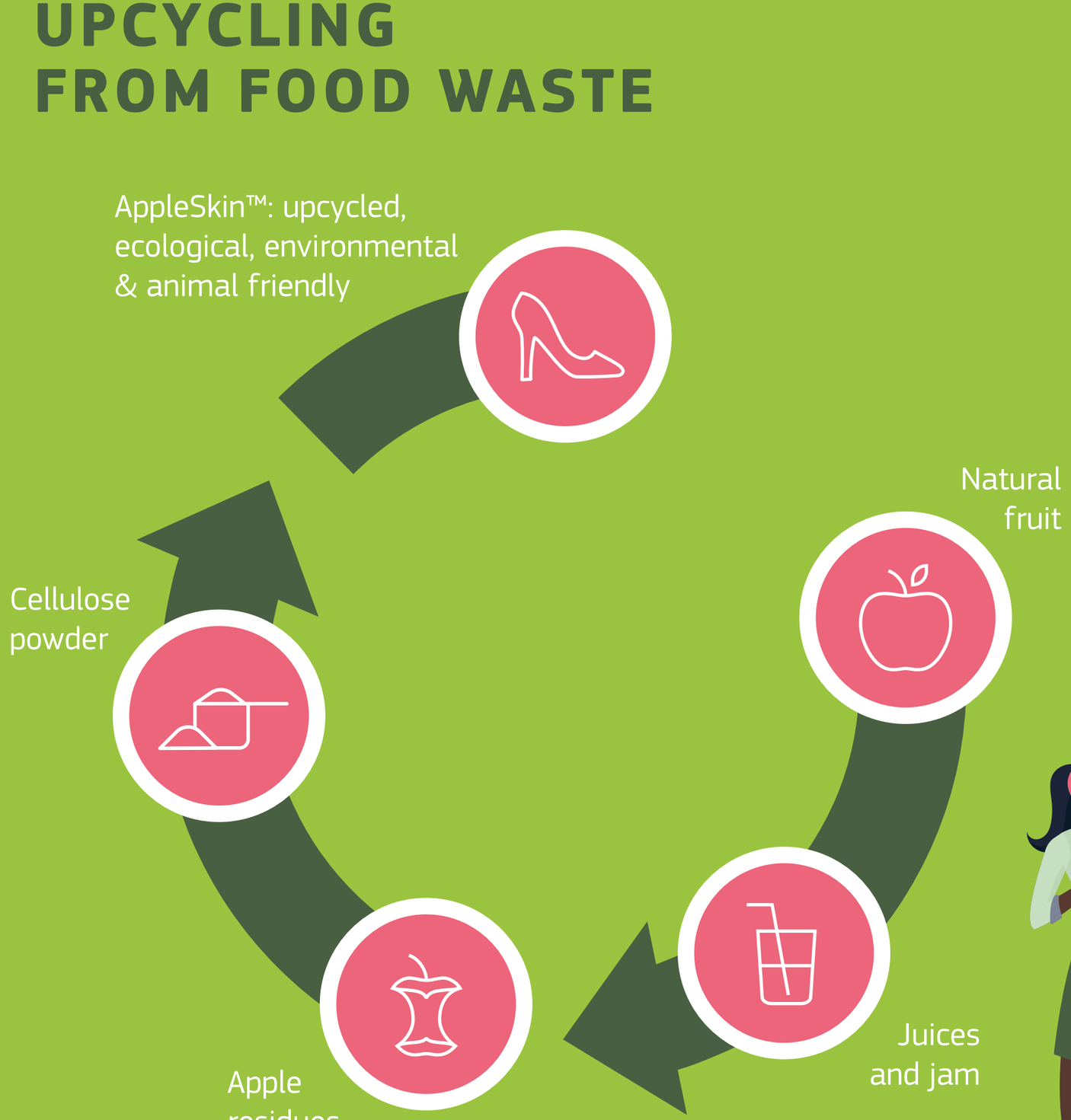
Hannes Parth, CEO Frumat

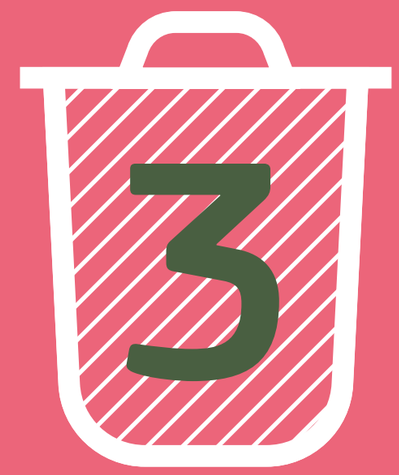
APPLE SKIN™

Vegan leather made from apple pomace

UPCYCLING FROM FOOD WASTE

AppleSkin™: upcycled, ecological, environmental & animal friendly

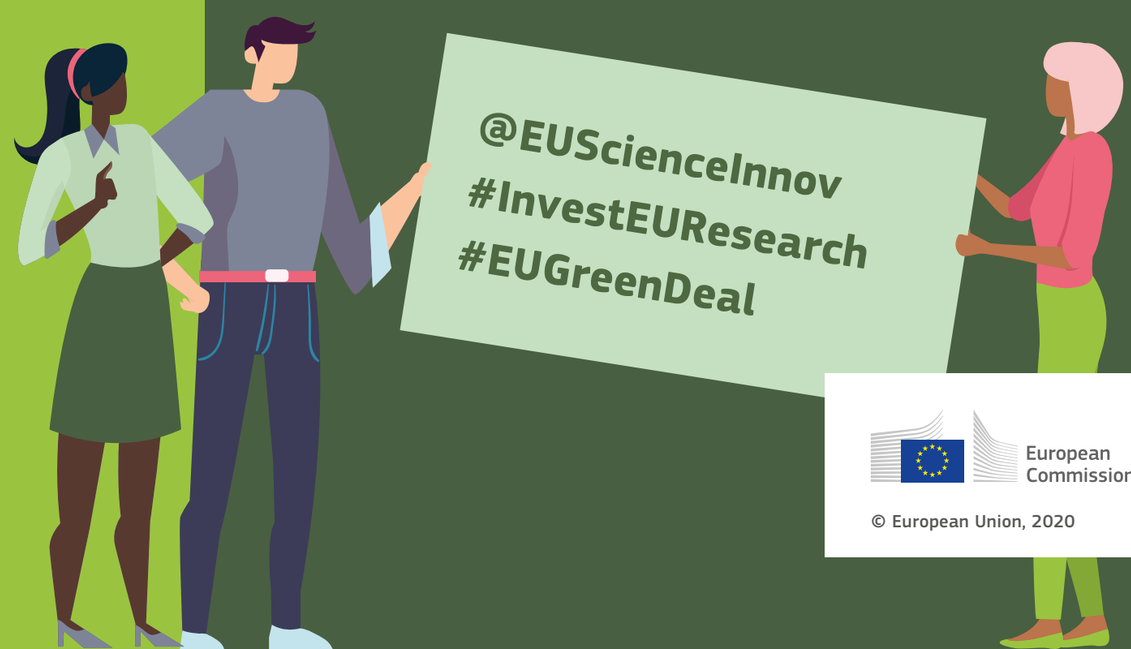




billion tonnes of waste burned in Europe every year that could be raw materials for new products

APPLE POMACE

consists **mainly of cellulose**, which is a **wonderful raw material** for the production of a textile material.



European Commission

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