

Leather: A Natural High Tech Material - Facts rather than Words

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Content

We all know and admire **leather** as the *beautiful, versatile, durable, sustainable and unique* material that it doubtlessly is. Leather is the material that gives a character to countless articles we use in our daily life. Leather is the material our waterproof hiking boots, our highly stressed wallets, handbags, belts, motorbike outfits and seat covers are made of. Leather provides a stylish and luxurious look, a pleasant touch and a distinctive odour, not to speak of the inherent technical properties such as an incomparably high wear resistance to name only one.

These countless positive aspects and the deeply rooted attraction and admiration of leather have driven the development of a growing number of **artificial materials** that are designed to look like leather and to imitate some of its most indisputable properties. Some of these artificial materials are cheaper and easier to produce and to handle; some are admittedly great materials in their own right.

--> *This extensive experimental study seeks to highlight one of leathers most prominent attributes: its **natural origin**.*

Using highly sophisticated methodology, namely radiocarbon technology, applied by means of the analytical method **ASTM-D6866**, the bio-based (renewable) content of various leathers and leather articles is established. These definite values are compared to the ones found for diverse synthetic imitations and the respective articles fabricated from such materials (Figure 1). The leathers tested in this study represent a large part of the spectrum of leather types, and they all had very high renewable contents. In contrast to leathers, all the competitor plastic materials tested in this study had low or negligible renewable contents.

Leather is based on a natural raw material, the hide or skin of an animal. However, for its manufacture the effect of various sophisticated chemicals is crucial. The contribution from process chemicals on the renewable content of finished leather is not negligible. The impact of a selection of chemical products on the bio-based content of leather is also quantified and discussed (Figure 2).

Leather is a natural, beautiful and durable material and should be acknowledged and marketed as such. The aim of the present contribution is to support this strategy with clear and provable facts.

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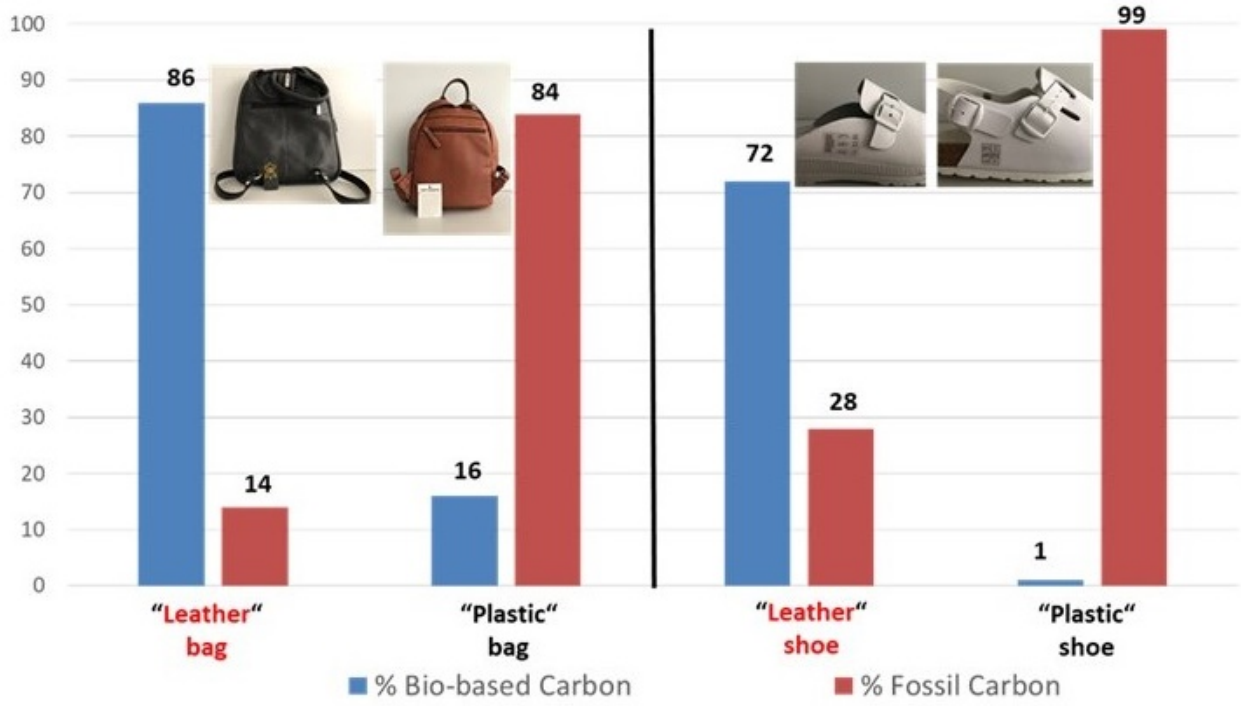


Fig 1: Renewable carbon content of commercial articles made of leather and artificial materials established via ASTM-D6866

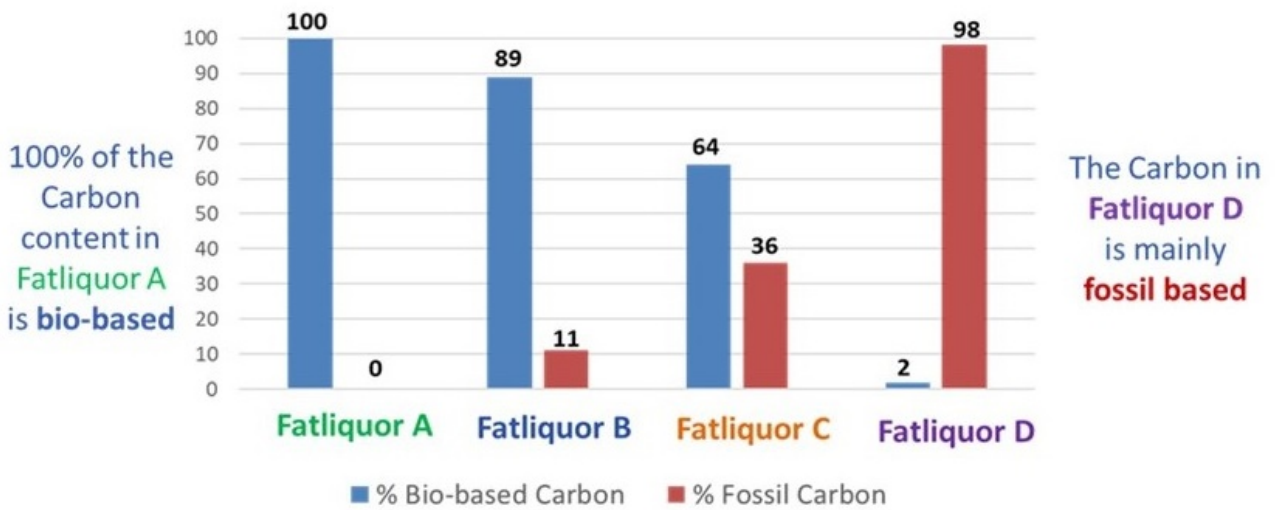


Fig 2: Renewable carbon content of commercial lubricating agents established via ASTM-D6866

Keyword

Leather and Chemicals, Bio-based content, Radiocarbon analysis