

Background Textile-Tracker

Traceability is an important aspect for the still missing transparency in the textile processing chain being able to prove the true origin of the textile raw materials. Cotton is one of the world's most important natural fibers and proving its origin gets more and more important. In particular, the conventional cultivation of cotton, with its high consumption of water, fertilizers and pesticides, has in some cases devastating social and ecological consequences for the growing regions. Therefore, the expansion of controlled ecological cotton cultivation (organic cotton) should be promoted. In this context, the assured proof of origin along the textile chain becomes a decisive factor, so that organic cotton becomes economically relevant for the producer and the origin of sustainable clothing becomes more transparent for the consumer.

The aim of “Textile-Tracker” is to investigate whether original chemical signatures of the cotton are retained throughout the usual textile processing steps in order to ensure unambiguous provenance without the need for additional labeling. Being well-established for agricultural commodities and certain wildlife products, stable isotope analysis using IR-MS (isotope ratio mass spectrometry) was applied. The measurement of the isotope ratio of selected elements (carbon, hydrogen, oxygen) in the cotton material provides discriminatory information on the provenance of cotton. These analyses were done exemplarily on different regiospecific cotton samples before and after carrying out textile-specific treatment processes, such as pretreatment (e.g. bleaching, scouring, acidifying), dyeing, chemical and mechanical finishing. The influence of textile processing was evaluated using statistical methods.

The research confirmed that chemical profiling throughout the textile chain can be very useful in answering specific compliance questions whether a sample comes from a specific region or not. The knowledge gained in this study enables the development of a geo-referenced database for cotton and textiles, especially for traceability issues of organically certified cotton goods.

We look forward to seeing you!

Should you have any questions regarding this event, please [contact us](#).

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