SIEGWERK

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From industrial coffee side stream to innovative water-based printing ink

What if yesterday's industrial coffee side stream could help create tomorrow's sustainable packaging?



Siegwerk is proud to be part of an innovative circular economy project that transforms coffee industry side streams into innovative water-based printing inks. Together with TAMK, Natural Indigo Finland, BioInk, Meira Oy and Hornung Verpackungen, this breakthrough has now reached a new milestone: the first successful industrial application.

Proven Under Industrial Conditions

The milestone was achieved at Hornung Verpackungen, where cross-bottom bags were printed under real production conditions using Siegwerk's COFFEE-SPECIAL, a water-based printing ink containing colorants derived from industrial coffee side streams.

This achievement demonstrates that renewable colorants can deliver not only environmental benefits, but also the performance required for industrial printing and packaging production.

The trial confirmed:

- print quality
- color contrast
- reliable processing on the press
- process stability

The successful test marks an important step from laboratory research to commercial packaging applications.

Closing the loop – the perfect circular application

The coffee-derived colorants originate from side streams supplied by **Meira Oy** and are transformed into valuable raw materials through **BioInk technology** developed by **Natural Indigo Finland**. Siegwerk then formulates these renewable colorants into high-performance water-based printing inks.

This creates a powerful example of circular economy thinking in action, where industrial coffee side stream becomes a valuable resource and sustainability is embedded throughout the value chain.

Where ink technology perfectly meets the packaging application: the cross-Bottom Coffee Bag



The printed cross-bottom bag is ideally suited for premium coffee packaging, creating a unique connection between the raw material and its final application. Coffee industry side streams are transformed into renewable colorants, which are then used to print packaging for coffee itself, a powerful example of circular economy in action.

For Siegwerk, this project represents another important step in expanding sustainable ink technologies. While renewable binders have long been part of our sustainability journey, coffee-based colorants help complete the sustainability picture and open new opportunities for renewable packaging.

The successful trial at Hornung Verpackungen demonstrates that bio-based colorants are ready to move beyond research and into industrial reality.

Today a prototype.
Tomorrow a new chapter in

sustainable packaging.

About the Partners

Tampere University of Applied Sciences (TAMK) – www.tuni.fi/tamk

A leading Finnish university of applied sciences known for strong industry collaboration and applied research in sustainable materials and technologies. Biocolores is one of TAMK's key research groups.

Kai Lankinen (kai.lankinen(at)tuni.fi), tel. +358504277616

Hornung Verpackungen – www.hornung-verpackungen.de

A leading German supplier of high-quality bakery packaging.

Rüdiger Hornung

BioInk / Natural Indigo Finland – www.naturalindigo.fi

Develops plant- and bio-based industrial colorants from renewable materials and organic side streams.

Pasi Ainasoja (info(at)naturalindigo.fi), tel. +358400282370

Meira Oy – www.meira.fi/en

A major Finnish coffee roaster and spice producer with science-based climate targets. Part of Massimo Zanetti Beverage Group, Meira works to reduce waste and environmental impacts.

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