

Making not Breaking the Mould!

May 2015

Zelfo Technology and Upgrading put sustainable packaging production in the hands of the food producers themselves.

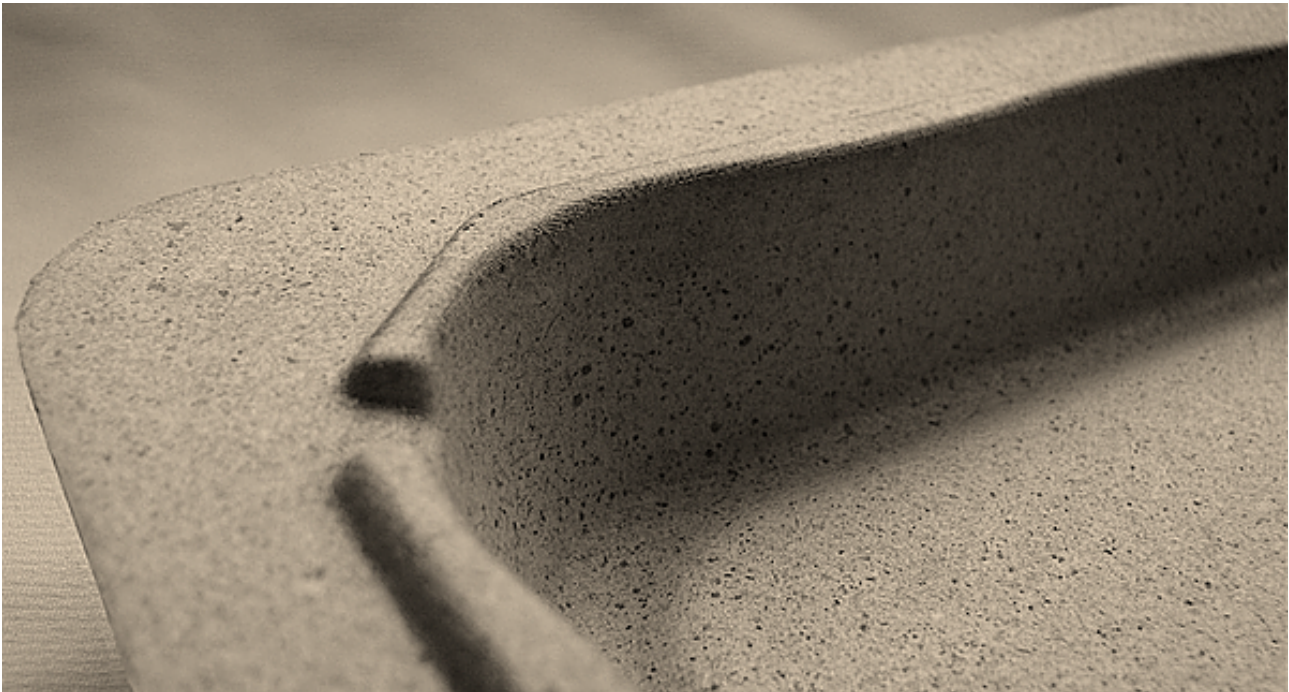


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Eco-business partners Zelfo Technology GmbH and Upgrading GmbH (both from Germany) have carried out trial production of an up-cycled wheat straw based Micro and Nano Fibrillated Cellulose (M/NFC) packaging solution. The material uses only the food producers' lingo-cellulosic fibre (in this case wheat straw) and requires no additional binder. **Designed to meet food industry packaging demands, the resulting products have a robust and flexible form and smooth 'closed' product contact surface.** The trial mouldings are approximately 250 x 150 x 50mm, sizes beyond or smaller than this are to be offered as standard. Non-toxic dyes can also be used to colour the product as required by the seller.

The trials used wheat on this occasion, however almost all fibre based crop residue or waste sources are suitable for conversion to packaging using the Zelfo/Upgrading system. There is therefore massive potential to solve or in fact to monetise agricultural residue or waste. Simply, the concept virtually bypasses the need to use standard cellulose sources (new or recycled) and focuses on any food source producers' own residue or waste fibre. This massively reduces production and logistics factors as well as costs. Effectively the producer becomes the raw material supplier of his or her own packaging material.

Alternatively M/NFC conversion of residual or waste fibre at a single regional source by a centrally placed processor could also supply other growers in the same region with raw material. **This game-changing situation places control of supply and price of the raw material for packaging in the hands of regional food producers.**



“Having been in packaging and product promotion for several years now, I feel that our business has taken an intelligent leap of faith into the world of sustainability with this product and processing system” commented Eduardo Gordillo, managing director of Upgrading.

Packaging products can be formulated using a mixture of up-cycled plant based M/NFC at various percentages with new cellulose or de-fibred waste material. Unit production times are relative to M/NFC quantities used. Tests have already been done to assess the spectrum of majority to minority quantities of M/NFC to non-M/NFC fibre, in order to match standard moulding times. Adjusting the percentage M/NFC content allows for a spectrum of performance, production and a cost oriented variety of end products.

In terms of carbon footprint the de-fibred source material has a very low embodied energy requirement coming, as it does from the producers own crop waste. End user disposal is as per any household paper based products as the product is non-toxic and biodegradable. The product is in fact recyclable into itself enabling the producer to effectively take back his own crop!

Upgrading is handling the technology customer interface and they already have Agro-business clients interested and ready to try the product. Two additional attractive points for the Agro-business sector are: **1. The production system is scalable and repeatable. 2. That it allows for ‘just in time production’.** Based on current interest the partnership between both firms is set to grow exponentially in the coming years.

Currently as most of the client interest is coming out of Europe, trial product development for individual clients will be handled at the partnerships pilot plant, which is near Hannover in Germany. Zelfo’s Material Technologist Kathrin Otto, who is part of the ongoing development team, looks forward handling the project at the pilot plant, noting; **“This is confirmation of the potential of M/NFC and an exciting new dawn for the bio-based economy”**

The Partners:

About Zelfo Technology

Ref website for www.zelfo-technology.com

About Upgrading GmbH

Upgrading is a Hamburg based Point of Sale / Packaging company which has successfully sold solutions to many global manufactures, retailers etc. and already has offers based on ecological materials available to it's clients. Eduardo Gordillo is a key driver of the sustainability aspect of Upgrading and has together with his partners established BioLutions as a complimentary 'Eco only' materials offer linked to Upgrading. Further information: www.upgrading.tv

Note: Since the issue date of this press release Upgrading GmbH has formed a sister company 'Bio-Lutions GmbH' which exclusively promotes bio-based packaging solutions. Information about this company can be found on their website:- <http://www.bio-lutions.com>

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