

FoodProduction Daily

Interview with Founder

Eduardo Gordillo,

June 2015

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Could you tell me a little bit more about the wheat straw based packaging solution?

Packaging now grows in fields!! One Crop, two products: food and packaging.

With our concept, we are taking the first steps to allow the agriculture industry to generate packaging, manufactured from their own agricultural waste.

Basically, we are offering packaging solutions created by using up-cycled agricultural waste, which is converted into self-binding Micro and Nano Fibrillated Natural Fibres (M/NFNF). The successful trials were made from wheat straw, because it was available and allowed us to test the principle. However, almost all fibre-based crop residue or waste sources are suitable for conversion to packaging using the ZELFO/UPGRADING system.

The innovation:

- Starting with the Agro-industry and moving beyond, the need for new cellulose (new or recycled) or petroleum based plastics (new or recycled) in packaging is diminished if not entirely removed.
- We no longer need additives or chemical processes because our fibres are self-binding.
- We don't need extra fields, no animal by-products are required, forests/trees are preserved and no problematic 'geo-technology' is employed. Our raw material is just there. Simply agricultural waste!
- The technology is compact so there are no big machines or support plants required! Production is at source! Stationary or mobile small plants are the key for the decentralization and the regionalization of the food industry.
- We can produce on a 'just-in-time' basis!
- We can produce simple and very complex 3D shapes
- We aim to fulfil our customers' technical and logistic expectations.
- We are potentially the cheapest and most ecological packaging alternative!
- It is biodegradable under normal conditions. It is recyclable. It has the lowest possible carbon footprint and that's because it is burnable and therefore close to being CO2 neutral.
- And last but not least: as a solution it is entirely elegant!

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Examples:

- Tomato trays (retail packaging) made from the annual agricultural waste of the tomato plants.
- Coffee capsules made from the agricultural waste of pitted coffee sherry.
- Olive oil bottles made from the agricultural waste of olive trees.
- Chocolate packaging made from the agricultural waste of cacao trees.
- Cookies packaging made from the agricultural waste of wheat plants.
- Corn soup packaging made from the agricultural waste of corn plants. Microwaveable.
- Packaging for the premium gifts of cities made from the tree leaves recollected in autumn.

And so on ...

Is this the world's first wheat straw packaging solution?

If the question were "Is this the worlds first example of engineered wheat straw packaging", we believe the answer is ,yes'!

If I answer the original question with a categorical 'yes', it would be both very arrogant and pretentious from my side. I have been engaged with the subject for many years. Thanks to travel and research, I picked up an extensive amount of background information. My findings lead me to believe that technically it was impossible, to bind fibres in their original state without using additives or intensive pre-processed energy/chemical pulp.

In regard to complex 3D shaped forms for high quality functional and affordable packaging, from my experience, I've not heard or seen anything which was made of 100% agricultural waste that could be close to our invention. The worldwide patents registered by Zelfo Technology in combination with our patents (in process) could confirm, that we are the first and only company in the world that is in a position to offer this extraordinary innovation.

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What are its main benefits?

Beyond the obvious ecological benefits the main advantage will be cost savings and logistic novelties. From my point of view, this could be the most important milestone of the last decades in the packaging and the related materials industries. We will offer the perfect combination of process simplicity, machinery size and local production. This will allow us to create a new relationship with our customers ... they will be our raw material suppliers as well.

This symbiosis allows us the absolute control of the raw materials prices and the raw materials involved. Thereby, automatically transforming our customers into our business partners. We can produce packaging for our costumers using their own agricultural waste, or for other customers who have an access to agricultural waste. In both cases, the cost savings will be huge.

- Imagine this new scenario, where the agriculture industry or the agro-cooperatives have the possibility to receive packaging for their products from us manufactured by their own agriculture residue/waste, produced on the spot, just in time and with the lowest existing carbon footprint. It is cheaper than any alternative.
That is what we call „RE-PACKING“.
- Imagine this new scenario, where we are using nature itself. We can produce essential, ecological packaging material, without any additives or chemicals, just produced with mechanical processes, in small stationary or mobile production plants. The best, we can comply the technical and logistic needs from our customers. That is what we call “RENATURING THE WORLD OF MATERIALS“.
- Imagine this new scenario, where a producer is no longer a victim of the stock market mood, of the speculative price changes, of the voracious appetite for profit from companies who are longing for profit, of any other form of strategic price changing in relation to raw materials in the market. That is what we call “RESOURCE REDISTRIBUTION – A FAIR FIBRE FUTURE“.
- Imagine this new scenario, where two companies (us and our customer) establish a very honest and transparent win-win situation, which has a third winner: our fragile eco-system. This is why we are part of the ‚ONLY ONE WORLD‘ BUSINESS GENERATION‘.

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What market trends does this solution address?

We have different possibilities:

Priority 1:

- Agriculture industry or Agro-cooperatives, who sell their own products to the retailers or who are interested to provide us with their agricultural waste for a profit share of the value added final product.

Other packaging based possibilities:

- Brands (with food or non-food products).
- Retailers, with or without own brands, who could require that suppliers work with us (for food and non-food products).
- Very innovative „Boutique“ start-ups or small companies (food and non-food products), which are very open for new ideas.
- Catering companies.
- Airlines.
- The coffee industry or „coffee to go“ stands.
- Fast food industry.
- Home delivery industry.
- Wholesalers and distribution companies.
- Packaging design and industrial design companies.
- Logistic packaging for the electronic industry.

For us it is very important that we engage with businesses which as well have a substantial ecological impact and who wish to embrace sustainability. All kinds of packaging, which is made of petroleum based plastics or processed energy or resource intensive cellulose should be replaced ASAP, that means „YESTERDAY“. Within this conceptual framework, we are not interested to produce long life products. This means, we are not going to produce cars ... not yet!!

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In terms of food and beverages, what can it be used for?

The product range will at first be orientated around containers for fruit and vegetables at first. These will be offered with and without additional foil lamination and graphic surface treatments. Fully waterproof vessels will form the part of the second wave of products. We already reviewed it. Furthermore, we can also produce packaging for non-food products.

Generally speaking we can offer a substantial range of opaque containers and casings. Transparent packaging is part of a parallel project, which remains as a 'secret' ... for now.

Where do you plan on selling? Do you have any companies interested?

Based on our history and extraordinary network in China, we have already started negotiations with some possible customers. At the same time, we will soon start sales in Germany and we will install an R&D/production plant near Hannover in 2 to 3 months together with Zelfo Technology. This plant will have a capacity of 3.000.000 packages per year, which is sufficient for so-called 'mini-orders'. In Spain we already have a potential customer, who is interested to build a plant with us in Tunisia, where they have a significant tomato plantation.

Because I am from Colombia, I have already activated my contacts there to find both agro-industrial partners and commercial partners. In India we have good contacts as well.

Our strategy is very clear: We think global but we act local with local partners.

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What was the biggest challenge when developing the solution?

From the start the biggest challenge was, that my idea seemed to be impossible to realize. The funniest part was, that fortunately I didn't believe it!! The neither part was, the honest, self-critical, absolutely transparent and efficient cooperation between Richard Hurding (Zelfo Technology) and me (Upgrading).

How was this overcome?

After more than 18 months full of failures, trial and error, some times a deep frustration (a typical path in the world of innovation!), we gave our project a last chance. Richard Hurding (Zelfo Technology) re-engineered their machine to process agricultural waste based on the information I had from our experiments with our 3D shaped packaging machines.

It was only after we obtained a different fibre, and when we simultaneously changed the setting of our machines including the re-engineering of our moulds, that we got the first positive output. It was a very critical point, because I was thinking to finish this R&D project. It was a weird situation, because at the same time, I was feeling, that we were very very close to the breakthrough.

Producing the last samples in our pilot plant in China was really an adventure. Because Zelfo Technology processed the agricultural waste at their pilot plant in Germany (near Hannover), using agricultural waste 'made in and from Germany', shipping the material to China was problematic. The reason are recent revisions in the regulations of China concerning the import of these kind of 100% natural materials. The customs in China required certificates, which doesn't exist even in Germany! They were very worried about the contamination we could cause in China. It was paradox when you considers the strict regulations in the EU.

At the end, we could make our trials and they worked!! Based on the success of these trials our system is ready to be up-scaled.