



# SUSTAINABLE PACKAGING

## How paper packaging for flour and seeds can minimise the impact on the environment

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**Y**ou have probably watched them. Video clips and images from various corners of the world, showing the effects of garbage on oceans, wildlife and people – often from non-biodegradable packaging. At BillerudKorsnäs, we are working actively to address the challenging concerns for our planet. We know that better packaging can do much for the environment and there are many benefits from choosing a smarter solution.

### Protecting goods and the planet

The most important task for packaging is to protect goods, save resources and minimise waste. Regardless of the choice of materials, strong packaging from strong materials can do much. However, excessive heavy

packaging is not the answer to the challenge of protecting products – we must also reduce the material usage for packaging. Waste, unnecessary resource use and climate change often go hand in hand.

### Biodegradable packaging can help

Normally, the product inside determines which packaging material is the most suitable. Plastic is a fantastic material, but due to its environmental impact, it shouldn't be used when other, more environmentally friendly, alternatives are available.

If a biodegradable paper packaging does end up in the nature, it breaks down within just a couple of months. This can be compared to a plastic bag which requires around 500 years to decompose. When it comes to climate change, BillerudKorsnäs' packaging materials have shown significantly lower climate impact in life cycle assessments where they have been compared to the corresponding similar plastic alternatives.

### Strong fibres make stronger packaging

At BillerudKorsnäs, we have produced and developed strong biodegradable packaging materials for centuries. Our papers are made from 100 percent primary fibres, mainly from Scandinavian forests.

They are a perfect mix of short and long fibres that together result in very strong packaging that can withstand tough handling in demanding transport chains. Moreover, the stronger the fibres, the less material is needed to create a strong packaging solution.

### Responsible forestry is the key

However, even though many market players are aware of the benefits of renewable and biodegradable materials,



### Annual forest growth and logging in Sweden



there is resistance to converting to paper packaging. At BillerudKorsnäs, we often hear that people believe that using paper results in deforestation and that the paper industry fells all of the trees.

This perception is unfortunate and incorrect. Trees are a renewable resource and replanting is a prerequisite for our industry's entire existence. Thanks to responsible forestry, the Swedish forest industry, including ourselves, has lasted for hundreds of years.

#### Primary fibres enable recycling

Paper fibres can be recycled up to seven times before the fibre quality is lost. To maintain paper recycling, it is thus necessary to add primary fibres continuously to the recycling loop. In short, our primary fibre papers contribute to the whole existence of recycled papers.

#### Beneficial for the whole value chain

As an example of how our papers can contribute to both packaging performance and sustainable development throughout the whole paper packaging chain, we can mention our product family, BillerudKorsnäs Axello®. This is a paper range especially developed for bag packaging, in particular for sugar, flour and grain packages and their demanding fast-fill processes.

#### Pure to carry food

Food safety is another major concern for us at BillerudKorsnäs, and pure paper packaging is necessary for packaging that comes into direct contact with food. Naturally, BillerudKorsnäs' products comply with FDA and BfR directives on direct contact with food. Paper packaging is a "breathable" material that is ideal for flour packaging, as excessive amount of moisture can leave the flour, preventing possible mould problems.

#### The right paper characteristics

For high efficiency and low waste on flour filling lines, the right packaging solution and paper is needed. During the filling process, it is essential that the flour can settle (compact) quickly to form a brick shaped bag.

BillerudKorsnäs, together with Fawema GmbH, has performed a study to find the right paper characteristics for fast flour settling. The result of this study will be presented in an article in a later edition of Milling & Grain magazine. Axello® is the result of years of research and development and offers these important characteristics.

#### The first sealed paper packaging

In collaboration with the machine technology supplier Bosch Packaging, BillerudKorsnäs has developed a film-free sealed packaging solution for dry food. Axello® ZAP is the only paper that can run on the new vertical fill form and seal (VFFS) machine from Bosch, which is equipped

with the new ZAP Module.

The result is dust-tight, insect-proof and rigid packaging with an eco-friendly, tactile profile, enabling maximal brand expression. The recyclable, renewable and biodegradable mono-material packaging also gives the added benefit of reduced packaging waste costs.

#### A small carbon footprint

BillerudKorsnäs has commissioned The Swedish Environmental Institute (IVL) to perform life-cycle assessments on a range of our papers. IVL's study includes a comparison between an Axello® package and a plastic package. It shows that the carbon footprint of the BillerudKorsnäs Axello® flour bag is 65 percent lower compared to the one made from plastic.

#### Discover the potential for improvement

In order to minimise bag breakages and food waste in the supply chain, BillerudKorsnäs has put a lot of effort into building knowledge. We give the right recommendations for various packaging concepts, including the right choice of paper for the different supply chains.

Using unique equipment, we can examine the function by simulating a package's path through demanding logistic chains until it reaches the store shelf. If our technicians find weaknesses in the design or choice of material, depending on different supply chains or production conditions – we can suggest improvements.

#### Mission: To downsize packaging material

We have noted that some markets, including the American one, frequently over-perform packaging by using a two-ply bag construction. One example of where this has changed is in Korea, where flour producers have started to use single ply bags utilising BillerudKorsnäs paper grade QuickFill® Single 120 gsm for 20kg flour, instead of the traditional solution of a two-ply made out of two 80 gsm papers.

Another example is South Africa, where flour is sometimes packed in 10 and 12.5kg bags. Previously, mainly two-ply bag constructions were used, resulting in a 200-gsm paper requirement. Now, the dominating solution is to use a single-ply bag made out of a 120-130 gsm paper.

#### Looking at the whole picture

BillerudKorsnäs challenges conventional packaging for a sustainable future. And we believe that everything has potential for improvement. By taking an overall view of packaging – from material, to construction and supply chain prerequisites throughout the value chain and all the way to the consumer – we can identify potential for improvements. We're on a mission to contribute to a cleaner and greener planet. We are happy to help.

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