

A Natural Progression:

A guide to transitioning to sustainable,
fiber-based packaging for fresh produce



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Introduction

Advice and insight from an expert in fiber-based packaging

Choosing to adopt fiber-based packaging for fresh produce unlocks a whole host of exciting benefits for growers, packers, and retailers in terms of both sustainability and commercial performance. It can also leave you pondering a number of important questions.

Where do I start? How easy will it be? And what disruption could it cause to my existing operations?

In this eBook, we draw on our expertise as one of the world's leading manufacturers of fiber-based packaging for consumer products to answer these questions—and more.





Fiber-based packaging benefits

Sustainable. Made using renewable plant-based fiber from sustainably managed forests and designed to be fit-for-purpose while lowering the environmental impact of the packaging where possible.

Recyclable. Fiber-based packaging is the most recycled form of packaging in the world. In the United States, almost 70 percent is recycled compared to just 8.7 percent for plastics.¹ In the EU, 81.6 percent is recycled, more than double the rate for plastic, which stands at 37.7 percent.²

Circular. Fiber-based packaging is made using renewable, plant-based fiber sourced from sustainably managed forests or from recycled fiber-based packaging and is recyclable, 'closing the packaging loop'.

Reduced greenhouse gas emissions. External carbon footprint assessment studies have highlighted that in some applications replacing plastic with fiber-based materials can cut packaging's potential impact on climate change versus plastic counterparts.³

Improved consumer perception. A recent survey found that 74 percent of consumers would be willing to pay more for sustainable packaging.⁴ The same survey revealed 65 percent of consumers associate plastic with pollution of the oceans. Fiber-based packaging perfectly accommodates this shift in consumer perception and preference.

Legislation. Many governments around the world are implementing legislation and taxation to discourage the use of virgin polymers and single-use plastics. The use of fiber-based packaging can help to mitigate these challenges.

1. United States Environmental Protection Agency

2. https://ec.europa.eu/eurostat/databrowser/view/CEI_WM020__custom_2984804/default/table?lang=en

3. Assessment conducted by Savvypack. Note that these results may vary depending on the assumptions, supply chain and specific comparison framework and should be verified on a case-by-case basis.

4. <https://www.circularonline.co.uk/news/three-fourths-of-consumers-willing-to-pay-more-for-sustainable-packaging/>

Performance Characteristics

Different aims. Different options. Different benefits.

For any business involved in packing or retailing of fresh produce, the transition to fiber-based packaging is based on the need to meet legislative requirements, their own sustainability goals, and/or the expectations of consumers.

However, the way these needs are met in terms of the format, structure and properties of the packaging, will generally be dependent upon the application, specifically, whether oxygen or moisture barrier properties are required to maintain shelf-life and prevent waste. Some solutions may even include both plastic-free and reduced plastic variants to accommodate different types of produce, or to differentiate standard and premium ranges.

Plastic replacement solutions

Plastic-free packaging (according to the European Commission's single use plastic directive criteria or other definitions) can suit the needs of many different types of fresh produce and is legally required in some countries, for example, France (depending on the produce). 100 percent paperboard packaging is perfectly suited to non-sensitive produce such as apples, pears, citrus fruit, avocados, etc.

Paperboard combines form and function, offering strength and a natural look that perfectly complements the nature of fresh fruit and vegetables. Water-based, food contact approved moisture- and grease-resistant coatings can be applied if required.

Fiber-based films are also becoming more widely available.

Reduced plastic packaging

For some applications, plastic cannot easily be eliminated. If an oxygen barrier is

required to extend shelf-life, for example in modified atmosphere packaging (MAP), plastic may be required to preserve freshness.

A 'hybrid' structure comprising a paperboard tray with a liner can deliver a significant reduction in plastic of up to 90 percent compared to traditional trays without compromising barrier performance.

Similarly, paperboard trays can be combined with flow wrap or a top film, enabling the plastic tray to be replaced with a recyclable alternative.

Selecting the right film

Barrier properties for lidding films or flow wrap can be tailored dependant on application. It is possible to adjust these properties to offer the optimal balance of plastic content, barrier performance, and mechanical strength on a case-by-case basis. Some options may even be plastic free.



Structural Design Options

Packaging that performs

Employing a carefully thought out, well-executed structural design for your fiber-based produce packaging can deliver significant commercial benefits. Your approach to this structural design should be holistic and consider the pack's performance across a range of different but equally important areas.

On-shelf impact

Breaking from tradition and employing a non-conventional shape for your fresh produce packaging can make for an eye-catching silhouette at the point-of-sale. Incorporating handles, shaped apertures, lids etc. can also create differentiation and visual impact.

Paperboard is a versatile material. It unlocks opportunities to create unique pack shapes that embody the essence of your brand message or the product itself. Creative structural designs can also maximize marketing real estate through billboardage - optimizing print area to deliver key messages to the consumer.

Enhancing the customer experience

When developing new packaging, collaboration with your packaging partner can be invaluable in thinking about whether value-adding features such as easy opening and resealing, the ability to be stored more efficiently, whether in a refrigerator or food cupboard, or more convenient carrying options can be incorporated.

Packs with structural designs that help to maximize protection for your fresh produce as it passes through the supply chain are vital. They can ensure the product arrives with the consumer in better condition, reducing food waste and delivering higher levels of customer satisfaction.

Material benefits

Moving from plastic to fiber-based fresh produce packaging can mean learning to appreciate new material performance parameters.

Your packaging partner will assist you with material optimization ensuring you employ just the right amount of paperboard to achieve your desired performance characteristics.



US-based apple grower BelleHarvest recently transitioned from flexible plastic packaging to a paperboard carton. The company reported that the new pack had resulted in 15 percent less apple defects while stored in refrigeration.

[You can read the full case study here.](#)



Commercial Considerations

Turning obstacles into opportunities

Turning obstacles into opportunities

The challenges of transitioning to fiber-based packaging for your fresh produce are not as onerous or complicated as you might expect.

Collaborating with an experienced packaging converter, and in particular, one who is able to advise not only on the packaging but also on the optimum machinery solution, will help ensure a smooth transition and an effective commercialization.

Investing in a more sustainable future

For all produce businesses looking to make the change from plastic to fiber-based packaging, the level of investment involved will be a crucial consideration.

While investment depends on an enormous range of variables, in many cases it can be less than you think. Often, existing packing machinery can be adapted, avoiding the expense of a complete packing line replacement.

Your fiber-based packaging partner will be able to conduct an audit of your existing plant and wider packaging operations before advising you on the most cost-effective way forward.

Comparing production costs, speeds and volumes

While research indicates many consumers are willing to pay more for sustainable packaging, there is still an obvious need for all businesses to protect margins.

Whether you currently use manual or automated technology to form, fill, and seal your produce packs, the ongoing costs, packing speeds and output volumes of using fiber-based packaging are typically on a par with those of equivalent operations using plastic.

Maximizing continuity with minimal disruption

The process of switching to fiber-based packaging can be carried out in a way that maximizes uptime and minimizes business disruption.

This can be achieved by making any required changes to your packing operations while the relevant produce is out of season.

Any new solutions can be phased in, dealing with the requirements of a specific area of your range at the time. Frequently, businesses focus on their premium products first before moving down to other lines.



Branding

Ensuring on-shelf differentiation and disruption

The visual impact of packaging can make all the difference between it ending up in a consumer's basket or being left on the shelf.

A number of unseen advantages

By switching to paperboard packs, particularly those that are 100 percent paperboard construction, you may be concerned that the visibility of your produce will be reduced. However, there are many effective ways to maintain good visibility of your produce to ensure consumers can still enjoy an appetizing glimpse of the pack's contents and feel they can buy with confidence.

For example, its structure can include attractively shaped apertures, or it can be open topped and used with or without flow wrap or lidding film.

Communicating key messages

Packaging for fresh fruit and vegetables can carry key brand messaging throughout the supply chain, from the farm to the consumer's shopping basket. Fiber-based packaging offers high-impact printing opportunities compared to plastic solutions.

Packs can be printed on all faces inside and out in multiple colors, giving you far greater freedom and flexibility to include key sustainability or marketing messages as well as vital information like barcodes and best before dates – without the need for additional labels or sleeves.

Accommodating tiered produce ranges

If you're looking to accommodate a tiered product offer based on a model such as 'good, better, best', paperboard packaging provides scope to create broad range differentiation, offering enormous flexibility to tailor pack structures and characteristics.

For example, you could employ a paperboard tray with a flow wrap or top seal for a core range and use a 100 percent paperboard pack construction for a premium organic line.



UK-based tomato grower introduced a first-to-sector fiber-based tomato pack, eliminating plastic flow-wrap from multiple tomato varieties while still enabling produce visibility.

[You can read the full case study here.](#)





PROCESS GUIDE

Five steps to fiber-based packaging success

Even though all businesses are different, the journey to fiber-based produce packaging typically follows a common path. This overview gives an outline of the typical process that Graphic Packaging would guide you through, which will include individual nuances and refinements along the way to accommodate the unique nature of your commercial operation.

The creative process is an iterative, phase-by-phase approach that allows continual feedback and measures effectiveness against the design objectives established in the project brief.

1. Project brief

We will work with you to fully understand your specific objectives and key considerations that are required for you move to fiber-based packaging. This will include your sustainability goals, specific produce applications, packing and distribution environments, existing equipment, etc.

2. Conceptualization

Design for the environment (DfE) principles are integrated into the design process. Our global team of structural and conceptual design experts will develop a range of ideas and concepts in response to your brief and present these to you. These concepts could include tried and tested solutions from our **fresh produce packaging** range, such as our unique **ProducePack™ Punnet tray**.

We often run collaborative innovation sessions with our customers. These sessions can achieve so much in a short space of time and can be invaluable when deadlines are tight.

3. Prototyping

Once an effective concept that meets your needs has been identified, the process of prototyping can begin. This can include the creation of branded samples for further evaluation and assessment in your business.

4. Trials

We will work closely with you to ensure the proposed solution is fit for purpose in your operations before its wholesale introduction. This can include bringing machinery to your site to carry out tests in a 'real world' environment.

5. Commercialization

Once your new pack design has undergone successful trials and gained approval from all the key stakeholders involved, we will work with you to integrate it into your existing operations and to roll it out into the market.





How do I take the first step?

At Graphic Packaging, we support produce customers in the transition from plastic to fiber-based packaging to meet consumer and market needs and help you drive towards a circular economy.

We begin with equivalent functionality, which is underpinned by added value innovation, to truly unleash the potential of recyclable, fiber-based packaging solutions for the produce aisle.

Our team of experts are ready and waiting to assist you on your journey.

Contact us today to and take the first step towards leveraging fiber-based produce packaging for success.



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