



Why You Should Replace the #10 Can

Case Study and Package Evaluation
of the Fres-co #10 can replacement



The Fres-co System #10 Pouch Provides Major Gains in the Areas of Sustainability, Safety, and Cost Reduction.

Cost-savings have been the top priority among food service managers and executives in recent years. According to a survey^[a] conducted during the Annual Conference of the International Food Distributors Association, more than 50% of the targeted group indicated that cost-cutting in the broader operation was their number one priority, in 2011.

While this trend continues and the condition of the economy remains uncertain, food service operators and restaurant owners strive to continue delivering quality products, solving long-term storage problems, and, more importantly, reduce the costs associated with transportation, waste disposal, and overall logistics.

Articles published recently^[b], point to sustainable packaging as a viable cost-reduction solution in a downward economy. Furthermore, they indicate that companies that have adopted this initiative, have reported cost savings.^[c]

The case study presented hereby, is an example of how one of our customers (“Company X”), was able to turn a challenging market to its favor. Eliminating rigid packaging from some of their product lines gave them the competitive edge they needed to continue succeeding in the industry, despite a declining economy.

Case Study

Introduction

Company “X” is a food manufacturer who has served the food service industry for more than eight decades. During this time, they have consistently delivered high-quality products to restaurants, catering service, corporations, government, etc. Their specialty comprises wholesome foods and ready meals such as beans in brine, tomato-based products, cooked fruits and vegetables, and food ingredients.

The Challenge

Since the beginning, Company “X” had been using metal cans to package their products. In 2007, the global market started struggling; prices of fuel, energy and resources continued to rise. As the market was meeting a highly vulnerable economy, Company “X” realized they needed to make some changes in order to reduce the impact. Its customers continued demanding high-quality products. Production costs continued to escalate, and consumer’s discretionary spending was declining significantly, causing detrimental to the restaurant business. Company “X” urgently needed to **reduce costs and improve its competitiveness in the marketplace.**

“Sustainable packaging initiatives are a viable cost-reduction solution in a downward economy.”

Source: “Sustainable Packaging on the Rise”
The Green Economy Post.

[a] “Priority in the Food Service Industry” Voxware, July 2011.

[b] “Sustainable Packaging on the Rise” The Green Economy Post, March 2010

[c] “Sustainable Packaging Initiatives” Industry Week, February, 2009

The Solution

Company “X,” who was using the #10 can to package their product, approached Fres-co System USA – a leader in the flexible packaging industry- to find a viable solution to their problem. After conducting a Life Cycle Analysis, Fres-co recommended to replacing the #10 can with the Fres-co #10 pouch, a high-barrier multi-layer laminate, they had developed for the food and beverage market. The results of the analysis strongly favored the pouch over the metal container. The numbers were high in the areas of cost savings and sustainability. The Fres-co #10 pouch was what they needed to achieve their goals.

The following are the results:

Life Cycle Analysis of the #10 can vs. the Fres-co #10 pouch

Assumptions:

- Steel cans are recycled at 62% (2008 Franklin Associates study).
- Laminated pouch would not be recycled.
- Corrugated secondary packaging is recycled at 70% (Corrugated Packaging Alliance 2007).
- Waste not recycled is either sent to a landfill or incinerated.
- The net weight of tomato in a #10 can is the same as the net weight of tomato in the #10 pouch.
- Estimates for GHG emissions and energy consumption for the two packages are based on a 2008 Franklin Associates study (these estimates are for the primary package only – corrugate is not included).

Data shows favorable results toward Fres-co’s proposed solution.

TABLE 1 COMPARISON	Current	Fres-co Proposed	% Reduction with Pouch
Packaging Type	#10 Steel Can	Retort #10 Pouch	
Product	Tomato Paste	Tomato Paste	
Product Net Weight (lbs)	6.75	6.75	
Standard for Waste Analysis (lbs)	100,000	100,000	
Description	Steel can with paper label	Laminate Pouch with paper label	
Weight Each (lbs)	0.661	0.099	85%
Recycling rate (%)	62**	0	
Primary Package Waste (lbs)	9,799	1,470	85%
Secondary Package Waste (lbs)	1,916	5,556*	
Total Packaging Waste (lbs)	11,715	7,025	40%
Packaging Waste Recycled (lbs)	7,416	3,889	
Packaging Waste Disposed (lbs)	4,298	3,136	27%
Total Source Reduction			40%
Reduction of landfill / Incinerator Waste			27%

(*) Company “X” chose a 2.25 pound box with an insert as secondary package. Had they chosen a lighter box, the results would have favored Fres-co #10 pouch even more.

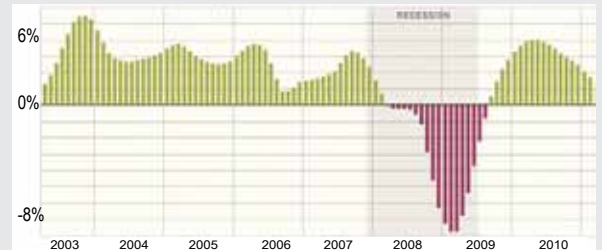
(**) Data Source: Franklin Associates study.

The USA TODAY/IHS Global Insight Economy Outlook Index

The graphic below represents Global GDP growth index from 2003 to 2010, with its lowest point of -8%, in 2009.

Many companies have taken the broader cost-reduction approach to be able to remain competitive as the economy recovers.

The USA TODAY / IHS Global Insight Economy Outlook Index



Source: USA TODAY / Update December 1, 2011

Economic Outlook Index:

A composite of 11 indicators designed to predict future real gross domestic product (GDP) growth. Values through September 2011 are actual real GDP, which is GDP adjusted for inflation.

What it means:

Real GDP growth is a key indicator of economic activity. It provides useful insight in assessing recession risk and recovery potential. Toward the end of a recession, a healthy GDP growth rate is around 3%.

Source: www.usatoday.com. December 1, 2011

The Market Trend in the Packaging Industry

According to a study presented by The Fredonia Group, in October 2011, “converted flexible packaging’s source reduction capabilities will be increasingly advantageous in light of initiatives by major retailers and packaged goods firms to evaluate their packaging in terms of eco-friendliness and cost reduction.”

The same study projects a 4.6% yearly demand increase of pouches for food applications, to \$8 billion in 2015.

According to *Flexible Packaging Magazine* published in October of 2011, “Growth will be driven by continued conversions to stand-up pouches and healthy gains for flat pouches in a number of markets, along with a smaller environmental footprint due to lighter weight and reduced material use, which also holds down shipping costs.” The publication also indicates that -due to the aging of rigid packaging equipment- we should see an increase in the pouch packaging equipment installed base, over the coming decade.

Because flexible packages are so much lighter than rigid ones, that recycling rate of the latter cannot offset the significant source reduction and waste prevention advantages of the former^[1].

[1]: The USL Report. A Study by Franklin Associates, 2007

Results

By replacing the can with Fres-co's #10 pouch, *Company "X"* achieved 40% of source reduction; the total weight of the finished product got reduced 85%. Consequently, we observed 27% reduction in landfill waste. In general, decreasing in these areas translate to reduced package volume and solid waste, generating cost-savings in transportation, warehousing, and waste management.

A further analysis using the Walmart Scorecard Modeling Software, confirmed the superiority of the Fres-co #10 pouch over the tin-plated steel can. In this case, the author -ECMR- used identical Consumer-Meaningful Unit of Measure (CMUM)^[e] and distance traveled for both packaging systems.

The Walmart Scorecard Packaging Evaluation

	Packaging Name	Component Description	Material Type	Weight lbs
1	#10 Can	3 Liter Can	Tin Plated Steel	0.661
2	#10 Pouch	3 Liter Pouch	Multi-layer film. Majority polyethylene; aluminum	0.099

	TABLE 2 Walmart Metrics	#10 Can	#10 Pouch	% Reduction with Pouch
1	GHG from package production	0.000251438	0.000028383	91.92%
2	Sustainable material	0.220337333	0.0330032	85.02%
3	Average Distance to transport material	0.220337333	0.0330032	85.02%
4	Product to package ratio	0.220337333	0.0330032	85.02%
5	Cubic utilization	0.46	0.3625	21.20%
7	Recovery	8.152481333	3.30032	59.52%
8	Non-renewable Energy	0.9301172134	0.906477312	2.55%

The numbers in green denote a better score, and numbers in red denotes a worse score. The lower the Walmart score, the better.

The Walmart Scorecard considered a new set of metrics, not included in the previous Life Cycle Analysis. The results, again, favor the Fres-co #10 pouch by showing a high percentile reduction in the areas of sustainability, recovery, and cubic utilization. Such reduction positively impacts cost-savings throughout the product's life cycle.

Summary and Conclusions

The Fres-co #10 pouch is a cost-efficient solution throughout the product's life cycle and supply chain. This is concluded from the results observed in tables 1 and 2, in which the authors included tangible metrics to measuring the pouch and can performance in related areas.

The flexible Fres-co #10 pouch also offers additional environmental benefits, plus other competitive advantages, to food manufacturers and consumers.



[d] ECRM

[e] Unit to express equivalences that are meaningful from the consumer's point of view, e.g. "X loads per container when referring to laundry detergent.

Fres-co's #10 Pouch FAQ

Q: What products can be packaged in the Fres-co's #10 Pouch?

A: Anything and everything that is currently packaged in a #10 can including, soups, tomato-based products, vegetables, syrups, cheese sauces, beans in brine, smoothie mixes, dairy products, fruit purees, etc.

Q: Will the food product packaged in a pouch maintain the same shelf life it would in a can?

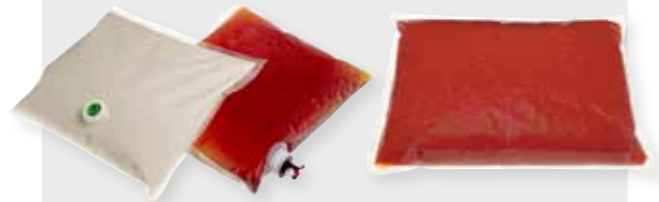
A: Yes. Product quality and integrity are achieved by using aseptic packaging and a high barrier multi-layer material. Furthermore, the final product can be refrigerated, frozen, or stored at room temperature.

Q: What are the biggest advantages of switching from a #10 can to the Fres-co's #10 pouch?

A: Cost savings associated with product handling, transportation, inventory, and disposal.

Q: Is the #10 Pouch healthy?

A: Yes. One of the greatest advantages of the #10 pouch over the can, is the highly reduced levels of sodium, and the absence of Bisphenol A (BPA) -an epoxy based coating applied inside the can to protect food from metal corrosion and bacteria. BPA is believed to be linked to human health problems. See below for more information.



How Canned Food May Impact Human Health

Studies conducted by several groups of scientists have indicated that even at very low doses, BPA can increase breast and ovarian cancer cell growth and the growth of some prostate cancer cells in animals. Like estrogen — BPA is active in very small amounts. According to the Environmental Working Group (EWG), "the lowest exposure of 2 to 2.5 ug per kilogram of body weight per day via food or water shows permanent effects to reproductive systems, antioxidant hormones, behavior and hormone levels."

EWG's calculations are based on 'official' USDA serving sizes, which underestimate the amounts many Americans eat. For instance, one 15 oz can of chicken soup, considered to be two servings by the government, could easily be eaten in a single meal. The BPA dose for a pregnant woman eating this can of soup would be 2.6 ug/kg body weight, and would exceed the doses in the most sensitive studies with absolutely no margin of safety.

Source: Environmental Working Group Research. July 2009.

Summary (...cont.)

Advantages of the #10 flexible pouch by Fres-co System

- 92% less GHG generation from package production
- 85% weight reduction
- 85% increase of product to package ratio
- 40% source reduction
- 27% less landfill waste
- 21% increase of cubic utilization

The numbers shown above, speak loud and clear. However, the recyclability factor found in the can, still generates some skepticism on whether or not the pouch is true cost-efficient solution. To make sure there are no doubts in this regard, let's review for a moment the data showed in Table 1.

Assuming that cans are recycled at a rate of 62% ^[2], laminate pouches are recycled at a rate of 0%, and the secondary package in this case is recycled at 70% ^[3]; there is a total packaging material reduction of 40%, or 4,689 lbs of packaging per 100,000 lbs of product. As a result, the weight of packaging sent to landfill gets reduced by 27%. Had Company "X" chosen a lighter secondary package or had they eliminated it, the final numbers would have favored the Fres-co pouch even more.

In other words, despite the recycling rates, the pouch is so much lighter than the can, that the latter cannot offset the significant source reduction of the former.

^[2]Franklin Associates. Study ; ^[3]US Environmental Protection Agency

More benefits of Fres-co's #10 Pouch

- **Higher product quality:** BPA coating used in cans is not necessary; neither is the use of large amounts of flavor enhancement ingredients such as sodium and sugar.
- **Increased ease of usability:** Can openers are not needed. Dispensing fitments are available to improve usability.
- **Reduced liability:** The #10 pouch eliminates the risk of injuries due to accidental product drop or when operating, handling, and disposing sharp-edge containers.
- **Increased consumer's safety:** The #10 pouch eliminates potential food contamination caused by metal shavings inadvertently falling into the product.
- **Easy to store at the point of use:** The pouch's shape and light weight make the life of food operators much easier. Due to its higher cubic efficiency, more packages fit on a shelf at a given time while its lighter weight makes the packages' manipulation highly convenient.

To request a complementary customized Life Cycle Analysis of your current packaging, or find out more about the Fres-co #10 pouch, call 215.721.4600.



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Specifications of the Fres-co #10 Pouch

Type: Flexible Bag
Material: High-barrier multi-layer polymers with or without Aluminum

Styles: Clear or foil
Pillow or Stand-Up

Conversion process:
Pre-print capabilities
Direct print capabilities
Rollstock Manufacturing
Three-side sealed pre-made bag

Temperature capabilities:
Shelf-stable
Refrigerated
Frozen
Hot-fill
Retort
Microwavable (clear only)

Package Features:
Easy open
Puncture resistance
Grease resistance
Reclosable (optional)
Dispensing fitment (optional)

Product Applications:
Solid
Liquid (multi-viscosity)
Powder
Paste
Granular
Chunks
Food in brine or syrup

Packaging Environments Applications:
High acid aseptic
Low acid aseptic
Multi-phase filling
ESL
Ultra Clean
Retort
Hot-fill



The Fres-co #10 pouch is run on the following packaging equipment by Fres-co System:

- **G90** : Automatic Horizontal Fill/Seal
- **FSU800** : VFFS Automatic High Acid Aseptic
- **FSU1000** : VFFS Automatic Low Acid Aseptic
- **FSU600** : Semi-automatic Fill/Seal

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