



Safe food packaging and the environment

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South Africa is ranked fifth by the World Packaging Organisation (WPO) in terms of packaging standards and quality. This means that the country's R18 billion a year packaging sector, is both competitive and sophisticated. Although the South African market is small compared to the United States, United Kingdom, Germany and Japan, accounting for only 0,5% of the global GDP, the country is still the economic powerhouse for the whole African continent.

In South Africa 2,4 million metric tons of material is converted into packaging. The manufacturing industry offers employment to 55 000 people. The food and beverage industry accounts for approximately 51% of the packaging industry's annual turnover. Of the materials converted into packaging, paper and board accounts for 41,2%, glass for 24,2%, plastics for 22,1% and metal for 12,5%.

Protection

Packaging of food products fulfils a variety of important roles. A primary function is that it provides protection. If the product is a solid substance, it should be protected from physical damage. The packaging material should prevent the entry of micro-organisms, insects or rodents. It must also act as a barrier against loss of moisture (for liquid or moist products) or absorption of moisture (for dry products). It must also protect against entry of oxygen in the case of oxygen-sensitive products such as products containing poly-unsaturated fats or oils. Where relevant, it must also protect against ultraviolet rays. Finally, packaging should prevent the entry of toxic or noxious chemicals, gases or odours into the product.

Sales pitch

The second function of packaging material is to assist in selling the product. Fluid milk processors traditionally have viewed the milk container as merely an expense – one in which they have con-

stantly tried to find the lowest cost solution. In fact, the container offers a great opportunity to act as a powerful marketing tool to help sell more milk and at the same time, make it a more profitable item in the product portfolio. One way of doing this, has been by changing the cap and closure system. Even though such solutions are often technologically difficult or inconvenient for the processor, dairy companies are realising that with the right packaging, product development has no limits.

Carrying the message

A third important function of packaging is to communicate and educate. The package identifies the product for the consumer. It also informs consumers about how to prepare or use the product, provides information on the amount of product in the package, the ingredients, nutritional content and other pertinent information.

Packaging is important in promoting the safety of the product. Following a series of processing steps, it often protects the final product against contamination by micro-organisms that can spoil perishable products or that may produce toxins or cause diseases. Packaging also acts as a barrier against any toxic substance from the environment. Where plastics are used, components from the plastic itself should not migrate into the food. All plastics used in contact with foods, must be approved for this purpose by regulatory agencies.

When shopping for food products, especially dairy products, the consumer furthermore wants to be sure that the product has not been tampered with. A plastic bottle's first line of defence in efforts to ensure safety, comes in the form of a tamper-evident feature with the actual cap. The three most common features are a safety ring, shrink-wrap band or extended shrink-wrap sleeve. These features are only good if they work properly. Poor quality closures will destroy consumer confidence in the product.

Environmental impact

Packaging material may have an important impact on the environment. In developed countries such as the USA, packaging of all forms makes up approximately 33% of disposable solid waste. The need to find better ways to dispose of solid municipal waste, has prompted interest in both increased recycling of food pack-

aging, as well as using less packaging material in the first place. The packaging industry in South Africa has shown commitment towards recycling so as to minimise the impact of packaging on the environment and solid waste streams.

Of the 465 000 tons of plastic converted into packaging in 2000, about 133 000 tons (including non-packaging items) were recycled, placing South Africa among the leading plastic recyclers worldwide. Total glass packaging produced in 2000 was 509 000 tons. Of this, 110 000 tons were converted into returnable, reusable, multi-trip containers. It is estimated that these containers make up to 30 trips each before being recycled into glass containers.

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With regard to paper-based packaging, almost every type of paper produced in South Africa has a recycled content. Of the total tonnage produced in 2000, 868 000 was converted into packaging and 770 000 (including non-packaging items) was recycled. Finally, metal-based packaging is also actively being recycled, with the beverage can industry leading the way. The estimated tonnage of tin plate produced locally in 2000 was 266 102 tons, while an additional 5 000 tons were imported. It is estimated that 219 466 tons of tin plate was converted into domestic packaging. Of this, 120 912 tons or 55% was recycled. The total recycling effort in South Africa employs about 100 000 people.

In conclusion

Packaging, especially as it relates to the food industry, is of paramount importance. This is illustrated clearly by its role in protecting the product, acting as a marketing tool and communicating with the consumer. It also plays a major role in ensuring the safety of the product. Packaging material may impact significantly on the environment, but recycling can minimise this effect. **M&J R**