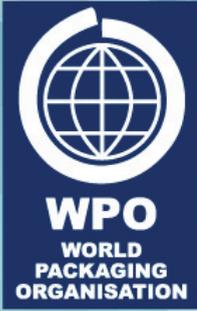


May 2020 – 042



WPONEWS

The packaging community around the world



Better quality of life, through better packaging, for more people

President's Word

With every threat comes opportunity!

Pierre Pienaar*

This pandemic is giving many of our members and those in the packaging industry the chance to stop, think, reflect and to push the reset button. To look at what we are doing and see different ways of doing things. We need to think about what life is going to be like coming out of this pandemic because we are not going to be in it forever. Now is a good time to start doing some forward thinking as well as some forward planning. We have a wonderful opportunity to set oneself up for the next period of growth that is coming. The decisions that we make will alter the course and map the path for future generations.

I will discuss more about COVID19, later in this piece.



Earlier this year I attended ProPak Philippines (2020) in Manilla, Philippines, where there was plenty of opportunity to connect with the industry in south east Asia. This is certainly an economy and where there is opportunity for growth. More and more foreign companies are investing in this region and encouraging to see. The WPO had a stand at the exhibition, generating lots of interfacing with the local industry.

From there I flew to Tel Aviv and spent a week with our new members and WPO colleagues in Ramallah, Palestine. I was accompanied by one of our WPO global ambassadors, Kishan Singh. We lectured at one of the local universities, we interfaced and held numerous discussions with industry, presented at a packaging conference involving

the emerging markets of the region, and held a two-day packaging technology course. In addition, we visited numerous packaging and printing factories as well as held discussions with Mr Khaled Osaily, the Minister of National Economy. I then flew home and went into home isolation.

This COVID19 crises has affected each one of us across the globe, so what role can packaging play in a pandemic crisis?

We are seeing that in many countries around the world, and probably more in developed countries an uptake in meal kit subscription and home delivery services. Some countries tell me busier more than ever. It would appear that the COVID19 will be directly affecting us all across the world in some or other way for at least the next 6 months. What we will see is a focus on packaged fresh food in the supermarkets. Consumers will be sceptical about any food not wrapped, especially foods where the skin is eaten, for e.g. tomatoes. There will certainly be more focus on packaging during the pandemic and certainly post COVID19.

I have no doubt that packaging will become even more important in the months and years ahead. Along with the importance and significance of packaging, will be more of an awareness by consumers in their appreciation for what we have. Our selfish attitudes about our environment will no longer be taken for granted, simply because we have awoken to realise how delicate life is. There will be a greater reliance on the assumption that all packed food is safe, and like pharmaceuticals, we who are involved better ensure food safety more than ever before.

I do not really think the COVID19 will affect the status of shelf life, i.e. extending it further or making it shorter. Instead, we would have learnt more about good principles in food buying during a pandemic, where we buy only what is important and ensure that we use all of it. Food wastage I believe will reduce in developed countries. Our buying trends will change for the better, beyond Coved19. We will buy less, probably more often, to ensure freshness and less wastage.

What about personal hygiene and the effect post COVID19. There is no doubt that personal hygiene will be more evident post pandemic and here we can learn a significant amount from our Japanese counterparts. Their culture is one of paramount personal hygiene. No hand shaking, more than often when out in the streets they wear masks, they as a matter of course maintain social distancing, they carry wet tissue packets to clean their hands, there are always sanitisers in public toilets. Washing hands is part of their culture. There will be a focus into the future on hygiene, and reusable shopping bags could well carry germs from the home into the marketplace, where it will be near food. Cups brought from home may well be carrying viruses, so I can well see Keep cups, in the short term disappearing from our landscape.

From situations like this pandemic, which is disastrous in every sense of the word, I am sure that good things will come out of it. We see how fragile humans are. Nobody saw this coming and nobody was prepared for it.

The home isolation has created an awareness of those around us, how precious and important our family is, how important our neighbours are, and how much we need and rely on our friends. We now care more about the neighbourhood, have more respect for one another, more forgiving, more compassionate and more empathetic to others. This pandemic is a leveller; every person on earth is affected by it, irrespective of who or what you are. When life returns to normal, post pandemic, this period of spending more focussed time with our loved ones has to have a positive effective on how we conduct business and our lives in the future. It is something that I look forward.

***Pierre Pienaar is President of WPO**

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 WPO – World Packaging Organization

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Around the World

An inspirational campaign in Turkey: “We Preserve Food. You Protect Environment”



WPO member, ASD (Turkish Packaging Manufacturers Association – www.ambalaj.org.tr) began 2020 continuing a campaign started two years ago. With the motto “Choose Packaged Food”, the initial campaign sent messages underlining the importance of recycling with the purpose of raising awareness about the use of packaged food and the post consumption recycling.

The 2020 campaign edition brought a renewed message: why packaged foods - fruits, vegetables, dried fruits, etc - must be consumed and why packaging cannot be seen as waste, but as raw material after recycled properly.

Aslihan Arikan, General Secretary of ASD and Vice President Education WPO, explains that it is mandatory to call the attention of the society about the key hole of packaging in terms of food safety. “The messages and designs of this new campaign aimed to explain the importance of packaging to the public. For this reason, we talked through food and tried to explain how packaging keeps foods fresh, how they prevent spoils and waste and how healthy packaging is. We also touched upon how packaging must not be thrown into the garbage and how everyone can contribute by recycling. We take this seriously because by recycling we contribute not only to environment but also to the national economy.”

And Aslihan continues explaining that all packaging can be recycled and recovered. “When we recycle an aluminum beverage can, we recover energy that can work a television for 03 hours or by recycling 1 ton of paper we keep 17 trees alive. Recycling 1 ton of plastics helps us save 5774 kw of electrical energy in 01 hour. By recycling only one glass bottle, we save enough electrical energy to keep a computer working for 25 minutes and a television for 20 minutes. For our health, our environment, and our country we must prefer packaged foods.”

The campaign could be seen in the most popular places in Istanbul from January 27th and February 2nd, like the Kanyon, Zorlu Center, Mall of İstanbul, Akasya, Optimum, Trump, Özdilek and Galleria Shopping Malls; it was also on metro and tram lines.

Outstanding 'Star Awards' In India



The 3rd edition of the Star Awards witnessed an overwhelming response from the industry with over 250 entries under 19 categories spread over the complete gamut of the packaging sectors – Converters, Package Users, Packaging Machinery & Systems, Printing & Graphics and Ancillaries. A conscious effort was seen in the approach and concept of development of packaging focused on recyclability and sustainability. A Jury Panel of experts/specialists, in different package related segments, evaluated the entries.

The Awards' presentation function was held on 8th February 2020 at the SIES Campus, Nerul, Navi Mumbai. The event was graced by the presence of the Governor of Maharashtra, Bhagat Singh Koshyari and by WPO Global Ambassador, Chakravarthi AVPS that presented the Awards and Certificates.



The Governor acknowledged the contributions of SIES (School of Packaging & Packaging Technology Center - www.siessop.edu.in), WPO member, to excellence the educational and social activities and expand its endeavours to recognise benefits to the educational, entrepreneurial and employment opportunities.

Chakravarthi AVPS shared the objectives of WPO with Packaging Education as a prime motivating aspect. The president of SIES, V. Shankar and Members of the Managing Committee of SIES also graced the occasion.

2020 Australasian PIDA award announces finalists

WPO member, the Australian Institute of Packaging (AIP – aipack.com.au), announced the of the 2020 Australasian Packaging Innovation & Design Awards (PIDA) which recognises companies and individuals who are making a significant difference in their field across Australia and New Zealand. Winners will be automatically eligible for entry into the 2021 WorldStar Packaging Awards, WPO global packaging competition.



The PIDA Awards recognises organisations that have designed innovative packaging in the following manufacturing categories:

1. Food
2. Beverage
3. Health, Beauty & Wellness
4. Domestic & Household
5. Labelling & Decoration

The PIDA Awards also sees finalists in a number of special awards including:

1. Sustainable Packaging Design Special Award
2. Accessible Packaging Design Special Award
3. Young Packaging Professional of the Year Award

Check all the finalists at www.aipack.com.au. The 2020 Australasian PIDA winners will be formally announced, virtually, in April.

Packaging competition in Turkey is open for entries

WPO member in Turkey, ASD (Turkish Packaging Manufacturers Association – www.ambalaj.org.tr), announced that applications for its local packaging award 'Crescents and Stars for Packaging 2020' will be open until June 5 2020. Any products from other countries will be accepted from packaging manufacturers and suppliers, packaging designers and

brand owners who sell packaging products for food and non-food consumption purposes and industrial consumption and/or the presentation forms of these products. The companies can apply in the following categories:



1. Food
2. Beverages
3. Electronic and Electrical Supplies
4. Healthcare and Cosmetic Products
5. Household Products - Automotive Parts - Office Equipment and Supplies
6. Packaging for Other Non-food Products
7. Medical and Pharmaceutical Products

8. Industrial and Transportation Packaging
9. Packaging Materials and Components
10. POS Display, Presentation and Storage Products
11. Flexible Packaging
12. Graphic Design
13. Luxury Packaging

The Gold Packaging Awards will be also offered in cooperation with the Turkish Standards Institute (TSE). The Crescent and Stars for Packaging Competition is accredited and recognized by WPO and Asian Packaging Federation (APF).

For more information contact sekretery@ambalajayyildizlari.com or check www.ambalajayyildizlari.com/en.

Food packaging redesign in the Circular Economy and Industry 4.0 are discussed in a workshop in Greece

Last October, during Foodtech, 05 associations, including WPO member Association of the Greek Manufacturers of Packaging & Materials (www.pac.gr), organized two training workshops: 'Redesigning food packaging in the Circular Economy' and 'Industry 4.0 tools for the food and packaging industry'.

The Circular Economy workshop covered many topics, including the new legislative framework regarding disposable plastics; organized retail and packaging changes in the context of sustainable development; brands, branding & sustainability; and how to create a waste-free future through innovation in packaging. In addition, the seminar also covered "Smart Packaging for the Cold Supply Chain" and "Practical Solutions and Energy Saving Techniques", which were under the auspices of the Greek Cold Storage & Logistics Association.

Of particular interest was the presentation by Lefteris Kioses, Chief Executive Officer Research Institute of Retail Consumer Goods, IELKA, who spoke about organized retail and packaging changes in the context of sustainable development. According to a study by the Institute, 42% of Greek consumers stated that they were willing to spend more money for products with reduced environmental footprint and for products with environmentally friendly packaging.

The workshop 'Industry 4.0 tools for the food and packaging industry' highlighted the most important changes the 4th Industrial Revolution is bringing, internationally and in various fields. The artificial intelligence presentation, for exemplo, showed that the goal of this new era is for robots to collect data and make decisions, helping with production. Specialists predict that, in the future, these robots will interact with both the environment and humans and reprogram their behavior without the need for human intervention.

For more information about the workshops contact Miltos Mellios, Manager of the Association of the Greek Manufacturers of Packaging & Materials by e-mail info@pac.gr or visit www.pac.gr.

Thinking on the Box: design on-pack information attributes to influence consumers' food waste behaviour

A study currently underway by the RMIT University (Australia), the Department of Management and Engineering, Linköping University, (Sweden) and the Service Research Centre, Karlstad University, (Sweden) identifies that on-pack date-related labelling is one of the most direct information carriers used by food industry to communicate product shelf-

life attributes to consumers.

Through applying an activity theoretical lens to analyse the literature and empirical results, the researchers found that consumers' interaction with date labels and storage information in their food consumption activity is highly influenced by their shifting motivations, the changing sociocultural contexts, and the dynamic interplay between the use of internal sensory perceptions and external on-pack date labels.

The study aims to systematically understand the interplay between on-pack date labels and consumer food waste behaviour and develop design implications and interventions to better support consumers in reducing food waste. Given the broad scope of the topic, this study specifically focuses on the consumer-food packaging interaction in household levels, the effects of date labelling and storage related packaging attributes in consumers' purchasing behaviour are excluded in the study.

A design for sustainable behaviour perspective is taken as the main research perspective. Design for sustainable behaviour is a relatively new field of inquiry aiming to reduce negative environmental and social impacts of products and services through influencing user behaviour towards a more sustainable direction (Wever et al., 2008; Wever, 2012).

Recent developments in this field attempt to understand the sustainability problems through both a synthetic and analytical approach, which can enable us to incorporate the factors such as the context of consumers' food consumption, consumer behaviour transition and evolution, and the emerging technological mediation into the on-pack date labelling and storage information evaluation and design process.

@WPO member, Australian Institute of Packaging (AIP – aipack.com.au), will provide updated outcomes from this study as a part of their CRC project. For more information, contact Nerida Kelton.

From the board

WPO cancels WorldStar ceremony and reschedules other activities as a result of Coronavirus spread around the globe

Since the decision that Messe Düsseldorf took to postpone interpack to 25 February to 3 March 2021, WPO President, Pierre Pienaar, along with the Executive Team, decided to cancel the WorldStar ceremony. "All winners, including the Special Awards categories, will receive their trophies and certificates by mail, commencing at the end of April. We will have a special celebration for winners on February 26, 2021 (Friday), during interpack 2021", explains Pierre.

According to Pierre, the decision follows the recommendation of the crisis management teams all over the world, taking into consideration the risk of spreading the Coronavirus at major events. "Delaying and/or reducing the spread of the virus, as much as possible, is a global goal and WPO will do all to help the cause", continues Pierre.

Another important measure taken by WPO, is to postpone all the packaging education programs confirmed for the first half of this year. All of them will be rescheduled and announced at a later stage. The 1st Board Meeting of 2020, originally scheduled during interpack 2020, has been cancelled.

WPO members join forces to help China avoid Coronavirus

In line with its mission 'Better quality of life through better packaging for more people', in

the beginning of March, WPO President, Pierre Pienaar, started a campaign among members to check how best some countries could contribute with the crises in China due to the advance of the Coronavirus. "WPO has significant influence through its global network. After being contacted by our members in China, CEPI (China Nat'l Export Commodities Packaging Research Institute), CPF (China Packaging Federation) and GPC, we decided to take some action."

The immediate result was the mobilisation of Turkey, Lebanon, Palestine and Brazil in finding some suppliers for masks, protective clothing and gloves which they were able to export to China. "All efforts worked very well and the immediate demand was satisfied", celebrates Pierre. According to the WPO Chinese members, remarkable local help came from Alibaba that offered fast and safe logistics to distribute the imported items.

"WPO is not only about packaging; it is also about helping people and/or assisting countries in times of need", states Pierre. He also reminds that WPO is a non-profit international body focused in promoting network that facilitates solutions for global challenges in all areas. "Packaging education is our area of expertise, but packaging is related to almost everything in terms of ensuring the safe delivery of the final item do the customer." In general terms, WPO aims to:

- encourage the development of packaging technology, science and engineering;
- contribute to the development of international trade;
- stimulate education and training in packaging;
- support local industries and professionals create their own packaging organisations;
- promote the exchange of technologies.

Worldstar

WPO announces 'Lifetime Achievement' winners



From left to right, the winners are Keith Pearson and Joe Foster.

WPO announced the two winners in the 'Lifetime Achievement' category within the WorldStar Packaging Awards 2020 programme.

The judges, from all over the world elected:

- Keith Pearson, South Africa
- Joe Foster, Australia

"The Lifetime Achievement in Packaging Award was established with the aim of acknowledging and rewarding excellence in all aspects of packaging science, technology, design and application across every country around the world", explains Pierre Pienaar, WPO President.

And adds: "The discipline of packaging is one that is truly global. The World Packaging Organisation is in a unique position to identify leading practitioners from around the world who have consistently pushed the boundaries in advancing the art, science and application of packaging to serve the needs of an ever more demanding society. These prestigious awards will celebrate and preserve in perpetuity the collective achievements of these innovators."

Annually, each WPO member (representing a voting member) is able to make up to one nomination through an online registration form. There will be a special celebration for winners on February 26, 2021 (Friday), during interpack 2021.

The full list of WorldStar Award winners can be seen at:
www.worldstar.org/worldstar-winners-2020

Corporate Partner News

Licella and BioLogiQ join forces to accelerate commercialisation of Cat-HTR™ technology in Australia

Australia consumes 3.4 million tonnes of plastic each year, of which only 9% is recycled¹. Licella Holdings Ltd announced a partnership with BioLogiQ, Inc. ("BioLogiQ"), WPO Corporate Partner, to drive towards a circular economy for plastics by accelerating the commercialisation of Licella's breakthrough Cat-HTR™ ('Catalytic Hydrothermal Reactor') chemical recycling solution.



Licella and Australian partner iQ Renew, with the support of BioLogiQ, will commercialise the Cat-HTR™ technology in Australia, while global partner Mura Technology ("Mura") will be working alongside BioLogiQ to bring the Cat-HTR™ solution to China.

The Cat-HTR™ technology is able to recycle End-of-Life Plastics, which would otherwise be sent to landfill, back to the chemicals they originally came from. These chemicals can then be used to make new plastics, a truly circular solution for post-consumer plastic.

"At the heart of the Licella and BioLogiQ partnership is a shared vision for a more sustainable future. By pioneering a circular solution for all plastics, we can utilise the massive amount of plastic already in circulation as a resource, preventing plastic from leaking into the natural environment, reducing our need for fossil oil and significantly reducing carbon emissions", explains Licella CEO, Len Humphreys.



Chemical recycling with the Cat-HTR™ technology plays an essential role in transitioning to a circular economy for plastics, helping to close the loop by recycling previously non-recyclable plastics. Chemical recycling supports the established waste hierarchy, with significant carbon (CO₂) emission reductions compared to Waste to Energy (incineration). In fact, converting End-of-Life PE (polyethylene) to liquid



hydrocarbon products with the Cat-HTR™ process creates 80-100% more value than Waste to Energy, and produces 45% less CO2 emissions.

Unlike techniques such as pyrolysis, the Cat-HTR™ technology can recycle a blend of End-of-Life Plastics that include polypropylene, polystyrene, soft plastics (low density PE) and multilayer flexible plastic packaging, without the need to sort plastics into a single stream. This process flexibility increases the total quantity of plastic that can be recycled and therefore the process economics. The Cat-HTR™ process produces a high yield of oil from plastic (around 85% oil, with the balance as gas that can be recycled to power the process).

BioLogiQ Founder and CEO, Brad LaPray, completes: "We believe the Cat-HTR™ technology has cracked the code of scalable, efficient, and economical chemical recycling. This collaboration represents an investment in our future. BioLogiQ customers will know they are supporting a bioplastics company that is as seriously committed to recycling as themselves. By accelerating and supporting the commercialisation of chemical recycling, BioLogiQ takes another big step in its quest to make plastics better."

In Australia alone, there is the potential for 20 to 30 commercial-scale Cat-HTR™ plants. With chemical recycling, Licella can recover and recycle almost all plastic we use today, including plastic with a renewable feedstock such as BioLogiQ's own innovative NuPlastiQ® Biopolymer.

For more information contact Bruno Pereira, Chief Sustainability Officer of BioLogiQ by e-mail bruno.pereira@biologiq.com or visit www.biologiq.com.

Save Food

AIP to lead the Save Food Packaging Project for the Fight Food Waste CRC

WPO member, Australian Institute of Packaging (AIP), is the project leader on the Save Food Packaging Criteria and Framework 1.2.1 project and have established an extensive Save Food



FIGHT FOOD WASTE
Cooperative Research Centre

REDUCE - TRANSFORM - ENGAGE

Packaging Consortium that is made up of leaders in Save Food Packaging Design and innovations to ensure that the guidelines are practical for the industries they will serve. The Save Food Packaging Consortium is made up of the AIP as project lead, RMIT as the Research Partner, Project Contributors will be ZipForm Packaging, Sealed Air, Multivac and APCO, Project Partners will be Plantic Technologies, Result Group and Ulma Packaging and the Extension Network will consist of AFCC, AFGC and AIFST.

The Save Food Packaging Design Criteria and Framework will integrate current research literature with industry knowledge regarding the functional properties and role of packaging in saving food being wasted. Whilst the primary functions of packaging are to contain and protect the content, as well as providing information about the product, the role of packaging in reducing food waste needs to be better understood by food producers, manufacturers, brand owners, retailers and consumers.

The connection between packaging design and food waste needs to be discussed more

openly in the industry. From field to fork there are several possibilities for food loss and waste to occur. It has been approximated that up to 30% of the edible food produced, does not reach the fork. Packaging's role in reducing food waste is the next challenge for Packaging Technologists, Designers and Engineers.

Using the industry networks, via AIP, in partnership with the Consortium, this project will produce packaging design criteria and communication material for the implementation into food packaging. That will lead to better packaging design, material selection and format selection using appropriate portioning, sealability, resealability features, date labelling, extend shelf life and provide the information required to assist retail, food service and consumers to minimise food waste.

This project will focus initially on Australia/New Zealand. Future projects will look to other countries through WPO. The global project will also be led and coordinated by the Australian Institute of Packaging (AIP) as the ANZ WPO Member.

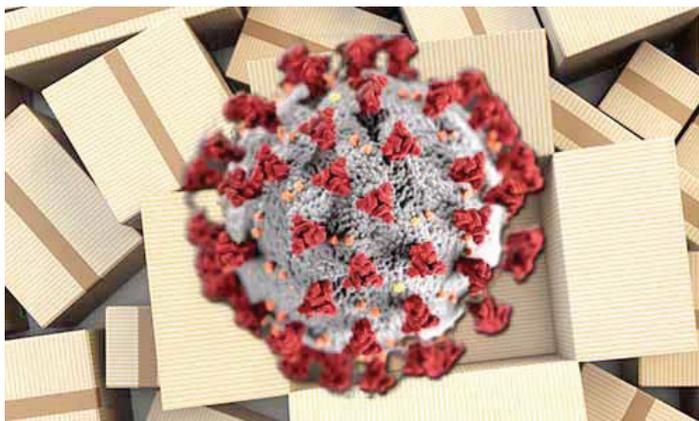
The expected impacts of this project are:

- packaging criteria for reducing food waste is known and applied in packaging design by food producers;
- the packaging criteria meets the needs of, and is used by, packaging and food technologists/designers/marketers/sustainability managers and is effectively communicated to the retailer, food service and consumers;
- delivery of AIP-run education and training programs that will demonstrate how to use the criteria and integrate within product-packaging development processes;
- food producers, manufacturers, retailers and packaging companies are designing innovative Save Food Packaging and communicating this to customers and consumers;
- recognition of companies designing innovative and intuitive Save Food Packaging through the annual Australasian Packaging Innovation & Design (PIDA) Awards and the international WorldStar Packaging Awards program run by the World Packaging Organisation (WPO). The AIP are the ANZ Board Member on the WPO;
- showcasing best-practice award-winning Save Food Packaging Design innovations across ANZ on a regular basis;
- revision, where required, of the criteria for the Australasian Packaging Innovation & Design (PIDA) Save Food Packaging Design Special Award;
- contribute to consumer education pieces on Save Food Packaging and the role that packaging plays in minimising food waste within Australia and New Zealand.

Thanks Nerida Kelton MAIP, Executive Director of Australian Institute of Packaging (AIP), for sharing the information.

Message from General Secretary

Corona virus is changing our life



Credit: www.paperfirst.info/covid-19-corrugated-industry-provides-sufficient-transport-packaging/

Interpack means: we meet all together at a Board Meeting in Düsseldorf. This was a good tradition since I remember being active in WPO. But what if there is no Interpack? As you all know, because of the corona virus pandemic we had to change our plans.

In response to the decision taken by Messe Düsseldorf to postpone Interpack (new dates: 25 February to 3 March 2021), WPO has also made the decisions to cancel WPO May (1st) Board Meeting. Depending on the virus situation, the WPO Exec may meet in September in Vienna.

If you, as WPO Board Member, have any important points that cannot wait for the November Board meeting in South Africa, please send in requests and business matters to me and my team, at any time. The election of the WPO President will take place at the November Board Meeting in South Africa, too.

The WPO Executive Team decided to cancel the 2020 WorldStar ceremony, too. While this is naturally a huge disappointment to all winners, please be advised that winners will receive their trophies and certificates by mail, commencing the end of April. During Interpack 2021, WPO will also hold a special WorldStar Celebration for winners on Friday 26 February 2021.

This decision is in accordance with the recommendations of the crisis management teams around the world, where the aim is to delay and/or reduce the spread of the virus, as much as possible, especially spreading the Corona virus at major events. Next full WorldStar Ceremony will be, therefore, hold in Argentina in May 2021.

Last but not least, we have also postponed all WPO packaging education programs up until June, when a further decision will be made. Aslihan Arikan, WPO Vice President Education, and her team are currently working on the possibility to launch online WPO Trainings.

Nevertheless, WPO Secretariat is running! Barbara, Tanja and I are in home office, getting even more experienced in web-meetings and sharing documents online. So, maybe our response is a bit slower than usual, but we are there for you and your requests! One special task to mention: end of March was the deadline for WorldStar Management applications became real. We got four very qualified entries for that prestigious job! WPO President Pierre Pienaar and his Exec Team are now studying the proposals to make their choice.

Source: www.paperfirst.info/covid-19-corrugated-industry-provides-sufficient-transport-packaging/

Barbara Zottl & Tanja Woschniak

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Special Article

Do you understand the difference between a Use by Date and a Best Before Date?

By **Nerida Kelton***

Legally the only food item that can have different date marking is bread, which can be labelled with a baked on, or baked for date, if its shelf life is less than seven days. (FSANZ)

Foods that have a shelf life of two years or longer, e.g. some canned foods, do not need to be labelled with a Best Before Date. This is because it is difficult to provide a consumer with an accurate guide as to how long these foods will keep; as they may retain their quality for many years and are likely to be consumed well before they spoil. (FSANZ)

So next time you see a date label on your food have a look and see whether it is a Use by Date or a Best Before Date and then make informed decisions when discarding the items. We encourage you to educate everyone within your tribe about the differences and help make a contribution to minimising food waste.

As an industry, we need to openly and collectively discuss how to improve consumer-based date labelling marketing campaigns and how to design packaging with better on-pack communications so that people make informed and conscious decisions before wasting food unnecessarily. Everyone has a role to play to help drive change that effectively minimises and/or prevents food waste.

***Nerida Kelton** MAIP is Executive Director of Australian Institute of Packaging (AIP), WPO member and Project Lead for the AIP Save Food Packaging Design Project for the Fight Food Waste Cooperative Research Centre.

Special Article

Processed food: packaging contribution & changing concepts?

By **P.V.Narayanan***

The national five years plans over plans have led to the green revolution in the country giving the benefit of self sufficiency moving away import dependence. The horticulture crop production is well over 310 Mn. tonnes. Yet a major problem facing the food sector is the enormous loss of the agrihorti produce estimated to be of the order of 25-30% and reasoned out to be due to inadequate, improper mode of post harvest activities-storage, handling, warehousing and transport system.

One major step identified and implemented is processing and packaging. Whereas initially in the earlier years the efforts were constrained due to non or inadequate availability of packaging materials, processing and packaging and packaging technologies. As the years have passed by one has witnessed considerable progress. The spread and adoption also were constrained due to the conventional myth that processing and packaging affects the food quality and possibly the natural facts like taste and nutritional values.

A primary task is to educate the market and consumers and emphasis on processing and packaging are the exclusive means to minimise such losses and significantly make available the natural blessings all over the year with quality and quantity assurance and throughout the year and at all locations. The situation is very same viz milk and dairy products, poultry meat and meat products and fisheries. The food retail has witnessed an unprecedented growth and is expected to record 25% CARG. The quantitative data available in respect of these are (by end 2018):

Milk	176.00 Mn tonnes
Egg	9.52 bn.
Fish Products	12.60 Mn Tonnes.

The processed food industry engages around 1.85 Mn. people in around 39800 registered units with fixed capital of US \$ 32.75 bn. The processed food market is envisaged to grow to US \$ 543 bn. by 2020 at a CAGR of 14.6%. By 2030 the Indian household consumption

would treble making India the 5th largest consumer. The processed food industry will enjoy 32% share in India food market, 11.6% in total employment and 10.7% in India's export. The following should indicate some of the major consumer products and their demand growth.

Bakery Products	Rs. 3295.00 Cr.
Bread & Biscuits	Rs. 2640.00 Cr.
Savoury snacks/Ethnic	
Foods	Rs. 2000.00 Cr.
Sweet and candy	Rs. 6000.00 Cr.
Ghee sector	Rs. 12000.00 Cr.

The encouraging growth of the processed foods is also a clear indication of the growing acceptance of the common masses of packaged foods. The trend influencers are consume convenience, willingness to pay, brand association, quality claim, value addition, increasing per capita income and personal disposal income with more household earning members. The shift from loose selling to buying products in packaged form is influenced by: bulk to retail consumer packs, conventional to new systems, long shelf life to optimum shelf life, ease in handling and convenience, ease in production and distribution, overall economy and adoption of mechanisation and automation. Consumer consciousness to health and hygiene have greatly contributed to the above.

Packaging industry contribution

Over the years, the packaging converting and package users (food processors packers) have consistently worked towards development of newer and more functional packaging media and in various converted forms. The packaging machinery designers and manufacturers have parallels addressed to manufacture of packaging machinery with domestic capability besides the product packers' adoption of the technology. Some of these developments include enhanced barrier materials, multilayer sheets for thermoform applications, multilayer bottles, soluble/edible and bio-degradable films, flexible cartons, lined cartons, stand up pouches with spouts, easy to tear pouches, monopolymer based multilayer structures, ecofriendly inks and adhesives, light weight- shock and impact resistant glass, lacquers and coatings particularly for tinsplate containers, laminated and co-ex, tubes and probably a score more.

Availability of such improved and functional media have also lead to improvised technologies and systems. Development and commercial adoption of varying types of caps and closure system with different dispensing features like spouted pouches (stand-ups) have paved way for multiple packaging applications. Yet a major trend is shaped pouches that add to market attraction and quite a few depicting the product consumption and application. Personalised packaging has gained ground with very high value addition. The tetra pouch and boat-pouch pack has enhanced the value with aesthetics and convenience. quite a few of these have also contributed towards enhanced shelf appeal, effective shelf space utilisation, help to meet short lead time and short runs and tamper evident security systems.

From the technology angle, the developments would include vacuum and gas flush packaging to smart- intelligent and active packaging besides the modified atmosphere and controlled atmospheric packaging. They have not only helped in achieving the desired product shelf life and prevent deterioration and spoilage, and a few of them help in identifying the quality changes in the product in respect of time-period and changing atmospheric conditions. Some of the features are even in-built in the packaging media.

In respect of modified atmospheric packaging, the research inputs successfully guide the kind and quantity of gas mixture needed with respect to the product and their individual characteristics against a shelf life needed. Meat and dairy products like cheese packaging are typical examples.

Yet another significant achievement relate to dehydration and solar drying technologies. The latter also gives products being organic and probably safer. Sterilised/aseptic and retort packaging technologies are more widely adopted and shift from tetrapack to tetrapouches and its contemporary alternate technologies have also found to be more economical. Others include in line facilities incorporated in the packaging lines like FFS both VFFS and HFFS (both with gas flushing) and improved flow wrap packaging, drip free filling, auto online for both package quality and fill quantity with impurity identification coupled with auto ejection. Flexible cartons with inbuilt convenience concepts have helped to replace rigid packs-glass, metal and plastics without sacrificing the product quality and market life besides equally excellent aesthetics as well as reduced storage and as a means to reduce quantitative post production and post consumer waste.

Thermoform packages is yet another package resources that have made sizeable inroads in ready to eat and ready to cook foods. A material machinery combination has also evolved wherein from RM to converted packages to product filling-sealing-coding and marking and ready to move into shippers and palletisers as a system with considerable benefit of consistent quality, very minimal online waste, faster productivity leading to economics of scale of output.

The developments in aseptic and retort, Cap-Map systems have also provided the added advantages of savings in storage cost and transportation cost, like doing away with cool/cold storage/refrigeration. Other technologies that have added value to the food packaging and distribution include inventory management tools like Bar coding, RFID and Q.R coding, anti counterfeit and security systems that could be incorporated during the package conversion and/or during online packaging are technological developments the food industry have gainfully adopted, providing consumer safety at large.

The changing concepts

The factors elaborated under shifts and trends and trend influencers, have clearly emphasised the need and achievements in the total gamut of packaging that revolve round the materials forms, machinery and systems as well as technologies. One has also witnessed the impact of modern format retailing demanded in the supply of farm to supermarkets with increased and near flawless efficiencies through bar coding, RFID, automation, tighter tolerances and track and trace systems.

Consumer consciousness and convenience features seem to be the potent leading factors. These have resulted in comparative fragmentation of packages for two reasons. The first one addresses to the need of a wide range of packages – sizes, shapes and material – technologies needed to meet the specific requirements. The second is proximity between the supply and buying sources – a logistical need also looking into changing buying concept of ‘just in time’ and optimising the quantity intake.

Product categories and technologies play a vital role as market drivers with a broader strategy towards a global scope, leadership and specialisation with identified business segments and closer customer relationship. Inventions and innovations are constantly driven by consumes and technologies. The dynamics in the total system is due to increasing uncertainty by consumer thrust on brands. Increasing literacy level with media influence leads to higher exposition of consumers demanding new products and packs – both vertically and horizontally.

There is a sea change in consumer expectations though cost centric but shift to value for money propositions. The consumer today looks for newer concepts as they are highly articulate and aspirational seeking solutions even for a price to towards “satisfaction” with quality and reliability as the new buzz words. Packaging has thus become a vital opportunity to build a new brand, reinforce and add value towards a positive experience of an existing brand/product in the entire marketing chain also enabling to interact directly with the brand.

It is estimated that globally well over 40% or even up to 55% of packaging produced is to cater to the food industry. Also, food industry is exclusive by itself as it uses virtually all

types of packages produced and adopts every possible technology. For reasons elaborated, the dynamics are both vertical and horizontal. In so far the consumer perceptions would continue to constantly change the packaging industry will have their handful of challenges and opportunities.

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