Ned-Pak introduces use of MAP bags in Pakistan

Azizur Rahman Shaik, the driving force behind Ned-Pak Technical Packaging & Instruments gave an exclusive interview to the editorial team of Pakistan Food Journal.

Ned-Pak established in 2011 to export fresh produce by sea instead of by air from Pakistan over long distances. Please tell us about recent packaging innovations and technology introduced by Ned-Pak?

NEDNGLISH is a well-known packaging solutions company for the long distance packaging and logistics of fresh produce by reefers from South America to The Netherlands. Ned-Pak established in 2011 is a consortium of Dutch and Pakistani technical experts of Fresh Fruits & Vegetables and Flowers to export fresh produce by sea instead of by air from Pakistan over long distances. Additional services commenced in 2012 for the Post Harvest Technology & Solutions in order to support the fresh produce exports especially mango and oranges for extending the shelf life. Ned-Pak excels in supply and distribution of the packaging products that support and extend the shelf life of fresh produce and offers specialized bags and cartons. The MAP bags are breathable by allowing a certain, controlled gas exchange ratio.The MAP system allows the exporter to control carbon dioxide gas levels, prevents anaerobic conditions (lack of oxygen) to occur by allowing ambient oxygen to diffuse inside the bag and prevents excessive odor accumulation. As you may already know that fresh fruit and vegetables produce ethylene gas after harvest and in this context, ethylene gas is a critical aging factor for fresh produce. The exposure of some produce types to ethylene accelerates produce ripening then senescence, deterioration and susceptibility to microbial disease. Ned-Pak's MAP bags absorb ethylene gas released from the atmosphere and consequently slow the ripening process and prolong the life and freshness of the produce. Last but not the least, MAP bags control the level of moisture around the produce by either water vapor absorption or with the help of its excellent anti fogging properties.

Kindly tell us about the successful results regarding new concept of fresh fruits packaging by Ned-Pak?

Indeed, it was a historical event of Pakistani Agriculture Export Industry, when containers in state of the art packaging as compare to the traditional packaging of the past were loaded with SINDHRI variety were being sent every week to different European destinations. The success story of Mango Harvest for us started from the year 2013, when some of the exporters used our products, i.e. Cartons, Data Loggers, Pallets and Pallet Corners for long distance exports. As shown in this picture the open top ledge tray, universally used for a better presentation, brought 25% more savings in logistics.

Furthermore, if you consider it in domestic use, it would allow our Pakistani population to enjoy the seasonal fruit of short life span to a longer span, and on top of it with 10% lower prices. For exporters, our MAP bags and cartons have changed the industry outlook. For example, the mango season for the SUFAID CHAUNSA variety that lasts from July to September will have a better stretch of supplies in domestic and international market. This variety has a delicate skin and is highly perishable but the use of MAP bags prevented early decay by extending its shelf life.

Successful results on Kinnow in 2012 have proven a Shelf Life extension for two months in ambient temperature (Dec/Feb), so the packaging in MAP bags can bring a saving in 2013/14 electricity bill of over US $20 million. This will make Kinnow more competitive in the International markets.

The open top ledge tray.

Cost Benefit Analysis							
Kinnow	25	Rs. / Kg				**Conventional Box**	**NED-PAK (OLT/MAP)**
Kinnow per box	10	Kg	250	Rs.	Kinnow per box	250	250
0.5 Kg Weight Loss per box			12.50	Rs.	0.5 Kg Weight Loss per box	12.50	--
Supply Chain Waste 10%			25	Rs.	Supply Chain Waste 10%	25	--
MAP BAGS			32	Rs.	MAP BAGS	--	32
Open Ledge Tray			120	Rs.	Open Ledge Tray	--	120
Corrugated Carton			85	Rs.	Corrugated Carton	85	--
Cost per box					**Gross**	**372.50**	**402**
WAPDA Cost	3 Months		400000	Rs.	WAPDA Cost	48	--
machinery Cost	3 Months		100000	Rs.	Machinery Cost	12	--
Total Amount 10 Containers					**Net**	**432.50**	**402**

Common people in domestic market will also benefit with 20% lower prices. The traditional key export markets for Pakistani oranges are Central Asia, Russia, Malaysia, Dubai, Saudi Arabia and some countries of the Middle East. The European Union, Japan, Korea and China are the some of the targeted markets, where Pakistani Kinnow tried to make an impact without any success. The challenges include poor packaging and presentation as well as the fact all consumers prefers seedless oranges.

Can you elaborate Ned-Pak "Squeeze Me" concept for our readers?

Our advertising campaign slogan "Squeeze Me" bears testimonial to the significant potential for the Pakistani industry in the freshly squeezed and processed orange juice industry. The Kinnow season in Pakistan begins in December and lasts till March, which can substitute the Spanish and Moroccan supplies at the European market, as their season ends in February. Most competitor countries such as Spain and Morocco, however, offer seedless oranges. In light of this, the Pakistani exporters can focus their produce towards the fresh juice industries. The worldwide fresh orange juice vending machines and their retailer chains take into account the price per liter of juice obtained from the fruit. Equally there is enormous scope in the restaurants, hotels as well as fresh juice parlors franchises in Europe. If the prices of the oranges are lower than others, we can develop a significant niche market in the fresh juice extraction sector. We should not under estimate the significant market potential of our oranges.

What are the key challenges faced by farmers and consequently exporters in Pakistan, and how does your company help them achieve better value for their produce?

The quality of the produce starts to deteriorate the moment the fruit is cut, and therefore temperature management begins in the field during harvest. The instant a fruit/vegetable's stem joined to the spur is cut, nutrients are no longer replenished and senescence (aging) begins. In order to slow this temperature dependent process as much as possible, we recommend that growers should use well ventilated crates, which should be aligned and stacked to ensure that, the air flows all the way. Having achieved this objective, the next challenge is to provide adequate ventilation, so that air flows freely within the room.We offer the most important post-harvest treatments, which includes maintenance of cool chain management systems, while preserving the visual appeal of the produce. Today, by using our products, such as cartons and MAP bags, the growers can enjoy a significantly higher rate of return, that too by not altering the prices, but by reducing their spoilage, which is estimated at almost 40% in every variety. I am very happy to report that an awareness of wastages produce, escalating high prices, inflationary impacts and alarming shortages of food in Pakistan have made the farmers and distribution channels consider amendments to the existing practices.

What are key benefits of MAP bags?

Having explained the above challenge of wasted produce, these Modified Atmosphere Packaging (MAP) simply means an alteration to the internal atmosphere or packaging goods, so that it is different to the composition of the air we breathe. Modified Atmospheric Packaging includes vacuum packaging, which consists of a range of low or non-permeable films (barrier films) or containers. When food items are placed into the pack, the air is removed and the pack is hermetically sealed under a vacuum. No other gases are added to replace the space created by the removed air. Vacuum packaging is probably the most

commonly used form of modified atmosphere packaging for food products. Fresh produce when packed with MAP has the following advantages:

1. Reduces weight loss, decay, incidence of jelly seed, lentils spots and chilling injury.
2. Reduces waste in supply chain.
3. Preserves firmness and smoothness.
4. Prolongs storage life.
5. Slows breakdown.
6. It slows down ripening.

Good temperature management is critical for optimal performance of MAP bags, which are precisely engineered to maintain optimal conditions for the specific fruit/vegetable inside the bag, when stored within the recommended temperature range. Our field support teams, stationed throughout the Pakistan, are available to assist customers with recommendations and implementation of our best cooling practices as well as other post-harvest handling and logistics issues.

Controlled Atmosphere (CA) packaging is widely used by the fresh fruit industry; can you please elaborate the basic concept of this technology?

This system requires the maintenance of certain atmospheric conditions around a product. This is mostly used for the bulk storage of perishable food like fresh produce. As per the prerequisites provided by EU importers, MAP bags are a suitable substitute for CA containers. Successful results on Kinnow have proven shelf life extension for two months in ambient temperature. It will make Kinnow more competitive in the international markets and common people in domestic markets will also find 20% decline in prices. As I mentioned earlier the open top ledge tray instead of cartons bring savings in terms of logistics cost.

Pakistani growers and pack houses have been using corrugated cartons traditionally, as they had no other option till 2013. What is the basic difference between corrugated and solid board cartons?

A corrugated sheet is two pieces of paper glued together in a series of parallel ridges and furrows. Whereas, solid board is made of pulp thus assuring durability and resistance to moisture and other elements. The international standard product used for packaging is the open ledge trays not cartons.

What is the reason of preference in solid board open top tray ledge in terms to reefer containers?

When contents are packed into reefer containers, it shall have either high humidity or high dryness. In both circumstances, only solid board can last, not the corrugated ones because either it will be too soggy or too hard respectively.

Which one is more suitable for fresh fruits and vegetables?

Both, for reefer logistics solid board is a must and for other short haul logistics corrugated is a suitable one.

Is it more expensive to use solid board open top trays as compared to corrugated cartons?

The savings you make at the end, makes it better with solid board open top trays. Other factors such as an attractive product display, with high quality images and a shiny finish, attract our customers as well as inherent technical features, that allows maximum protection of the produce. We must emphasize its high load capacity and its resistance during transportation, which also makes it good alternative to plastic trays. Our cartons take up minimum space during transportation and storage and these boxes work especially well on long distance transportations.

What do you mean by Common Footprint (CF)?

Europe-wide standard: The Common Footprint (CF) is a Europe-wide standard that guarantees safe and efficient stacking of all fruit and vegetable trays. The Common Footprint stamp (CF stamp) clearly marks trays that adhere to this FEFCO standard: it is printed on the sides of the boxes. These specifications make sure that trays have identical base sizes and that all will fit onto the common pallet or half pallet without wasting precious space.

Stable stacks: The CF stamp shows when stacking is safe and efficient: the fixed base size guarantees stack ability and efficient use of the pallet footprint. Interlocking tabs and matching receptacles at the sides of the boxes give added stability – and the height can be chosen to suit the product, right through the supply chain. Common Footprint trays from many different producers and countries can be stacked safely and quickly, whilst the ability to vary the height of the tray makes the most of the pallet height.

Why use Common Footprint packaging?

- Standardized trays.
- Variable heights.
- Stable mixed loads.
- Best use of space.
- Road fuel optimized.
- Environmental impact reduced.

Which ever way you look at it – Common Footprint is bound to save you money. ◆