May-June 2010 Volume 1, Issue 1 Rs. 75/-

BAKERY BUSINESS

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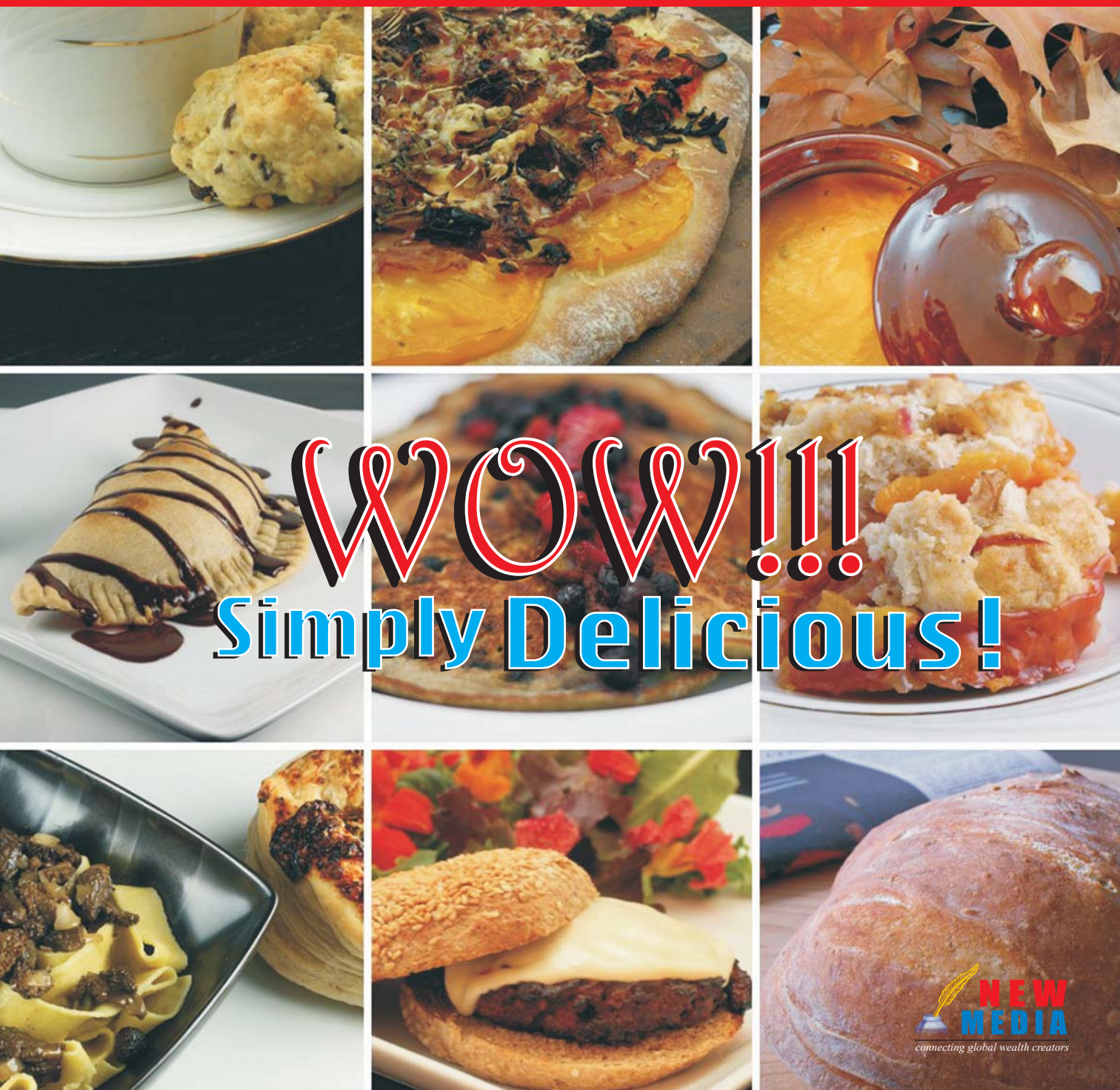

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CONTENT INSIDE

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Dear Reader,

Greetings. For all of you in the business of making life sweeter for the world's food lovers, we have brought out the inaugural issue of Bakery Business!

Baking is one of the oldest methods of cooking. Man's search for good food has always led him to discover new, improved ways of cooking. As a result, baking has gone through its own gamut of improvements and innovations. The business of confectionery has made impressive progress with the development of technology and easier methods to produce anything the consumer wants on a mass scale.

Did you know that the Indian biscuits industry is the second largest in the world after America's? Or that it is the biggest from amongst all the food industries, with a turnover of 3,000 crores annually? In this inaugural issue, we simply had to have a report on this industry that is doing so well! There is also a report on the bakery business in general, with a special focus on the use of enzymes in the bakery process [a trend we are likely to see more of in the future].

In 2008, in Georgia, USA, a factory of Imperial Sugar went up in flames because of excess sugar dust that heated up and caught fire. An enquiry was launched, and the report came out recently. The findings, listed in this issue, serve as a cautionary tale in the prevention of sugar and dust fires in the bakery industry.

Dr. Meena Mehta, who lectures on Food Science and Nutrition, takes us through the history of the bakery industry and lists specific areas of bakery where future breakthroughs in research will lead to better baked products for us all. Food consultant Subhash Vaidya gives us a comprehensive list of the requirements that need to be in place in a bakery in order to get a food safety certificate.

New Media recently organized a conference on Modern Bakery Practices where the leading minds of the business got together, exchanged ideas and debated on issues. It was an exciting event, and we have a photo story of it.

Bakery Business hopes to be your connect with your fraternity, a platform for exchange of information and your window to developments around the world. We promise to give you our best in the months and years ahead!

As for this inuagural issue of Bakery Business, we can only wish you

Happy Reading!

Satya Swaroop

Managing Editor
satya@newmediacomm.biz

Indian Bakery Business

Since 2004, the Indian bakery industry has been taking huge strides forward, undergoing a virtual metamorphosis thanks to increasing consumer gravitation toward convenience products and health food products. The market is expected to grow at a steady rate of 8 per cent from 2010 onwards. At present, the bakery market in the country is valued at Rs 3,295 crore.

In a recent analysis report "Trend analysis of ingredients applications in Indian bakery Industry," Frost & Sullivan stated that the Indian bakery market earned revenues of over $161.4 million in 2007 and estimates this to reach $278.1 million in 2014.

According to reports, the annual production of bakery products which includes bread, biscuits, pastries, cakes, buns and rusk most of which are in the unorganised sector, is estimated to be in excess of 3 million tonnes.

The production of bread and biscuits in the country both in the organised and unorganised sectors is estimated to be over 2 million tonnes and 1.5 million tonnes respectively. Of the total production of bread and biscuits, only 35 per cent is produced in the organised sector and the remaining is manufactured in the unorganised sector.

Frost & Sullivan is one of the leading business research & consulting firm which offers market analysis, market research, and reports. B Maheshwari, senior consulting analyst for Frost & Sullivan, said, "The food industry is riding on a health wave; an increase in consumer awareness about health concerns has led to most of the bakery products being augmented with health benefits from fiber and whole grains."

However in bakery ingredients industry, the addition of whole wheat and fibres disrupts the gluten network, which could lead to processing difficulties, changing organoleptic properties and causing quality problems. Using enzymes offers a way out.

Enzymes interact with the gluten network, strengthening and stabilising the dough during processing, baking, and proofing. The escalating demand for whole grain and high-fibre bakery products will thus positively impact market progression in the bakery enzyme sector as well, the research firm said.

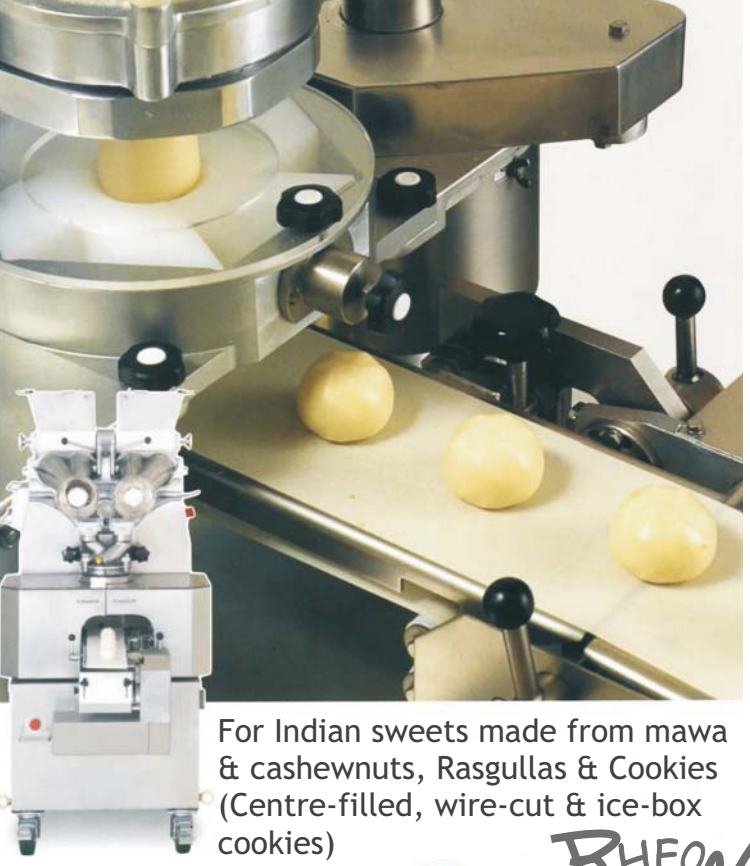
"On one hand, severe competition in this space prevents manufacturers from hiking prices. Norms set by the government for products such as bread have increased the bargaining power of end users, reining in revenues in the bakery ingredients market," Maheshwari added.

"Although local manufacturers have an advantage in many ingredient markets, the threat from imports looms large. The Indian market is devoid of entry barriers for imports, and specialty ingredients manufactured abroad are multifunctional and are higher in quality compared with domestic products. Further, soaring inflation rates in India and rising manufacturing costs are eating into profits," the analysis report stated.

According to All India Bread Manufacturers Association (Aibma), per capita consumption of bread across India is only about 1.75 kg. "Meticulous analysis of regional consumption of bread denotes, Southern states top with 32 per cent, Northern, Western, and Eastern states consume around 27 per cent, 23 per cent, 18 per cent respectively.

"Rapidly growing population and mounting middle class income are the significant drivers for the wide expansion of the quality bakery ingredients & products industry, so it is not uphill task to make substantial profits out of country's bakery market, if managed properly and sensibly," Aibma said.

Further the Frost & Sullivan report suggests that the Indian manufacturers can opt for energy-saving projects to keep manufacturing costs in check. Innovation offers another route to higher margins for ingredient manufacturers. ■



For Indian sweets made from mawa & cashewnuts, Rasgullas & Cookies (Centre-filled, wire-cut & ice-box cookies)

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Applet Bakery Machinery

Jaydeo Chokhawala

The new CORNUCOPIA® KN170 was designed to specialize in confectionery. It is also being used by Indian Sweet Manufacturers to make sweets like multi-color peda's and snack items like kachori's.

Recently 2-color Icebox and filled cookies options were introduced. These products are a novelty and have a huge potential to do well. So far, they have been very well received in the Indian market.

Product Weight, Filling/Dough Ratio and Length are Flexible.

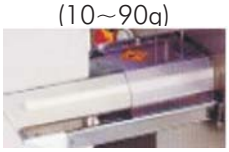
Weight Range (10~90g)

Length Range

Encrusting ratio Range

Design variation

Dough dividing



Cylindrical molding

Spherical molding with filling

Cylindrical co-extrusion in mosaic pattern

Bar shape molding with filling

Cylindrical co-extrusion in spiral pattern

Lian Huat Continuous Bun Divider & Rounder

Lian Huat is a 55-year-old Malaysian company that specializes in bread-making machines. They are one of the leaders of stress-free dough systems that make superior quality bread with a longer shelf life.

Macadams Modular Deck Ovens

Macadams Baking Systems of South Africa is an ISO 9001 company. It is one of the largest manufacturers of bakery equipment in the world. With state of the art software packages and improved components, Macadams have engineered an oven that is extremely high on quality and efficiency.

Rondo Doge Sheeters

Rondo Doge is a Swiss company, one of the largest manufacturers of sheeters and has a very wide range of dough sheeters.

With more than 50 years of pioneering solutions for dough processing, Rondo Doge machines and services are trusted by professionals world-wide to help them produce high quality products in an effective and economical way.

Rondo Doge is best known for its broad range of machines and lines for sheeting and laminating, for production of pastry, khari, rolls, croissants, and many more like thin dough, donuts and special products.

Sinmag SV series Rack Ovens

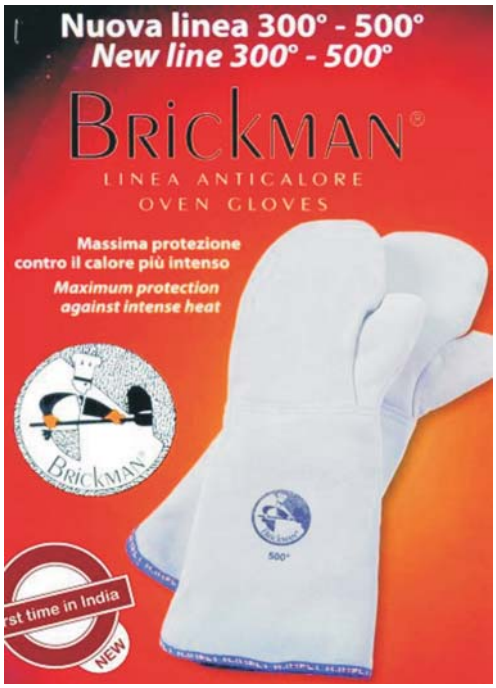
SV-1/SV-2/SV-3

Sinmag has introduced the SV series of Rack Ovens, which are based on Swedish Technology.

These are superior ovens with the lowest fuel consumption and the best baking results.They are very economically priced.

Brickman Oven Gloves

Apple Introduces Brickman Oven Gloves from Italy for the first time in India. These are high quality oven gloves which protect from 300° - 500° C.



Sensient Dairyboost Flavours

Sensient DairyBoost Natural Cheese Flavours enliven taste perception in processed foods and are designed to replicate and enhance the taste of real cheese while also contributing complex mouth filling and natural enhancement characteristics without adding Mono sodium glutamate or ribotide. It further adds to vitality and depth of character.

The Dairyboost Cheese portfolio represents the world's most popular cheese styles, such as Cheddar, Vintage Cheddar, Processed Cheddar, Parmesan, Romano, Creamy, Blue, Swiss, Feta, and Ricotta.

The development uses proprietary technology, time temperature processing and natural enhancement technology to liberate intense and vibrant flavours that deliver upto 15 times the flavour strength of standard cheese ingredients and are used at extremely low application levels.

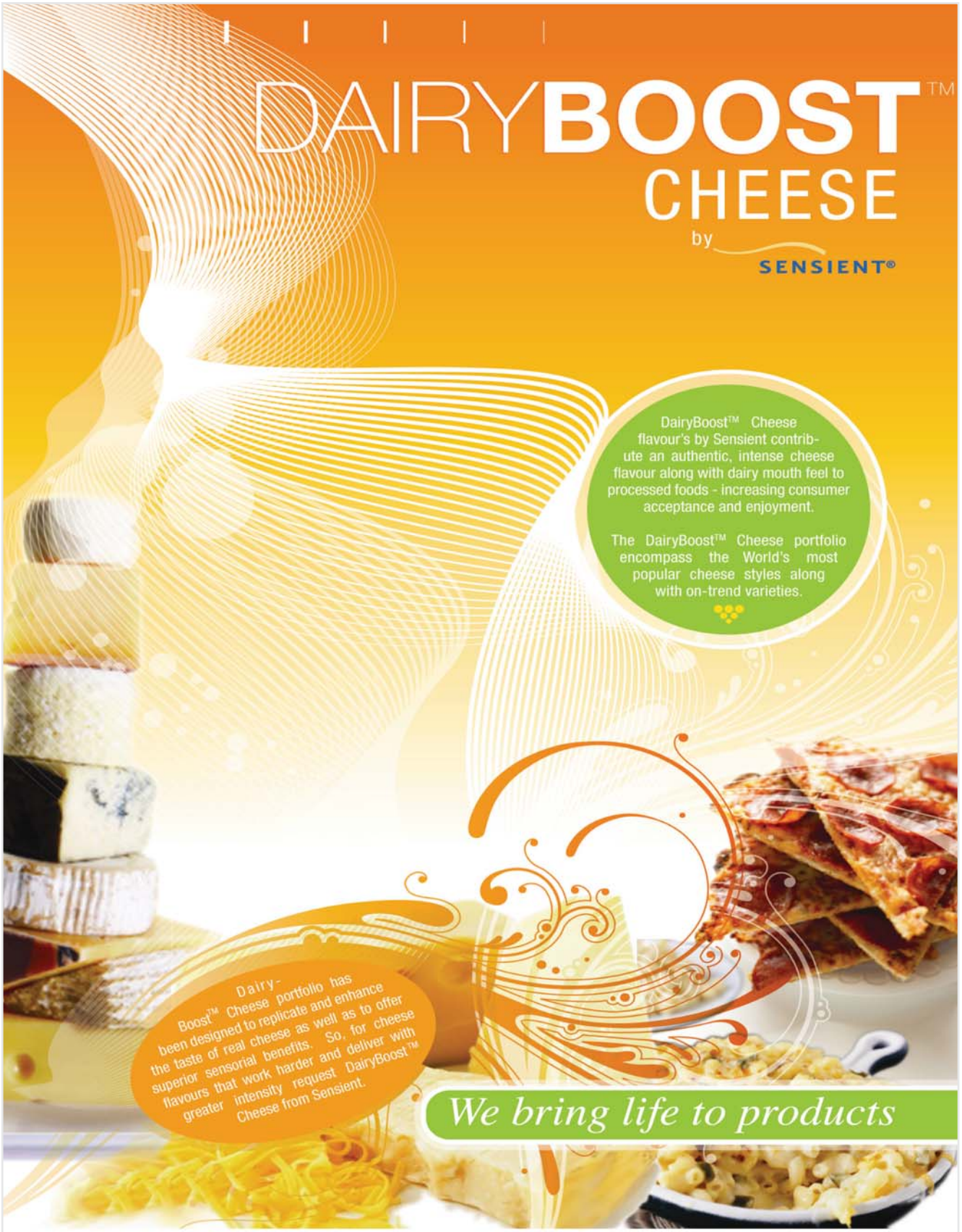
DairyBoost Cheese flavours are a healthy choice too, as at typical application levels, they contribute less than 0.15% fat. They are easy to use in powdered form, fluctuate less in price based on a cost-in-use basis, and provide an exceptional range of advantages that meet new product developers exacting needs, besides replacing part of cheese powder.

These offer advantages in usage in

multiple formulations such as Sauces and dressing, Dairy products, Savoury products (snack seasonings), bakery products and Chilled Desserts.

Apart from Cheese flavours, Sensient specialities include DairyBoost Butter and Cream flavours that contribute greater flavour to foods and beverages, increasing consumer acceptance.

The fresh cream or butterfat goes through a complex proprietary process, eventually producing a rich texture that gives the sensation of butter fat on the palate. ■



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Bakery Industry: Past, Present And Future

Dr. Meena Mehta, Department of Food Science & Nutrition,
Dr. B.M. Nanavati College of Home Science

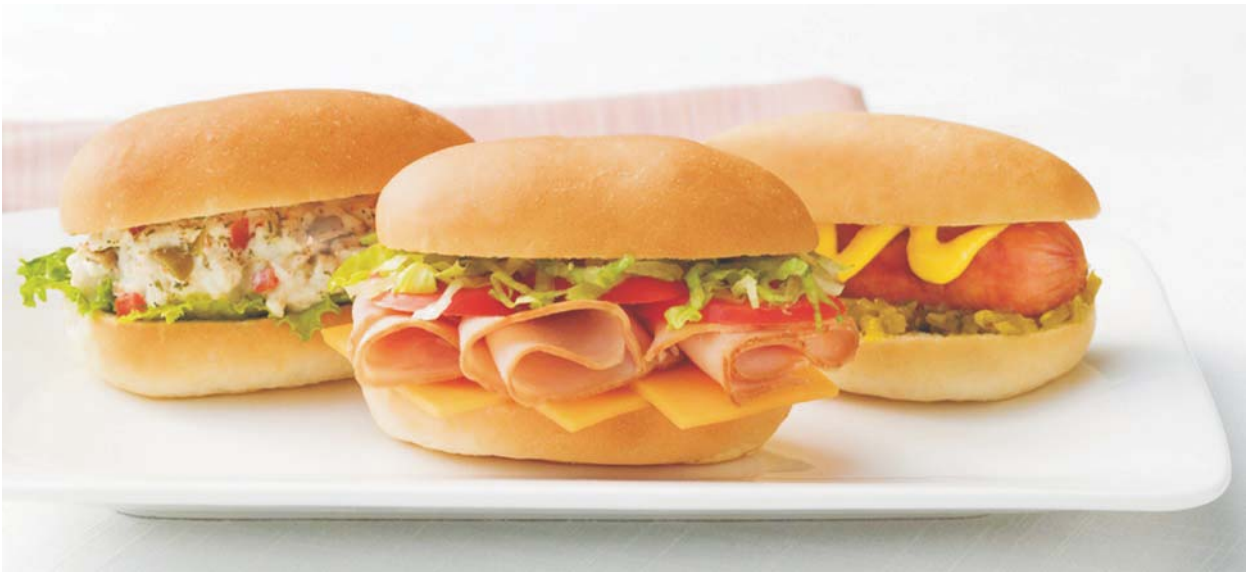
In the food and beverage sector, the bakery industry has a central role to play. Whether it's in the morning or the evening, we are always consuming bakery products, especially biscuits and bread. In Maharastra, bread-based vadapav and pavbhaji are fast foods liked by every age group of consumers. Thus bakery products have become an integral part of every type of meal.

The first good primitive baking uses were perhaps done in Egypt around 2600BC. After that it remained a neglected field. In the 8th century BC, Roman bakers started to use, for the first time, a mechanical means of mixing dough. By the end of the 2nd century AD, the Roman bakers had organized themselves into a professional group. In India bread received attention during the British Raj.

Baking is an art which anyone can master with patience and practice. However, baking blindly is injustice to this art because baking requires not only a wealth of technical knowledge and skill but also specialized equipment. The growth of the food industry from a kitchen craft to the present state of hi-technology is a fascinating story. In earlier times, bakers faced many difficulties, particularly because of the ever increasing price of raw materials and its labor intensive nature.

Today bakery and confectionery products form a major segment of the food processing industry. The turnover of the bakery industry in the year 2005 was about 15,000 crore rupees which is expected to increase by ten fold in the near future. Bakery products like bread, biscuits and pizza have become popular in India. It is evident that these products are consumed by everybody. It is no more limited to the higher income group people.

"Give us our daily bread" is an eternal prayer said by people allover the world everyday. It just goes to prove that bread is the stuff of daily life and a staple diet for each and everyone.



Among all the bakery products, bread and biscuits have become the most popular foods because of the following reasons:

1. The mild pleasant aroma appeals to all age groups.
2. Urbanization and long hours at work leave little time for active kitchen work, hence a rise in demand of bread-based 'ready to eat' foods.
3. Progressive changes in ethnic foods have also made it more bread-based.
4. It holds an advantage for the old age group for its properties like easy mastication.
5. Bread versatility is a great attribute it possesses. It can be consumed along with diverse foods starting from plain butter to vegetables and expensive meats.

In India the market has a vast array of foods that were unheard of 15-20 years ago. As a part of changing lifestyles, consumers have started accepting many new foods on the table. Today's world has been deemed as the "fast moving age". It is proclaimed as the era of the "Thinkers' generation", a generation which values time and health.

"Innovation is a must" has been reformed into the current slogan of "Innovate or Perish". The recent market trend is consumer oriented, with high expectations. The need for new products is necessary since food is an integral part of man's culture. It is foiled with many different meanings and symbols for all individuals at various stages and ages of life.

The new trends which will appeal to all in India can be short listed as challenges to the intelligent bakers who will have to try and meet the following requirements.

1. Formulation of nutritious cake by incorporating soy flour/whey protein/wheat flour etc.
2. Reducing fats and sugar content of cake and other bakery products.
3. Reducing even Trans Fat Acid (TFA) by incorporating blended oils to achieve composition with zero TFA. [50:50 palm oil with Rice Bran oil].
4. Addition of other ingredients which are low in energy but rich in more essential nutrients and micronutrients.
5. Formulation of frozen batter for quick bread-making.
6. Pre-baked items using appropriate packaging materials and authentic permissible food preservatives.
7. Pour it in prepared tin and bake for 30-40 minutes at 1500C to make the product fast and quick to serve.
8. Use of slow flame on gas to minimize the cost of fuel used in making the bakery products..
9. Pie with fruit fillings and inclusions of tortillas and its varieties.
10. Developments of new nutritious breads and biscuits.

It will be interesting to see how all the above-mentioned challenges will be overcome. It will require a lot of research and innovation. But the results will be exciting, and as better and better food stuff is delivered from the bakeries to society, there will be cheers for all. But it will also be necessary to make the products cost effective, so they can earn more revenues and keep the profit margin acceptable and endorsed by consumers. I strongly believe that "Baking can be a happy combination of art and science which will be a new sunrise in the Indian horizon".

Your positive response is eagerly awaited.

bipin_281050@yahoo.com

A One Day Conference on Modern Bakery Practices

New Media organized a conference on Modern Bakery Practices on March 20, 2010 at Mirage Hotel, Andheri East. It was attended by the leading members of the bakery industry, and included speeches by specialists on important food and bakery issues, and discussions on the latest news and development in the industry. The chief guest of the event was Mr. C.L. Rathi, CMD, Advanced Enzyme Technologies.

Shripad Tandale, Sales Manager, DKSH speaking on 'Functional Milk Proteins in the Bakery Industry.'

Dr. Meena B Mehta, Department of Food Science & Nutrition, Dr. B.M. Nanavati College interacting with Dr. S.G. Bhat, Nutritionist.

Dr Malthy Venkatesan, Manager, Food R&D, Advanced Enzyme Technologies, speaking further on Enzymes in Bakery Products.

[L to R] Mr Mahendra Mehta, Food Consultant, Universal Food Specialist; Mr Satya Swaroop, Managing Editor, New Media & Dr Deepa Bhajekar, MD, MicroChem Laboratory.

Mr C.L.Rathi, CMD, Advanced Enzyme Technologies and chief guest of the event, speaking on 'Enzymes in Bakery Products.'

AB Mauri - Global Yeast & Bakery Ingredients Company

We understand the Science behind the Art of Baking.

A new name with a long history and rich experience in yeast and bakery ingredients, AB Mauri was formed by merging Cereform and Burns Philip in 2004. A part of the Associated British Foods, AB Mauri is present in over 48 locations in 26 countries.

Whilst AB Mauri is still new to many people, some of the local brands are very well recognised and respected in their markets examples include Tower, Mauri, Calsa, Cereform, Serrol, Mauri mix, Mauri Pan, Fermipan and Fleichmann Headquartered in Chennai, AB Mauri India Pvt Ltd has a well connected distribution across the country.

AB Mauri believes in providing outstanding customer service backed by high level investment in R&D and technology. They have recently invested Rs 112.5 million in building the state-of-the-art R&D facility in Bangalore to help their customers realize their needs. AB Mauri global team of experts, with vast experience in the industry, are made available for New Product Development as well as further Quality Enhancements to all their existing clients.

In the present-day fast moving life, AB Mauri has successfully established easy-to-make pre-mixes for industrial use. To ease a baker's efforts, it launched some bread pre-mixes like the brown bread, seven-grained multi-grain bread and the much awaited Italian foccacia. It is also the market leader in the egg-free segment with egg-free vanilla and chocolate cake pre-mixes.

AB Mauri is committed to be the 'one-stop-shop' for the Bakery and Ingredient community. With this endeavor, they have continually launched new and useful products. Thus, they added a new range of products of FLAVOURS, SEASONINGS and EMULSIONS to their existing pool.

If you are a budding baker or own a large bakery chain, AB Mauri should be prime suppliers who will help you get rid of most of your headaches. ■

Mr Satya Swaroop & Mr C.L. Rathi.

Participants breaking for lunch.

Mr Mahendra Mehta posing a question to one of the speakers.

Dr Deepa Bhajekar speaking on 'Food Safety in Bakery Products.'

Dr Meena Mehta interacting with a group of young participants.

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DKSH is the No.1 Market Expansion Services Group with focus on Asia. It enables and supports companies in expanding their businesses in existing markets and launching into new ones. DKHS offers sourcing, marketing, sales, distribution, and after-sales services. DKSH provides its partners with fundamental expertise and on-the-ground logistics covering Asia Pacific, Europe, and the Americas with a comprehensive network of 460 business locations operated by 22,000 specialists.

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Natural / nature identical flavors

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Think Asia. Think DKSH.

Indian Biscuits Industry

The Indian Biscuits Industry is the largest among all the food industries and has a turnover of around Rs.3000 crores. India is known to be the second largest manufacturer of biscuits, the first being USA. It is classified under two sectors: organized and unorganized. Bread and biscuits are the major part of the bakery industry and covers around 80 percent of the total bakery products in India. Biscuits stands at a higher value and production level than bread. Bread belongs to the unorganized sector of the bakery industry and covers over 70% of the total production.

India Biscuits Industry came into limelight and started gaining a sound status in the bakery industry in the later part of 20th century when the urbanized society called for ready made food products at a tenable cost. Biscuits were assumed as sick-man's diet in earlier days. Now, it has become one of the most loved fast food product for every age group. Biscuits are easy to carry, tasty to eat, cholesterol free and reasonable at cost. States that have the larger intake of biscuits are Maharashtra, West Bengal, Andhra Pradesh, Karnataka, and Uttar Pradesh. Maharashtra and West Bengal, the most industrially developed states, hold the maximum amount of consumption of biscuits. Even, the rural sector consumes around 55 percent of the biscuits in the bakery products.

The total production of bakery products have risen from 5.19 lakh tonnes in 1975 to 18.95 lakh tonnes in 1990. Biscuits contributes to over 33 percent of the total production of bakery and above 79 percent of the biscuits are manufactured by the small scale sector of bakery industry comprising both factory and non-factory units.

The production capacity of wafer biscuits is 60 MT and the cost is Rs.56,78,400 with a motive power of 25 K.W. Indian biscuit industry has occupied around 55-60 percent of the entire bakery production. Few years back, large scale bakery manufacturers like cadbury, nestle, and brooke bond tried to trade in the biscuit industry but couldn't hit the market because of the local companies that produced only biscuits.

The Federation of Biscuit Manufacturers of India (FBMI) has confirmed a bright future of India Biscuits Industry. According to FBMI, a steady growth of 15 percent per annum in the next 10 years will be achieved by the biscuit industry of India. Besides, the export of biscuits will also surpass the target and hit the global market successfully. ■

Prevention of Flour and Sugar Dust Fires

Flour and sugar dust are major hazards in bakeries . Bakery factory owners or plant operators need to keep safety precautions for these areas with good housekeeping with regular maintenance of equipment in these areas . Sugar dust is found in sugar grinder areas or sugar bulk handling. Similarly, flour dust is found in areas of flour handling and storage system. Biscuit dust is also highly inflammable; biscuit grinders are a major source of biscuit dust.

Explosion and fire has been reported in many units which had sugar or flour dust. One of the major explosions was in Imperial sugar in the year 2008 , Georgia USA. 14 people were killed. Investigators at Imperial Sugar shared their findings in a recent seminar:

Dust produced by sugar and flour and other materials such as wood, metal, coal and paper, can produce explosive hazards if not contained, claims Imperial Sugar Company.

Kevin Jeffries, Imperial's safety systems manager, last week gave a talk to confectionery and bakery

Bakery World 2010

BakeryWorld 2010 exhibition will showcase a wide range of bakery and pastry equipment, machineries, ingredient and supplies. A part of HospitalityWorld 2010, BakeryWorld tradeshow offers an ideal opportunity for manufacturers as well as exhibitors to break into new markets and forge new alliances. The annual exhibition on bakery industry is jointly organised by Express Hospitality and The Express Group.

Bakery World 2010 exhibition will be held at Palace Grounds, Bengaluru, Karnataka, India from 24th 26th June, 2010. BakeryWorld exhibition is expected to attract high qualified audiences that include Business Owners, Bakers, Pastry Chefs, Executive Chefs, General Managers, Purchase Managers and Consultants, etc.

Exhibit Profiles:

• Bakery & Confectionery ingredient and products • Bakery & Confectionery equipment and machines • Bread, Biscuits and Cake making products and equipment • Baking agents and ingredients • Packaging materials, containers • Cooling and Deep Freeze Units • Pizza equipment, Ingredients and supplies • Packaging, Filling and Encrusting machinery • Pastry making products & equipment • Design and consultancy, Display Units, Pastry • Essences and Flavours • Ovens, Biscuits and Crackers

Visitors Profile:

• Airlines & Cruise Lines • Bakeries - Craft • Bakeries - Plant / Industry Confectionaries • Hotels, Restaurants, Cafes & Patisseries • Hypermarkets, Supermarkets & Convenience Stores • Importers & Exporters • Institutional Foodservice

Contact Information:

• Venue: Palace Grounds • City : Bengaluru • Country: India • Period: 24/06/2010 To 26/06/2010 • Organizer Name: Express Hospitality • Telephone: +91-80-22231904/ 2106 • Website: www.expresshospitality.com ■

processors such as Hershey's and Mars, Kellogg's, Sara Lee and Krispy Kreme about the importance of maintaining a safe work environment and the potential hazards of uncontrolled sugar dust and other dust during food processing.

Imperial said that it has generated a considerable body of knowledge around the explosive properties of sugar dust by analyzing the sugar process and conducting ongoing laboratory tests on all of its products, related raw materials, and intermediates since the explosion at the Port Wentworth refinery in 2008.

Ron Allen, safety symposium organizer and Imperial Sugar's senior director of environmental health, safety and quality, also spoke on the explosive characteristics of sugar, and he said that the supplier feels a professional commitment to share its findings on combustible dust technology following on from the deadly blast.

The findings highlighted the following facts:

• Explosion occurred due to inadequate design of sugar dust collection system and handling system

• Sugar dust can ignite on hot surfaces and can be sparked by static electricity, gas cutting and welding

• Explosion can occur in silos, enclosed conveyors or bucket elevator. ■

Milk based proteins- the way to eggless Success!

Arla®
Closer to Nature™

By Mark Schou, Technical Sales Manager, Arla Foods Ingredients.

Replacing the functionalities of eggs in baked goods can be a challenge. However, Arla Foods Ingredients knows that milk based proteins are the right solution towards ensuring quality and high standards in eggless cakes, especially when there is an ever-increasing demand for eggless cake products.

Own production = uniform quality

Arla Foods Ingredients is a part of one of the world's biggest dairy companies. With milk- and cheese production sites all over the world, the supply of milk and fresh whey is the basis of many different products all based on milk ingredients.

Extensive control of the raw materials from the cheese vat to the final functional milk protein ensures a high and uniform quality of the products.

Innovation is a vital part of our ability to constantly offer new solutions. New ways of separating and modifying the components of milk is constantly being discovered and exploited. More than 40 people are dedicated to the innovation department. Their most important task is to optimise our existing processes to make them more efficient and to explore new opportunities in fractionation and modification of milk proteins.

This knowledge differentiates the functional solutions of Arla Foods Ingredients from standard Whey Protein Concentrates (WPC), which is widely used in the Indian baking industry. Due to increased efficiency of the modified proteins a significant reduction in the dosage is possible compared to standard WPC.

When it comes to the finished product-application of the proteins a brand new application facility has just been opened in Denmark. The pilot plant bakery is fully equipped, which makes it possible to simulate most processes, both in the artisan bakery scale and in an industrial scale. A team of experienced bakers every day strive to find new general solutions. Furthermore they are working on customer specific projects. Cooperation between Arla Foods Ingredients and the customers can take place in full confidentiality. If the customers are interested Arla Foods Ingredients offers a more formal way of approaching new products. The method is called The Twintell® Application Programme.

In brief we hope that by working more closely on the whole project from idea to launch in the market a closer partner ship will be the result. A high

level of mutual sharing is obviously the foundation for a successful result.

Three steps to success

Dear producer….

The Twintell® Application Programme is your opportunity to improve your products and your business results in three simple steps.

Whether you wish to optimise an existing product or reduce the time to market for a new launch, our team of experienced technicians find solutions to the specific challenges you face with your products and your business.

The Twintell® Application Programme is an exceptional chance to make use of the expertise of Arla Foods Ingredients without committing to anything but the desire to be excellent.

Our business is to make functional milk protein solutions that are the perfect match to your challenges.

Our employees combine application expertise with process expertise and a great sense of business. And with the Twintell® Application Programme, success is achievable in three easy steps. We call them define, develop and deploy.

Ste p 1: we define the challenges that you face with a particular product and we identify the purpose of your Twintell® Application Programme.

Step 2: we develop a solution using our unique test plant.

Step 3: we deploy the solution in a large-scale test at your production facilities, and we examine the results of our efforts.

Solutions for the Indian market

Egg replacement is possible with NUTRILAC® BK-7676. This is the most well-known egg replacer from Arla Foods Ingredients in India. In most cases, manufacturers will see an improvement in the overall storage quality of the final product, which remains fresh and moist right up to its sell-by date. It builds a strong texture in most of the bakery applications, which are so known on the shelves for instance muffins, bar cakes and brownies

From a nutritional point of view, NUTRILAC® BK-7676 contains 95% less cholesterol and 65% less fat than the egg it replaces.

Manufacturers also gain from the proteins' long microbiological shelf life compared to liquid and powder egg and the fact that they can be stored at room temperature.

The most reason development launched in the Indian market is the product NUTRILAC® BK-7900.

This product is developed for sponge cakes. It gives bakers ultimate egg replacement flexibility. Whether they wish to replace all the egg in sponge cake recipes or just a part of it, the result will be a cake of matching quality. The product provides not only a desired structure, but its ability to emulsify is also a key feature, which is necessary to maintain the distribution and capsulation of air to give a soft and spongy product.

For further details & inquiries about this product[s], please contact M/s DKSH India Pvt. Ltd, which is our marketing & distribution partner in India.

Email to : food-beverages.in@dksh.com or Shripad.tandale@dksh.com ■

Essentials for Food Safety Certificate in Bakery Industry

Background: In general, biscuits, bread, pastries, cakes are products manufactured in a unit which is termed as the bakery industry. It is estimated that the size of the industry is around Rs. 5000 Crores, which is growing at a fast rate. Day by day, consumers in India are growing conscious about safety of the products in the bakery industry. The traditional old fashioned cottage type baker is closing down and more and more mechanized units are coming up. There is stiff competition amongst those units.

The trade reforms imposed by the World Trade Organization (WTO) have transformed business environments and brought about adoption of new activities in industries and government. Manufacturing food products is not enough. The product must be free from harmful additives, microorganisms and shall remain good during the intended shelf life. Therefore, procedures to be employed for quality assurance by the bakery industry will have a great deal of accuracy and sophistication, depending upon the type of ingredients, production process and control over activities.

Why food Safety Certificates: Excellence in quality of food and safety has taken tangible form with the advent of the ISO series with a view to meet certain quality objectives in the country. The HACCP (Hazard Analysis Critical Control Print) is directed towards ensuring the ISO standards initiated by the International Organization for Standardization (ISO) and HACCP standards by Codex Alimentus Commission (CAC) in the year 2005.

The ISO has introduced a series of ISO 22000-2005 Food Safety Management Systems which will cover both the quality objectives of ISO 9000 and HACCP System. These standards have assumed importance worldwide both as an essential requirement to tap markets and as a marketable feature of the company.

The HACCP system identifies, evaluates and controls hazards to the safety of bakery products.

To achieve the goal of obtaining Food Safety Management System like ISO 22000 - 2005, the establishment must have some pre-requisite programmes which are described below.

Pre-Requisite Programmes (PRPs): It is a great concern to food safety in the manufacture of bakery products in particular and all other food products in general. The Hazards Analysis Critical Control Points (HACCP) is a scientific approach to prevent and control food safety hazards right from receiving raw material, through the production process and the distribution until it reaches the consumer. This system involves systematic assessment of all the steps involved in food operation and identification of these hazards that are critical to the safety of the product.

The HACCP food safety programme of

the bakery industry must be based on the compliance with prerequisite programmes. The prerequisite programmes are the foundation of the food safety system of the organization and the following are the highlights of the programmes.

Premises: The building and surroundings shall be designed, constructed and maintained in such a manner that it will prevent the contamination of the product. The building shall be designed such that the product manufacturing flow is in one direction and that there shall not be cross contamination. There shall be adequate facility of potable water and steam, and waste water shall be disposed off properly.

The surrounding area or land shall be free from debris and refuse and shall not be any source of pollution.

Sanitary Facility: Wash rooms shall be provided with self-closing doors. The wash room, lunch room and change room shall be separate. The doors of these rooms shall not open into the production area.

Hand Washing Facility: There shall be proper hand washing facility with potable running water, soap and sanitizer. The notices regarding washing hands shall be displayed around the processing area.

Plumbing: It shall be of adequate size and design. Provide adequate floor drainage in all areas.

Sewage Disposal: The Sewage disposal shall be made into adequate sewage system or to be disposed off by other means.

Toilet Facility: The company shall provide its employees with adequate and readily accessible toilet facility.

Rubbish Disposal: Rubbish shall be moved, stored and disposed off in a manner that minimizes the development of odour contaminations and creates a potential atmosphere for the breeding of pests.

Equipment Cleaning & Sanitizing Facility: Proper facilities for cleaning and sanitizing equipments shall be installed. Separate facilities for cleaning and sanitizing of equipments used for inedible material shall be provided. Cleaning & sanitizing agents used in cleaning and sanitizing procedures shall be free from undesirable organisms and shall be safe. All food contact surfaces including utensils and food contact surfaces of equipments shall be cleaned as frequently as per the needs.

Water, Ice, Steam Quality Program:

The company's water control department shall find out the chemical, microbial & physical quality of supply of these items and shall meet the local statutory compliances.

The packaging material, raw material must be stored and handled in a safe and sanitized manner.

Preventive maintenance: The preventive maintenance programme shall be installed appropriately.

Pest Control Programme: Adequate Pest Control programme shall be in place and it shall be monitored for effectiveness.

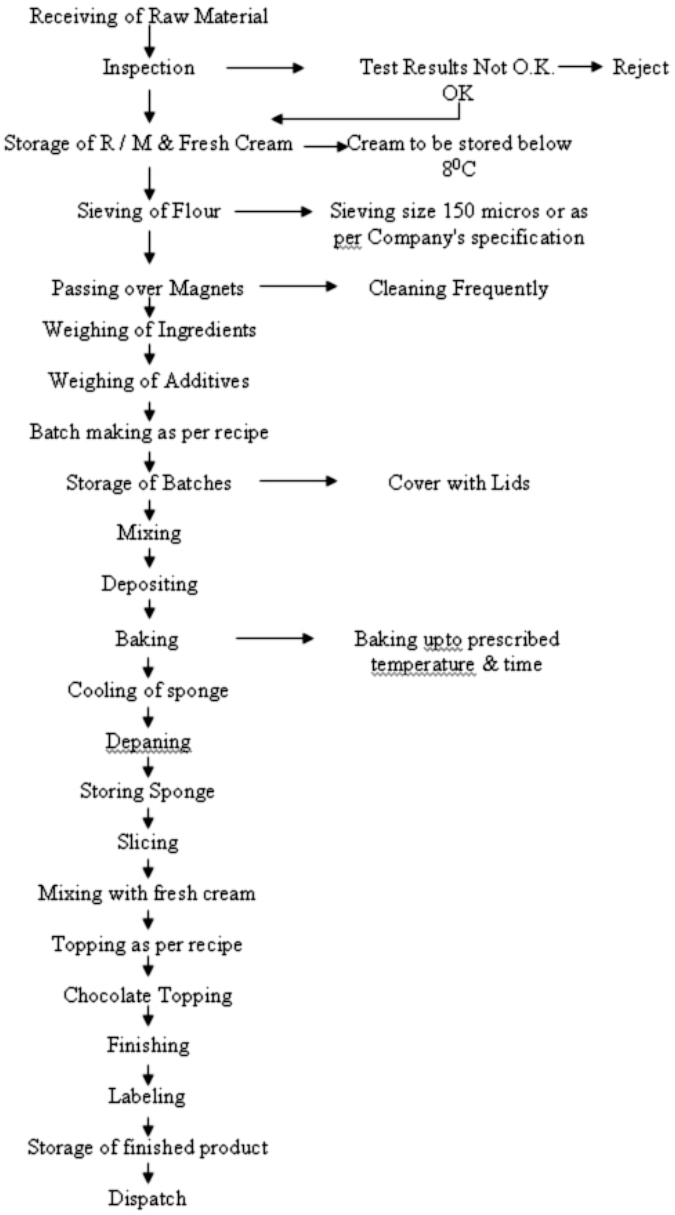
Achieving Food Safety in Cakes & Pastries: Out of the various bakery products, the following illustrations for Cakes & Pastries will explain the general guidelines, as per the flow diagram.

Receiving of Raw Material: All the raw material such as flour, additives, sugar, fresh cream are to be checked as per the acceptable criteria laid down by the company because there could be problems of bacterial contamination and physical & chemical hazards. If fresh cream is received at a temp above 80C and stored above that temp, it might cause increase in bacterial load and may pose problem in your finished product.

Inspection: Inspection of your incoming raw material is very essential as many times we observe the flour bags are torn which increases the chances of contamination. Inspect the condition of the vehicle and report to the supplier, if there is any abnormality. Follow correct sampling procedure as per the plan.

Storage: All the raw material shall be stored as per the instruction of manufacturers. Do not store bags on the floor. Use plastic pallets. Bags shall not stick

FLOW DIAGRAM OF CAKE & PASTRIES



to walls as crawling insect may enter into bags.

Sieving of Flour: This is a very important step as there may be presence of foreign matters such as iron. This can be achieved by using correct mesh size and carrying out visual inspection.

Passing over Magnet: The next step will be to pass over magnet. Flour normally contains iron particles which will then be separated. You can actually weigh per batch so you can evaluate the quality and if necessary inform the supplier, if it is in excess quantity.

Weighing Ingredients: Measure the various ingredients accurately as per the recipe. Ensure that these ingredients or items are kept properly with proper batch card. All the weighing equipment must be calibrated at regular intervals and should be suitably labelled.

Weighing of Additives: The role of additives is important in food industry especially bakery industry, to maintain body, texture and flavour. They are to be stored properly. Excess use of these items may turn out to be carcinogenic.

Batching as per recipe: These ingredients, additives are kept separated as per type of cake / pastries.

Storage of Batches: These batches are stored properly and trays or bins shall be covered to avoid contamination of physical particles.

Mixing of Sponges: The dry batches are mixed in a mixer for a predetermined time and speed as per the product. Care is to be taken to use clean machines, and that there is general cleanliness of the surrounding area as it may contaminate your product.

Backing: The mould filled with mix is then baked in the oven for time temperature combination. In this process, most of the pathogenic organisms are destroyed.

Depaning: After the baking procedure is over, sponges are removed from the oven and allowed to cool down naturally. While removing from mould, if personal hygiene is not followed properly, chances of contamination can be high.

Storage of Sponges: The sponges are stored in a cool dry place, preferably under refrigeration. Labels of date, shift, type, batch no. are to be given for identification. Please follow FIFO (First in First Out).

Slicing: The sponges are sliced as per the

requirement of products. Personal hygiene clearing of machine; the knife plays a crucial role in preventing contamination.

Mixing with Fresh Cream: Slices are mixed with fresh cream prepared with addition of additives and whipped to a particular volume. This cream is filled. This is important and a critical process as equipment, knife, personal hygiene have to be followed strictly, failing which contamination may occur.

Toping & Finishing: During the process of this step, equipment, sanitation, personal hygiene, use of hot water are essential factors to check contamination.

Finished Product Storage: After proper identification such as with egg, without egg, type of cake / pastries, date, these items are to be stored below 50C in cold storage.

Metal Detection: In large bakery units, metal detectors are installed. All the products have to pass through metal detectors. If there are any metal particles detected in the final product, it can be discarded. This is a very important step in the entire process.

Loading & Despatch : The products are to be delivered in clean and sanitized delivery vans. These vans have to be cleaned properly as many times we find cockroaches, insets in gaps, which may contaminate the final product.

In short, from the selection of raw material till your despatch all the steps are critical, and one has to analyze where physical, chemical or biological hazards can occur. Try to eliminate at acceptable levels.

We have gone through one process in bakery industry, step by step and tried to find out the hazards and how to overcome them. It is very difficult to elaborate them due to space. For other products in the bakery industry, there will be different flow charts, but the basic raw materials and the major steps in processing remain more or less the same. General cleanliness, sanitization, personal hygiene, record keeping are part of the food safety programme.

Quality Standards & Compliances requirements

In order to receive the Food Safety Certificate, the following requirements are to be met.

1) The Bureau of Indian Standards (BIS) has specified some quality standards and parameters for the manufacturing of some baking products like biscuits, breads, etc. which are to be strictly followed.

2) Compliance of Prevention of Food Adulteration Act 1954, is necessary and licence is to be obtained as per the prescribed norms.

3) Food & Drug Authority Licence to be obtained.

4) The unit must get approval from the state pollution control board.

5) Licence from the local municipality authority for establishment.

6) Appropriate approval as SSI unit or equivalent requirement.

7) Compliance to Weight & Measures Dept. of the State.

Conclusion: We have discussed the requirements for bakeries to manufacture safe and healthy products by implementing Pre-Requisite Programmes, and adopting the Food Safety Management System based on Hazard Analysis Critical Control Points (HACCP), adopting statutory requirement, keeping proper records. The unit can then apply for the International Certificate such as ISO-22000-2005 to enhance quality objectives, food safety and image in the market.

Subhash R. Vaidya

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Developing Trans Fat Solutions for the Baking Industry

By Don Banks, Edible Oils Technology

As the U.S. food industry works to reformulate products to reduce or remove trans fat, the baking industry faces a particularly complicated challenge due to the diverse functional requirements of oil and shortening within baking applications.

Developing oils and shortenings with low or no grams trans fat per serving for baking applications is more complicated than for frying applications. In frying, oil primarily functions as a heat transfer medium. While paying consideration to taste and physical characteristics, one can select oils as needed for light, medium or heavy duty applications.

By contrast, the functional requirements for bakery oils and shortenings are more diverse and can be very complex. Bakers often rely on formulations containing blends of multiple components. Shortening selection is specific to each application and to the finished-product requirements.

For example, I once worked on the development of shortening for a pastry that needed to have a cone shape with a slight curl at the top. We tested numerous shortening formulations, with varying combinations of three base components (basestocks), but the pointed top refused to curl. Finally, with the addition of a fourth component, five-percent soybean oil, to the shortening formulation, the top of the pastry slumped slightly during baking to form a perfect curl…and we added one more formulation to the list of shortening products used by the baking industry.

The different types of shortenings used by the baking industry number in the hundreds to meet the needs of products ranging from breads, rolls, cakes and icings to cookies, pastries, fillings and confections. Industrial bakeries endeavor to limit the number of shortenings they use by selecting a multi-purpose shortening when possible and as few specialty shortenings as possible for their line of products. However, the situation is changing as companies seek to use shortenings to create products with zero grams trans fat per serving.

Oil processors are making excellent progress in removing trans fats from many shortening formulations. However, some bakeries find that the reformulated shortenings have narrower ranges of performance that limit the number of products that they can make. As result, these bakeries find it necessary to increase the number of shortenings they use to maintain production of their full line of products.

Bakeries also face a challenge when testing shows flavor differences between products made with new and old shortening formulations. The industry ideal for taste testing has long been to show no

difference between test and control products, but that is changing. Rather than exactly matching flavor, the criterion for success is now determined by achieving either a match or a win on product preference.

The techniques being used to make shortening with low and no grams trans fat per serving include blending, interesterification, and reduced trans hydrogenation. The starting materials include commodity oils, trait enhanced oils, solid and liquid components from fractionated oils and fully hydrogenated oils. The oil refining industry uses all of these techniques and materials to replace trans fat in shortenings, but keeping pace with the growing demand from bakeries challenges both industries.

In my opinion, trait enhanced soybean oils offer the best opportunity for increasing production of shortenings with zero grams trans fat per serving to meet the growing needs of the bakery industry. Applications for the new oils, both those currently available and those in the pipeline, are noted below.

Low-Linolenic Soybean Oil

The low-linolenic trait enhances the flavor stability of soybean oil and provides support for improved oxidative stability that delivers performance in baked goods similar to that of lightly hydrogenated soybean oil. Use low-linolenic soybean oil as a direct replacement for lightly hydrogenated oil in making white breads, rolls and pizza dough.

Fluid shortenings are made by incorporating a small percentage of high melting fat in liquid or lightly hydrogenated oil. With the addition of emulsifying and leavening agents, they can be used in place of solid shortenings in a number of applications. Fluid shortenings with zero grams trans fat per serving can readily be formulated with low-linolenic oil and a small percentage of fully hydrogenated soybean oils.

Increased Oleic Soybean Oils

Increasing the oleic content of soybean oil in combination with low-linolenic dramatically increases oxidative stability, with values doubling for mid-oleic and doubling again for high oleic oil. Applications for mid-oleic include usage as a spray oil for crackers, coating oil for baked goods and as a blending component for formulating numerous types of margarines and shortenings. The use of mid-oleic oil in combination with interesterification adds more options for making shortening with zero grams trans fat per serving. Mid-oleic is just entering production and leading bakeries have already made arrangements to obtain samples and conduct testing.

Production of high oleic soybean oil will follow mid-oleic oil in about two years. With four times the oxidative stability of regular soybean oil, it will provide unique and exceptional performance. High oleic oil will further extend usage of soybean oil in bakery applications beyond the applications supported by mid-oleic. However, bakeries can expect competition from the frying industry for supply of this high-performance oil. Those wishing to test high oleic oil should contact their suppliers as soon as possible.

Increased Stearic Acid

Early work demonstrates that increasing soybean oil's stearic acid content to at least 25 percent yields a margarine-like base material. Producing margarine directly from a soybean would be quite impressive.

Even more impressive, high stearic soybean oil appears to offer the best direct alternative to the partially hydrogenated basestock used to formulate a wide range of shortening products with respect to trans fat solutions.

Stearic is, by definition, a type of saturated fat. However, scientists suggest that, unlike saturated fatty acids with shorter carbon chain lengths, stearic acid does not increase (blood) cholesterol. The FDA may consider labeling stearic to differentiate it from palmitic and other saturated fatty acids that have been shown to raise cholesterol. With consideration for both avoiding trans and limiting cholesterol, products formulated with high stearic soybean oil can support a dual health benefit. ■

New Ingredients in Bakery Products

Pre-soaked fruit is just one of the inclusions popular in the bakery sector at present. So what else is new?

Anyone noticed a change in supermarket hot cross buns this year? Did you observe, perhaps, that the fruit was particularly moist? Well, you would be right.

More and more, big industrial bakers are insisting that their vine fruits are pre-soaked in orange juice or water to give them extra succulence. It means the wet dough does not leech into the dried fruit, so it gives a softer product with better keeping qualities. It's a trick of the trade from the craft sector, adapted by the plant sector, says Whitworths' business unit director, ingredients Dan Sparshatt.

With innovation often quoted as the lifeblood of the food industry, what else is new with fruits, nuts and seeds? Sparshatt says: "Soaked fruits are now our biggest seller to bakery, far and away. We are operating in challenging times, with cost an important factor, but customers are still innovating on fruits, nuts and seeds either to allow cost savings or to add value to the product or even both."

One innovation that ticks both those boxes is the increasingly popular soft fruit option, where a base fruit is infused with a fruit juice concentrate, he says. Apple infused with blueberry juice is a big seller, for example and the product comes out at half the cost of a blueberry. Flavours such as mango and passion fruit also lend themselves well to this patented technology and there is rising demand.

But it would be difficult to identify "the next big thing" he adds. Tastes have not really changed dramatically, with raisins and sultanas remaining top sellers. None of the superfruits have really gained critical mass.

However, there are plenty of interesting ideas around; plantain chips was one new product launched in the UK recently, for example. But these introductions "need the craft sector to make something of them by launching interesting new products", he says.

The craft sector is often the early adopter of innovation, he suggests: "They can react quickly to trends and they have the skills to innovate. But we also see innovation in the industrial sector both can learn from each other."

Frank Horan, director of Unicorn Ingredients, a big seeds supplier to bakery, agrees that the craft sector often leads the way. "In the craft bakery sector, seeds remain a core inclusion," he says, "but craft bakeries are moving increasingly into other

kinds of ingredients, such as sun-dried tomatoes and olives, to add value to their products in the face of competition from plant bakers' seeded breads."

In the industrial bakery sector, linseed, sunflower and pumpkins seeds are the mainstay inclusions in bread, he adds, with sesame seeds falling out of favour a little due to allergy concerns.

Meanwhile, Derek Donkin, CEO of the Southern African Macadamia Growers' Association, says macadamia nuts may be the next big thing. Sales in the UK have increased by 45% over the past five years and the bakery sector has played a huge role in this growth, he says. "NPD departments are increasingly looking for new ingredients that can add value, set their products apart from competitors and impress adventurous consumers."

Whole macadamias, halves or chips are proving popular with small artisan bakeries, as well as industrial companies, due to their luxury appeal, health benefits and value-adding qualities, he says. They fall into a similar price bracket to hazelnuts, pistachios and pine nuts.

Meanwhile, Taura Natural Ingredients recommends its bakestable concentrated fruit pieces, carrying up to seven times their own weight in fruit. These come in a wide range of options, including harder-to-use berry fruits, such as strawberry and blueberry.

But back to the plantain chips. Dawn Van Rensburg,

recently led top bakers in the Richemont Club of Great Britain on a tour of importer John Morley's premises in Cheshire. The club was on the hunt for new ideas for NPD. And let's just say they were inspired. Watch out for plantain chips coming soon to a muffin near you.

[Anne Bruce] ■

Top Tips for Reducing Bakery Waste

1. Buy and use only what you need and plan your deliveries, so you always have just enough to meet customer demand.

2. Store food and ingredients at the correct temperature to prolong their life.

3. Rather than throw away imperfect baked goods, sell them at a discount or break them up to use for customer tastings.

4. Reduce the cost of bakery products towards the end of the day.

5. Can you reuse any leftovers? Off-cuts or stale bread as long as it is still edible can be crumbed and toasted as part of a topping. Or turn them into bread and butter pudding.

6. If you have good-quality leftovers, particularly cakes or tarts, give them to a local charity or community group.

7. If you still have food waste, contact the local council to see if there is a local food waste collection scheme. ■

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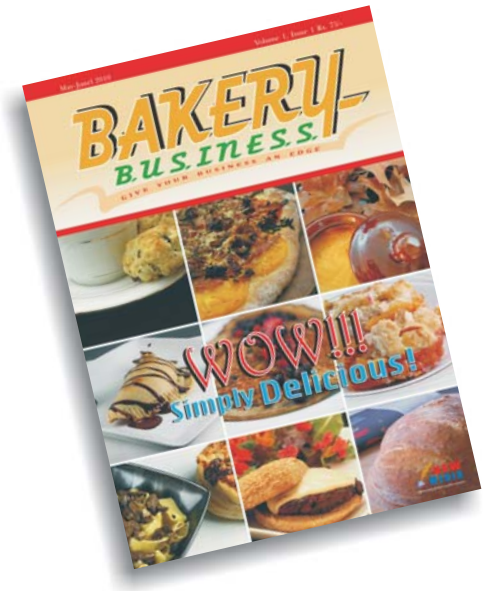

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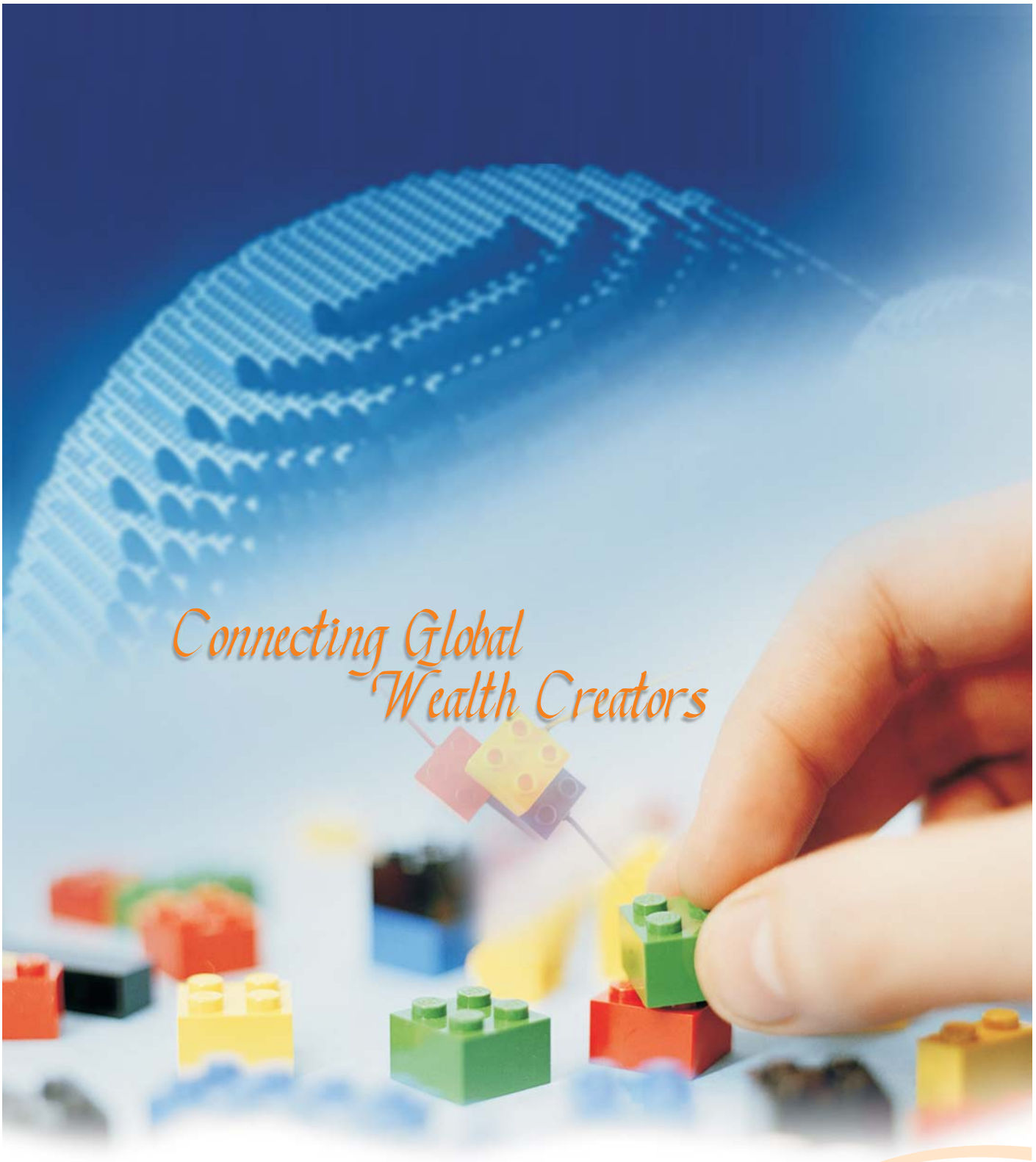

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