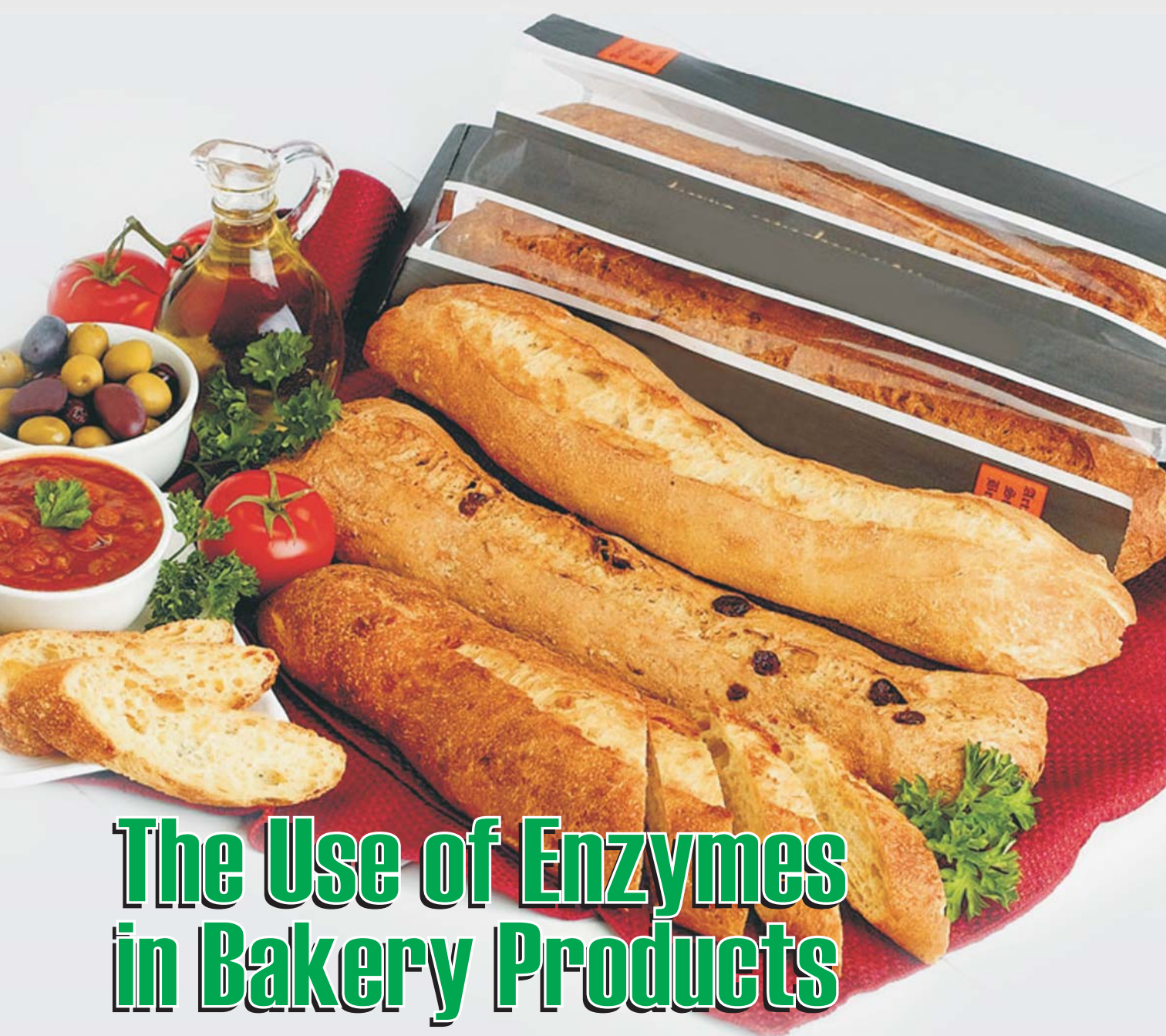


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अधिक समय
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Published by:

New Media Communication Pvt. Ltd.

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Director: B.K. Sinha

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Tripat Oberoi & Md. Sabir Nishat

Marketing Manager: Samir Sehgal

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Liaison Officer: Vrunda Gurav

Executive Database: Madhavi Singh

Circulation: Jawaharlal, Santosh Gangurde,
Vijay Wangade

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Dear Reader,

Greetings and welcome to Ingredients Business. Enzymes have the potential to revolutionize the bakery business. In the future, enzymes will replace all the harmful chemicals that are presently being used in the bakery sector. For instance, potassium bromide and benzoil peroxide are carcinogenics and banned in the west, but in India, bakers are still using them. The enzyme business is worth just a few billion dollars today but is likely to leapfrog to a trillion dollars in the near future. In this issue, we have a story of the use of enzymes in baked products. We also have an interview with Mr. C.L. Rath, MD, Advanced Enzymes Technologies, which is the foremost enzymatic solutions company in the country. We also carry the latest exciting research in bakery - the possibility of olive oil replacing transfat shortenings, and the use of flakes to boost health and the shelf-life profile of products. There is also an interesting report on the economic recession leading to increased consumption of cupcakes in America! Nutritionist Dr. Meena Mehta elucidates on the health risks of trans fatty acids. While Mr. Vivek Ojha explains how bakery shortenings actually work. There is also an enlightening piece of research on how our preconceptions of how filling the food we are about to eat will be has a direct effect on weight control! Ingredients Business is bilingual, and in our hindi section, we have articles on the harmful ingredients and chemicals in daily-use products, simple steps on setting up a bakery, and the specific function of yeast bread ingredients. We hope you enjoy what we have put together for you in this issue.

Happy Reading!

Satya Swaroop



Managing Editor
satya@newmediacomm.biz

The Use of Enzymes in Bakery Products

By Terry Sharp



Since the 1960s, bakers have supplemented the naturally occurring enzymes in wheat flour, called alpha-amylases, to minimize differences caused by weather conditions. For the past 10 years, the experts at Campden & Chorleywood Food Research Association (CCFRA), Gloucestershire, UK, have been working to understand the uses and benefits of enzymes in baking.

Enzymes work on sugar, starch, fat and protein. Here is the latest research for each group.

Hemicellulases

Wheat flour contains starch, of which a small proportion (approximately 3%) is in a different form called hemicelluloses. This can be soluble or insoluble, and it is the latter that can interfere with the formation of gluten during development of the dough. The hemicellulase enzymes, also known as xylanases, are able to convert the insoluble hemicellulose into its soluble form, thus ensuring that the gluten is developed as much as possible to enhance bread volume.

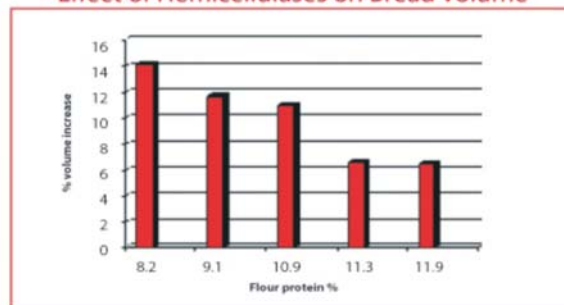
A second important effect is to control the softness

of dough. Xylanases help dough incorporate more water during the mixing process giving a softer-eating loaf of bread.

Research showed that the interaction of enzyme with flour quality is important, and that the highest percentage volume increases were achieved with flour of low-protein content generally not high bread-making potential. This means we can use a small amount of enzyme to get much better bread quality from relatively low-grade flour (See "Effect of Hemicellulases on Bread Volume" below).

Anti-staling Enzymes

Effect of Hemicellulases on Bread Volume





Enzymes also reduce the rate of bread staling due to starch changing during storage. Flour starch consists of long chains of sugar units that get tangled up and form bridges from one chain to another. This causes increased firmness and harshness of texture during prolonged storage that reduces product acceptability. However, anti-staling enzymes, which fit into starch chains, stop those chains from forming the bridges that cause staling. Such enzymes include maltogenic alpha-amylase.

Bread baked with these enzymes has delayed onset of firmness: The bread stays acceptably soft far beyond the usual three to four days. Not only does the texture remain intact, but also the flavor is enhanced.

This enzyme technology has been widely exploited by the UK baking industry and forms the basis of the longer life sandwich breads, which stay fresh for more than seven days. CCFRA has produced bread that stays fresh for 18 to 24 months. Although this is of little use for everyday shopping, it was of great value to the Turkish army, which needed an ultra-long shelf life product for troop rations during maneuvers.

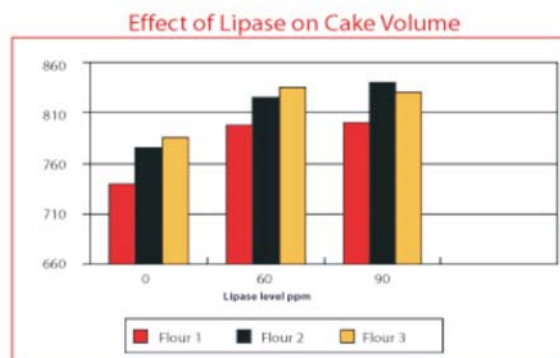
Lipases for Cake-making

Although more enzymes are used in bread recipes than any other products, there is an increasingly wide range that benefits non-bread products.

A recent development is a special enzyme from the lipase group that can affect naturally occurring fat in flour. This new lipase rearranges portions of the fat into emulsifiers, which in turn have a useful effect on batter and cake properties. While emulsifiers are commonly added to cake recipes, lipase enzymes in certain cases help reduce the need for their use. Since enzymes are classified in the UK as processing aids, they do not need to be declared on the label. As a result, their use in place of emulsifiers leads to "cleaner" labeling.

Results from work at CCFRA showed that cake batter flowed more easily when lipase was added, and that the cake volume became larger (see "Effect of Lipase on Cake Volume" below). In the study, three different cake-making flours yielded slightly different product volumes. It is known that flour from

various sources can perform differently, and it became clear that increasing the added enzyme from 0 to 90 ppm (up to 90 g per tonne of flour) gave volume improvements up to 10%.



Transglutaminases In Pastry

In cakes, the average product bakes up to be three times the volume occupied by the ingredients alone. For products such as bread, some biscuits and pastry, this increase in volume is achieved by making the dough strong enough to trap gases produced by fermentation, leavening agents and the baking process. Gluten development during mixing provides strength to the dough. Another important reason to develop gluten is that it gives the product better eating quality.

Transglutaminases (TG) "stick" protein chains together in a different way than gluten development by the traditional methods of mixing, dough improvers or fermentation. TG allows dough to be developed more quickly while also improving its ability to retain gases produced during processing. Adding TG can also lead to a reduction in dough-mixing times. As a result, adding small amounts of enzymes can increase product volumes. Puff pastry volume, for example, was 5 to 10% bigger when TG was added to the mix at a 0.1% level. It is likely that TG is cross-linking the protein in the laminated dough sheets. This makes them physically stronger and more able to hold gases produced in baking providing more lift.

The addition of small amounts of enzymes can have a major positive impact on bakery processes and products, so it is not surprising that the baking industry has embraced their use. ■

Enzymes can Revolutionize Bakery Industry

Mr. C.L. Rath

The enzyme business is the industry of the future. Currently worth a few billion dollars, it is expected to leapfrog into a trillion dollar industry in the near future. Enzymatic solutions will be key to the development of industries like pharma, bio-fuel and food, including bakery products. India's foremost enzymatic solutions company is Advanced Enzymes Technologies. It was started in 1989 by Mr. C.L. Rath with an initial investment of \$1 million. Today, under Mr. Rath's leadership, the company is worth \$120 million. In an interview with New Media, Mr. Rath talks about the exciting possibilities of using enzymes in the bakery business.



Tell us a little about your background. How did you get into the enzyme business?

My father, L C Rath, set up India's first enzyme manufacturing plant. He pioneered the extraction of papain, an enzyme complex derived from papaya fruit and widely used for pharmaceutical and medical purposes. I went on to study chemical engineering from REC, Rourkela. I worked as a farmer for a few years, then started my first enzyme-manufacturing company in 1978. It didn't work but of course I didn't give up. In 1986 I was involved in another enzyme-based collaboration; then in 1989 I started Advanced Biochemicals, which is now called Advanced Enzyme Technologies. For me the mission was always to make India self-reliant in enzyme production, and through it, to be able to help create healthier and safer food in the country.

So what is the use of enzymes in the bakery business?

The use of enzymes is vital in the bakery business, and indeed, the entire business of food production. I say vital because right now, we are resorting to all kinds of chemicals for everything. Potassium bromide and benzoyl peroxide are carcinogenics and banned in the west, but in India, bakers are still using them. So we are all injecting these harmful chemicals into our system. If we started using enzymes instead, we will produce safer and healthier food products. Besides, enzymes are a lot cheaper to use.

So why are bakers not using enzymes?

We have to realize that baking is an art as well as a science. But bakers here tend to focus only on the art of baking. The science is neglected. But the science too can help produce tastier food, while also bringing down costs and increasing production. Our bakers are still traditional in that sense. And therefore, they tend to go with their tried-and-tested methods. They don't want to experiment too much. Besides, there is the notion that enzymes are expensive. A kilo of it will cost a few thousand rupees. But what they don't realize is that a kilo will last them for a long time, because you are supposed to use just a tiny fraction every time, just a few PPM. It has to be administered carefully and precisely, and here again, they feel they don't have the necessary equipment and skills to do this.

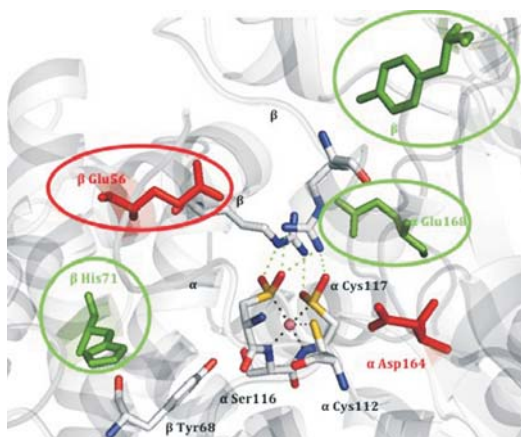
So what can be done about this?

Awareness. There needs to be a lot of awareness and information disseminated amongst the bakers. And this is for our own good. I strongly believe that all the diseases that affect us are a result of our food habits

not being right, not being pure. We must realize that our best defense against any diseases is eating healthy and pure, ensuring that dangerous chemicals, etc. do not enter our bodies. Today a company can dole out some artificial flavouring or emulsifier for free or at a cheap price, and bakers will use them. They don't realize, and we don't realize, that ultimately, all this is only going to end up harming our bodies.

Are there any precautions to be taken while using enzymes in food products?

None whatsoever. Enzymes are nature's own energy.



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There are no side-effects. They are the way nature intended. We don't need chemicals, which only end up causing a lot of damage to our bodies in the short and long term. Why do you look different from me? Why do we look different from trees and leaves? Why does each leaf of a tree look different from another leaf of the same tree? It is all the play of enzymes. And we are only now beginning to comprehend the power of enzymes, the power it holds to change our lives dramatically for the better. Right now the enzyme business is worth just a few billion dollars but this is going to jump into trillions in the near future. Enzymes are the power of the future.

Give us some examples of the potential use of enzymes in the bakery or food business?

There are enzymes for everything. Advanced Enzymes has developed enzymes that can be used to make eggless cakes. Instead of using chemicals, etc. As you can understand, this is a huge thing, because in India, there is a huge demand for eggless cakes. We have the technology and will be most happy to part with it, for whoever would be interested in marketing and promoting this. But eggless cakes is just the tip of the iceberg. There is no limit to the uses we can put enzymes. Take another example. In India, we love rajma and chole. But eating these produces a lot of gas. But we can develop enzymes to nullify the production of gas. Look at roti. A lot of restaurants, etc, add fat or emulsifiers in order

to keep rotis fresh for hours. But we can find an enzymatic solution to this. We can find an enzymatic solution to everything. I can give you enzymes to make instant idlis.

So why is your company not working with bakers?

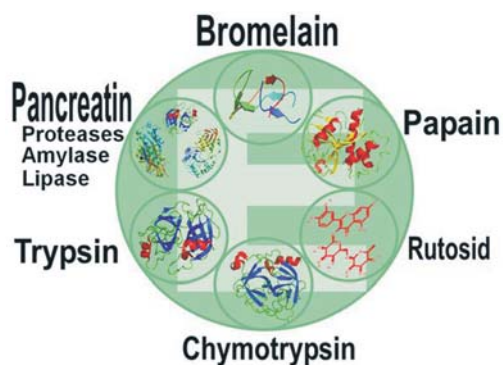
There are hundreds and thousands of bakers. Each with his or her own small unit. We cannot reach out to them individually. That is not the focus of the company. So what we do is, we work with the millers from whom the bakers get their dough. Different millers have different requirements. Some millers' specialization is roti-making dough, for others it is something else. So depending on what the millers' requirements are, we make the necessary enzymes. But hopefully, in the future, we will be able to go directly to the consumers.

What are the difficulties you faced building this company?

A lot of difficulties. Everyone said, this is not going to work. You have to remember that the enzyme business was still in a nascent stage when we started. Yet it required a lot of investment in infrastructure and technology. Everyone said, why are you putting so much money into something which is so uncertain? People who were working in biotechnology said, listen, do something else, this thing doesn't work, we have tried it ourselves.

What are the qualities you admire in people?

The spirit of entrepreneurship. That is the quality that this country needs if we are to march forward. We need more and more entrepreneurs. There is no end to opportunities. Seriously! But people have to be willing and desirous to try something of their own. Even within the bakery or food industry, there are hundreds of opportunities just using enzymes. But no, most of us are quite happy just doing something under someone else. There is no thinking. There is no innovation. How then will the country progress? Innovation is not about technology and infrastructure. It is foremost about attitude. If you have the attitude to want to do something on your own, you will innovate. But if you are always in the habit of copying, of depending on others, then how will you innovate even if you have the technology and infrastructure? There are so many ideas waiting to be exploited. This country needs entrepreneurs so desperately. It's the only way we can leap forward. ■



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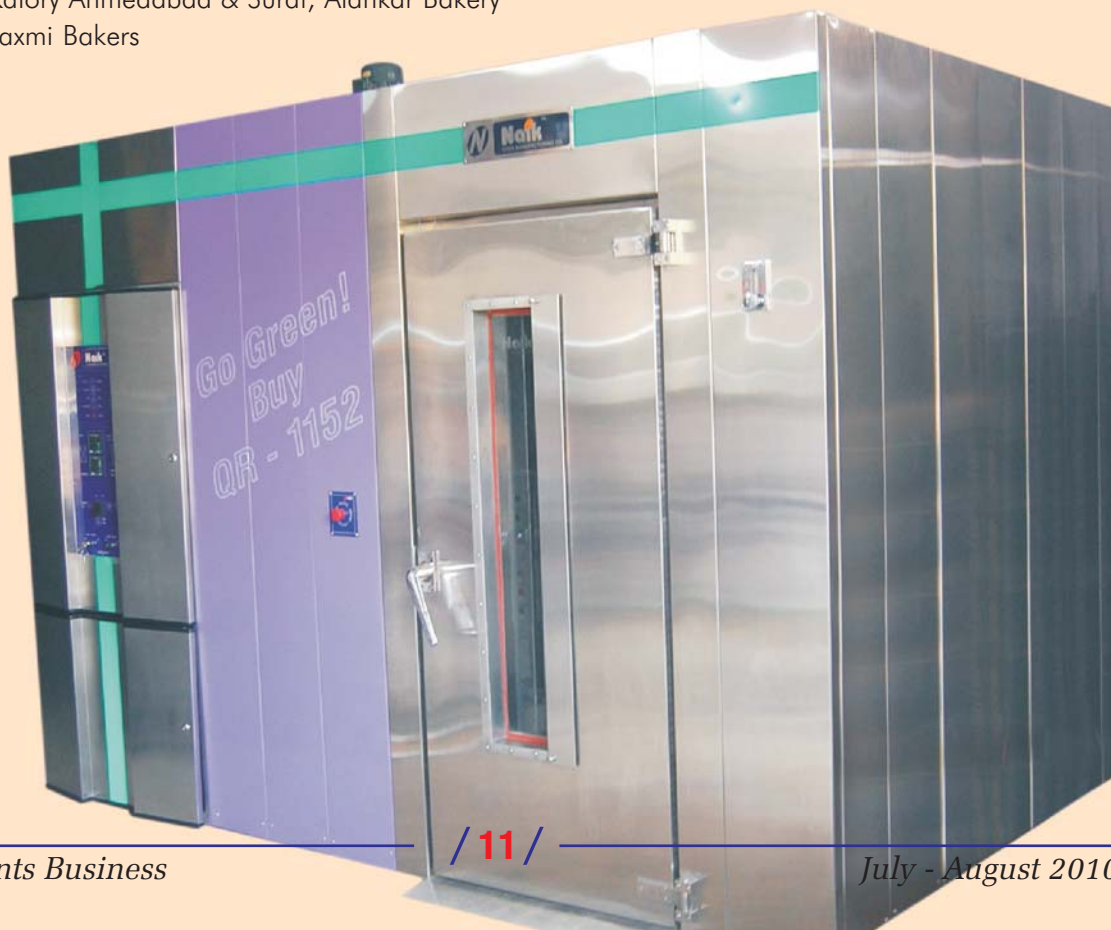
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'Satisfying' Labels May Beat 'Diet' in Curbing Consumption

By Stephen Daniells



Manipulating our preconceptions on how filling we think food will be before we eat it may offer an interesting avenue in weight control, indicate new findings from the UK.

According to results presented at the Annual Meeting of the Society for the Study of Ingestive Behavior (SSIB), test subjects were more satisfied for longer periods of time after consuming food of varying quantities for which they were led to believe that portion sizes were larger than they actually were.

Jeff Brunstrom from the University of Bristol also told attendees that memories about how satisfying previous meals were also played a causal role in determining how long those meals staved off

hunger. Taken together, the results indicated that expectations before eating and memory after eating play an important role in governing appetite and satiety, he said.

Such data may have implications for food manufacturers, particularly from a labelling aspect, added the Bristol-based researcher.

"Labels on 'light' and 'diet' foods might lead us to think we will not be satisfied by such foods, possibly leading us to eat more afterwards," said Dr Brunstrom. "One way to militate against this, and indeed accentuate potential satiety effects, might be to emphasize the satiating properties of a food using labels such as 'satisfying' or 'hunger relieving'."

The research was funded by the Biotechnology & Biological Sciences Research Council (BBSRC) and a consortium of food companies under a joint initiative with the Diet and Health Research Industry Club (DRINC).

Fat and brain changes

Also presenting at the SSIB, Mitchell Roitman from the University of Illinois at Chicago reported findings on how prolonged exposure to a high fat diet may be correlated with changes in the brain chemical dopamine within the a part of the brain linked to the reward system.

According to findings from studies with laboratory rats, 'real-time' changes in dopamine levels were observed in the striatum after animals consumed a high fat diet for either two or six weeks. Consuming a high-fat diet was associated with a reduction in the release of dopamine in lab rats, and a reduction in the reuptake by "dopamine transporters" within the striatum, compared with animals consuming a low fat diet.

"Previous research has demonstrated reduced dopamine transporter numbers in association with obesity and exposure to a high fat diet," explained Roitman. "Our research shows that these changes lead to major differences in the way dopamine functions in the brain."

The results from this study highlight the impact of diet on brain neurochemistry and in particular on brain systems that regulate motivation and



willingness to work for food reward in rats as well as humans.

The study was supported by the National Institute on Drug Abuse (NIDA).

Brain rewiring

This is not the first time that a high fat diet has been linked to changes in brain chemistry. Earlier this year, scientists from The Scripps Research Institute in Florida reported that the development of obesity was accompanied by a break-down in brain chemistry linked to pleasure responses. According to findings published in Nature Neuroscience, the very same changes occur when rats over-consume heroin or cocaine.

"These findings confirm what we and many others have suspected that overconsumption of highly pleasurable food triggers addiction-like neuroadaptive responses in brain reward circuitries, driving the development of compulsive eating," said lead researcher Dr Paul Kenny. ■



Olive Oil May Replace Trans-fat Shortenings in Bakery

Trans-fat containing margarine and other shortenings used in cakes may be substituted by olive oil without affecting textural properties or flavour and aroma, says a new study from Greece.

Despite the strong and characteristic flavour profile of extra virgin olive oil, when used to partially replace margarine in a Madeira cake, a panel of tasters rated the reduced trans fat cake as the most preferred, according to findings published in the *LWT - Food Science and Technology*.

In addition, researchers led by Adamantini Paraskevopoulou from the University of Thessaloniki also report that substitution with the extra virgin olive oil did not affect the appearance or odour of the final cakes.

Moving away from partially hydrogenised shortening

Shortenings play a key role in cake making by helping to trap air bubble in the batter, which helps with leavening of the product, while also enhancing crumb tenderness, and enhancing moistness and mouthfeel.

However, many shortenings are based on vegetable oils that have undergone partial hydrogenation, a process that converts the oil into semi-solids for a variety of food applications. The process produces trans fats, which are attractive for the food industry due to their extended shelf life and flavour stability, and have displaced natural solid fats and liquid oils in many areas of food processing.

But scientific reports that trans fatty acids raise serum levels of LDL-cholesterol, reduce levels of HDL-cholesterol, can promote inflammation, cause endothelial dysfunction, and influence other risk factors for cardiovascular diseases (CVD), has led to a well-publicized ban in American cities like New York and Chicago.

In the food industry this has been mirrored by an increase in the pressure on food manufacturers to reduce or remove trans fatty acids from their products and reformulate. The food industry as a whole has expressed its commitment to removing trans fatty acids from its products, but such reformulation is not straightforward and presents challenges. Commercial baked goods such as crackers, cookies and cakes, along with many fried foods, like

french fries and doughnuts contain trans fats.

In their new study the Greek researchers formulated cakes with margarine only as a shortening, extra virgin olive oil only, or with a combination of margarine and olive oil. Results showed that inclusion of extra virgin olive oil increased the batter density, and boosted the cake volume. No effect on the appearance or odour of the cakes was recorded, they added. While the cake prepared only with extra virgin olive oil was rated the least preferred by a panel of 20 tasters, the score was "very close to those obtained for the control cake", wrote Paraskevopoulou and his co-workers. "Attending overall liking, the cake prepared with extra virgin olive oil/margarine mixture was the most highly preferred by the panellists," they added. ■



Health Risks and Trans Fatty Acids

Dr. Meena Mehta (Nutritionist)

What are trans fatty acids, and where do they come from?

Trans fat is the common name for unsaturated fat with trans-isomer fatty acid(s). Trans fats may be monounsaturated or polyunsaturated but never saturated. Unsaturated fat is a fat molecule containing one or more double bonds between the carbon atoms. Since the carbons are double-bonded to each other, there are fewer bonds connected to hydrogen, so there are fewer hydrogen atoms, hence "unsaturated". Cis and trans are terms that refer to the arrangement of chains of carbon atoms across the double bond. In

the cis arrangement, the chains are on the same side of the double bond, resulting in a kink. In the trans arrangement, the chains are on opposite sides of the double bond, and the chain is straight.

Unlike other dietary fats, trans fats are **not essential**, and they **do not promote good health**. The consumption of trans fats increases the risk of coronary heart disease by raising levels of "bad" LDL (Low Density Lipoprotein) cholesterol and lowering levels of "good" HDL (High Density Lipoprotein) cholesterol. Health authorities worldwide recommend that consumption of trans fat be reduced to trace amounts. Recent concept is

of **ZERO TRANS FAT**. Trans fat from partially hydrogenated oils are more harmful than naturally occurring oils.

Because saturated fatty acids were found to be bad for you a couple decades ago, the food industry wanted to switch to using unsaturated fatty acids. Unfortunately, unsaturated fatty acids become rancid relatively quickly. To combat the instability of unsaturated fatty acids, manufacturers began to "hydrogenate" them, a process that makes them more stable. The result was a more solid and longer lasting form of vegetable oil, called "partially hydrogenated" oil.

Unfortunately, when unsaturated vegetable fats are subjected to the process of hydrogenation, a new type of fatty acid is formed. This new type of fatty acid is called trans fatty acid. So when manufacturers began substituting partially hydrogenated vegetable oils for saturated fats in processed foods, they began adding - for the first time - relatively large amounts of trans fatty acids to the typical diet.

Which is worse - saturated fatty acids or trans unsaturated fatty acids?

Both saturated fats and trans fatty acids are bad. Saturated fats are almost always found in foods that also contain cholesterol, so saturated fats offer a "one-two" punch to heart health. On the other hand, trans fatty acids not only increase LDL cholesterol, they also decrease HDL cholesterol.

Which foods contain trans fatty acids?

Cows. Milk and meat from cows and other ruminants contains naturally occurring trans fats in small quantities. Trans fats occur naturally to a limited extent: Vaccenyl and conjugated linolenic Acid (CLA) containing trans fats occur naturally in trace amounts in meat and dairy products from ruminants. A type of trans fat occurs naturally in the milk and body fat of ruminants (such as cattle and sheep) at a level of 25% of total fat. Natural trans fats, which include conjugated linoleic acid (CLA) and vaccenic acid, originate in the rumen of these animals. It should be noted that CLA has two double bonds, one in the cis configuration & one in trans, which makes it simultaneously a cis & trans-fatty acid.

Fortunately, it is relatively easy to identify foods that contain relatively large amounts of trans fatty acids: margarines (the more solid the margarine, the more the trans fatty acids; stick margarines contain the most, tub margarines contain less, and semi-liquid margarines contain the least;) **high-fat baked goods** (especially doughnuts, cookies and cakes;) and any product for which the label says "partially hydrogenated vegetable oils. Trans fatty acids absolutely lace two favorite food groups: French fries and potato chips. Also corn chips and many crackers.

Animal-based fats were once the only trans fats consumed, but by far the largest amount of trans fat consumed today is created by the processed food industry as a side effect of partially hydrogenating unsaturated plant fats (generally vegetable oils). These partially-hydrogenated fats have displaced natural solid fats and liquid oils in many areas, the most notable ones being in the fast food, snack food, fried food, and baked goods industries.

Many baked foods require semi-solid fats to suspend solids at room temperature; partially hydrogenated oils have the right consistency to replace animal fats such as butter and lard at

l o w e r



cost. They are also an inexpensive alternative to other semi-solid oils such as palm oil.

Foods containing artificial trans fats formed by partially hydrogenating plant fats may contain up to 45% trans fat compared to their total fat. Baking shortenings, in general, contain 30% trans fats compared to their total fats, whereas animal fats from ruminants such as butter contain up to 4%. Margarines not reformulated to reduce trans fats may contain up to 15% trans fat by weight.

It has been established that trans fats in human milk fluctuate with maternal consumption of trans fat, and that the amount of trans fats in the bloodstream of breastfed infants fluctuates with the amounts found in their milk.

Trans fats are used in shortenings for deep-frying in restaurants, as they can be used for longer than most conventional oils before becoming rancid. In the early twenty-first century, non-hydrogenated vegetable oils that have lifespans exceeding that of the frying shortenings became available. As fast-food chains routinely use different fats in different locations, trans fat levels in fast food can have large variations.

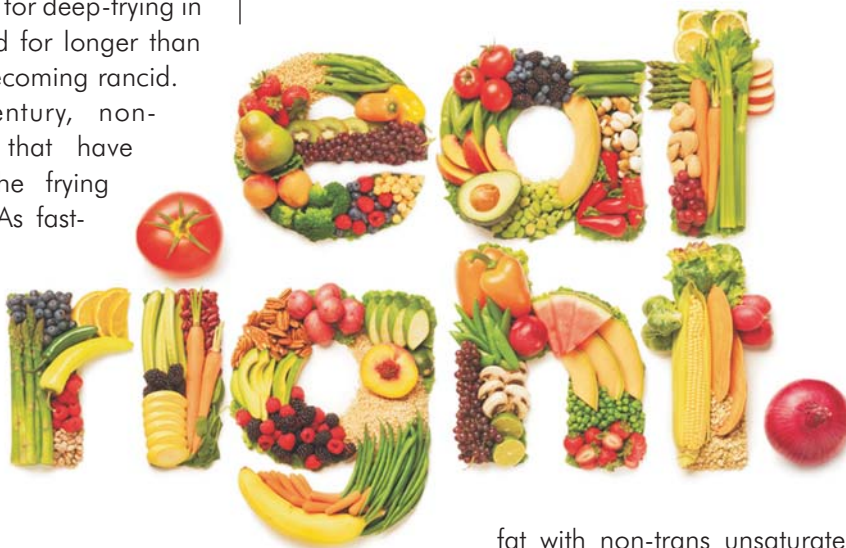
Health risks

The exact biochemical methods by which trans fats produce specific health problems are a topic of continuing research. The most prevalent theory is that the human lipase enzyme is specific to the cis configuration, rendering the human body unable to metabolize or remove trans fat. A lipase is a water-soluble enzyme that catalyzes the hydrolysis of ester bonds in water-insoluble, lipid substrates. Lipases perform essential roles in the digestion, transport, and processing of dietary lipids in living organisms. The human lipase enzyme is ineffective with the trans configuration, so trans fat remains in the blood stream for a much longer period of time and is more prone to arterial deposition and subsequent plaque formation.

Coronary heart disease

The primary health risk identified for trans fat consumption is an elevated risk of coronary heart disease (CHD). "On a per-calorie basis, trans fats appear to increase the risk of CHD more than any other macronutrient, conferring a substantially increased risk at low levels of consumption (1 to 3% of total energy intake)".

"The replacement of saturated fat or trans unsaturated fat by cis (unhydrogenated) unsaturated fats was associated with larger reductions in risk than an isocaloric replacement by carbohydrates." Replacing 2% of food energy from trans fat with non-trans unsaturated fats more than halves the risk of CHD (53%). By comparison, replacing a larger 5% of food energy from saturated



fat with non-trans unsaturated fats reduces the risk of CHD by 43%.

- **Cholesterol ratio:** Trans fatty acids turn out to increase total cholesterol levels and LDL cholesterol levels, and to reduce HDL cholesterol levels. In other words, trans fatty acids are detrimental to cardiac health. This ratio compares the levels of LDL (Bad cholesterol) to HDL (good cholesterol). Trans fat behaves like saturated fat by raising the level of LDL, but, unlike saturated fat, it has the additional effect of decreasing levels of HDL. The net increase in LDL/HDL ratio with trans fat is approximately double that due to saturated fat. (Higher ratios are worse.) Comparing the postprandial effect on blood lipids of (relatively) cis and trans fat rich meals showed that cholesteryl ester transfer (CET) was

28% higher after the trans meal than after the cis meal and that lipoprotein concentrations were enriched in apo-lipoprotein(a) after the trans meals.

- **Alzheimer's disease:** A study published in Archives of Neurology suggested that the intake of both trans fats and saturated fats promote the development of Alzheimer disease.
- **Cancer:** There is no scientific consensus that consumption of trans fats significantly increases cancer risks across the board. Recent study has found connections between trans fat and prostate cancer. An increased intake of trans-fatty acids may raise the risk of breast cancer by 75%.
- **Diabetes:** There is a growing concern that the risk of type 2 diabetes increases with trans fat consumption. Risk is higher for those in the highest quartile of trans fat consumption.
- **Obesity:** Research indicates that trans fat may increase weight gain and abdominal fat, despite a similar caloric intake. Although obesity is frequently linked to trans fat in the popular media, this is generally in the context of eating too many calories; there is no scientific consensus connecting trans fat and obesity.
- **Liver Dysfunction:** Trans fats are metabolized differently by the liver than other fats and interfere with d-6 desaturase. d-6 desaturase is an enzyme involved in converting essential fatty acids to arachidonic acid and prostaglandins, both of which are important to the functioning of cells.
- **Infertility in women:** Each 2% increase in the intake of energy from trans unsaturated fats, as opposed to that from carbohydrates, was



associated with a 73% greater risk of ovulatory infertility.

So what is the health-conscious consumer to do?

There are three basic steps to reducing the amount of "bad" fat in the diet and substituting "good" fat.

First, avoid the saturated fatty acids found in meat and dairy products, as well as the tropical oils (palm and coconut.)

Second, avoid trans fatty acids by steering clear of commercially fried foods, high-fat baked goods, and stick margarines.

Third, whenever possible substitute one of the natural unsaturated vegetable oils, listed above, in recipes calling for stick margarine, butter, or lard.

It is recommended that fatty acid can be esterified before mixing it with other oil. Ester of glycerol with two hydroxyl group in 1,2 position can be esterified which has beneficial effects on lipid metabolism. ■





Bakery Flakes can Extend Shelf-life of Breads

By Jane Byrne

New flake ingredients, based on an ancient variety of barley, can extend the shelf life of multi-grain breads, rolls and bagels by at least 20 per cent, claims Kampffmeyer Food Innovation.

The Hamburg-based milled grain application house said its StoneAge barley flakes consist of 95 per cent of amylopectin as well as a high content of cholesterol-lowering beta glucans and can meet the growing demand for healthier baked goods, particularly in the UK, Germany and the Eastern European market.

Introducing dietary fibre into foods is a challenging task for formulators as the ingredient can affect their sensory characteristics. However, Bettina Zeuch, product manager at Kampffmeyer, said that the supplier conducted successful trials on the inclusion of the flakes at multigrain bread manufacturers in Germany.

And the bakers produced bread and rolls

using 40 per cent of the barley flakes combined with wheat or rye, with no negative effect on taste, texture or colour in the final product, she claims. She holds that due to the light colour of the flakes as well as their mild aromatic taste, they also have product decoration applications.

Furthermore, said the product manager, the high amylopectin content of the barley ingredient enables delayed retrogradation and thus extension of shelf life for baked goods by up to 20 per cent depending on the quantity of wheat flour and flakes employed.

No modification of bakery equipment is required, said Zeuch. Due to their pricing structure, the flakes, she added, are best suited to speciality breads, cereal bars or savoury snacks with a premium positioning.

There is blossoming interest in the health benefits of barley, particularly the role of barley beta glucan in lowering blood cholesterol levels, linked to heart health problems, and its capability to balance blood glucose and insulin response after meals, as well as the association between wholegrains and increased satiety.

Indeed, back in October 2009 the European Food Safety Authority (EFSA) issued a positive scientific opinion on the relationship between beta-glucan and healthy blood cholesterol.

So long as the positive EFSA opinion on beta-glucan is approved, products containing the ingredient should be able to carry a health claim along the lines of: "3 grams per day of barley beta-glucan, as part of a diet low in saturated fat, and a healthy lifestyle, can help manage normal blood cholesterol."

And Zeuch said that Kampffmeyer will collaborate with bakers on recipes incorporating the barley flakes to ensure they satisfy the minimum beta glucan content specified in the proposed EU health claim. ■



Economic Recession a 'Cakewalk' for Some

By Jillian Scharr

Bad economy? Piece of cake!

As businesses across the United States continue to struggle in the recession and unemployment remains uncomfortably high, New York City's restaurant and bar industry grew in June, due in no small part to cupcake cafes, some analysts say.

"The restaurant job gains are stunning," said Chief Economist at Eastern Consolidated, Barbara Byrne Denham in the company's June 2010 report, adding that "One segment of the industry that seems to be adding the most outlets is cupcake cafes. This could be a fad, or not."

"People still want a cupcake," Pam Nelson, owner of the East Village's Butter Lane bakery told the Wall Street Journal. "I think it's kind of an indulgence and the price point is still low. For three dollars people can buy something for themselves instead of spending 100 bucks on a dinner and still feel like they're treating themselves."

Some trace New York City's cupcake craze back to *Sex and the City*. In the show, the characters often grabbed 'designer' cupcakes at Magnolia Bakery on Bleecker Street.

If that's true, a lot of bakeries - as well as the city's

economy - might want to thank Carrie Bradshaw and friends. Butter Lane has more than tripled its staff in the past eighteen months, plans to open a kiosk on the High Line, and will start teaching cupcake-baking classes, Nelson told the Journal.

Cupcakes' low cost makes them an easy commitment for both buyers and sellers. According to entrepreneur David Arrick, whose company Butch Bakery sells 'masculine cupcakes,' "it's small, it's finite, [customers] can commit to it," he told the Journal.

Start-up costs for cupcake vendors are much less than those for a restaurant or cafe. Butch Bakery, based in Long Island City, has grown from one to five employees since its opening last November.

They're cheap, they're popular, they're relatively easy to whip up - as far as businesses in bad economies go - but some are skeptical that New York City's cupcake craze will last.

"I don't think they'll all survive, quite honestly," Jason Bauer, CEO of New York-based national bakery chain CRUMBS, told the Journal. "As many as the mom and pop shops open, I think some of them will close in the next year or two."

Perhaps that's just the way the cupcake crumbles. ■



The Importance of Shortenings in Baked Products

By Vivekanand Ojha, Marketing Manager, Liberty Oil Mills



In the bakery, we keep hearing of the important role played by Bakery Shortening in the making of puffs, cookies, cakes & icing.

So what is Bakery Shortening?

Bakery Shortening is tailor-made solidified oil (fat). It is specially designed to suit Bakers to manufacture their products. Bakery Shortening is made from a blend of selected edible oils (oils having plasticity). The oils are neutralized, bleached, de-odorized. This process is done to remove fatty acids, impurities, colour and natural flavour of oil to make it bland in taste. Nickel dust with hydrogen gas works as a catalyst. It is pumped into the oil to solidify the fat. After that it is passed through a votator which churns, and the crystals are converted into a pasty material. Earlier the bakers used to melt vanaspati and pour it on the table & continuously rub to break the grains & make it pasty; but this was a tiresome and time consuming job.

In certain recipes, such as Puffs,





Cookies, Bar Cakes, Toppings, bakers need solidified fat which should give the desired results. It should have the following characteristics:

- 1) Smooth, Pasty, Non-Granular
- 2) Plasticity
- 3) Aeration Properties
- 4) Binder
- 5) Aroma
- 6) Better Shelf Life.

Why is it called Bakery Shortening?

As we are aware, refined flour (maida) contains more gluten in comparison to normal wheat flour. Refined flour is rich in gluten which gives best result in making of bread, rusks and sponge cakes. But it has an adverse effect on puffs and cookies. No doubt different varieties of refined flour are available.

Now take the example of puffs. The dough is rolled, folded again, re-rolled, to produce layers in it. As we are aware gluten becomes active in moisture. Bakers laminate the rolled dough with bakery shortening. Thus preventing the gluten to mix with other layers when folded. As bakery shortening reduces activeness of gluten, it is known as bakery shortening.

Characteristics of Bakery Shortening

Puffs: At first stage, while rolling, it separates the layers from binding together.

But it works as a binding agent after baking. It binds layers and prevent them from crumbling.

Cookies: In certain recipes, water is not added to knead the dough. It is bakery shortening which binds the flour & other ingredients to give it a shape and size. After baking, the cookies don't crumble.

Aeration Properties: When bakery shortening is whipped with hand or in planetary mixer, it incorporates air into it, which make the fat fluffy. When flour & other ingredients are added, they become lighter. Again this air helps cookies to be crispy. Aerated fat added along with icing sugar turns into decoration cream for cakes & center-filling in biscuits.

Aroma: We know flour, sugar, & fats are bland. When mixed together to make cookies along with shortening, and then baked, it creates an aroma.

Also, being saturated fat it gives better shelf life to end products.

The manufacturers of bakery shortening have developed the products tailor-made for bakers:

- Bakery shortening for puffs, (a) hard consistency (b) soft consistency;
- Bakery shortening for cookies;
- Aerated fats for cookies & cream;
- Margarine for puffs;
- Margarine for cookies.

In the next issue, we will talk about the importance of:

- Hard consistency fat.
- Soft consistency fat.
- Margarine in puffs.



Global Chocolate Prices Likely to Rise

The global price of chocolates is probably going to experience a huge hike after a large number of the world's cocoa beans were speculatively bought out. Prices have been driven up to their highest level since 1977 after a £658 million deal for 440,000 tonnes of cocoa was mooted.

According to the International Cocoa Organisation (ICO), almost all chocolate companies have increased prices in the past two years. "Investment banks, like Goldman Sachs, are making huge profits by gambling on the price of every day foods. But this is leaving people in the UK out of pocket and the poorest people in the world are starving," Deborah Doane, director of the World Development Movement said.

Recently, Nestle announced it would be launching a new variant of its famous Milkybar brand but with a twist it is being aimed primarily at adults. A new raisin and biscuit version of the children's favourite will be produced at York's Nestle factory. ■



Sugar Output to Touch 23 Million Tonnes

India, the largest sugar user, may produce as much as 23 million tonnes in the year starting October 1, up from an estimated 18.8 million tonnes this season, a government official said in New Delhi.

Output in Maharashtra, the nation's biggest producer, would rise to 8.6 million tonnes from 7.09 million tonnes a year earlier. Production in Uttar Pradesh, the second-largest, would total 6 million tonnes, he said. The new estimate was announced after officials from the cane-growing states met food ministry officials in New Delhi on June 29.

At present, India, the biggest sugar importer, may

stay away from the global market in the 2010-2011 season as production may reach 24 million tonnes, matching demand, Vivek Saraogi, managing director at Balrampur Chini Mills Ltd, the nation's second-biggest mill, said.

Stockpiles will jump 53 per cent in the year ending September 30, according to the Indian Sugar Mills Association. The nation would end the season with 4.9 million tonnes compared with 3.2 million tonnes a year earlier, the association said. Farmers planted cane in 4.73 million hectares as of June 25, compared with 4.52 million hectares, the farm ministry said. ■

India Under EU Pressure to Open Up Dairy Market

India is under intensive pressure to open up its market in dairy produce, especially cheese, from European nations. But India has advocated that milk and cheese should be excluded from the scope of free trade agreements under negotiations with the European Union. India fears that by opening up its markets, small farmers would be forced into deeper poverty as a result. However, EU officials stepped up their efforts to have India's agricultural markets liberalized amid complaints from anti-poverty activists that EU has shown scant concern for the plight of India's rural poor.

In India, the dairy sector assumes critical importance as it provides work and

income to landless farmers but EU cheese makers want the protection given to them dismantled. When EU-India free trade talks were launched in 2007, the European Dairy Association had said that the taxes levied by India on imported food were unrealistically high. But critics said that by lifting of such taxes Indian farmers would not be able to withstand competition.

Trade analysts say that the EU wants to include dairy within the scope of an agreement with India because of the crisis faced by the European milk farmers. According to Paul Goodison from the European Research Office, the EU is keen to get any market opening abroad in a bid to compensate for the troubles facing milk farmers at home. ■



Now a Perfect Sandwich for Every Mood

Now you can choose a perfect recipe for every thing whether you are trying to get rid of a hangover or to boost your mood. Dietician Dalhia Campbell has suggested that roasted vegetable with cheese and rocket on a wholemeal bread works best for hangovers, according to an ANI report from London. "The combination of the slow-release carbohydrates in the bread and protein and calcium in the cheese will keep your blood-sugar levels more stable, so you'll feel less tired and irritable, The Sun quoted Ms Campbell as saying. "The vegetables can help top up your potassium and sodium, reducing cravings for salty snacks," she added.

Sardines, excellent sources of omega-3 fatty acids were proven to aid concentration. Sesame seed bagel with Edam works best

for healthy bones and teeth, she said. "Bright, colourful fruit and vegetables such as beetroot are packed with antioxidants to keep your immune system fully charged," she added. If you want to avoid feeling

bloated, have a tuna sandwich. Lean beef with chilli sauce on seeded wholegrain will uplift your mood.

Avocado, roasted Mediterranean vegetables and spinach in a wrap is full whack of antioxidants -- in particular vitamin E to boost skin and health, according to Ms Dalhia. Tinned salmon in spring water with salad on oatmeal bread works best for healthy heart and for sport enthusiasts, peanut butter and banana on half-and-half bread should do the trick.

"Taken an hour before, it will help fuel your exercise, or taken within 30 minutes afterwards it will help repair your muscles." Peanut butter is high in healthy mono-and-poly-saturated fats, as well as protein, which further helps repair muscles. ■





खमीर ब्रेड रहे अधिक समय तक ताजा

खमीर ब्रेड बनाने के लिए केवल चार सामग्री की जरूरत होती होती है :-

आटा, खमीर, पानी एवं नमक। बाकी सभी सामग्री केवल स्वाद पोषण, रंग एरां क्रमब में परिवर्तन के लिए होते हैं। यहाँ पर बताया गया है कि खमीर ब्रेड की सामग्री क्या करती है :

आटा

आटा उत्पादन के लिए संरचना प्रदान करता है। आटे में ग्लूटेन या प्रोटीन मिलकर एक जाल बनाते हैं जो हवा के बुलबुले को रोकता है और सेट करता है। आटे में स्टार्च डालने से गरम करने पर ढांचे को समर्थन देता है। खमीर ब्रेड में हमें बहुत से ग्लूटेन की जरूरत होती है जिससे वह एक जाल बनाए जो कार्बन डाय ऑक्साइड और भाप को बंद करने के समय रोकता है, जो ब्रेड को एक टेक्सचर देता है। चर्बी और चीनी ग्लूटेन के निर्माण को रोकता है। आटे में साधारण चीनी उपलब्ध रहती है जो खमीर को फीड करती है, यदि आप के पास बिना चीनी के स्रोत के ब्रेड की रेसीपी उपलब्ध है तो यह ठीक है, खमीर के पास आटे में से खाने के लिए काफी है। खमीर को उठने के लिए ज्यादा समय लग सकता है।

ब्रेड का आटा एक उच्च प्रोटीन आटा है जो अधिक मात्रा बनाता है क्योंकि इसमें अधिक स्ट्रेची ग्लूटेन उपलब्ध है। ब्रेड के आटे के बनाए लोफ उठने के बाद १०-१५ मिनट के लिए आकार देने से पहले स्थयी रहते हैं जिससे ग्लूटेन थोड़ा रिलेक्स करे और **Dough** को काम करने में आसानी रहे। कई बार ब्रेड के लिए ऑल परपस आटे का



उपयोग अच्छा रहता है। साबूत अनाज के आटे में अधिक ग्लूटेन नहीं रहता है क्योंकि इसमें ब्रैन और **germ** जैसे अन्य सामग्री है जो ग्लूटेन **molecules** के बीच आ जाते हैं। साबूत अनाज को सामान्यतः ऑल परपस आटे को अच्छे क्रमब बनाने के लिए साथ में मिला दिया जाता है।

वसा

वसा ग्लूटेन अणुओं को ढक लेता है जो तैयार उत्पाद की कोमलता को बरकरार रखने के लिए आसानी से मिलाया ना जा सके। ऐसे खमीर की ब्रेड जिसमें आटे में उच्च स्तर की वसा उपलब्ध हैं वह अत्यधिक नरम होती है, बहुत उपर नहीं उठती है, ओर मुंह में वह नरम लगती है। वसा से ब्रेड में स्वाद आता है और यह बेक करते समय ब्रेड के ब्राऊन बनाता है।

चीनी

चीनी मिठापन जोड़ते हैं एवं उत्पाद को ब्राऊन करने में योगदान देता है। खमीर की ब्रेड में चीनी का मुख्य काम है खमीर को भोजन प्रदान करना। जैसे - जैसे खमीर बढ़ता है वह चीनी का उपयोग करता है जिससे कार्बन डाय ऑक्साइड तथा एलकोहॉल के बॉय प्रोडक्ट बनते हैं, जो ब्रेड को विशिष्ट स्वाद देते हैं। चीनी ब्रेड को नरम रखती है। वह तैयार उत्पादन में नमी को बरकरार रखती है।

अंडा

अंडा एक उठाने वाला एंजेंट है और योक (**yolks**) ब्रेड को नरम और हल्का बनाने के लिए वसा जोड़ता है। थोक तैयार उत्पादन में



चिकनाहट और सामान बनावट प्रदान करता है। जब बहुत सारे अंडों को प्रयोग किया जाता है तो वे तैयाद उत्पाद को स्नाद प्रदान करते हैं।

तरल पदार्थ

तरल पदार्थ उत्पाद के भीतर स्वाद ले जाने का कार्य करता है, ग्लूटेन बॉंड बनाता है और प्राटीन में स्टार्च के मजबूत किन्तु हल्के ढांचे (बनावट) के लिए साथ मिलता है। तरल पदार्थ बेकिंग के दौरान भाप का काम करता है और उत्पाद को नमी प्रदान करने में सहायक होता है। खमीर को बढ़ने के लिए, पानी की जरूरत होती है जिसके कारण वह ब्रेड को फूलने में सहयोग प्रदान करता है।

नमक

नमक ग्लूटेन को मजबूत बनाता है, उसमें स्वाद जोड़ता है। यह स्वाद को बढ़ाता है। खमीर की ब्रेड में नमक खमीर के असर को सामान्य रखता है जिससे ब्रेड जल्दी से फूलने ना पाये।

खमीर

खमीर एक कोशिश वाला पौधा है। जो केक में सूखे रूप में तुरंत मिलाने के काम आता है। खमीर की ब्रेड में वह चीनी और पानी की मदद से बढ़ता रहता है और



कार्बन डाय ऑक्साईड और **enthyle alcohol** को बाहर छोड़ता है। जब तक हवा उपलब्ध है खमीर बढ़ता रहता है। ब्रेड की रेसपी में जब ब्रेड दूसरी बार उपर उठती है तो आपको उसे "पंच मार कर नीचे करने को कहा जाता है" इससे खमीर के सेल छोटे क्लस्टर या **colonies** में बंट जाते हैं जिससे वे अधिक हवा और खाने के संपर्क में आ सकें इसलिए दूसरी बार वह पहली बार से कम उठता है। केक को खमीर बहुत जल्दी खराब हो जाता है, इसलिए मैं उसे खरीदने के लिए एक दिन के भीतर ही उपयोग कर लेती हूँ। आप केक के खमीर को फ्रिज कर सकते हैं। मेरी दूसरी पसंद है सूखा खमीर, जो मेरे हिसाब से **instant rise** से बेहतर है। **instant rise** खमीर जेनितिकली संशोधित और उसके अपने खाने के साथ पैक किया हुआ है क्योंकि वह **rehydrate** करता है और पानी के साथ मिलाने पर तुरंत एक्टिव हो जाता है।

इस प्रकार का खमीर बहुत सुविधाजनक रहता है, किन्तु तुरंत बढ़ने के कारण फरमेंटेशन प्रक्रिया के दौरान बहुत स्वाद विकसित नहीं हो पाता है।

खट्टे इव की ब्रेड खमीर और बैक्टेरिया स्टार्टर पर निर्भर करते हैं, जिससे विशेष खट्टा स्वाद प्रदान किया जा सके। बैक्टेरिया ब्रेड के मिश्रण के **PH** को कम करता है जो स्वाद बढ़ाता है। चूंकि ब्रेड (**PH** कम के कारण) अधिक अम्लीय है, यह सामान्य ब्रेड से अधिक समय तक रहती है। आप अपनी रसोई में खमीर डाले बिना स्टार्टर बना सकते हैं यदि आप खमीर की ब्रेड की बहुत बेकिंग अधिक समय तक रहती है। आप अपनी रसोई में खमीर डाले बिना स्टार्टर बना सकते हैं यदि आप खमीर की ब्रेड की बहुत बेकिंग करते हैं तो, क्योंकि खमीर कोशिकाएं (**cells**) आपकी रसोई में मौजूद हैं। यदि आप पहली बार खमीर का उपयोग कर रहे हैं तो फिर भी अपने स्टार्टर में खमीर का प्रयोग करें। ■



दुध उत्पादों में हानिकारक तत्व

ऐसा लगता है की हमेशा आपत्तीजनक सामग्री और हानिकारक पदार्थों से बचने की बात करते हैं। आपकी दुनिया अब पहले से अधिक रसायनिक तौर पर **Infused** है। हम खाद्य पदार्थों में कृत्रिम सामग्री और पर्यावरण के उत्पादनों में **additives** के साथ डिल करते हैं। इन उत्पादनों में कई शैम्पू, माइशचराइजर, त्वचा के जैल, वैक्स, हेयर जैल, शेविंग क्रिम, और साबुन और कुछ कॉस्मेटिक शामिल हैं। इन उत्पादनों में प्रयुक्त कुछ रसायन **diethanolamine**, **Propylene**, **glycol** और सोडियम सल्फेट **/laury** हैं जिन्हें एंटी फ्रीज और गैरेज के फर्श को रगड़ने के लिए इंजन के **degreasers** को **degrease** करने के लिए प्रयोग किया जाता है।

बहुत से विभिन्न प्रकार के हानिकारक रसायन हैं जैसे **Carcinogens**, **Volatile Organic Compounds** And **Phosphates**। किसी भी एक प्रकार के रसायन से विभिन्न प्रकार के रसायन से विभिन्न प्रकार के बिमारियों या स्वास्थ्य का नुकसान हो सकता है।

किन्ही रसायनों के बारे में जानना चाहिए -

Carcinogens घर के क्लिनसर और सफाई के उत्पादनों में पाया जाता है। **Carcinogens** का उदाहरण **benzene**, **formaldehyde**, **nitrilotriacetic acid** और कार्बन टेट्रा क्लोराइड है। खाद्य पदार्थों में **Carcinogens** के लिए अनुसंधान किया जाता रहा है। सिगरेट धूम्रपान में भी **Carcinogen** है और कई तो दुसरे हाथ के धूम्रपान से भी चिंतित है। फॉस्फेट डिटर्जेंट में पाया जाता है। और यदि उसका अनुचित तरीके से निपटारा किया जाए तो उनके नालों में या पानी में मिल जाने से पानी में संक्रमण हो सकता है। इसका उदाहरण सोडियम **Tripolyphosphate** है। यह ना केवल पानी को प्रभावित करता है बल्कि समुद्र में मछलियों, कोरल, रिफ एवं अन्य जलीय प्राणियों पर भी असर पड़ता है।



volatile organic compound हमारे स्वास्थ्य और ओजोन परत के लिए खतरा बढ़ा रहा है। इसका उदाहरण **methane**, **trichloroethylene** and **Chloroform** यह सभी ओजोन परत को नष्ट करने में सहायक हैं। उदाहरण के लिए मीथेन एक ग्रीन हाऊस गैस है जो ग्लोबल वार्मिंग से जुड़ा है।

ऐरोसोल्स हेयर स्प्रे एवं बाल के उत्पादनों में पाया जाता है। ऐरोसोल्स रसायन सांस लेने के लिए आसान है क्योंकि वह सांस लेने वाली हवा के साथ मिल जाता है। यह तो कुछ ही रसायनों का उदाहरण दिया गया है जो हम अपने दैनिक उत्पादनों में प्रयोग करते हैं। यह ना केवल आप को और पर्यावरण के लिए सौम्य और ध्यान रखने के लिए चेतावनी का काम करता है।

हमें अपने क्लिनसर में प्रयुक्त सामग्री से परिचित होना चाहिए, जो खाना हम खाते हैं और जो घरेलू उत्पादन हम प्रयोग करते हैं। यह बेहत है कि आप प्रयोग की जाने वाली सामग्री के जोखिम और परिणाम के बारे में जान लें। हमें दिमाग में रखें कि आधुनिकता एक कुंजी है, किसी भी चीज की अधिकता नुकसान दायक होती है। अंत में यह जानना जरूरी है कि अपने कचरे का निपटारा कैसे करें क्योंकि यह भी महत्वपूर्ण है। ■



बेकरी स्थापित करने के लिए

भोनाली आडवाणी द्वारा

भारत में बेकरीयां आंतरराष्ट्रीय स्तर तक पहुंच चुकी हैं और अब वे केवल ५ सितारा होटल तक ही सीमित नहीं है। दोहरी आय वाले परिवारों के बढ़ने से वहाँ स्वतंत्र बेकरी और बेकरी के कैफे शहर में शोरूम की तरह हो गए हैं और बेकरी तो अगर आप इस में लुप्त रहना चाहते हैं तो पढ़ते रहें.....

स्थान

जैसा कि ज्यादातर खुदरे दुकानों, के मामले में होता है उन्हें बहुत ही महत्वपूर्ण और स्पष्ट रूप से दिखाई देने वाला हो। ऐसी जगह पर बेकरी शुरू करना जहाँ एक आवासीय क्षेत्र में मुख्य रूप से दोहरी आय वाले परिवार रहते हैं या अत्यधिक वाणिज्यिक क्षेत्रों में जहां आपको अच्छे ग्राहक मिलेंगे। किसी भी स्ट्रीट पर बेकरी खोलने पर

यह सुनिश्चित करें कि वहाँ सुविधाजनक पार्किंग का स्थान उपलब्ध है।

माहौल

आपकी बेकरी आरामदायक और सुखद हो, एक स्टोर रूम की तरह दिखने वाले कमरों में प्यारे केक को पेश करने का कोई मतलब नहीं है। थोड़ी बैठने के व्यवस्था करें, जिससे आपको अपने ग्राहकों के लिए एक आरामदायक बेकरी हो सकती है जिसमें वे लिप्त रह सकते हैं।

उत्पादों का अच्छा मिश्रण

किसी भी बेकरी में मीठा और नमकीन सामग्री का एक मिश्रण होना





चाहिए। हालांकि, यह महत्वपूर्ण है कि अपनी ताकत को पहचान ले और उस पर ध्यान केंद्रित करें उदाहरण के तौर पर यदि आप की केक और डेसर्ट में अच्छी पकड़ है तो यह सुनिश्चित करें कि आप कम से कम ७० प्रतिशत सामग्री इस क्षेत्र में बना रहे हैं।

यदि आप को ऐसी बेकरी की स्थापना करनी है जो किसी ब्रेड में विशेषज्ञ हो तो इसी नियम का पालन करें। आपके मेनू में ला आइटम होना एक अच्छा विचार है। पर याद रहे कि सबसे अधिक पसंद किए जाने वाले आइटमों (जैसे ब्लैक फॉस्टेंट, बटर, स्काच, पाइनएपल केक को छोड़ ना दिया जाए)

इसके अतिरिक्त स्वास्थ्य के प्रति सजग उपभोक्ताओं की ओर भी पूरा ध्यान देने का प्रयास किया जाए। कुछ हेल्थ ब्रेड और अंडे रहित/चीनी रहित केक और डेसर्ट की व्यवस्था करें। संक्षेप में, यह सुनिश्चित करें कि आप एक अच्छा मिश्रण उपलब्ध करवा रहे हैं।

बैकएंड उपकरण

शुरुआत में, आप के पास एक केंद्रीकृत रसोईघर होगा क्योंकि प्रत्येक आउटलेट के लिए एक रसोई आप के बजट से बाहर होगी। किसी भी रूप में, आप को नीचे दी गई सामग्री की आवश्यकता होगी।

- एक स्पाइरल मिक्सर
- मोल्डर
- प्रोवर
- रोटरी ओवन (ब्रेड के लिए)
- डेक ओवन ((ब्रेड के लिए)
- फ्रिज
- सीलिंग मशीन (यदि आप ब्रेड और कुकीज जैसे सीलबंद आइटम बेचना चाहते हैं)
- ठंडा करने वाली ट्रॉली
- प्लेनेटरी मिक्सर (केक के लिए)
- केक बोर्ड
- बेक करने वाली समूची (spatuals, पाइपिंग किट, कटर)

प्रशिक्षित कर्मचारियों को रखना

याद रहे कि आप १००३ मशीन से निर्माण उत्पादनों को ही नहीं बेच रह हैं। इसलिए एक अनुभवी स्टाफ की आवश्यकता है।

आपको एक मुख्य बेकर, जिसे बेकरी उद्योग में अनुभव है, जो इसी के साथ अपने अन्य कर्मचारियों को भी प्रशिक्षित कर सकता है। होटल प्रबंधन स्कूल और बेकिंग / केटरिंग इंस्टीट्यूट अच्छी संस्था है जहाँ से आप नये लोगों को ले सकते हैं और उन्हें अपनी आवश्यकता के अनुसार प्रशिक्षित करवा सकते हैं। शुरुआत में छह से दस लोग पर्याप्त होंगे।

आपको लाइसेंस की आवश्यकता होगी।

- खाद्य अपमिश्रण की रोकथाम के लिए
- फैक्टरी लाइसेंस
- वजन एवं नाप लाइसेंस
- लघु उद्योग लाइसेंस
- पैकिंग लाइसेंस (ब्रेड ओर कुकीज जैसे पैकड उत्पादनों के लिए)

अपनी बेकरी को प्रमोट करें-

गुण से बोले शब्दों द्वारा ही आपकी सफलता की सबसे अच्छी भात है। इसका अर्थ है कि आपको अपनी बेकरी में लगातार गुणवत्ता सुनिश्चित करनी होगी।

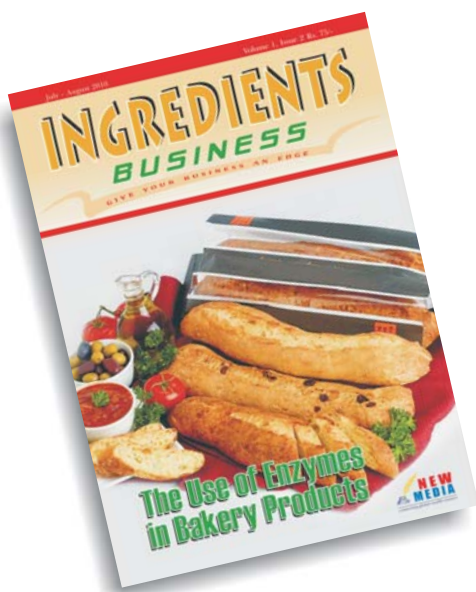
अपनी बेकरी के खुलने के दिन, अपने ग्राहकों को अपनी ओर खींचने के लिए उन्हें मुफ्त और छूट देना एक अच्छा तरीका है। ■



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