



Soy protein welcomed

The future cannot be appreciated without reflecting on the past. The processed meat industry mirrors an image of evolution, with changes taking place at increasingly faster speed. Although it might be hard to believe, for many years the US dominated franchised fast food industry implemented dogmatic standards of American origin menu board foods in their international markets, totally ignoring the needs for value-priced yet healthy and tasty nutrition.

By Henk Hoogenkamp



The Sebze Burger was introduced in Turkey in 2002 as a promotional food. It will be re-introduced between June – August 2005.

Looking back, 1993 probably will go down in history as the year where for the first time ever McDonald's became interested in considering a menu food, based on a combination of meat and soy. In spite of major opposition from McDonald's corporate offices in Oakbrook Illinois, who categorically refused to discuss the use of soy protein in formulated meat and poultry, it was a flamboyant and highly visible CEO of McDonald's Philippines who stood up against an avalanche inward thinking professionals from the corporate ivory towers and went ahead in putting together a unique team of talented people to develop the first formulated beef-soy patty in the company's history.

St. Louis Missouri-head quartered soy protein company Protein Technologies International (now Solae, a DuPont-Bunge venture) together with GenOSI Philippines and McDonald's Philippines fast tracked a beef-soy integrated burger to address rapidly changing market environments including socio-economic dimensions.

Code named "Pinoy", the formulated patty was first rolled out in April 1994 and was introduced as "Burger McDo".



The Brezilya Burger (Brazilian Burger) was introduced as a promotional food during the World Championship Football competition in Turkey.

In McDonald's 50 year history the introduction of the Burger McDo was the first time that a local franchise had overruled the very strict corporate guidelines. Obviously executives at corporate level were not happy with the development. Probably their only hope was that the new menu board offerings would fail, teaching a valuable lessons to all other franchisees. How wrong they were! From the start, the Burger McDo was a major hit with a local population longing for ethnically flavoured preferences at affordable prices. Within weeks of introduction, the beef-soy formulated patty outsold the regular pure beef patties 10:1, a number that has grown ever since. In 1998 the

onto the menu boards



The Japanese Chicken Tatsuha contains rice wine, hydrolysed soy protein and ginger.



The formed Longganisa sausage is served with cooked rice and a fried egg. This was the first McDonald's breakfast food to be developed outside the US.

Burger McDo became a core menu board food on its own right, demonstrating that dogmatic pure beef standards were not the drivers for success.

George Yang, the keen business entrepreneur who owned the McDonald's franchise in the Philippines deserves the kudos for standing up for his strong belief that McDonald's Corporation can only prosper long-term if it relaxes its often dogmatically managed American fast food specifications and empowers international markets with the freedom to create formulated meat and poultry burgers and patties based on differing ethnic and socio-economic preferences.

Patented technology

Solae's soy protein philosophy combining health, value and superior taste, allowed McDonald's exclusive supplier GenOSI to use a range of innovative methods for forming Supro proteins into intermediate products with unique textural and flavouring characteristics. The patented and proprietary structuring technologies demonstrated commitment and providing leading-edge development

to help McDonald's maintain their competitive edge. The patented technology was made available free of charge.

Solae's commitment didn't stop there. To facilitate the actual production of intermediate structured soy granules, Solae provided GenOSI for a symbolic leasing fee of USD 1 per year a state-of-the-art bowl chopper. The bowl cutter is still being used today as an essential piece of hardware to keep up with the production of millions and millions of meat-soy formulated menu board foods.

The strong repeat sales of the Burger McDo didn't stay unnoticed for long. From 1996 onwards a steady flow of innovative meat-soy formulated menu foods were introduced: Sausage Longganisa, Pork Breakfast Patty, Pork McRib, McFish nuggets and McChicken Poppers, toppings for Spaghetti meat sauce, are just a few.

Environmental evolution

Increasingly, soy protein is associated with health benefits and cost advantages. Soy protein suppliers have been fighting an uphill battle for many years to con-

vince the franchised fast food companies that these premium protein ingredients should become mainstream choices. Even though McDonald's and its primary suppliers do evaluate product and process improvements through supplier councils, for some mysterious reason, the mostly US dominated councils have for years had an adverse reaction to include functional proteins in formulated products. This position can be considered rather strange since the same franchised fast food industry had no objection to including fillers like modified food starch and phosphate to reduce costs in menu foods like chicken patties.

In principle there is nothing wrong by "exporting" American-origin food and meat standards. However, to insist on 100% pure beef standards for parts of the world with less disposable income and/or different taste preferences, can be viewed as a form of ideological indoctrination. It therefore is difficult to comprehend why huge amounts of dollars are spend to promote "100% pure beef patties", while in fact the product purity is seemingly not relevant for pork and or

Countries where McDonald's has adopted soy protein formulated foods on its menu board

Philippines

Burger McDo
Longganisa Meal
Egg McMuffin Meal (in ham)
Sausage McMuffin
McSpaghetti Meal (in hot dog)
Chicken McPoppers
McFish Nuggets
McRib

Japan

Chicken Tatsuta
Pork Teriyaki

Thailand

Malaysia

Singapore

Indonesia

Prosperity Beef Burger
Prosperity Chicken Burger

Canada

Veggie Burger

USA

India

McChicken Burger
McGrill Chicken Burger (Happy Meal)

Hungary

McWestern Burger
McFu Burger
McCountry Burger

Turkey

Kofte Burger
Sebze Burger

Netherlands

McKroket
Groenteburger

Above menu-board foods are either regular or promotional. These formulations contain either (hydrolyzed) soy protein and/or combinations of functional soy protein and textured soy protein.

poultry formulated menu board foods. What makes beef so special?

Fortunately, McDonald's realised in time that despite their enormous market domination, they were too small to stop the evolution of allowing value-priced yet healthy food choices onto their menu-board. Subsequently, in the last few years many soy protein formulated meat and poultry products have been added to the selection options, if only as promotional foods, but nearly always very well received by consumers. The 1994 launch in the Philippines paved the road for many foods to follow. About 10 years later, meat-soy formulated foods are available throughout the McDonald's franchise in countries such as Japan, China, Indonesia, Korea, South Africa, Bulgaria, Turkey, Czech Republic, Hungary, India and yes, now also in Canada and the USA. Soy protein really has arrived as an ingredient of strategic importance.

Realistically speaking, fast food, not ingredients and home scratch cooking, are the future for most societies in the 21st century. McDonald's, Burger King and Pizza Hut deserve lots of kudos for making fast food available for millions of day-to-day food choices. However, the franchised fast food industry was very slow to anticipate environmental changes in some international markets, especially in developing countries that require different approaches when food is concerned. Instead of addressing the old saga "soy is a cheap filler", the quick service restaurant companies should have focused on capitalising on the evolutionary trend of huge demand for healthy food choices in the US and other well-off countries, as well as an enormous need for affordable and tasty foods in many emerging and developing countries. In most of these countries the Golden Arches has become an icon, yet it is a pity that because of dogmatic

insistence of core menu-board foods, only the upper-class could afford to actually experience the pleasure of eating out in the American themed restaurant.

Soy choices

Although soy protein isolate and its structuring intermediate granules are still the base of many meat-soy formulated burgers and patties, in recent years textured soy protein has now been included in some formulations. Exclusive suppliers now have the flexibility to modify the flavour and colour of the products to form a range of truly customised foods that meet specific performance requirements. This flexibility, along with a clean flavour, allow these formulated products to achieve price points that are in excess of 30% cheaper when compared to an all-meat alternative. In terms of technological parameters, the inclusion level of soy protein depends on yield considerations and organoleptical preferences. To optimise variables such as juiciness, usually a small inclusion of 1-2% will suffice. The same is true when variables such as product characteristics like shrink, texture, and shelf-life need to be modified. There are currently foods on the menu-board that have a meat inclusion level of less than 50%. Obviously, these meat-soy formulated foods contain an integrated balance of soy protein ingredients of various forms including textured protein.

The use of premium functional soy protein ingredients in formulated meat-soy burgers not only has health and organoleptical advantages, but also proven benefits such as significantly improving water retention, less directional shrink, and markedly longer end-product shelf life during storage because of the anti-oxidative properties of the isoflavones present. The anti-oxidative properties of soy protein isolates may act as free radical scavengers by reacting with unpaired electrons from lipid molecules or oxygen species, or as chelators by complexing with ions such as iron. Because of these properties even a small inclusion level of soy protein can significantly delay forma-

Nutritional guide to popular McDonald's products available in Holland containing soy protein.

	Allergie-informatie	Gewicht	Kilo-Joules	Kcal.	Eiwit	Vet
Hamburger		103 gram	1092	260	13,2	9,1
Cheeseburger		117 gram	1286	306	15,9	13,1
Quarter Pounder met kaas		205 gram	2180	521	31,7	27,1
Big Mac		211 gram	2147	513	26,6	26,1
McDeluxe		233 gram	2123	508	29,1	28,1
Fish'Fillet		145 gram	1431	341	14,5	15,1
McRib		193 gram	1897	453	26,2	21,1
McKroket		159 gram	1744	417	12,8	17,1
Groenteburger		202 gram	1880	449	9,9	22,1
McChicken		185 gram	1713	409	18,1	20,1
McNuggetsKip (6 stuks)		109 gram	933	223	16,8	12,1

tion of volatile compounds during meat flavour deterioration.

Environmentally speaking, when soy replaces expensive lean meat, it not only drastically reduces formulation costs and improves yield and performance on the flat grill or when pre-cooked; the soy inclusion is also less damaging for the world's infra-structure by increasing product output while reducing the need for clean fresh water that often is associated with ever-increasing meat production.

MyPyramid.com

The global recognition of soy's health benefits is clearly on the rise and the US Food Administration has said that soy can reduce the risk of heart disease when included in a modified diet with low amounts of saturated fat and cholesterol. A variety of studies completed in 2004 also suggested soy may help to reduce the incidences of both prostate and breast cancer as well stall or slow down the development of type 2 diabetes. Currently a soy petition covering a meta-analysis study regarding soy's positive influence in the occurrence of colon cancer is awaiting ruling and subsequent publication in de Code of Federal Regulation.

Soy protein-containing foods, beverages and meat products can help people meet many of the recommendations included in the new MyPyramid Food Guidance System unveiled by the US Department of Agriculture (USDA). Designed to help challenge the growing obesity epidemic as well as selecting nutritive-balanced foods, MyPyramid

(www.mypyramid.org) replaces the former Pyramid introduced in 1992 and incorporates recommendations from the 2005 Dietary Guidelines. Among other things, MyPyramid advocates a diet that is low in saturated fats, trans fats and cholesterol and provides lean sources of protein, along with vegetables and whole grains. Meat-soy formulated foods can help people in all parts in the world design a daily diet that meets these goals.

Bearing all these arguments in mind, one can only wonder why the number one franchised fast food company showed so little interest and refused approval for so many years. Was it sheer ignorance or arrogance of the good-old-boys network between executives of exclusive suppliers and corporate offices who decided that suppliers of functional protein ingredients had no role to play?

From negative to positive awareness

In the last 10 years companies like McDonald's have been constantly on the front pages and evening news in which unrelenting negative press reports have blamed the company for promoting greasy and unhealthy foods, leading to obesity levels of almost epidemic proportion. After years of fighting the avalanche of negative publicity, franchised fast food companies are now responding and take a more pro-active role in addressing the need for variables such as health and affordable nutrition. Although difficult to accomplish, these two variables can be teamed up into a great tasting sand-

wich. For the last few years McDonald's worldwide menu management has undergone major strategic changes and although the core menu will remain in place, diversity and food selections based on the regional economic and organoleptical preferences are now allowed. Unlike the past, foods such as flavoured burgers and patties, including choices at lower prices, will be available throughout the country or region specific system. The same is true for meat-soy formulated foods and other types of wellness foods such as soymilk that promote healthier lifestyles.

Franchised fast food companies are now balancing customer obesity levels or perceptions against the intrinsic food components such as the presence of (hidden) fat and the competitive challenges in the battle to draw customers into the restaurant and at the same time provide customer satisfaction by making their favourite foods available at affordable prices. For example, only a few months ago McDonald's introduced throughout most of the Asian region a range of "Prosperity Burgers", delivering preferred flavour expectations as well as price value. These Prosperity Burgers are ideally suitable for the meat-soy concept based on all three major muscle foods: beef, pork or chicken.

The partnership between The Solae Company and McDonald's Philippines was a momentous event. After years fruitless attempts, the soy industry had finally scored a touch down. Today, McDonald's Philippines and many other countries boast quite a number of meat-soy formulated menu foods, and very often these great tasting and value-priced patties and burgers outsell the traditional core menu items. While the underlying soy protein application philosophy is the same, the country specific formulas are totally different. Over the past few years textured soy protein have been increasingly used to extend the lean meat portion. A word of caution is needed here, because when textured soy protein enters the equation there is a risk of increasing



The Hungarian McFu Burger is a formed pork patty containing 2% soy protein isolate and paprika.

level of addition which ultimately might have detrimental effect of organoleptical quality. Key to international development is having a solid but flexible infrastructure in place to meet demand without sacrificing any of the quality that is part of the brand. This variable is something McDonald still has to manage more carefully. Yet the flexibility of the brand should always be such that modification be allowed and not hindered by people who have little idea about regional conditions and preferences.

As with many other leading entrepreneurial companies with a few pure innovators on their payroll, the emerging use of soy protein in formulated menu board foods didn't stay unnoticed long by other suppliers of functional ingredients. The initial strong leadership and technological advantages of The Solae Company has waned and competing companies have been successful in carving into this rapidly growing market segment.

In addition to the introduction of integrated meat-soy formulated foods, franchised fast food companies now agree that one of the most prevalent trends is the increasing need to make value-priced yet great tasting menu-board foods available. This trend is fuelled mainly by the lingering preference for regional or even local food preferences, which consumers have grown accustomed to over many generations. Hopefully the dialogue between the franchised fast food companies and manufacturers of functional premium soy protein ingredients will continue on a more balanced and harmonised platform so that emerging global issues such as demographics, health, longevity and renewable resources become closely intertwined with customer's attitude, preferences and perceptions, effectively creating an upside for all parties concerned. **MI**