

AT the various cycles of life, people have different needs and requirements for food, not only as distinct nutritional and dietary needs, but also to reflect group or individual health status, environment and social prestige.

These consumers want to feel that they are engaging in healthy practices through consumption and in a way disassociate from other groups. Therefore, foods and beverages targeting this market must emphasise highly scientific benefits, rather than adopting 'suitable-for-all' ethos and mainly serve as a building block in leading a healthier lifestyle.

The nutritional paradigms will require a different dimension and change away from calories towards, for example, healthy brain growth to optimise mental health (ie: Omega 3 and 6) or cranberry support of urinary health for women (proanthocyanidins).

DEMAND CHALLENGES

Healthcare is an important issue in growing populations. For example, Asia is the largest and fastest growing market for both baby food and geriatric foods. Aging population around the world present an extra challenge for segmented lifestyle foods to address distinct dietary needs of people with serious health conditions, like diabetes T2, cancer, lung disease and kidney disease.

These challenges will be formidable if one considers that by 2050, the number of people above 60 years or older will triple to two billion. Two thirds of this population will reside in Asia. While there will be added pressure on healthcare costs, there also will be increasing



Part 1: Changing Paradigms from Soy to Rice

Lifestyle foods can be defined by coupling available, affordable and tasty foods during the lifespan of people to enhance nutrition, general wellbeing and promote optimal health. By **Henk Hoogenkamp**

emphasis on lifestyle health, wellness and proper nutrition.

MEAT FREE

There is no question diets are evolving and growing number of consumers are actively looking to replace some meat in their diets, as a pro-active option to both increase health and wellness as well as giving environmental

satisfaction to 'help the planet'.

The obstacles of the past, like less palatable and wooden-tasting meat analogue foods, is rapidly fading now that extrusion technology has been introduced to convert a blend of vegetable protein sources enhanced with stabilised rice bran into tasty foods that truly simulate meat-eating experience without the



Luis Rack, Buenos Aires, Argentina / Jim Waldron, US

guild. After all, consumers are still not willing to sacrifice taste for health or ease-of-preparation.

New technologies will become available to further improve the optimisation of extruded protein fibre analogues, and its many possible blends with muscle foods. Shelf life while preserving its nutrients, taste and texture will see further refinement on how food is processed and preserved.

Soy protein prices will remain a relatively cheap source of protein, although even cheaper functional alternatives, especially stabilised rice bran, will continue to take away market volume in processed meats.

This is especially true for microwave sterilisation technology, which immerses cans and pouches packed with food in pressured hot water. This is done while simultaneously heating it with microwaves of 915 MHz, a frequency that penetrates more deeply than conventional home microwave ovens. Total

thermalisation time is generally less than 10 minutes.

SOY DERAILED

Although the soy protein industry portrays an image of ecologically green messaging and sustainable harvest at cheaper price points than animal proteins, they do not have a solid

track record of reinventing and reimagining themselves.

Underestimating the intelligence and creativity of Chinese expertise of reverse engineering, upstart soy companies came from left field and have in less than decennia wiped out major soy protein markets that were dominated by US companies.

For example, in 2010 Chinese soy protein companies have captured major markets: Russia, Ukraine, South Africa, East Europe and Asia. The catastrophe would have been complete, if the US soy protein industry was not saved by the Chinese melamine scandal in 2008.

Prior to the Chinese competition for functional soy protein ingredients, the US driven soy protein industry have been good at rebounding after recessions, and if one tries to understand the future by looking at the past, a rebound is not what will be expected anytime soon. For the time being, the soy protein industry will continue in a negative feedback loop in which overcapacity as well as relative reduced demand, hinder a return

to a positive feedback loop.

Soy protein prices will remain a relatively cheap source of protein, although even cheaper functional alternatives, especially stabilised rice bran, will continue to take away market volume in processed meats. A double strike against the soy protein industry, who now increasingly is confronted with issues such as optimizing yield against plant capacity, a continuation of depressed PTOI's (Pretax Operating Income), and as such lower returns for share and stakeholders.

Processed meat applications are still considered the cornerstone for the soy protein industry. Whatever way the cake is sliced, the processed meat industry still consumes some 70 percent of all functional soy protein manufactured worldwide.

Due to the avalanche of Chinese origin soy protein isolate



and soy protein concentrate, soon to be followed by the lucrative soy crisps market for health bars, the ingredient has commoditised in recent years putting great stress on innovation and profitability. The emergence of functional fibres will make the outlook even darker.

EMERGENCE OF WHOLE GRAIN FIBRES

The World Health Organization (WHO) has estimated that there will be more than 1.5 billion overweight people by 2015. It is clear that science needs to

to fight modern degenerative diseases. Without intuition, intelligence and creativity, research & development probably will not deliver success stories. Intelligence and creativity is the ability to look at issues and problems in a different manner, although people often observe mostly what they are looking for.

Having said that, it sometimes pays off to get lost. Getting lost forces creativity in finding new routes. This phenomenon can often be seen when introducing new technologies, including new functional ingredients to

food formulations.

FIBRE IMPORTANCE

Food fibres deliver both water management and texture in variable degrees of functional properties. Fibres generally reduce caloric value, while it may provide dietary support in terms of pre and/or probiotic performance, as well as regulate transition time in the dietary tract and colon. Fibres have specific technological and organoleptical characteristics that can deliver both advantages as well as disadvantages.

The individual properties in processed food and meat products vary widely. For example, it is known that, at increased level of usage, soy fibre generally dries out coarse ground meat products, significantly reducing consumer preferences for adequate moisture release.

Generally speaking, when stabilised rice bran is part of a coarse ground meat formulae, cooking times are reduced as thermal conduction is improved. Typically, in terms of water retention, rice bran is broadly similar to other fibres, when calculated on its fibre content.



develop a better understanding of the psychology of appetite in overweight people to optimise food R&D.

The collective food industry need to step up and put less fat, salt and sugar in foods. Not just to tweak it around the edges, but entirely rethink the product concepts. Part of this rethinking is the need to crack down on misleading labelling.

GET CREATIVE

Fibres of various plant species will be increasingly used to formulate foods that are better suited

modify food formulations. Despite ongoing progress in the understanding of food and meat science, lots of development projects are still based on empirical trial and error.

It is not easy to gospel the technological and health benefits of ingredient like stabilised rice bran that only first in 2008 became available as a formulation option. That is exactly the case for the successful introduction of stabilised rice bran. An ageless all-natural food, rediscovered for its properties as a binder and stabilising ingredient for modern

ALL NATURALE

However, rice bran is more than just fibre alone. Of all mentioned varieties, only rice bran contains a harmonised all-natural composition of synbiotic fibre, a complete protein profile and trans-fat free healthy oil, and, not to mention, a wide range of phyto micronutrients such as antioxidants and gamma oryzanol.

Clean-label and low sodium trends are here to stay, at least for now, and will spur growth for healthier ingredient innovations. The number of food and beverages marketed on a whole grain platform will further dominate

new product launches.

Scientific data show that a diet rich in whole grain has beneficial effects on bioavailability, such as for heart health in general, and cholesterol in particular. For example, recombining 89 percent white rice flour and 11 percent stabilised rice bran will recreate original whole grain properties. Bringing back the rice bran and germ safeguards the presence of dietary fibre and other bioactive components.

Although food marketing companies often portray a different picture, only a minority of consumers are interested in fibre enhanced products with digestive claims. It is a fact that US consumers are not getting enough fibre in their diets.

Partly, modern consumers are increasingly removed from the regular and natural food chain, partly ignorance, and partly because many people have negative perception about the taste of fibre. Taste often deters consumers from eating fibre-added foods that have numerous health benefits.

All these reasons combined are troubling, given the numerous studies that have linked lack of fibre to various cancers, heart disease, diabetes T2, as well as bowel irregularity problems. Men especially associate fibre with stool irregularity, and so, are ignorant about other health benefits. To sum it up, fibre remains a considerable obstacle for marketers to overcome and to further dispel negative impressions educational initiatives as well as better tasting foods need to become part of the solution.

DEFINING THE GRAIN

It is important to agree on a definition for whole grain in order to avoid confusion for consumers.

An acceptable definition could be used by the industry, by governmental bodies such as the FDA and EFSA, as well as food inspection agencies and nutritional guidelines including communications to consumers.

As a possible definition could serve:

- Whole grains consist of intact, ground, cracked or flaked kernel after the removal of inedible parts such as the hull and husk. The principal anatomical components – the starchy endosperm, germ and bran – are present in the same



relative proportions, as they exist in the intact kernel.

- Temporary separation of the whole grain constituents during processing for later recombination is acceptable.

As food and meat processors in world markets continue to look for ways to improve product development and cost-efficiency, new functional solutions are increasingly based on combinations of fibre, protein and stabilised healthy oils.

Such an ingredient is now

available – natural rice bran – which is recommended for a plethora of further processed meat products such as ground meat and kebab, coated chicken foods, dry fermented sausage and time-tested emulsified sausage.

This ingredient has proven functionality as a medium to stabilise moisture, increase cooking yield, reduce cooking time, and provide substantial cost savings when added at low inclusion levels to standard formulated meat products. The major food applications of rice bran are fibre-enriched breakfast cereals, crackers, nutri-bars and fibre-beverages.

Stabilised rice bran allows a green and clean product label. Depending on the country-specific regulatory framework, the ingredient can usually be labelled as (dietary) rice fibre, rice bran extract or rice extract isolate. Since it also contains trans-fat free healthy oil and hypoallergenic protein, alternative label identification can be contemplated, including the much sought-after replacement of allergen-promoting ingredients, such as soy protein.

In non-English languages, there are a great many label identifications of rice bran depicting its environmentally sound origin. Therefore, stabilised rice bran can be seen as a novel ingredient that may provide benefits for product quality, performance, food safety, cost reduction and wellness.

As such, rice bran can be part of an innovation strategy geared toward meeting latest consumer needs and market opportunities including needs for novel bioactive compounds that are naturally present. **APFI**

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