Editorial

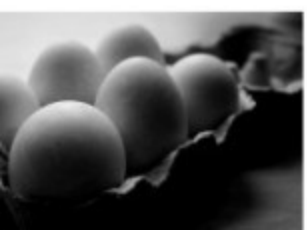
Pen-drives are quite useful nowadays to carry a presentation or some of the files one wants to discuss in a meeting. However, when one buys this it comes packed in rigid plastic mould which itself is packed in a cardboard box of attractive colour and design. For a tiny thing of about hardly 2 inches long, one gets a box that is eight or ten inches long and about six inches wide and at least an inch thick.

It is very likely that manufacturers may want to make the product very attractive and noticeable in a maze of such products as well as prevent pilferage of such a tiny thing by shoplifters.

When one goes to supermarkets, the same is observed. Most products are packed in package which is far greater than the product inside. Probably consumers like the feeling of getting a lot more for the price they are paying.

Packaging has several advantages such as it protects product from damage. In a country like ours there is heat, humidity, light, and dust among other things that can damage products. In case of food products there could also be contamination with microbes, chemicals and even foreign substances that could be prevented by package.

Manufacturers also use attractive packaging for marketing purpose not only giving advantages of their products but give directions of use. A nice package of attractive colours certainly demands attention.
Regulators also want certain information from consumer point of view such as weight, number of pieces, prices, manufacturers name, address and other contact details. For food products, there are additional sets of information including nutrition information, ingredients list, declaration about safety or quality such as presence of trans fat, artificial sweetener, presence of chicory, added colours and flavours and declaration of best before date etc. as well as whether it is vegetarian or non-vegetarian. All this information requires space on package.



Even after this stores will put all the goods purchased in a carry-bag even when it has only one tiny pen-drive. Consumers sometimes demand a carry bags when they buy things in a local stores and some stores have been refusing to give these because of government directives.

It is necessary to change our attitude about packaging. Over-packaging should be avoided, although sometimes for obvious reasons some packaging is unavoidable. Even consumers should realise that most of the packaging material become instant waste when they go home and take out their purchased goods. In our cities, there is not proper system of segregation of waste into solid and wet or whether recyclable. Neither government is worried nor consumers. Only a few people either affected by the dumps or environmentally conscious will be complaining about this. Let us try to reduce to reduce the waste by reducing the packing.

Wishing you a very Happy & Prosperous New Year

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Processed Foods: Prof. Jagadish S. Pai

Early humans were hunters and gatherers so they hardly consumed any processed foods. However, there were dangers of running out of food as well as some toxic material being consumed such as certain species of mushrooms or shell fish would cause toxic effects. This necessitated changing to agriculture and farming to ensure safe and secure supply of food. For many centuries this was the pattern of procuring food. However, both sudden increase in population and urbanisation has shifted the centres of food production and consumption making food processing a necessity in the past century in the western countries and in past few decades in India.

Processing was practiced by Indians at home or cottage level for long and products like preserves, pickles, papads, dried fruits & nuts, wines, dried fish etc. were prepared so some of the excess food could be stored for extended usage. These are processed foods at home scale and are still used not only to preserve but also to make speciality food products.

Wars had special needs as only well fed army would perform well. During the Napoleon's war to conquer Europe, he felt the need for better quality food products to feed his army. He offered a huge prize for a food process producing preserved food of high quality. This was won by a French confectioner Nicholas Appert who invented a process to preserve fruit and dairy products in sealed glass containers that were boiled. This was the beginning of canning of foods although not the first commercially processed foods. Dehydrated and concentrated products were already being produced.

During the industrial revolution large numbers of people in western world started moving to cities where better opportunities existed. Large scale urbanisation created a need for sending foods over long distances which was difficult without processing. This gave a fillip to processed food industry with dried, canned, and frozen foods became very essential part of life. India is also seeing the large urbanisation in recent decades. People have greater purchasing power and less time. Even the housewives are working full time so they have less time for preparing foods. So convenience foods and ingredients sector of the processed foods is seeing rapid growth.

It is estimated that Indian Food production will reach over $250 billion by 2015 and over $300 billion by 2020 of which processed food products are becoming an increasingly large portion. One estimate puts processed food market in India around $ 70 billion (about Rs. 320,000 crores). The products include canned fruits and vegetables, frozen and refrigerated vegetables, meat and fish products, milk and milk products, a variety of convenience foods that could be ready-to-cook or ready-to-eat as well as instant mixes, bakery and other cereal products, snacks, confectionery and chocolates, soft drinks and other alcoholic and non-alcoholic beverages and concentrates.

Why Foods Are Processed

Make Foods Safer: Pasteurised milk is safer than raw milk which may contain pathogens that would cause diseases if consumed without pasteurisation by heating. Heat kills the pathogens. Louis Pasteur, a professor of microbiology in Paris discovered that heat renders milk and many other foods like vegetables safe and without spoilage by killing microorganisms that are present in them and developed several processes of heat treatment. There are many thermal and other processes that destroy the microbes and/or chemicals that might be harmful if consumed.

There are now newer methods like irradiation and ultra high temperature (UHT) processing to produce safe food products and also maintain nutritive and sensory quality of foods with minimal damage being caused to them. Processing can also destroy or remove some of the toxic substances that may be present in food ingredients naturally like cyanogens, inhibitors of digestive enzymes, binders of essential minerals etc.

Preservation: Even before Appert discovered canning process to preserve the food, drying was practiced to prepare dry fruits and cereals and legumes that would last for several months. Jams and pickles were prepared to allow fruits and vegetables to be preserved and make them available out of season using sugar and salt as preservatives. Foods are

spoiled due to microbial and enzymatic action on food substances that makes them unfit for human consumption although it may not always be harmful. Canning uses heating after food is packed in can or bottle or more recently flexible containers, which would kill microbes capable to spoiling food and prevent fresh entry of microbes. Thus foods can last for a long time as long as container can prevent spoilage microbes from entering.

People going on long voyages, armed forces, people living in inhospitable areas etc. need preserved food as they can neither get fresh food ingredients nor sometimes they are able to do cooking.

Convenience: As women are increasingly becoming working housewives, they do not have adequate time or energy to prepare foods from scratch. They would like to still care for their families by cooking but if they use frozen peas or canned sauces or spice mixes, they save a lot of time and efforts in shelling, cleaning, grinding and preparing raw materials so after coming home from a full-day work they can quickly prepare meals. However, they would not like to compromise on quality so they would use convenience if they know the foods they prepare are equally good. Poor quality canned vegetables and spice mixes lacking flavour would not have a good market.

Making specialty foods: Cooking a meal is not as difficult as making a dark chocolate or decaffeinated coffee etc. Even some of the ordinary foods like sponge cake and upma (made of semolina or rawa) requires ingredients that cannot be made at home such as roller mill flours. The quality and composition of flours used for making chapatti, nan, bread, cake etc. are different which cannot be made by getting chakki ground wheat flour.

With today's lifestyle, people are also demanding low fat and low sugar products. Skim milk with low fat content can be prepared by centrifugal cream separator. When low sugar products are needed low calorie sweeteners are used.

Food consistency: Food ingredients like fruits, vegetables, meats, spices etc. are all natural produce that varies in colour, texture, flavour and other quality parameters that when products are made at home or in factories they would vary in appearance and eating quality. If one sees in shop ketchup of same company with varying colour and consistency or solids separated from liquid, he or she would not buy it thinking there is something wrong with it. So colours, emulsifiers, thickeners etc. are added to make them uniform in sensory attributes.

Fortified or Enriched foods: Making food more nutritious is very much possible by fortification while processing. Vitamins and minerals could be added to food products while they are being made so foods that are normally not rich in these could become more nutritious without changing the character of the food product. So one can have vitamin and mineral or fibre enriched biscuits, bread, juices, milk beverages, jams, etc. Even raw materials like wheat flour or sugar or salt could be enriched so when foods are prepared at home using them could be more nutritious.

Enables transport of delicate perishable foods over long distances: As population is becoming more urbanised, foods need to be transported over long distances. When milk, fruits & vegetables, meat, fish etc. are transported there is a great loss due to spoilage unless partial processing is carried out so the spoilage is minimised or eliminated. Refrigeration or chilling, freezing, pasteurisation, irradiation, high pressure processing, use of modified or controlled atmosphere, fumigants etc. help preserve the foods during transport and storage and minimise loss of nutrient and sensory quality.

Food Safety & Food Laws

In spite of several advantages for today's consumers, there are some who would still prefer foods made from the fresh materials as they feel the processed food may be lower in nutrients due to processing, or some inferior ingredients may be added with the help of colour, flavour or other additives to mask them or some unsafe additives may have been added. This was also the concern about a century ago in the US where food laws were made to prevent adulteration and deception of consumers by unscrupulous food product manufacturers. They also started testing of food additives for their safety.

Prevention of Food Adulteration (PFA) Act was passed in India in 1954 which gave rules and regulations about food manufacture and marketing to prevent adulteration and cheating as well as to ensure that food products were safe. More recently, Food Safety & Standards Act (2006) was passed not only to ensure that food products are safe and of high quality but included many new categories of products including those that can reduce the risks of some diseases e.g. Functional Foods and Nutraceuticals. The new act introduced a concept of risk assessment for ingredient, additive or process of food manufacture so processed foods would be safe.

Fresh or Processed

Food products when they are processed say using heat as in canning or pasteurisation, there are losses of heat sensitive vitamins like vitamin B_1 or C. When milk is pasteurised some losses do take place. These losses are even more when milk is boiled at home. When milk is pasteurised using high temperature short time (HTST) process or sterilised using ultra high temperature (UHT) process, high temperatures are used for a very short time that minimises the loss of nutrients.

Canning process relies on putting food in a can which is then heated to commercially sterilise it so there will not be any microbes surviving in it that are capable of growing in the canned food. This would require a great amount of heat that would cause many changes in sensory and nutritional quality of food products. Aseptic processing was developed to eliminate greatly problems of heat damage to the product. Food would be heated before it is put in the container, so it is possible to use very high temperature (UHT) for extremely short time. This sterile food is then packed in a container without allowing microbes (pathogenic or spoilage) to get in and sealing the food. This has very high quality and nutrient retention is also quite high. Liquid foods like milk, butter milk, fruit juices, etc. have been successfully packed and even some foods with solid particulate matter is processed.

Fresh fruits and vegetables are consumed for their vitamins and other nutrients. However, vitamins are not stable as under ordinary conditions of storage and transport employed for these, there is rapid loss of quality including vitamin contents. Vitamin C degrades extremely rapidly. There are also losses in texture, colour and flavour due to over-ripening. So distributors either use produce before it ripens and attains optimum conditions of quality and nutrition and when it reaches the urban markets, they are ripened mostly artificially. This does not provide the quality and nutrition that would otherwise be available from garden fresh fruits and vegetables that were consumed immediate after they are harvested upon attaining their maximal quality on plants.

When vegetables are processed e.g. frozen, they are harvested and kept chilled for a short time for the duration of transport to factory and are processed using conditions to ensure minimal losses of quality and nutrients. Once frozen, they do not lose quality and nutrients in frozen conditions for a long time so further losses are curtailed until they reach the consumers. Unless the consumers are getting garden fresh vegetables, the so-called fresh ones are commonly transported and stored in ambient conditions for several days incurring quality loss, and would have lesser vitamin contents that frozen vegetables. Recently, there are efforts to ensure cold chain from farm to markets and products that are harvested and immediately chilled or stored to reduce losses in quality and nutrients until they reach the consumers would certainly have quality almost as high as garden fresh produce.

Are Processed Foods Bad?

Processed foods are at times considered inferior because they contain additives such as preservatives, colours, flavours, emulsifiers & stabilisers, acids, antioxidants, flavour enhancers etc. However, all these additives are thoroughly tested for their safety. Some of them are natural substances such as pectin, lecithin, citric acid, some natural colours and flavours etc., some are also added in home-cooked foods like baking soda and MSG in soya sauces. Secondly, not all processed foods contain additives. Canning and freezing processes do not require preservatives. In fact some products like frozen peas, spinach or meat & fish as well as UHT processed milk and fruit juices may not contain any additives. Some of the additives that were earlier found to be unsafe have been banned such as metanil yellow and amaranth (colours), cyclamate (artificial sweetener), BHT (antioxidant) etc. A small percentage of

individuals are sensitive to tartrazine (colour) and MSG.

Processing in some cases forms undesirable or unsafe chemicals in foods. Acrylamide, a carcinogen is formed when potatoes are fried. This is true also when they are fried at home, but during processing an enzyme asparaginase could be added to potatoes that would drastically reduce the formation of acrylamide. Trans fats are formed when oils are partially hydrogenated to make them more solid and to impart them shortening ability useful in baked goods. Trans fatty acids not only increase the LDL cholesterol but lower the HDL cholesterol increasing the risk of heart disease. However, instead of using hydrogenation, enzymatic interesterification achieves the similar melting characteristics useful for bakery without the formation of trans fats.

Whole wheat (atta) contains bran rich in fibre and some vitamins and minerals. However, whole wheat flour does not make very fluffy bread. When water is added to refined wheat flour (maida) it forms elastic dough because of formation of gluten. When yeast is added while making dough it ferments and forms gas which is entrapped by dough in the form of tiny bubbles that rise and cause dough to rise (leaven) making it light. When baked the bread is very light, fluffy and soft. Whole wheat however, has bran which interferes with the gluten formation and entrapment of gas is not uniform and substantial. So bread is not soft and fluffy but dense and harder. However, adding certain fibre products including bran and modern methods of processing still gives sufficiently soft bread rich in fibre and nutrients from bran.

Whole grains have many essential nutrients including iron, but they also have phytate that binds iron and calcium making them less bio-available. Phytase enzyme can degrade phytate that increases the bio-availability. This would allow the goodness of whole grains without the undesirable components affecting the nutritive value of foods.

What Foods Are Avoidable?

Whether they are processed, homemade or restaurant foods, some are very high in sugar, fats and/or salt. These may be the problems if consumed in large quantities in our daily diets. Deep-fat fried foods, baked foods high in fat, sweets containing high amounts of fat all contain too much fat and are undesirable in daily diets. Many beverages including those with milk and fruit juices are sweetened with a lot of sugar. They may contain nutrients but too much of sugar in our daily diet also is avoidable. Savoury snacks as well as many other foods may contain a lot of salt. All these consumed in moderation may not cause ill-effects but regular consumption of these due to their highly acceptable taste would have undesirable health effects and all kinds of diseases including hypertension, obesity, diabetes, cardiovascular disease will be appearing if this diet is combined with lack of physical activity and healthy diet.

More recently, labelling with nutrition information of all packaged food products has become mandatory so one can very easily see what ingredients are used in food products. Although salt or sodium information is not mandatory, sugar and fat needs to be declared on the label. This can help consumer choose healthy processed foods. Many have started giving information on fibre, sodium, various vitamins and minerals.

Newer Foods & Processes

As mentioned above, the new act permits inclusion of some of the ingredients in foods that would have benefits beyond traditional nutrients that prevent deficiency diseases. These are called Functional foods and Nutraceuticals which may have components that would have physiological effects such as lowering cholesterol to reduce the risk of heart diseases. Hitherto these were included in medical jurisdiction, many will now come into foods so people wanting to reduce their risks of certain diseases like hypertension, heart diseases, cancer, diabetes, age-related macular degeneration (AMD) etc. may include them as part of their daily healthy diet along with physical activity and other preventive measures.

Carotenoids like lutein and lycopene have preventive action against AMD while omega-3 fatty acids have been shown to

have benefits with respect to heart diseases, diabetes, rheumatoid arthritis, osteoporosis, depression, attention deficit/ hyperactivity disorder (ADHD), inflammatory bowel syndrome, asthma, AMD, cancer and some other diseases as well. Lutein is present in eggs and lycopene in tomatoes. However, these could be isolated from other sources and added to foods so these functional foods could be consumed to derive benefits. Omega 3 fatty acids are present in flax and mustards seeds, as well as in fish oils. Seeds contain alpha linoleic acid (ALA) that in body converts to docosa hexaenoic acid (DHA) and eicosa pentaenoic acid (EPA) which are more effective and the conversion is not very efficient. So fish oils are better sources but vegetarians may not get this benefit. Some algae have shown the presence of DHA and EPA that could be isolated and used in foods.

Newer processes like high pressure processing (HPP), ohmic heating, irradiation etc. have been developed that would have very little or no heat input in the process so there would be minimal damage to the nutrients while effectively making foods safe from pathogens. HPP relies on high pressure with moderate heat that would destroy pathogens but would not alter the colour or flavour of food product. It is effectively used for fruits, vegetables as well as some shell fish like oysters which would lose flavour and texture if thermally processed to render them safe. Ohmic heating also relies on heat generation by instantaneously by electric current passed through foods to quickly process and cool them so loss of colour, flavour and texture is minimal. Irradiation has no heating involved at all. It has been successfully used for many food products including fruits, vegetables, meat, fish, spices, grains etc. for disinfestations as well as for sterilisation.

Conclusions

Fresh commodity is perishable and there are significant losses due to spoilage. Lack of proper storage and transport facilities also incurs losses in quality so fresh produce is poorer in nutritive quality as well. Processing not only avoids spoilage but losses in essential nutrients are slowed down drastically after small losses during processing because of modern efficient methods of processing. In some cases raw or unprocessed food ingredients may be unsafe and processing makes them safe. Processing can also be used to destroy some of the undesirable anti-nutritional components in foods like phytate, cyanogenic glucosides, trypsin inhibitors, etc. Processing can also be used to prepare healthy foods by incorporating nutrients and phytochemicals giving health benefits. Excess of salt, sugar and fat in foods, whether processed or not, is the real problem of bad diet. Undesirable effects of processing can also be minimised by using modern technology to produce safe foods that are nutritious.

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WEIGHT MANAGEMENT MYTHS by Michelle May, M.D.

Diets are filled with dogma about when, what and how much to eat. Certainly “the rules” are usually based on observations that make sense, but unless you understand why you do certain things, you’ll break the rules as soon as the temptation is greater than your motivation. Let’s examine some of these myths, where they come from and how to make long term changes that will work for you.

Myth: Don’t Eat After 7pm

Your metabolism doesn’t shut off at 7:01 pm so why is this rule so common? It is based on the observation that a lot of people who struggle with their weight overeat in the evening. Most people have already eaten dinner so they aren’t snacking because they’re hungry. They snack because of boredom, television, loneliness and other triggers. Rather than creating a rule to address those habits, ask yourself “Am I hungry?” whenever you feel like eating in the evenings. If you truly are, eat, keeping in mind that your day is winding down so you won’t need a huge meal. If you aren’t, consider why you feel like eating and come up with a better way to address that need. Ken, a man in one of my workshops, realized he was just bored so he started doing stained glass in the evenings to entertain himself. Whatever works!

Myth: Eat Small Meals Every 3 Hours

This rule is based on the fact that many thin people tend to eat frequent small meals. However, most of the thin people I know don't check their watch to tell them it's time to eat – they eat when their body tells them to. They eat when they're hungry and stop when they're satisfied. Since that tends to be a small meal, they get hungry again in a few hours. Instead of watching the clock, begin to tune in to the physical symptoms of hunger to tell you when to eat. And remember, your stomach is only about the size of your fist so it only holds a handful of food comfortably. By learning to listen to your body's signals, you are likely to follow a frequent small meal pattern naturally.

Myth: Don't Let Yourself Get Hungry

This one is based on the belief that overweight people are incapable of controlling themselves when they are hungry. In my experience with hundreds of workshop participants, once they learn to tell the difference between physical hunger and head hunger, the opposite is true. Think about it. When you're hungry, food tastes better and is more satisfying. My grandmother used to say, "Hunger is the best seasoning." Besides, if you aren't hungry when you start eating, what's going to tell you to stop? Of course, you also need to learn to recognize hunger and make time to eat before you are too hungry since it's harder to make great choices when you are starving!

Myth: Exercise More When You Cheat

I HATE this one because it has caused millions of people to equate physical activity with punishment for eating. As a result, many people either hate to exercise or use exercise to earn the right to eat. While it's true that your weight is determined by your overall calories in versus your calories out, exercise is only part of the equation and has so many other important benefits. Instead of using exercise to pay penance, focus on how great you feel, how much more energy you have, how much better you sleep and how much healthier you are becoming. In the long run, you are more likely to do something because it feels good than because you are forced to.

Myth: Follow Your Diet Six Days a Week Then You Can Have a Cheat Day

This is absurd! What if you were a harsh, overly strict parent six days a week then completely ignored your kids every Saturday? How would this approach work for your marriage or managing your employees? It just doesn't make sense to try to be perfect (whatever that is) Sunday through Friday while obsessing about everything you're going to eat on your day off. Then on Saturday you overeat just because you're allowed to so you end up feeling miserable all day. Huh? Personally, I would rather enjoy eating the foods I love every day mindfully and in moderation. I call this being "in charge" instead of going back and forth between being in control and out of control.

Myth: Eat X Number of Calories (or X Number of Points) Every Day

Does it make sense that you would need exactly the same amount of fuel every day? Aren't there just days when you are hungrier than others, maybe because of your activity levels or hormonal cycles? Rather than setting yourself up to "cheat" on those hungry days and forcing yourself to eat more food than you want on your less hungry days, allow yourself the flexibility to adjust your intake based on your actual needs rather than an arbitrary number. Important: for this to work long term, you also need to learn to tell the difference between physical hunger and head hunger.

Myth: Carbs are Bad (or Fat is Bad)

This "good food-bad food" thinking makes certain foods special. As a result, you may feel deprived and think about them even more than you did before. Worse yet, healthy foods become a four- letter word. The truth is all foods fit into a healthy diet. Since different foods have various nutritional qualities and calorie content, you can use the principles of balance, variety and moderation to guide you without trying to restrict an entire food group.

Truth: You Are In Charge

I assume the rule-makers are well-intentioned and don't realize that they've created a tight rope that most people will

fall off of sooner or later. If your head hadn't already told you that all these rules are crazy, wasn't your heart saying there had to be a better way? It's time to give yourself a wider path that you can stay on forever. Allow yourself the flexibility to make any decision as long as you consider the advantages and disadvantages of your choices and always keep self care in mind.

From: Eat What You Love, Love What You Eat: How to Break the Eat-Repent-Repeat Cycle (2009), a book by Dr. Michelle May, M.D.

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Labelling: Are We Levelling With Consumers?

Early in my food science career, I heard a story about how Kentucky Fried Chicken (KFC) was creative in its new product innovation. The company's unique method of cooking chicken delivered a terrific-tasting product. But when people ate the chicken, their hands became sticky. Initially, consumers complained and considered this a defect. Rather than simply accepting the consumers' verdict that this was a serious defect, the folks at KFC hit upon the creative idea of making the defect a virtue with the advertising slogan: "Finger Lickin' Good." And the rest, as they say, is history.

Thus, sometimes in the food industry we need to think through our immediate reactions to an issue and also to think through the consumers' reaction, particularly if either of them seems to be inherently negative. We also need to recognise that our customers have needs that go beyond the obvious services our products provide. Today's consumers want to know more about how their food was produced and this desire is simply getting stronger. Yet, when it comes to providing information to consumers, especially for something the industry perceives as a negative, we are often our own worst enemy. The reaction is to fight against providing the information rather than working with consumers to help them understand, including the idea of reasonable risk after going through a scientific process to establish safety and efficacy.

A major example of this reluctance to share information with consumers is labelling. Whenever the industry does anything really new, which tends to garner more publicity, it is also likely to generate some controversy spurred on by the activist groups.

The natural solution seems to be to roll out the change, but not to flag or even label it, if not required by law. Well, that, I believe, is absolutely the wrong thing to do. I would argue that the industry should label it as "Finger Lickin' Good" and be proud to take leadership in adopting new technology. Unfortunately there are too many examples of not labelling: water-added scallops (which actually taste better), using irradiated spices (which avoid both pathogens and invasive species), carbon monoxide (smokeless smoke, which maintains the desired colour of product through the global food chain), and, of course, the really big issues now of genetically modified organisms (GMOs, such as the chymosin enzyme used in most large-scale cheese making), and nanotechnology.

The irony is that the activist community has had much more success in attacking the food industry for not labelling products than it really has had in convincing consumers that the technology is bad for them. Making the food industry look secretive and uncommunicative is so much easier to so. And we hand them this opportunity again and again.

If you look back at many of these issues, the real disconnect with the consumer was not with the actual product but with the information being withheld. In fact, I would venture to strongly suggest that in most cases a majority of consumers will buy the product regardless of what is on the label (as opposed to what they'll say in a survey).

Many new technological developments are great stories and can be "Finger Lickin' Good". And if we go beyond the strict requirements of the law, the industry would be perceived as more proactive and more consumer-friendly. We could be perceived as trying to improve our products to fill consumer needs and to provide the latest in value-added for

consumers. And, yes, a few customers won't buy it just because it is new technology. But the activists won't be as successful in painting the industry in a bad light. By not labelling, we are handing the issues to the activists.

There is also the flipside of this argument. Whey must we market our products by denigrating the potentially negative attributes of someone else's product? Why is the industry the source of some of the food "fear mongering"?

And finally, what about all those terms we're sticking on our labels (and in our advertising) that are sometimes justified but just as often plainly misleading? For example: free range, natural, local. When these words are misused, we not only cheapen the words, but we cheapen the entire food industry. So when we have a real problem, the consumer is already weary of the food industry and no longer trusts us even after we go through hoops to make corrections.

Yes, we really can be our worst enemy by not levelling with consumers. We need to trust them to make good decisions most of the time. And treating them with respect would go a long way.

Dr. Joe Regenstein in Food Technology Mar 2009

RESEARCH IN HEALTH & NUTRITION

Probiotics Good for Kid's Gut Health

CHICAGO—Adding probiotics or prebiotics to children's diets may help treat acute viral gastroenteritis and prevent antibiotic-associated diarrhea in healthy children, according to a new clinical report published in Pediatrics.

According to the findings, infants and children who ate probiotic foods—mainly yogurt—early on while having diarrhea from acute viral gastroenteritis experienced a shorter duration of diarrhea by about one day. Other studies showed that probiotics were modestly effective in preventing antibiotic-associated diarrhea in healthy children when compared with a placebo. However, there is no evidence that probiotics treat antibiotic-associated diarrhea.

There is some preliminary evidence to suggest probiotics may help prevent necrotizing enterocolitis or death of intestinal tissue in infants born weighing more than 1,000 grams. More research also is needed before probiotics can be recommended to treat disorders such as irritable bowel syndrome, Crohn's disease, colic, and constipation, and to prevent common infections and allergy in children.

Infant formulas enhanced with probiotics or prebiotics do not appear to cause harm in healthy infants, but there's insufficient evidence to suggest they offer any clinical benefits. Prebiotics may help reduce atopic eczema in healthy children, although more research is needed before prebiotics in infant formula would be recommended to help reduce infections.

Food Product Design 11/30/2010

Researchers ID Method to Control Blood Sugar Levels

LEICESTER, United Kingdom—Researchers at the University of Leicester have identified for the first time the role of a particular protein that helps the body to manage its blood sugar level after a meal.

The findings, published online in the Proceedings of the National Academy of Sciences, suggest that in order to

maintain the correct levels of sugar, a protein present on the cells that release insulin in the pancreas has to be active. This protein, called the M3-muscarinic receptor, is not only active but also needs to undergo a specific change that triggers insulin release and the control of blood sugar levels.

“Without the change in the M3-muscarinic receptor protein sugar levels go up in the same way that we see in diabetes. We are of course testing if the mechanism of controlling sugar levels we have discovered is one of the mechanisms disrupted in diabetes. If this were the case then our studies would have important implications in diabetes," the researchers wrote.

Food Product Design 11/30/2010

Protein, Vitamin D Key for Elderly

NICE, France—Older adults need to pay special attention to their nutritional intake of protein and vitamin D, according to new research presented during the 32nd European Society for Clinical Nutrition and Metabolism (ESPEN) Congress in September.

Key messages delivered during the Nestlé Nutrition Institute’s satellite symposium were nutritional needs of the elderly are impacted by health status; there is a high prevalence of vitamin D deficiency in older people leading to an increased prevalence of skeletal and possibly chronic non-skeletal diseases; and nutrition has been shown to have an important role in reducing the risk of hip fracture and supporting the repair process.

Professor René Rizzoli from the Division of Bone Diseases, Department of Rehabilitation and Geriatrics, Geneva University Hospitals, noted that osteoporotic fracture is a major risk for all older adults, especially for those older than age 70, and hip fracture is the most serious subcategory of osteoporotic fracture. In fact, 20 percent of patients die from hip fracture complications within one year; 30 percent are permanently disabled; and 40 percent are unable to walk independently.

“Nutrition, specifically protein and vitamin D, have been shown to play an important role in preventing falls and fractures through the improvement of bone mineral density," he said.

Professor Dorothee Volkert from the Institute for Biomedicine of Aging at the University of Erlangen-Nürnberg said as people age, there is a reduction in lean body mass and the metabolic rate decreases as does physical activity, contributing to an overall reduction in energy needs. Protein intake is an important determinant of optimal function and sarcopenia prevention. A 1995 study showed that protein intake was related to both muscle mass and muscle strength. The actual amount of protein required to maintain muscle mass is unknown but experts believe that healthy elderly require 0.8-1g of protein per day, while those with underlying chronic disease or illnesses may need up to 1.2-2.0g.

Vitamin D deficiency occurs due to limited exposure to sunlight of sufficient strength to allow synthesis of the vitamin in skin, particularly when coupled with low dietary intakes of vitamin D. Professor Kevin Cashman from the School of Food and Nutritional Sciences, and Department of Medicine, University College Cork confirmed there is a huge gap between the currently consumed low intake of vitamin D by older adults and the recommended intake values for the vitamin.
The amount of vitamin D in the diet required to maintain blood levels of 25-hydroxyvitamin D (the marker of vitamin D status) in the free-living elderly above the minimum recommended of 25 nmol/L is 10 μg (400 IU) per day and as high as 25 μg (1,000 IU) per day if 50 nmol/L is used4. This level of 50 nmol/L is gaining increasing acceptance as “optimal" for the elderly. However, the current dietary intake of vitamin D in the elderly populations (typically around 2-5 μg (80-200 IU) per day), is substantially below the recommended 10 μg (400 IU) per day and poses a major public health concern. These low intakes arise as a consequence of there being only a few rich food sources of vitamin D. There is a need for effective nutritional strategies to improve vitamin D status, particularly in the vulnerable elderly population. Vitamin D supplementation and/or fortification are possible means of addressing this mismatch.

Food Product Design 11/29/2010

New Study Calls for Greater Awareness of Food Supply for Children with Diabetes

Managing diabetes in a child requires a careful balance of insulin, diet, and exercise. Buying essential medical supplies, such as needles and testing strips, adds a financial burden to families. According to a new study soon to be published in The Journal of Pediatrics, the resulting food insecurity that arises from the financial burden of diabetes management increases a child's risk of being hospitalized due to complications from diabetes.

According to study author Dr. Elizabeth Cummings, "A household is food secure when all members have access to food that is safe and varied enough to meet their nutritional needs. Families who are hungry, who use food banks or food stamps, or those who worry about affording food are considered food insecure."

Drs. Cummings and colleagues from Dalhousie University, the IWK Health Centre, and Mount Saint Vincent University interviewed 183 Canadian families with at least one child with diabetes over a 16 month period. They completed a survey that assessed their food security, demographic information (e.g., income, education levels), and strategies used to mitigate the financial burden of their child's diabetes.

The researchers found that 22% of the families they interviewed were food insecure, a significantly higher percentage than the national Canadian rate of 9.2%. Food security is not just a problem in Canada, however. A report released by the U.S. Department of Agriculture's Economic Research Service states that 17.4 million households had difficulty providing enough food due to lack of resources in 2009.1 According to Dr. Cummings, "Children from food insecure families had poorer diabetes control and were 3.7 times more likely to require hospitalization for diabetes within the past year."

Almost all the families interviewed received some financial support for their diabetes supplies. However, many reported that someone in the family ate less so that the child with diabetes would have enough. "A small number of families reported that they tested their child's blood sugar less often than recommended," co-author Dr. Stacey Marjerrison reports, "or used needles more than once to help manage the cost of their child's diabetes."

Dr. Cummings believes that health professions should be more aware of this issue. "A review of financial support available to families is needed," she asserts. "Improvement of support may result in fewer hospitalizations and thus lower health care costs."

Nutrition Horizon 2 Dec 2010

Harvard Report Says Foods Offer More Nutrients than Supplements

While half of Americans routinely take dietary supplements, the most common being multivitamin and multimineral supplements, evidence suggests getting nutrients from food is a much better option, according to a health report from Harvard Medical School titled “Vitamins and Minerals: Choosing the Nutrients You Need to Stay Healthy.” The report indicates studies of people who eat diets rich in fruits, vegetables, nuts, whole grains and fish show they consume higher levels of vitamins and minerals from these foods and also have a lower risk of many diseases, including heart disease, stroke, diabetes and cancers. On the other hand, trials testing the effect of selected vitamins or minerals as pill supplements have mostly shown very little influence on health. The main exception may be fish oil supplements, for which some trials show a lower risk of heart disease and possibly vitamin D. Vitamin and mineral supplements deliver only a fraction of the biologically active compounds in food, the report states.

Nutraceuticals World December 1, 2010

Research Confirms Safety and Importance of Vitamin D

Consumers should feel confident that the vitamin D intake levels needed to achieve the numerous health benefits demonstrated by growing scientific literature does not present a health risk, according to the Council for Responsible Nutrition (CRN), Washington, D.C. Andrew Shao, PhD, senior vice president, Scientific and Regulatory Affairs, reached this conclusion based on a benefit-risk assessment he co-authored with his CRN colleague John Hathcock, PhD, senior vice president, Scientific and International Affairs, and academic researchers from Harvard University, Tufts University and the University of Zurich (Switzerland). The review was published in the July issue of *Osteoporosis International*. In recent years, research has pointed to benefits from vitamin D beyond bone health and at doses considerably higher than what is currently recommended by the Institute of Medicine (IOM). This analysis compared the benefits of supplemental vitamin D as measured by the incidence of falls, fractures, cardiovascular outcomes and colon cancer with the potential risk of adverse effects as measured by elevated blood calcium. The authors concluded the vitamin D intake needed for optimal benefit is far from that which poses a risk.

Nutraceuticals World December 1, 2010

Soy Isoflavones Decrease Risk of Invasive Breast Cancer, Large Breast Tumors, Study Shows

Press Release -- BUFFALO, N.Y. -- November 30, 2010 -- Isoflavones, chemicals found in soy products and in small amounts in other plant-based foods, may be associated with a reduced risk of developing certain types of breast tumors, a new study by researchers at the University at Buffalo and Roswell Park Cancer Institute has found.
The study showed that women with newly diagnosed breast cancer who consumed the highest versus lowest amounts of isoflavones, a class of phytoestrogens, had a 30 percent decreased risk of having an invasive tumor -- one that had spread into the breast tissue instead of remaining in the epithelial layer of cells -- and a 60 percent decreased risk of having a grade 1 tumor.

Tumor grade refers to the similarity of cancer cells to normal cells. As cancer progresses, the cells become more abnormal and increase in grade (1, 2, 3). The study results also found a potential decreased breast cancer risk associated with specific isoflavones.

Anne Weaver, an epidemiology PhD student in the UB Department of Social and Preventive Medicine, UB School of Public Health and Health Professions, is first author on the study. She presented the findings at the American Association for Cancer Research International Conference -- Frontiers in Cancer Prevention held Nov. 7-10 in Philadelphia, Pa.

"Countries with high isoflavone intake tend to have lower breast cancer rates," according to Weaver. "Previous studies have had mixed results, but they indicate that isoflavone intake may be related with a reduced risk of breast cancer. This study examined isoflavone intake in relation to several different tumor characteristics.

"We believe that isoflavone intake may affect characteristics of breast cancer in different ways, so we examined several characteristics of breast cancer, including tumor size, stage, grade and hormone receptor status," Weaver notes. Higher stage and grade indicate more severe cancers, while hormone receptor status determines how likely a tumor is to respond to hormone-based treatments.

The researchers compared the amount of isoflavones eaten by women without cancer to the amount of isoflavones eaten by women with different breast cancer characteristics.

The study involved 683 women with newly diagnosed breast cancer and 611 women without a history of breast cancer, all of whom were enrolled in Roswell Park Cancer Institute's Data Bank and BioRepository. All women completed a questionnaire providing biographic and dietary information. Data on tumor characteristics of the women with cancer was retrieved from their medical records.

In addition to findings on isoflavones in general, results of the analysis showed a slight to moderate decrease in cancer risk and tumor characteristics in women in the highest third of specific dietary isoflavones.

The isoflavone glycetein showed the most relationships with breast tumor characteristics. In the highest versus lowest third, glycetein was associated with an approximately 25 percent decreased odds of having cancer, 60 percent decreased odds of having a grade1 tumor and 30 percent decreased odds of having a HER2 negative tumor.

HER2 is a human epidural growth factor receptor, one of the hormone receptors, along with estrogen and progesterone receptors, that commonly are used to diagnose breast cancer. "Generally, HER2 positive tumors are more aggressive while HER2 negative tumors are less aggressive," explains Weaver.

In postmenopausal women only, results showed that cases in the highest-third intake versus lowest-third intake of the isoflavone glycetein had an approximately 30 percent decreased odds of having luminal A, or stage I, disease. The isoflavone genistein was associated with approximately 60 percent decreased odds of having a grade 1 tumor.

In premenopausal women only, highest total isoflavone intake as well as intakes of isoflavones daidzein, genistein, and glycetein were associated with an approximately 70 percent decreased odds of having a large (greater than 2 cm) tumor. In addition, premenopausal women in the highest- versus lowest-third of total isoflavones and genistein intake had an approximately 60 percent lower risk of having stage II breast cancer.

"Results showed that premenopausal women with larger tumors were less likely to have eaten high amounts of isoflavones, compared to premenopausal women without cancer," Weaver notes.
"Overall, this study indicates that isoflavone intake may be associated with tumor characteristics with more favorable prognoses," Weaver reiterates. "However, our sample had low isoflavone intake compared to, for example, an Asian population. Most isoflavone intake was from other foods, so we can't comment specifically on soy."

The results were not conclusive, Weaver notes, so further studies need to be done to determine the mechanisms by which isoflavones may affect tumor characteristics.

Susan McCann of Roswell Park Cancer Institute (RPCI) is senior author on the study. Additional contributors from RPCI are Katie Hootman (formerly a Department of Social and Preventive Medicine student at UB), Christine Ambrosone, Helena Hwang and Carl Morrison. Peter Horvath from UB also is a contributor.

The research is funded by grants to McCann from the National Cancer Institute.

The University at Buffalo is a premier research-intensive public university, a flagship institution in the State University of New York system and its largest and most comprehensive campus. UB's more than 28,000 students pursue their academic interests through more than 300 undergraduate, graduate and professional degree programs. Founded in 1846, the University at Buffalo is a member of the Association of American Universities.
SoyTech eNews from Wednesday, December 1, 2010

Soy Isoflavone Genistein May Be Effective Treatment for Fatal Childhood Disease: UK Research

Press Release -- December 2, 2010 -- Scientists from The University of Manchester say a naturally occurring chemical found in soy could prove to be an effective new treatment for a fatal genetic disease that affects children.

Dr Brian Bigger, from the University's MPS Stem Cell Research Laboratory, found that genistein – derived from soya beans and licensed in the US as an osteoporosis drug – had a dramatic effect on mice suffering from the human childhood disease Sanfilippo.

“Sanfilippo is an untreatable mucopolysaccharide (MPS) disease affecting one in 89,000 children in the United Kingdom,” said Dr Bigger, who is based in the School of Biomedicine.

“Children with Sanfilippo disease experience progressive deterioration of mental function, similar to dementia, in early childhood, with other symptoms including severe behavioural problems, hyperactivity and ultimately death in early teens.”

In the study, published in the journal Public Library of Science One, mice with Sanfilippo disease were fed with high doses of genistein over a nine-month period. Treated mice showed a significant delay in their mental decline, including a third reduction in the amount of excess sugars found in the brain as a result of the disease, and a sixth reduction in inflammation in the brain.

Importantly, the research, carried out with colleagues at St Mary’s Hospital in Manchester, also showed that the hyperactivity and other abnormal behaviour normally seen in Sanfilippo mice were fully corrected by genistein treatment.

Professor Wraith, a co-author on the study and consultant paediatrician from Genetic Medicine in St Mary’s Hospital, said “Sanfilippo is a disease where the genetic lack of an enzyme leads to a fault in the breakdown of complex sugars in the cell.

“This leads to storage of these undegraded complex sugars in cells, disturbances in brain function and ultimately to this profound mental deterioration that we see in the children with this condition. Manchester is a specialist centre for this type of genetic disease and as such we look after more than 100 patients from all over the UK and beyond.”
The Manchester team, supported by the UK Society for Mucopolysaccharide Diseases and the Manchester Biomedical Research Centre, hope to announce a placebo controlled clinical trial for patients with Sanfilippo disease in the near future.
SoyTech eNews from Friday, December 3, 2010

Vitamin Supplements Reduce Deaths Caused by Measles and Diarrhea

Vitamin A supplements are still an effective way to reduce childhood death and disease. A new study by Cochrane researchers strongly endorses the continuation of vitamin A supplementation programmes, which reduce the incidence of measles and diarrhoea and ultimately save lives.

Vitamin A deficiency is a common problem in low and middle income countries. People whose diets do not include enough of the vitamin may have impaired body functions, and be more susceptible to blindness, infection and early death. The World Health Organization (WHO) recommends vitamin A supplements for pregnant mothers and children. However, controversies have recently been raised regarding the effectiveness of vitamin A supplementation programmes in developing countries.

The 43 trials included in the review involved 215,633 children between six months and five years of age. All except one trial used the standard dose of vitamin A as recommended by the WHO. Overall, giving vitamin A capsules reduced the risk of death from any cause by 24% compared to placebos or usual treatment. This equates to saving the lives of almost a million vitamin A deficient children a year.

The review suggests that much of the beneficial effect vitamin A supplementation in developing countries may be related to prevention of measles and diarrhoea. "Giving vitamin A is associated with a reduction in the incidence of diarrhoea and measles, as well as the number of child deaths due to these diseases," said Zulfiqar Bhutta, Chairman of the Division of Women and Child Health at Aga Khan University in Karachi, Pakistan and the senior reviewer of the project. "However, the effects of supplementation on disease pathways are not well understood, so this could be a focus for further studies."

The researchers strongly recommend continuation of vitamin A supplementation programs in children under five, but recognise that this it is not a permanent solution to the problem of vitamin A deficiency. "Fortification, dietary diversification, food distribution programs and horticultural developments such as home gardening and biofortification may provide more permanent relief," said Bhutta. "For example, vitamin A content could be increased in staples such as rice or growers may aim to promote use of biofortified foods such as orange sweet potato."

Nutrition Horizon 8 Dec 2010 ---

Nanoparticle Gives Antimicrobial Ability to Fight Listeria Longer

A Purdue University research team has developed a nanoparticle that can hold and release an antimicrobial agent as needed for extending the shelf life of foods susceptible to Listeria monocytogenes.

Yuan Yao, an assistant professor of food science, altered the surface of a carbohydrate found in sweet corn called phytoglycogen, which led to the creation of several forms of a nanoparticle that could attract and stabilize nisin, a food-based antimicrobial peptide. The nanoparticle can then preserve nisin for up to three weeks, combating Listeria, a potentially lethal foodborne pathogen found in meats, dairy and vegetables that is especially troublesome for pregnant women, infants, older people and others with weakened immune systems.

Controlling Listeria at deli counters, for example, is especially problematic because meat is continually being opened, cut and stored, giving Listeria many chances to contaminate the food. Nisin alone is only effective at inhibiting Listeria for a short period - possibly only a few days - in many foods.

"People have been using nisin for a number of years, but the problem has been that it is depleted quickly in a food system," said Arun Bhunia, a Purdue professor of food science who co-authored a paper with Yao on the findings in the early online version of the Journal of Controlled Release. "This nanoparticle is an improved way to deliver the antimicrobial properties of nisin for extended use."

Yao used two strategies to attract nisin to the phytoglycogen nanopoarticles. First, he was able to negatively charge the surface of the nanoparticle and use electrostatic activity to attract the positively charged nisin molecules. Second, he created a partially hydrophobic condition on the surface of the nanoparticle, causing it to interact with partially hydrophobic nisin molecules. When the particles are hydrophobic, or repel water, they become attracted to each other.

"Both strategies may work together to allow nanoparticles to attract and stabilize nisin," Yao said, "This could substantially reduce the depletion of nisin in various systems."

For practical use, Yao said a solution containing the nanoparticles and free nisin could be sprayed onto foods or included in packaging. The solution requires a balance of free nisin and nisin on the nanoparticles.

"When you reduce the amount of free nisin, it will trigger a release of more nisin from the nanoparticles to re-establish the equilibrium," Yao said. "There will be a substantial amount of nisin preserved to counteract the Listeria."
Using a model, Yao said a sufficient amount of nisin to combat Listeria could be preserved for up to 21 days.

Yao and his colleagues are working on using other food-based antimicrobial peptides and nano-constructs to combat Listeria other foodborne pathogens such as E. coli O157:H7 and salmonella. The U.S. Department of Agriculture and the National Science Foundation funded their research.

Food Ingredients First 8 Dec 2010 ---

Whey Protein Soothes IBD

EDE, The Netherlands—Cheese whey protein protects against intestinal inflammation by stimulating beneficial bacteria and enhancing the protective mucous layer in the gut, according to new findings from NIZO food researchers. The findings suggest cheese whey protein may be a useful ingredient for clinical foods for patients with inflammatory bowel disease.

Cheese whey protein is a rich source of the amino acids threonine and cysteine that have been shown to protect against intestinal inflammation; however, the effect of cheese whey protein itself was not known. In an in-vivo model NIZO scientist Corinne Sprong showed cheese whey protein enhances the protective mucous layer that covers the intestinal tract. She also found that cheese whey protein stimulates the intestinal microbiota species lactobacilli and bifidobacteria which are reported to have a beneficial effect on the gut. Food Product Design 12/07/2010

Video Games May Increase Kids' Fruit, Veggie Intake

SAN DIEGO—Video games have long been vilified as a leading cause of childhood obesity; however, a new study published ahead of print in the ***American Journal of Preventative Medicine*** suggests video games designed to encourage healthy eating habits actually may lower the risk of obesity.

Researchers followed 153 children aged 10 to 12 divided into a treatment group (103 children) and a control group (50). Complete data were obtained on 133 subjects. The treatment group first played Escape from Diab and then Nanoswarm: Invasion from Inner Space—epic video games specifically designed to lower risks of type 2 diabetes and obesity by changing youth diet and physical activity behaviors. The control group played diet and physical-activity knowledge-based games on popular websites.

Each group was assessed at the start of the trial, immediately after Diab, immediately after Nanoswarm, and again two months later. Height, weight, waist size, and triceps skin-fold thickness were measured. Physical activity was monitored for at least four days by accelerometer-based data from each child at each assessment. Food consumption was measured using 24-hour dietary recalls conducted by registered dietitians.

Children playing these video games increased fruit and vegetable consumption by about 2/3 serving per day, but did not increase water consumption or moderate to vigorous physical activity, or improve body composition. Despite the increase, fruit and vegetable, water consumption and physical activity remained below the minimum recommendations.

"Diab and Nanoswarm were designed as epic video game adventures, comparable to commercial quality video games. These games incorporated a broad diversity of behavior change procedures woven in and around engrossing stories. The games motivated players to substantially improve diet behaviors," said lead investigator Tom Baranowski, PhD, Professor of Pediatrics, U.S. Department of Agriculture/Agricultural Research Service supported Children's Nutrition Research Center, Baylor College of Medicine. "Serious video games hold promise, but their effectiveness and mechanisms of change among youth need to be more thoroughly investigated."

Food Product Design December 7, 2010

Magnesium Boosts Women's Heart Health

BOSTON—Women who consume a diet high in magnesium-rich foods, such as green leafy vegetables, beans and seeds, may reduce their risk of dying from sudden heart failure, according to a new study published in the ***American Journal of Clinical Nutrition***.

The findings suggest women who had the most magnesium in their diets were significantly less like to die from heart

failure than those who ate the least, and the researchers also found each 0.25-mg/dL increment of magnesium blood concentration was associated with a 41-percent lower risk of sudden cardiac death.

Harvard researchers examined the association for magnesium intake in 88,375 women within the Nurses' Health Study who were free of disease in 1980. Information on magnesium intake, other nutrients and lifestyle factors was updated every two to four years through questionnaires. During the 26-year follow-up, 505 cases of sudden or arrhythmic death were documented. For plasma magnesium, a nested case-control analysis including 99 sudden cardiac death cases and 291 controls matched for age, ethnicity, smoking and presence of cardiovascular disease (CVD) was performed.

The relative risk of sudden cardiac death was significantly lower in women in the highest quartile compared with those in the lowest quartile of dietary (relative risk: 0.63; 95 percent CI: 0.44, 0.91) and plasma (relative risk: 0.23; 95 percent CI: 0.09, 0.60) magnesium, even after multivariable adjustment for confounders and potential intermediaries. The linear inverse relation with sudden cardiac death was strongest for plasma magnesium (P for trend = 0.003), in which each 0.25-mg/dL (1 SD) increment in plasma magnesium was associated with a 41-percent (95 percent CI: 15, 58 percent) lower risk of sudden cardiac death.

Food Product Design December 2, 2010

Omega-3s, Carotenoids Benefit Eyesight

The carotenoids lutein and zeaxanthin, and the omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are important to supporting long-term visual health. An article from **Nutrition Horizon** reviewed the current state of research on these classes of nutrients and their effects on eye health.

First, the article covered the role of lutein and zeaxanthin, which form the macular pigment in the retina. These micronutrients filter out ultraviolet (UV) and blue light that can damage the eye, improving contrast sensitivity and reducing susceptibility to glare. Further, the carotenoids are antioxidants and have anti-inflammatory effects. They are best known for their ability to fight age-related macular degeneration (AMD), with the article noting studies have “confirmed" preventing AMD depends on the health of the macular pigment and the storage of lutein and zeaxanthin.

Regarding omega-3s, the article noted the European Food Safety Authority (EFSA) recent allowed a claim that 250 mg/d of DHA could support healthy vision. DHA and EPA, which are long-chain, polyunsaturated fatty acids, are important building blocks for cell membranes, keeping them flexibly. DHA further supports the formation and activity of rhodopsin in the retinal photoreceptors, which enhances light and dark perception. Nutrition Horizon’s piece also attributed the positive effects of these EFAs to anti-inflammatory properties.

The article noted there are food sources of these nutrients including fish (omega-3s) and vegetables such as kale, spinach, broccoli and corn (lutein and zeaxanthin). However, it concluded most people do not ingest close to the recommended intake of these compounds, suggesting older adults in particular should consider supplementing with these nutrients.

Food Product Design December 2, 2010

Low Folate Linked to Hearing Loss in Elderly

ALEXANDRIA, Va.—Elderly individuals with low serum levels of folic acid may have an increased risk of age-related hearing loss (ARHL), according to a new study published in the December 2010 issue of ***Otolaryngology – Head and Neck Surgery***.

ARHL affects more than 28 million Americans between the ages of 60 and 74 dealing with the loss, and the findings

show that low serum levels of folic acid among elderly people are significantly associated with hearing loss in high frequencies.

"Based on our research, age-related hearing loss may be associated with poor micronutrient status. The role of folate in cellular metabolism, the nervous system, and vascular function are important for the auditory system," said study author Akeem Olawale Lasisi, MBChB, FWACS, FMCORL.

The study included interviews with 126 elderly Nigerian men and women age 60 or older who had no known medical conditions and had been examined by physicians. The study excluded those who were found to have a history of diabetes, stroke, hypertension, ear diseases, ear infections, ear trauma, ear surgery, or exposure to noise and ototoxic drugs such as aminoglycosides, antibiotics and diuretics.
Food Product Design December 1, 2010

Total Calories Cause Weight Gain, Not GI

DENVER—Although specific diet fads have, at times, isolated foods and dictated that adherents avoid them— perhaps due to their nutrient makeup or glycemic index (GI), for example—recent research conducted by the University of California, Davis and the National Center for Food Safety and Technology at the Illinois Institute of Technology shows that total calories is a much greater factor in this equation. This research, commissioned by the United States Potato Board, was presented at the 28th annual meeting of the Obesity Society in October.

A primary goal of this study was to help shed light on the role of potatoes and their glycemic index in weight loss. The researchers studied 86 overweight men and women for 12 weeks to measure the effects of variable GI within a reduced-calorie framework.

One group was given a list of low-GI foods to include in their diet daily. The second group was given a list of high-GI foods to include in their diet daily. However, both groups were instructed to reduce their daily caloric intake by 500 calories while also consuming five to seven servings of potatoes each week. Individuals in the control group were allowed to select their own daily meals and overall caloric intake, but were encouraged to adhere to the U.S. dietary guidelines and the food guide pyramid. Like the other two groups, they likewise included five to seven servings of potatoes each week.

Results showed that all three groups lost weight. No significant difference was found in the degree of weight loss between the low-GI and high-GI groups.

“The results of this study confirm what health professionals and nutrition experts have said for years,” said Britt Burton-Freeman, Ph.D., M.S., assistant researcher, Department of Nutrition, University of California, Davis, and lead researcher for the study. “When it comes to weight loss, it is not about eliminating a certain food or food groups. Rather, it is reducing calories that counts. There is no evidence that potatoes, when prepared in a healthful manner, contribute to weight gain.”

Food Product Design December 1, 2010

Pomegranate Juice Components Inhibit Cancer Cell Migration; in Vivo Testing Planned

Researchers at the University of California, Riverside (UCR), have identified components in pomegranate juice that seem to inhibit the movement of cancer cells and weaken their attraction to a chemical signal that has been shown to promote the metastasis of prostate cancer to the bone, according to a presentation at the American Society for Cell Biology's 50th Annual Meeting in Philadelphia.

The researchers in the UCR laboratory of Manuela Martins-Green, Ph.D., plan additional testing in an in vivo model for prostate cancer to determine dose-dependent effects and side effects of the two components.

The effect, if any, of pomegranate juice on the progression of prostate cancer is controversial.

In a 2006 study of prostate cancer patients who daily drank an eight-ounce glass of pomegranate juice, UCLA researchers detected a decline in prostate-specific antigen (PSA) levels that suggested a potential slowing of cancer progression.

The UCLA researchers did not try to define the potential biological mechanism behind pomegranate juice's effects in the study.
In Sept. 2010, the Federal Trade Commission (FTC) filed suit against Pom Wonderful, the natural foods company that provided the pomegranate juice for the UCLA research and has supported other research on pomegranate juice. The FTC charged the company with making false and misleading claims about the juice's effects on health.

In previous studies, Martins-Green and her research team used a standardized concentration of pomegranate juice on two types of laboratory-cultured prostate cancer cells that were resistant to testosterone.

Resistance to the hormone indicates a potentially strong metastatic potential. The researchers noted not only increased cell death among the pomegranate juice-treated tumor cells but also increased cell adhesion and decreased cell migration in those cancer cells that had not died.

The Martins-Green lab next analyzed the fruit juice to identify the active ingredients that had a molecular impact on cell adhesion and migration in metastatic prostate cancer cells. Martins-Green, graduate student Lei Wang and undergraduate student Jeffrey Ho identified phenylpropanoids, hydrobenzoic acids, flavones and conjugated fatty acids.

"This is particularly exciting because we can now modify these naturally occurring components of the juice to improve their functions and make them more effective in preventing prostate cancer metastasis," said Martins-Green.

"Because the genes and proteins involved in movement of prostate cancer cells are essentially the same as those involved in movement of other types of cancer cells, the same modified components of the juice could have a much broader impact in cancer treatment," she said.

Nutrition Horizon 12/13/2010 👎👎👎

High-Protein, Low Glycemic Diets Assist with Weight Management

A higher-protein diet paired with lower intake of refined starches like white bread or other high-glycemic index (GI) foods can provide an effective approach to prevent weight regain following weight loss, according to one of the largest, randomized, multinational clinical studies conducted on the impact of diet composition on weight management.

Eight European research centers collaborated on the study called “Diogenes” (Diet, Obesity and Genes), which investigated the effectiveness of diets varying in protein content and glycemic index on preventing weight regain following a period of weight loss. The results were recently published in New England Journal of Medicine in November.

Dairy products, which are typically categorized as low-glycemic index foods, and dairy ingredients provide a good source of protein and can play a valuable role in building a higher-protein diet to help maintain a healthy weight. The Dairy

Research Institute, which manages pre-competitive dairy research in nutrition, products and sustainability on behalf of the Innovation Center for U.S. Dairy and the National Dairy Council, has focused much of its resources on research related to the connection between dairy consumption and healthy weight, including the role of dairy protein.

“Research on weight has steadily evolved during the last 10 years,” said Greg Miller, president of the Dairy Research Institute. “Researchers continue to demonstrate the connection between higher-protein diets and healthy weight and the results reported by the Diogenes investigators provide further evidence for that relationship.”

In this study, overweight and obese adults initially underwent an eight-week weight loss phase where they consumed a low-calorie diet. Following successful weight loss (≥8% of their original body weight), participants were randomly assigned to one of five different diets in which there were no restrictions on calorie intake, but they had to choose from foods that fit one of these five profiles: low protein/low GI, low protein/high GI, high protein/low GI, high protein/high GI, or a control diet which followed the dietary guidelines in their respective country. A total of 548 participants completed the six-month diet intervention. The results showed that a diet consisting of higher protein content and low-glycemic index foods helped ensure overweight people who lost weight were better able to maintain their weight loss.

Low-fat dairy and dairy ingredients like whey protein can help consumers increase their protein intake to help achieve weight management goals. Food and beverage manufacturers and dairy processors can leverage the high-quality protein found in dairy to help meet these needs.

“Advancing the science surrounding metabolic health, including healthy weight maintenance, is increasingly important in light of the nation’s obesity epidemic and rising healthcare costs,” said Kevin Ponticelli, board of directors chair, Dairy Research Institute, and executive vice president of Dairy Management Inc. “Metabolic health is a nutrition research priority for the industry. We are committed to better understanding the effects of dairy consumption on weight, heart disease and diabetes.”
Nutraceuticals World December 13, 2010

Salt reduction 'reduces serious threats of diabetes'

Salt reduction is the key to reducing the risk of serious threats to diabetics' health, according to a review of previous studies. In the Cochrane review, researchers evaluated the results of 13 studies, with 254 adults who suffered from either type 1 or type 2 diabetes. Participants' daily salt intake was monitored over the course of a week to see how it would affect their blood pressure.

Lead reviewer Rebecca Suckling said: "We were surprised to find so few studies of modest, practical salt reduction in diabetes where patients are at high cardiovascular risk and stand much to gain from interventions that reduce blood pressure." She added there was consistently a reduction in blood pressure where people consumed less salt.

Recently, a study by researchers at the University of Queensland in Australia suggested mandatory salt reduction rules could cut the risk of heart disease by around a fifth.
09 December 2010 Ingredients Network.Com

New Research Shows Rice Eaters Have Better Diets and Reduced Health Risks

When it comes to rice, side dishes are front and center, as new findings published in Nutrition Today suggest that a serving of rice improves overall diet quality and reduces risk for many chronic conditions. The study found that rice reduced risk for obesity, high blood pressure and metabolic syndrome.

Building a Scientific Consensus

Researchers analyzed data from the 1999-2004 National Health and Nutrition Examination Survey (NHANES) datasets. The research included available data on the diets of more than 25,000 children and adults. NHANES surveys are considered the most accurate representation of Americans' eating patterns.

Of the four age groups studied, nearly 3,000 participants reported eating rice. The results show that children and adults who ate rice had diets that contained higher amounts of several key nutrients such as folate and other B-vitamins, potassium, fiber and vitamin A. In addition, those who included rice in their diet had less total fat, saturated fat and added sugars, and more beans and fruit.

Further, research shows that people who eat rice reduce the amount of added sugars in their diet by four teaspoons (16 grams) and reduce highly saturated solid fats by seven grams.

These findings reinforce previous published research of rice eaters using NHANES and additional government nutrition surveys to show that the diets of those who reported eating rice were more consistent with nutrition recommendations. Rice eaters ate more vegetables and grains, less total fat and saturated fat and had more fiber and iron in their diets. Together, these studies strongly confirm that rice eaters have healthier diets and face less risk for chronic diseases.

Supporting Dietary Guidance

"As Americans are encouraged to cut saturated fat, sugar and sodium intake to improve their health, they can feel good about some easy switches that can have a positive impact on their overall health," explains Julie Upton, MS, RD, a study author. "A serving of rice -- brown or white -- is a simple and enjoyable way individuals can have a better diet and reduced risk for disease. Rice is low in calories, nutrient-rich and is great-tasting. It pairs well with other healthy foods like beans, vegetables and lean proteins making it easier to meet nutrition recommendations," says Upton.

Improving Health Parameters

The researchers also looked at the overall health profiles of rice eaters, and learned that the 19- to 50-year-olds who ate rice were less likely to be overweight or obese, had a 34% reduced risk for high blood pressure, 27% reduced likelihood of having abdominal obesity and increased waist circumference and 21% reduced risk of metabolic syndrome. No associations could be drawn for children ages two to 13; however, in children ages 14-18, body weight, waist circumference, triglycerides and diastolic blood pressure were lower (P G .05) among those who ate rice.

"This study shows that eating rice can improve overall diet and reduce risk for the major conditions that afflict more than half of all Americans -- heart disease and Type II diabetes," states Upton. "Rice is a practical solution to help consumers meet dietary guidance to eat more plant-based foods."

Rice by the Numbers

U.S. national nutrition surveillance records show that rice eaters have healthier diets and less risk for chronic diseases compared to non-rice eaters. The researchers reported that rice eaters are:

* 1/3 less likely to have high blood pressure;
* 1/4 less likely to have a high waist circumference (often linked to obesity and diabetes risk);
* 1/5 less likely to have metabolic syndrome.

Research shows U.S. rice consumption has increased steadily over the past 20 years, with current per capita consumption at 26 pounds per person. Surveys show that rice is most frequently served as a side dish or one pot meal.

The research was supported by a grant from the USA Rice Federation. The USA Rice Federation is the global advocate for the U.S. rice industry, conducting programs to inform consumers about domestically-grown rice. U.S. farmers produce an abundance of short, medium and long grain rice, as well as organic and specialty rices including jasmine, basmati, Arborio, red aromatic and black japonica, among others. Farmers in Arkansas, California, Louisiana, Mississippi, Missouri and

Texas grow some 20 billion pounds of rice each year according to the highest quality standards. Eighty five percent of the rice Americans consume is grown in the USA.

Nutrition Horizon 12/14/2010 ---

Whole grain consumption may lower cardiovascular disease risk

A study published in The *American Journal of Clinical Nutrition* shows that consumption of whole grain foods may reduce cardiovascular disease risk in middle-aged people. The researchers aimed to assess the effects of consumption of three daily portions of whole grain foods (provided as only wheat or a mixture of wheat and oats) on markers of cardiovascular disease risk in relatively high-risk individuals.

A randomized controlled dietary trial was conducted with 206 middle-aged healthy individuals. After a four-week-run-in period on a refined diet, the researchers randomly allocated participants to a control (refined diet), wheat, or wheat plus oats group for 12 weeks.

The researchers found that the primary outcome was a reduction of cardiovascular disease risk factors by dietary intervention with whole grains, which included lipid and inflammatory marker concentrations, insulin sensitivity, and blood pressure. Systolic blood pressure and pulse pressure were significantly reduced by 6 and 3 mm Hg, respectively, in the whole grain foods groups compared with the control group. Systemic markers of cardiovascular disease risk remained unchanged apart from cholesterol concentrations, which decreased slightly but significantly in the refined group.

The researchers concluded that daily consumption of three portions of whole grain foods can significantly reduce cardiovascular disease risk in middle-aged people, mainly through blood pressure lowering mechanisms. The observed decrease in systolic blood pressure could decrease the incidence of coronary artery disease and stroke by 15% and 25%, respectively.

IFT Newsletter December 15, 2010

Further Support for Soy Protein's Potential in Lowering Non-HDL Cholesterol

Soy protein's ability to lower total and LDL (low-density lipoprotein or "the bad") cholesterol has been extensively studied, but the mechanism whereby soy protein lowers cholesterol remains unresolved. A new study published in the Journal of Clinical Lipidology this month shows that soy protein lowers total cholesterol and non-HDL (non-high-density lipoprotein) cholesterol significantly more than milk protein in patients with moderately high cholesterol levels.

"Non-HDL cholesterol has been shown to be a somewhat stronger predictor of cardiovascular disease and mortality risk than LDL cholesterol in population studies," said Elaine Krul, co-author of the study and nutrition discovery lead at Solae. "The fact that soy protein significantly decreased non-HDL cholesterol levels compared to milk protein in this study is very promising."

This randomized, controlled, parallel arm trial evaluated the effects of an insoluble fraction of soy protein, compared to total milk proteins with high calcium content, on the fasting lipid profile. It also assessed the potential contributions of increased excretion of bile acids and neutral sterols to their lipid-altering effects.

"The results of this study also showed that soy protein lowered non-HDL through a mechanism that does not involve increased bile acid excretion, but some yet to be determined mechanism," said Kevin Maki, lead author of the study. "Nonetheless, these results are supportive of the heart health claim for soy protein."

The Food and Drug Administration (FDA) heart health claim for soy protein established in 1999 states that "25 grams of soy protein a day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease." Currently, 11 other countries have approved health claims for soy protein's potential to lower blood cholesterol and lower the risk of coronary heart disease.

Solae's soy protein that was used in this study was a relatively insoluble fraction of soy protein isolate that had been shown

to lower plasma cholesterol and increase fecal bile acid excretion in animals. The levels of isoflavones in the soy protein were lower than the average commercial soy protein isolate further supporting the notion that isoflavones do not play a role in the cholesterol lowering. The milk protein supplemented group also showed a modest cholesterol lowering.

Subjects for this study included men and women 18 to 79 years of age with elevated cholesterol, defined as fasting LDL-cholesterol concentrations of at least 100 mg/dL and less than 200 mg/dL while receiving no lipid altering therapy. Once recruited, participants were asked to follow a Therapeutic Lifestyle Changes diet throughout the study. Subjects that still met the inclusion criteria were then screened for their ability to lower their cholesterol in response to a bile acid binding drug, colesevelam. A majority of subjects responded and were then randomized to the test protein groups.

Nutrition Horizon 12/16/2010 ---

Study Shows Garlic Could Protect Against Hip Osteoarthritis

Researchers at King's College London and the University of East Anglia have discovered that women who consume a diet high in allium vegetables, such as garlic, onions and leeks, have lower levels of hip osteoarthritis. The findings, published in the BMC Musculoskeletal Disorders journal, not only highlight the possible effects of diet in protecting against osteoarthritis, but also show the potential for using compounds found in garlic to develop treatments for the condition.

A relationship between body weight and osteoarthritis was previously recognised, although it is not yet completely understood. This study is the first of its kind to delve deeper into the dietary patterns and influences that could impact on development and prevention of the condition.

Osteoarthritis is the most common form of arthritis in adults, affecting around 8 million people in the UK, and women are more likely to develop it than men. It causes pain and disability by affecting the hip, knees and spine in the middle-aged and elderly population. Currently there is no effective treatment other than pain relief and, ultimately, joint replacement. The study, funded by Arthritis Research UK, the Wellcome Trust and Dunhill Medical Trust, looked at over 1,000 healthy female twins, many of whom had no symptoms of arthritis. The team carried out a detailed assessment of the diet patterns of the twins and analysed these alongside x-ray images, which captured the extent of early osteoarthritis in the participants' hips, knees and spine. They found that in those who consumed a healthy diet with a high intake of fruit and vegetables, particularly alliums such as garlic, there was less evidence of early osteoarthritis in the hip joint.

To investigate the potential protective effect of alliums further, researchers studied the compounds found in garlic. They found that that a compound called diallyl disulphide limits the amount of cartilage-damaging enzymes when introduced to a human cartilage cell-line in the laboratory. Dr Frances Williams, lead author from the Department of Twin Research at King's College London, says: "While we don't yet know if eating garlic will lead to high levels of this component in the joint, these findings may point the way towards future treatments and prevention of hip osteoarthritis.

"It has been known for a long time that there is a link between body weight and osteoarthritis. Many researchers have tried to find dietary components influencing the condition, but this is the first large scale study of diet in twins. If our results are confirmed by follow-up studies, this will point the way towards dietary intervention or targeted drug therapy for people with osteoarthritis."

Professor Ian Clark of the University of East Anglia said: "Osteoarthritis is a major health issue and this exciting study shows the potential for diet to influence the course of the disease. With further work to confirm and extend these early findings, this may open up the possibility of using diet or dietary supplements in the future treatment osteoarthritis."

Nutrition Horizon 12/17/2010 ---

Cinnamon may have beneficial effects for type 2 diabetics

A study published in *Diabetic Medicine* shows that consuming cinnamon may have beneficial effects on blood glucose and blood pressure in people who have type 2 diabetes. The double-blind clinical trial demonstrated beneficial results using 2 g of cinnamon, the amount found in about a teaspoon a day.

Researchers in London followed a group of 58 overweight adults with poorly controlled type 2 diabetes for 12 weeks. One randomized group consumed 2 g of cinnamon daily, while the other group received a placebo. At the end of 12 weeks, the participants in the cinnamon group experienced significant reductions in fasting blood glucose, body mass index (BMI), and both systolic and diastolic blood pressure compared to the beginning of the study. Hemoglobin A1c (HbA1c)—an indicator of glucose in the blood during the past 6–8 weeks—and blood pressure were also significantly lower in the group taking cinnamon daily compared to a placebo group.

The researchers concluded that cinnamon could be considered as an additional dietary approach to help regulate blood glucose and blood pressure levels along with conventional medications to manage type 2 diabetes. While more research is needed, the researchers concluded that the short-term effects of cinnamon on blood glucose and blood pressure look promising.

IFT Newsletter December 20, 2010

FOOD SCINECE & INDUSTRY NEWS

Natural Color Market Growing Rapidly

At the recent HiE conference, Steve Rice of RTS Resources said there is a marked shift toward using natural colors. According to Rice, the colors market is estimated at $1.7billion, and natural colors make up some $.65 billion of that total.

“Total colour usage has been growing by about 4 per cent year on year, but naturals are growing by 6.5 per cent year on year, so inevitably we can see that it’s synthetic colours that are being squeezed out," said Rice. “Our forecasts now show very little growth for synthetics, with all of the growth coming from naturals."

The market for natural colors will likely become intense as manufacturers begin using natural colors in more products and begin to see highly stable natural colors and explore new natural extracts.

Food Product Design 11/24/2010

Encapsulation with alginates may slow fat digestion

A study published in *Food Hydrocolloids* shows that encapsulating oils with alginates may slow the digestion of the lipids in the intestines. As a result, this may help formulate foods with controlled fat release and weight management potential.

The researchers used radioactive labeling of the carbon in octanoic acid added to sunflower oil, which was subsequently encapsulated by alginate. This allowed them to measure the digestion of fats as labeled carbon dioxide (13CO2) was produced in the breath during digestion. In addition, magnetic resonance imaging (MRI) was also employed to study how the particles behaved in the gastrointestinal tract of the participants.

Eleven volunteers consumed test meals with encapsulated or un-encapsulated oil. Results showed that the production of labeled CO2 was delayed by an average of 47 min following consumption of the encapsulated oil, compared to the control meal with freely available sunflower oil.

The researchers concluded: “This study showed that encapsulation is an effective strategy to control the GI fate of lipids. It also showed that multimodal studies including MRI are powerful tools for investigating how the body handles food components and may aid in the design of food products with controlled functionality.”
IFT Newsletter December 1, 2010

New Enzymes to Aid Egg Progressing

Eggs are extremely useful food ingredients and have a variety of functional properties including foaming, gelation, emulsification and texturisation. Eggs provide foaming properties in cakes and meringues; gelation in cakes and quiches; emulsifying components in batters and mayonnaise and improve the texture of baked goods.

It used to be that fresh whole egg and liquid products had the best functionality. However, both liquid and dried egg products can be treated with enzymes to improve functionality and may also be supplemented with salt, sugar and other ingredients to produce speciality egg products with improved functionality tailored for specific application.

Biocatalysts have launched a new enzyme suitable for the modification of egg yolk to provide increased viscosity and heat stability in mayonnaise manufacture.

Yolk treated with Lipomod 790L makes a superior mayonnaise that can be pasteurised without separating out. Enzyme-modified yolk is used in place of untreated egg yolk in a standard mayonnaise recipe. Because the enzyme-modified yolk has superior emulsifying properties, it's also possible to achieve better results using less yolk, saving money on expensive ingredients. L790L is a phospholipase A2.

Biocatalysts also has a variety of other enzymes suitable for a number of different egg processing applications.

Food Ingredients First 2 Dec 2010

Staying Tuned for More Innovations

Listen to Radio Fanaka Fana and Radio Jigiya, in the Fana and Zégoua regions of Mali, and you are much more likely to hear tips for improving compost piles and soil quality than you are pop music hits or current events. That's because the station is participating in Farm Radio International's Africa Farm Radio Research Initiative (AFRRI), a project to test the viability of using radio as a tool for spreading agricultural information to farmers throughout Africa.

Farm Radio International is a Canadian-based, non-profit organization with partner broadcasters from over 300 radio stations in over 39 sub-Saharan African countries. Its programs reach an audience of over 600 million people speaking more than 300 languages, providing listeners with valuable information that is increasing harvest yields and improving livelihoods.

Though cell phones, computers, and televisions might seem like more obvious—and increasingly popular—forms of mass communication, the radio is still the least expensive and most widespread communications technology in Africa. In Mali, where the soil is often dry and eroded, AFRRI is taking advantage of radio's popularity by working with local leaders and extension officers to present radio programs that can help farmers improve soil quality. Radio Fanaka Fana and Radio Jigiya—which have a combined audience of over 170,000 people— present regular shows promoting the use of compost pits to create organic fertilizer.

A case study for this particular campaign shows that farmers in the two radio stations' regions were listening and responding to the programs in overwhelming numbers. In Radio Zégoua 's region alone, households practicing improved composting increased from just over 25 percent to over 89 percent. Farmers reported feeling more comfortable with local extension officers after hearing them on the radio, and—based on word of mouth— other communities outside the reach of the radio stations started requesting programs of their own. One outside community even built a homemade antenna so they could hear the programs being broadcast in the next region over.

Nourishing Planet December 6, 2010 Danielle Nierenberg

India Launch of Food Security Report Focuses on Rice

Press Release -- MUMBAI, INDIA -- December 3, 2010 -- The International Rice Research Institute (IRRI) and the Asia Society launched a new food security report for Asia in Mumbai today, calling for increased investment in rice research.

The report, Never an empty bowl: sustaining food security in Asia, emphasizes the importance of rice as the primary staple food in Asia and a major source of income for Asian farmers. Existing global efforts to combat hunger and achieve food security are evaluated in the report, which also recommends more research on: climate change mitigation for farming, farming infrastructure, and market price stability.

"India, which is the second biggest producer of rice and where rice is a staple for more than 65% of the population, is an indispensable partner in spearheading rice research," said IRRI Deputy Director General for Research, Dr. Achim Dobermann, who helped launched the report.

India's leading agricultural scientist Prof. M. S. Swaminathan, co-chaired the international task force of prominent global thinkers, including the founder and board chair of the IT company Infosys Mr. Narayana Murthy, that prepared the report.

Poverty remains the single biggest factor contributing to food insecurity in Asia," said Prof. Swaminathan at the initial launch of the report in New York. "Two-thirds of the world's 1.4 billion poor people surviving on less than $1.25 per day live in Asia. They spend half of their income on purchasing food, mainly rice. For the extreme poor, having access to adequate food is often too costly."

He added that raising agricultural productivity is central to achieving overall economic development that reaches the poor.

The report coincides with IRRI's 50th anniversary fundraising campaign, which seeks to raise support for rice research through philanthropy and the private sector in Asia. Funds raised by this campaign will go toward the IRRI-led Global Rice Science Partnership, which will be carried out with hundreds of research and development partners around the world, including India.

IRRI has had a strong relationship with India since the Institute's inception, and established a local research office in Pusa nearly 30 years ago. IRRI has around 170 research partnerships with Indian agricultural institutions and organizations, including more than 40 under the Indian Council for Agricultural Research umbrella, as well as academic institutions. IRRI also has approximately 130 adaptation and dissemination partnerships in India, which include government bodies such as the National Food Security Mission and the National Seeds Corporation, nongovernment organizations, companies, and farmer associations.

Since the 1960s, India's rice production has improved with the use of better rice varieties, more precise nutrient management practices, and improved irrigation infrastructure, among other factors. However, erratic monsoons and extremes in weather patterns are proving increasingly challenging to the hundreds of millions of farmers in India. Investment in rice research will help to develop better methods of adaptation to floods, droughts, and high-salinity conditions, all of which will increasingly hinder rice production as climate change progresses.

Through greater investment and by growing more and healthier rice in an environmentally sustainable way, the report suggests, rice prices will be stabilized and poverty in Asia can be reduced by approximately 15% by 2030.

SoyTech eNews from Saturday, December 4, 2010

Pea Flour Reduces Acrylamide in Whole Grain Breads

CANAKKALE, Turkey—The addition of pea flour in wheat bran and whole-grain breads can reduce acrylamide levels significantly without negatively impacting color, texture and flavor, according to a new study published in the ***International Journal of Food Science and Technology***.

Researchers examined the effect of pea (Pisum sativum L.)-originated asparaginase on acrylamide formation in white wheat, wheat bran and whole-grain wheat breads. Two-day germinated pea flour was used at 0%, 1%, 3% and 5% levels for each bread type. Acrylamide analysis was performed with liquid chromatography–mass spectrometry.
The researchers also evaluated color and sensory properties of the breads to determine the effects of pea flour substitution on the consumer acceptance.

They discovered adding 5% pea flour reduced acrylamide levels by 57% in wheat bran and 68% in whole-grain bread without any negative impact on color and sensory properties. Reduction of acrylamide in white wheat bread was not significant, and the addition of pea flour decreased its sensory properties.

Food Product Design December 2, 2010

Water Out of Thin Air

In many parts of sub-Saharan Africa, people are forced to travel long distances and spend hours at a time collecting the water needed for cooking and drinking from far away streams or wells. But the residents of Cabazane, South Africa have found a much less labor intensive alternative. They use gravity and let water come to them.
With the help of a team of scientists lead by Jana Olivier from the University of South Africa's School of Agriculture and Environmental Studies, featured on AlterNet last month, the residents of Cabazane are using nets strung up across a nearby mountain pass to harvest water from the air.
Built at an altitude of 1,600 meters, steel cables held by wood posts support the two layers of shade clothe nets used to catch tiny droplets of water from the passing mountain fog near Brooks Nek Pass. The drops of water create runoff that is caught in gutters built at the bottom of the nets. This water is then carried by tubes down the side of the mountain and to the village. With each square meter of netting providing up to five liters of water per day, Cabazane can collect hundreds of liters on a good day.

And, most importantly, coming from the clouds, the water is very clean—an especially valuable commodity in area previously suffering from water shortages. The nearest stream to the village is two kilometers away and contaminated by animal use. Residents who used the stream were often exposed to water-borne diseases. Once dams were used to collect water in the area, but extreme drought has even dried up this source. Nandi Ntsiko, a resident of Cabazane, in the Alternet article, "having piped water was a pipe dream for us. We were forced to share drinking water with animals in this stream. The situation was dire."

Now the villagers not only have a steady supply of clean water, they have enough of it to store in newly constructed tanks. The netting also provides the additional benefit of being completely gravity-driven. No electricity is needed to power this innovation, making it affordable and environmentally friendly, and the technology is simple enough that maintenance is relatively easy.

Collecting water from fog is a technique that has been used for almost 30 years in some mountainous parts of Chile, and the project at Cabazane has been so successful that it's already been replicated in other dry areas of South Africa, including Venda and Limpopo.
Nourishing The Planet December 13, 2010

Market for Digestive Health Growing

Food Product Design December 13, 2010

DALLAS—According to recent research conducted by Markets and Markets and published in the report, "U.S. Digestive Health Ingredients Market (2010-2015)," the American market for digestive-health ingredients is currently valued at $265.9 million and is expected to grow at a compound annual growth rate of 13.2 through 2015, increasing in value to a projected $495.3 million.

The report notes that the range of digestive-health ingredients has been divided into three primary segments: prebiotics (including fructans, oligosaccharides, etc.), probiotic cultures, and digestive enzymes (like proteases, lipases, carbohydrases, lactases, etc.). Markets and Markets notes that prebiotics and probiotics are hot now and are growing at double-digit rates. Prebiotic ingredients are currently selling particularly well; the report notes that prebiotics is the largest revenue-generating ingredient category. Digestive enzymes are experiencing a relatively slower growth rates.

The report suggests that the U.S. probiotics market is at an "emerging" stage, with consumers still building their awareness of the ingredients, whereas European consumers are much more familiar with the category. However, the report shows that this market has great potential for growth, particularly among digestive-health ingredient suppliers who work to educate and create awareness among consumers, as well as product manufacturers who incorporate such ingredients into their foods. The report also notes that U.S. consumers still tend to primarily consume probiotics via dietary supplements. In Europe, most consumers get their probiotics via dairy foods, as well as other foods and beverages.

In addition to analyzing the domestic market for specific digestive-health ingredients, it also analyses prevailing trends for products and applications, as well as factors driving and inhibiting the growth of the market for digestive-health ingredients.

Low-Salt Substitutes From Plant Extracts

Food Product Design December 8, 2010

DAEJON, Korea—A new study published in Food Research International suggests certain salty and umami tasting extracts from aqueous plants may be used to reduce sodium levels in food products by as much as 43 percent without affecting salty tastes.

To develop a salt substitute with low-sodium content, 13 plants were extracted with water, and their sensory perception was analyzed. After the sensory evaluation, three plant aqueous extracts (PAEs), representing salty and umami tastes, were selected using principal component analysis (PCA). They were powdered using a spray dryer, mixed, and subsequently referred to as plant salt substitute (PSS). The relative saltiness of PSS to NaCl was shown to be 0.65. When the degree of saltiness between PSS and NaCl is the same, PSS contains 43% less sodium than NaCl. Therefore, PSS can be used in food to reduce an individual's sodium intake with the retaining the salty taste of NaCl.

REGULATORY & SAFETY NEWS

Does Being 'Small' Mean Less Food Safety Risk?

Being a small business person myself, I am all for helping my peers who are working hard to make our businesses successful. The order that comes with rules and regulations intended for Wall Street can be onerous and difficult to manage for those found mostly on the local main streets. However, is it correct for FDA to require less food safety controls for smaller food manufacturers than for the larger ones? I can't agree that such a principle for regulation is in anyone's best interests.

First, food doesn't care much if it comes from a smaller or larger manufacturer. The thresholds for food safety are one and the same. The rules for use of safe ingredients; equipment sanitation; personnel hygiene; and proper food cooking,

storage and distribution practices are the same for small and large operators. The consequences of consuming unsafe food are marginally different coming from small or large manufacturers, and only because fewer people may be adversely affected if the distribution system is limited, as is likely the case for a smaller operation. But if you are the one affected and sick with salmonellosis, the impact to you is just as bad. It hurts to be sick.

FDA should be cognizant that regulations can be developed that are cumbersome, difficult and even unrealistic for smaller operators to comply – but the rules should not be made lax just because of an operator's size. The discipline to deliver safe food preparation and handling is necessary for protecting the public health. Companies who go into the marketplace to sell food need to know that food is perishable and unsafe food makes people sick – and is a liability to their business. If they don't want to care about food safety, they should sell candles—not cream pies.
Catherine Adams Hutt ePerspective from Food Technology December 1, 2010

Cloned cattle food safe to eat, say scientists

The BBC's Pallab Ghosh looks at how cloned meat reaches the dinner table .

Meat and milk from cloned cattle and their offspring are safe to consume, independent scientists have said.
The Advisory Committee on Novel Foods and Processes said it believed the food was unlikely to present any risk.
The Food Standards Agency will discuss the conclusions in December before providing further advice to ministers.
Questions raised by reports over the summer that meat from cloned animals' offspring was sold to consumers "remain unanswered", the Soil Association says.

However, the committee's scientists said there was no substantial difference between meat and milk from cloned animals and produce from conventional livestock, in line with a number of other scientific assessments. Three cases had emerged of meat linked to a cloned cow being sold in the UK, according to the Food Standards Agency (FSA).

Two involved Highlands farm bulls grown from embryos of a cow cloned in the US, while the third involved meat from a male calf being sent to a London butcher's shop.

Disadvantage claim The FSA said the calf was the offspring of one of eight animals born in the UK from embryos produced by the US cloned cow.
FSA chief scientist Andrew Wadge said: "The Advisory Committee on Novel Foods and Processes has confirmed that meat and milk from cloned cattle and their offspring shows no substantial difference to conventionally produced meat and milk, and therefore is unlikely to present a food safety risk."

In the US, South America and Asia, farmers can breed from cloned cows, sheep and pigs in order to increase milk and meat production. However, farmers in Europe who want to introduce the products of cloned animals into the food chain require specific authorisation because they are considered "novel foods".

BBC science correspondent Pallab Ghosh says this is in effect a ban. Breaches of the Novel Food Regulations can attract a fine of up to £5,000. Some European farmers believe they are being put at a disadvantage by being denied the option of using the technology, our correspondent adds. Critics say there are strong ethical and animal welfare reasons to ban its use in European agriculture. "There are many unanswered questions on the issue of cloning animals - both ethical and practical - and insufficient regulation," said a Soil Association spokeswoman. "Not only does cloning have a negative impact on animal welfare, we also have no long-term evidence for the impacts on health."
The European Commission proposes to ban meat and milk from clones and their offspring. The FSA board will

discuss this at its December meeting, with the outcome influencing Britain's negotiations on the issue in Europe.
A spokesman said the board had asked for clarity from Europe but that any change in position was unlikely to come in the short term. "It is for individual member states to interpret European law but, obviously, we differ from the commission on this," he said.

BBC News UK 26 November 2010

EFSA Releases Article 13 Opinions for Omega 3s

The European Food Safety Authority (EFSA) has released its third wave of scientific opinions on Article 13 “general function” health claims, including three that addressed EPA and/or DHA claims for a variety of health conditions, according to the Global Organization for EPA and DHA Omega-3s (GOED), Salt Lake City, UT.

In total, EFSA issued positive opinions for four new claims and negative opinions for 11 claims on long-chain omega 3s. DHA received positive opinions for three claims: maintenance of normal (fasting) blood concentrations of triglycerides (2g/day of DHA in one or more servings), maintenance of normal brain function (foods should contain 250 mg of DHA in one or more servings) and maintenance of normal vision (foods should contain 250 mg of DHA in one or more servings). The combination of EPA and DHA received positive opinions for three claims, two of which were reaffirmations of previous opinions: maintenance of normal cardiac function (intake of EPA and DHA of about 250 mg/day), maintenance of normal blood pressure and maintenance of normal (fasting) blood concentrations of triglycerides.

In general, these are positive developments for the recognition of EPA and DHA, further cementing their roles as the nutrients with the most recognized benefits under a strict regulatory regimen, GOED said.

However, EFSA did not recognize the evidence submitted by GOED related to maintenance of normal triglyceride levels, stating that “no scientific conclusions can be drawn from this meta-analysis to establish conditions of use for the claim.”

The panel said the meta-analysis excluded studies prior to 2002 and that combining studies using DHA alone with those using EPA+DHA does not support a claim for the combination of the two nutrients.

The panel also concluded that a cause and effect relationship had not been established for several other claims, including all claims for EPA alone.

Nutraceucals World December 1, 2010

FDA Considering New Phytosterol Reduced Risk of Heart Disease Claim

The Food and Drug Administration (FDA) is proposing to amend the regulation authorizing a health claim on the relationship between plant sterol esters and plant stanol esters and reduced risk of coronary heart disease (CHD) for use on food labels and in food labeling.

The agency is taking this action based on evidence previously considered by the agency, and FDA's own review of data on esterified and nonesterified plant sterols and stanols (collectively, phytosterols) published since the agency first authorized the health claim by regulation. FDA is also taking these actions, in part, in response to a health claim petition submitted by Unilever United States, Inc.

The proposal would amend the authorized use of the claim by modifying the nature of the substances that may be the subject of the claim for conventional foods to include nonesterified, or free, phytosterols, by expanding the types of

foods that may bear the claim to include a broader range of foods, by modifying the daily dietary intake of the substance specified in the claim as necessary for the claimed benefit, by adjusting the minimum amount of the substance required for a food to bear the claim, and by making other minor changes.

Nutrition Horizon 8 Dec 2010 --

FTC Settlement Reached on Children's Brain and Eye Development Claims

As part of what it says are ongoing efforts to stop bogus health claims, the Federal Trade Commission has reached a settlement requiring major marketers of children's vitamins to stop making false and unproven claims that their supplements promote healthy brain and eye development in children. The companies have agreed to pay $2.1 million to provide refunds to consumers who purchased certain multivitamins in their Disney and Marvel Heroes line.

The FTC charged NBTY, Inc. and two subsidiaries, NatureSmart LLC and Rexall Sundown, Inc., with making deceptive claims about the amount of DHA – an Omega-3 fatty acid – used in their line of Disney- and Marvel Heroes-licensed children's multivitamin gummies and tablets. The companies also made unsupported claims that a daily serving of the products promotes healthy brain and eye development in children, according to the FTC administrative complaint.

Sold by major retailers such as CVS Pharmacy, Wal-Mart, Target, Walgreens, Kroger, Kmart, Meijer, and Rite Aid, as well as online, the multivitamins featured characters such as the Disney Princesses, Winnie the Pooh, Finding Nemo, and Spider-Man. Product packaging and print ads promoting the vitamins had bold graphics highlighting that the products contained DHA, but in reality, the products allegedly had only a trace amount of DHA. While the vitamins' packaging touted the purported health benefits of 100 milligrams of DHA, a daily serving of the Disney and Marvel multivitamins for children ages four years and older contained only one thousandth of that amount (0.1 mg or 100 mcg), according to the FTC's complaint.

The FTC alleged that the packaging and ads for the Disney and Marvel multivitamins misrepresented that they contained a significant amount of DHA, and that NBTY, NatureSmart, and Rexall Sundown made unsubstantiated claims that the amount of DHA provided by the multivitamins promotes healthy brain and eye development in children.

The settlement:
- bars NBTY, NatureSmart, and Rexall Sundown from misrepresenting the amount of any ingredient contained in any product.
- bars them from misrepresenting that any ingredient, including DHA, promotes brain or eye health or provides any other health benefit, unless the claim is true and backed by competent and reliable scientific evidence.
- specifies that any violations could subject the NBTY, NatureSmart, and Rexall Sundown to civil penalties.

A refund program to distribute the $2.1 million to purchasers of the Disney and Marvel multivitamins will be administered by the FTC. The agency will reach out to affected consumers in the coming months.

Nutrition Horizon 12/14/2010 ---

Food Colors and ADHD

Everything from vaccines to food colors have been implicated for contributing to behavioral problems, including attention deficit hyperactivity disorder (ADHD), in children. Is the hue and cry warranted, or are food colors getting a bad rap for no reason?

ADHD 101

ADHD affects up to 1 in 20 children in the United States, and prevalence estimates indicate ADHD is common in many other countries, as well (*Journal of the American Academy of Child and Adolescent Psychiatry*, 1997; 36:21-29). This disorder typically starts in childhood and can continue through adolescence and adulthood. Symptoms vary, but may

include difficulty concentrating, staying focused, paying attention and controlling behavior, as well as being easily distracted and hyperactive.

ADHD can impact one's quality of life, causing performance in school and at home to suffer while straining relationships with family members, teachers and other children. If ADHD continues into adulthood, those with this disorder are more likely to suffer from lower occupational status, poor social relationships and substance abuse (*Journal of the American Academy of Child and Adolescent Psychiatry*, 1997; 36:21-29).

ADHD has a number of potential causes , including genetics (*Archives of General Psychiatry*, 2007; 64:921-931), cigarette smoking and alcohol use during pregnancy (*American Journal of Psychiatry*, 2003; 160:1,028-1,040; *Journal of the American Academy of Child and Adolescent Psychiatry*, 2002; 41:378-385), exposure to lead early in life (*Environmental Health Perspectives*, 2006; 114:1,904-1,909) and consumption of artificial colors and preservatives (*Lancet*, 2007; 370:1,560-1,567).

FDA colors

The United States has two main categories of food color additives: certified and exempt. Certified color additives are synthesized primarily from petroleum and coal. Manufacturers of products made domestically or imported into the United States must submit a batch sample of their color to FDA for analysis of composition and purity prior to being used in any FDA-regulated product, including food. If the batch passes, FDA will certify the batch and give it a certification lot number.

Exempt colors are obtained mainly from plant, animal or mineral sources and do not require batch certification. However, FDA still considers them artificial color additives in use and they must comply with FDA regulatory requirements. Examples of exempt colors include grape color extract or caramel color.

According to FDA, color additives are safe when used properly. The FDA allows the use of colors that it knows have "a reasonable certainty of no harm" for the intended use. Color additives that have been found to cause cancer in animals or humans are not allowed for use in FDA-regulated products.

Research

The initial concern over food colorings and behavior was spurred by pediatrician Ben Feingold who, at a 1973 meeting of the American Medical Association, claimed that food additives were responsible for 40% to 50% of the hyperactivity he observed in children that came to his practice. Studies examining Feingold's additive-free diet are mixed, so support of this approach is theoretical at best (*Journal of Learning Disabilities*, 1983; 16:574-575; *Professional Care of Mother and Child*, 1998; 8:35-37; Journal *of Developmental Behavioral Pediatrics*, 1986; 7(1):35-42).

It has also been theorized that food additives may cause non-immune-dependent histamine release, which may exacerbate ADHD symptoms (*American Journal of Psychiatry*, 2010; 167:1,108-1,115), and that a wide variety of chemicals within our food may contribute to neurobehavioral toxicity (*Journal of Developmental and Behavioral Pediatrics*, 2004; 25:423-434).

One of the most well-known studies to date, the Southampton study on food additives, used a randomized, double-blind, placebo-controlled, crossover trial to examine if artificial food colors and additives affected childhood behavior in 155 3-year-olds and 144 8- and 9-year-old children. Over the 6-week study period, both groups of children were put on a diet free from the additives used in the study and then given a daily drink containing mix A, which combines tartrazine (E102 or FD&C Yellow No. 5), ponceau 4R (E124), Sunset Yellow FCF (E110), carmoisine (E122) and sodium benzoate; mix B, consisting of Sunset Yellow FCF (E110), carmoisine (E122), Quinoline Yellow (E104), Allura Red AC (E129) and sodium benzoate; or a placebo. All subjects were examined for global hyperactivity aggregate, a measure based on aggregated z-scores of observed behaviors and ratings of behavior by teachers, parents, a classroom observer and a computer-based test of attention for the older children.

Compared to placebo, when the 3-year-old children were given Mix A, they exhibited significant adverse effects on the global hyperactivity aggregate. mix B did not differ from placebo on measures of the global hyperactivity aggregate. The

8- and 9-year-old children showed significant adverse effects of global hyperactivity aggregate when they consumed at least 85% of either mix A or B in comparison to placebo.

The study authors concluded that artificial colors or sodium benzoate increased hyperactivity in both groups of children. However, this study doesn't shed any light on which additives may have been responsible for observed changes in the children's behavior. Was it the sodium benzoate or the color? If it was the color, which color, and was there an added effect of all colors combined or total dose that made the difference? In light of such lingering, unanswered questions, the results of this study should be interpreted with caution. Muddying the waters even more, re-analysis of the statistics by the European Food Safety Authority (EFSA), which examined the data using each subject as their own reference point, found that some of the statistically significant results were not significant at all (*The EFSA Journal*, 2008; 660:1-5).

Studies on food colors and behavior are not comprehensive (because there are so many food colors) and, at this time, inconclusive.

By Marie Spano Food Product Design 12/13/2010

NSF Supports FDA's Increased Enforcement to Safeguard Against Adulterated Dietary Supplements and Nutritional Products

NSF International, an independent public health organization that tests and certifies dietary supplements to protect against adverse health effects, fully supports the U.S. Food and Drug Administration's (FDA) announcement yesterday that reemphasizes and reinvigorates the FDA's legal authority to aggressively eliminate adulterated dietary supplements in the marketplace. In a letter to manufacturers of dietary supplements, the FDA asserted that the problem of "spiked" supplements has grown significantly in recent years, and now constitutes "a significant public health problem." The FDA letter reminds companies of their legal obligations and responsibility to prevent tainted products from reaching the U.S. market and that the companies should take appropriate steps to insure that their products do not contain adulterating substances that can cause serious adverse health consequences.

NSF applauds the FDA's recommendation that dietary supplement manufactures, importers, distributors and retailers understand and investigate their full supply chain and review their manufacturing and quality assurance activities to insure the lawfulness, quality and safety of their products and, as required by existing federal regulation, that dietary supplement components conform to established product specifications and that they maintain documentation of the qualification of a supplier for the purpose of relying on a supplier's certificate of analysis.

As the developer of the U.S. national standard for dietary supplements and provider of accredited third-party testing and certification of dietary supplements, NSF has in-depth knowledge of the supplement manufacturing and retailing industries and possesses a strong reputation for protection of public health. This is why professional sports organizations asked NSF to develop the NSF Certified for Sport program to reduce the risk that a dietary or sports supplement contains banned or disqualifying performance enhancing substances. The NSF Certified for Sport program is recognized by the National Football League (NFL), Major League Baseball (MLB), Canadian Centre for Ethics in Sport (CCES), the Ladies Professional Golf Association (LPGA) and the PGA, among other major sports organizations, and demonstrates that spiked or adulterated products in the marketplace can be minimized with the help of third-party certification labels that consumers can trust when purchasing supplements.

In addition, market sampling and independent testing of "suspect" products by NSF International researchers confirms the FDA's findings that illegal supplements spiked with steroids, erectile dysfunction drugs and stimulants are very readily available from both retail stores and internet merchants. That is one of the reasons that major league sports organizations only allow NSF Certified for Sport supplements and nutritional products into their locker rooms.

NSF International applauds FDA's announcement and stands ready to assist in reducing this public health concern.

Nutrition Horizon 12/17/2010 ---

EFSA Approves Chromium Picolinate as Safe for Use in Foods

Nutrition 21, Inc., the developer and marketer of clinically substantiated ingredients for dietary supplements, foods and beverages, and animal nutrition, announced the European Food Safety Authority (EFSA) issued its safety assessment supporting the use of chromium picolinate in foods intended for the general population in the European Union (EU). In its safety assessment, EFSA concluded that chromium picolinate has a large margin of safety supporting its use as a source of chromium up to the maximum level established by the World Health Organization (WHO). EFSA's safety review was in response to Nutrition 21's Application to market Chromax chromium picolinate as a source of chromium in conventional foods in Europe. The safety assessment is an initial step in obtaining formal EU approval of chromium picolinate as an acceptable form of chromium for use in foods. We expect the formal approval will be issued in 2011.

Chromax chromium picolinate is Nutrition 21's top selling nutritional supplement ingredient in the U.S. The formal approval of chromium picolinate for its use in both fortified food and "medical" food applications in the EU and will provide Nutrition 21 with additional opportunities for business expansion. William J. Levi, Vice President—Ingredients for Nutrition 21, stated, "This is an exciting development for our Ingredients business. Expansion into the European Union is an important component of our growth strategy. We, along with our European distributor Ingredia, look forward to pursuing opportunities with food companies."

James Komorowski, Vice President, Research & Development at Nutrition 21, commented, "The safety review was extensive and included a review of Nutrition 21's safety data on Chromax chromium picolinate, our manufacturing and product specifications, and the long-term, high-dose, toxicity studies independently conducted by the U.S. National Toxicology Program." In total, the safety review included over 140 references. "The expert opinion on the safety of chromium picolinate and the extensive scientific support is consistent with the high quality standards Nutrition 21 stands behind when offering our premium ingredients to customers and consumers", added Mr. Komorowski.

Nutrition Horizon 12/20/2010 –

Energy Drinks Increase Alcohol Consumption

Food Product Design December 16, 2010

HALIFAX, Nova Scotia—A new study published in the *Drug and Alcohol Review* found students who drank energy drinks in combination with alcohol drank nearly twice as much alcohol as those who did not combine energy drinks and alcohol. Researchers at Dalhousie University interviewed more than 70 students about their energy drink consumption and alcohol use and found energy drinks basically doubled the amount that people reported drinking.

"So if they had an average of four drinks when they weren't mixing with energy drinks, they would have around eight if they were. That's actually a pretty profound increase, but it's consistent with our other research where we see an increase in alcohol consumption related to the use of other stimulant drugs, like tobacco," said lead author Sean Barrett. "What we found was that energy drinks basically doubled the amount that people reported drinking."

There is no conclusive reason for why this is happening but researchers have several hypotheses. The first is that it is a purely social behavior—people who are having a good time will consume more of anything. The second is that certain ingredients in the drink might cause the brain to release more dopamine. This would prolong the initial euphoria-like feelings caused by a rise in the blood-alcohol level and hold off the depressive and sedative feelings triggered by a decrease in the blood-alcohol level.

There is also a correlation between the banning of smoking in bars—a popular stimulant for many who drink—with the rising use of energy drinks. Due to the increase in alcohol consumption, individuals who combine alcohol and energy drink consumption are at a higher risk for acute alcohol poisoning, engaging in risk-taking behavior and developing a higher tolerance to alcohol that could potentially lead to dependence.

"Research has yet to determine if it's the caffeine or perhaps an amino acid called taurine that might be affecting the brain and leading to these behaviors," he said. "But what we do know that when alcohol is used together with these energy

drinks, people say they feel more sober but they still tend to perform poorly on various neurocognitive tasks. They're still physically intoxicated, they just feel like they aren't."

FSA Targets 30% Reduction in Campylobacter

Food Product Design December 21, 2010

LONDON—The Food Standards Agency (FSA), the UK poultry industry and major retailers have agreed a new target measure to reduce the levels of campylobacter in chickens by nearly 30 percent or 90,000 cases per year. Accrording to FSA, nearly two-thirds of raw chickens sold in the United Kingdom are contaminated with campylobacter, causing more than 300,000 illnesses and 80 deaths every year.

There are three categories of contamination and 27 percent of birds in the UK are currently in the highest category. The new target is for the industry to reduce the numbers of these most contaminated birds in UK poultry houses from 27 percent to 10 percent by 2015. The FSA estimates that achievement of this target could mean a reduction in campylobacter food poisoning of up to 30 percent or some 90,000 cases per year.

"The Food Standards Agency has identified tackling campylobacter as its No. 1 food safety priority. There are about 850 million chickens slaughtered in this country every year. This target is challenging but achievable. However, solutions need to be found at every stage of the food chain to stop this bug from spreading," said Alison Gleadle, FSA director of food hygiene. "The new target will underpin all of our joint work on reducing campylobacter in chicken and allow us to measure the success of these interventions. We are working closely with the food industry to make chicken as safe to eat as possible."

Options being considered to reduce campylobacter levels in the slaughterhouse include better hygiene measures on farm, hot water treatment or steaming chicken carcasses, the use of electrolyzed water, and antimicrobial washes such as lactic acid. Such washes would require approval from Europe.

Another option might be for pre-packed chicken on retail sale to be packed in modified atmosphere packaging, which raises the levels of oxygen inside packs to slow the rate at which bugs multiply. Better leak-proof packaging could also help prevent the spread of the bacteria to other foods or surfaces in the kitchen.

UK Issues New COOL Rules

LONDON—The United Kingdom on Nov. 24 published new country-of-origin labeling (COOL) guidelines for meat, processed meats and dairy products that will help provide consumers with clear, accurate information on the origin of their food.

Developed by the British Retail Consortium (BRC) and other food industry members, "Principles on Country of Origin Information" is based on the labeling practices of the best performers in the food chain and aims to ensure a higher quality and consistency of origin.
The guidelines apply to meat, processed meat products (sausages, bacon, ham etc.) and milk, fresh cream, cheese and butter. They ensure that the term "British" only can be used for meat from animals born and reared in the United Kingdom, and dairy products made from milk produced in the UK. Many British grocers already use this approach to origin labeling, with the overwhelming majority committed to going one step further, providing country of origin information on the meat in all "composite" products such as soups and ready meals.

Manufacturers need to label processed meat products like bacon and sausages with the origin of the meat ingredient in the products. In other composite products like pies and casseroles, where a voluntary origin declaration is made, the guidelines state that processors need to "label the country or origin of the meat ingredient if the meat is considered of primary interest to the consumer or a predominant component of the product."

“I'm delighted to see the food industry come together to build on good progress already made in labeling food with the country of its origin. I am pleased that a large number of food companies have already committed to follow the principles agreed today and are encouraging others to also do so. These principles will mean a consistency of information that will reduce confusion and ensure British consumers will be the best informed in Europe," Food and Farming Minister Jim Paice said.

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