

Cornelius Health and Food Bites

Spring is almost here and its time for another issue of Health and Food Bites. We aim to provide you with new ideas, update you on legislation and give you a sample of some of the up and coming trends along with new product launches.



New Products On The Market

We start the new products section with a new packaging technology. A can system developed by **Ball Packaging Europe**. This packaging is designed to protect sensitive ingredients for use in beverages. The technology is called **fresh can** and contains an air and water tight plastic capsule which keeps the active ingredient enclosed until the can is opened. The opening action causes the ingredient to be deposited into the drinking liquid. Ingredients that would otherwise quickly lose their effectiveness in an aqueous environment are stored until consumed.



The first company to use this technology is a German company who have launched **Crea Max**, a creatine rich sports drink. Cranberry flavoured ready to drink in a 429ml can, it contains 4.6g of creatine which is stored inside a wedge until you open the can. When the ring pull is released the creatine is automatically mixed and ready to drink within 30 seconds. Crea Max is the first ready to drink creatine drink that delivers a stable dose of creatine to extend training time.



You may have heard the word "Super foods" mentioned. This is the new trendy buzzword for, particularly, fruits packed with antioxidants like pomegranate.

The Goji berry is the latest super-food. It is small, red, dried, and a bit like a savoury cranberry, the nutritionally-rich fruit is making the leap from specialist stores to supermarket.

Already popular in the US, celebrities like Madonna and Liz Hurley are said to like them for their rich properties.

Gillian Mckeith has been publicising this berry on her TV program, You are what you eat. The UK's Food Standards agency have sent out letters to retailers, health food companies and other stakeholders to request evidence of whether goji berries were consumed in substantial quantities in the European Union before May 1997. If no satisfactory evidence is available, authorisation under novel foods legislation may need to be sought (NUTRA ingredients.com)



Nestle have teamed up with Coca-Cola to give us a new green-tea beverage that has been proven to burn calories. This drink could burn 60 to 100 calories with three 12-ounce servings (1020g or around a litre). Envigo contains the optimum blend of green tea extracts (EGCG), caffeine and naturally active plant micro nutrients designed to work with your body to increase calorie burning, thus creating a negative calorie effect. It makes this product stand out as unique. **Envigo** brings the benefits of green tea to the forefront in a convenient and accessible, great tasting beverage

Muller have launched a 3 in 1 functional yoghurt drink, including omega oil, and a pre and pro-biotic.

"The pro biotic bacteria and pre biotic fibre in Müller Vitality are a great combination, working together to help maintain a healthy digestive system as part of a healthy diet and lifestyle. The range also provides a great way to top-up your Omega 3 intake".



Cornelius Can help

Cornelius are able to supply Creapure (Creatine) from Degussa , we are their UK agents , this product is EU certified. Creatine has recently been linked to improved brain function.

We also have a great range of green tea extracts from Taiyo, Taiyo's range includes Sunfiber and an emulsified omega oil which could easily be incorporated into yoghurt's like Müller's.



Cornelius Lab

Over the last few months in the Group Technical Centre we have been looking at beverages and ingredients that could add a functional claim.

So far we have looked at the following ingredients which are supplied to us by Taiyo Kagaku Co Ltd.

Soluble Fibre (Sunfiber), which has many physiological benefits in the body, including reducing Glycemic index, helping with digestion and improvements in the intestinal environment. Sunfiber also has taste masking properties which can be used to reduce the astringent/bitter taste of some artificial sweeteners . RDA for fibre is 5g

Low taste Iron (SunActive Fe). Iron deficiency is one of the most common. Lack of iron can lead to anaemia causing fatigue, weakness, poor exercise tolerance, loss of appetite and decreased immunity. RDA of iron is 14mg

An **omega emulsion** (Sunactive DHA). Omega oil has recently been linked to increased brain function in children who's mothers consume more omega oil. Omega oil also improves heart health. There is no RDA for DHA but it is recommended that 700-1000mg be taken daily.

These products are designed to tackle some of the previous problems that are associated with adding these ingredients.

After some testing in the lab it was found that these ingredients are extremely easy to use and make little difference in taste and appearance when compared to other materials of the same type.

SunFiber AG (Soluble fibre)

This ingredient was added to a blackcurrant drink (5g per 300ml). No change in viscosity was observed and no obvious change in taste or appearance was found.

SunActive Fe (Iron)

Two orange drinks were made, one using the SunActive Fe the other with Ferrous Sulphate heptahydrate (4.6mg of iron). The two were compared against each other in a taste test. Results showed that it was found that the Ferrous Sulphate heptahydrate produced a metallic after taste, this was not found when tasting the SunActive sample.

SunActive DHA-6HR (Omega oil)

This ingredient is a liquid emulsion of omega oil (Emulsified DHA oil). It can be added to water and creates a milky solution as seen in the picture below, which has no fishy taste or smell. This ingredient has overcome the two main issues associated with fish oil and is thought to be one of the best on the market at present.



Cornelius Can Help.

If you would like more information about the ingredients mentioned or you would like samples please contact me or your usual Cornelius representative. Laura.thompson@cornelius.co.uk,

News From Cornelius



Kemin Defend Their Patent!

Kemin Industries (a Cornelius principal) have successfully defended their patent in a four year court battle. A US court of appeals has upheld Kemin's Industries patent after Pigmentos Vegetales del Centro appealed a September 2004 jury verdict. This finally closed the lengthy litigation between the two parties, Kemin were awarded \$58,775 in damages.



Meet the Team



Darren Spiby
(Business Manager Health and Food)



Neil Forbes
(Area Sales Manager Health and Food)



Joy Thomas
(Area Sales Manager Health and Food)



Bris Goodey
(Area Sales Manager Health and Food)



Laura Thompson
(Nutritional Health Chemist)

The Joy of Legislation



Irradiation is currently permitted in the UK, as long as foods are irradiated in authorised irradiation facilities which must be licensed, regulated and subjected to strict safety inspections by the Food Standards Agency.

Irradiation can be used to kill bacteria that cause food poisoning, such as salmonella, campylobacter and E. coli. It can also delay fruit ripening and help stop vegetables such as potatoes and onions from sprouting. It is used in many parts of the world because it is an effective way of killing bacteria and with some food, such as spices that are dried in the sun, irradiation kills bacteria without changing their flavours or aromas.

There is only one source of ionising radiation permitted for food irradiation in the UK: gamma rays from cobalt-60.

It is a safe processing technique used for herbs and spices. However it is required that all foods, or ingredients of foods listed on the label, which have been irradiated, are labelled as 'irradiated' or 'treated with ionising radiation'. This is not something that is attractive to the consumer, so the trend is to use non irradiated materials. These non irradiated materials, however, can sometimes be difficult to source.



Most irradiated foods or foods containing irradiated ingredients can today be identified using specialised detection equipment and techniques. There are two main methods of measuring irradiation, thermoluminescence (TL) and photo-stimulated luminescence (PSL). Thermoluminescence testing measures energy taken on when minerals (such as those found in shellfish or spices) are irradiated. Photo stimulation releases stored energy by an optical technique, using infrared radiation to detect blue and ultraviolet light emissions and detect single photons. The advantage of this technique is that it is cost-effective, sensitive to even minuscule quantities of an irradiated product and very quick - an initial positive or negative reading can be obtained in under a minute, indicating whether further testing may be necessary.

Can you guarantee that your raw materials have not been irradiated?

Cornelius Can Help.

Cornelius Principal, Fenchem, a Chinese ingredient supplier, has its own PSL machine to test for irradiation. Therefore Cornelius and Fenchem can give you peace of mind, low price and quality assurance when purchasing herbal ingredients.

Trials and Studies

Improvements of Glycemic Response

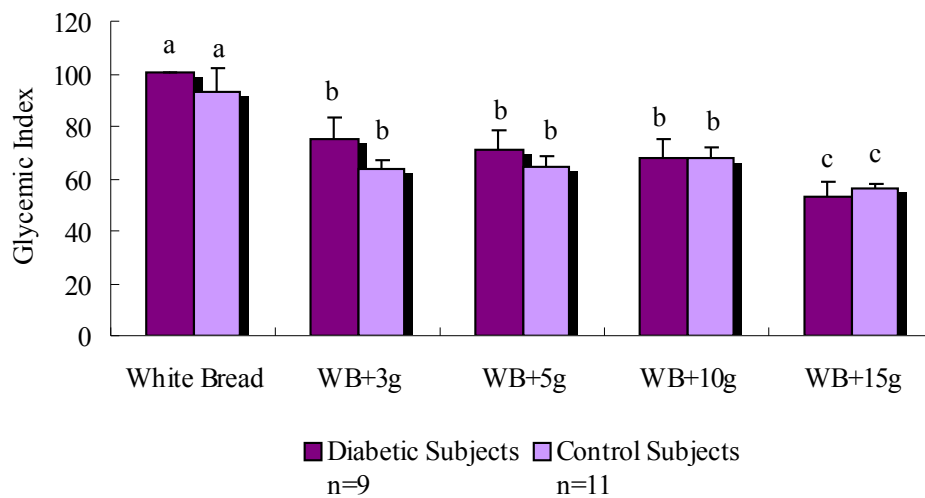
The glycemic index ranks food according to how they raise blood glucose levels. The glycemic response is influenced by the body's ability to respond to elevated blood glucose levels by releasing insulin, and for the tissues to react to increased insulin levels. Obtaining a low glycemic response may be beneficial for anyone with glucose intolerance or problems with blood glucose management, such as diabetes.

Reducing GI and consuming low GI foods is desirable because it can reduce blood sugar levels, help with weight management and reduce the risk of heart disease. It has also been shown that consuming low GI carbohydrates can prolong physical endurance.

Soluble dietary fibre has been demonstrated to reduce post-prandial glycemia in both normal and diabetic subjects. Improvement of glycemic control in long-term studies has also been seen.

Here is an example of a study that has used Sunfiber (soluble fibre)

The addition of Sunfibre to food can effectively reduce the glycemic index of those foods. A total of 11 normal and 9 diabetic subjects were given white bread and rice with different amounts of Sunfibre (3-15g) added during baking or cooking. Using a randomised, crossover design, the control and test foods were given following an overnight fast and blood samples were taken. Experiments were performed twice and the glycemic index was calculated. The glycemic index of white bread was significantly reduced when baked with increasing levels of Sunfibre in both the normal and diabetic subjects.



GI of white bread is assumed to be 100

Letter (abc) denote significant differences at a level of $p < 0.05$

Cornelius Column: Bone Health

Our bones perform vital functions in the body. They provide the framework for your body to move and protect your vital organs.

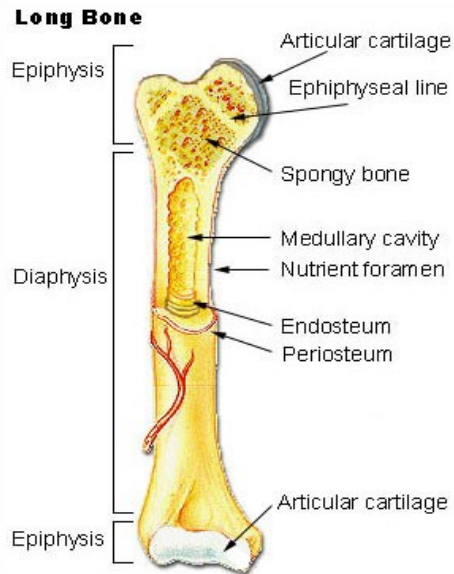
Bone is a living tissue that is continually remodelled and rebuilt throughout your life. New bone is made and old bone is lost. When we are first born, bones are much softer compared to adulthood. They harden (or calcify) when calcium, protein and phosphorus are deposited in them. The body cannot make its own calcium, so it is essential that diet supplies this need. (99 percent of the calcium in your body is in your bones, and 1 percent is in your blood and body fluids).

Eating a balanced diet that includes calcium-rich foods can supply the calcium required to maintain these levels. Most diets do not provide this.

The problems of bone health are increasing with an increasingly ageing population. Poor diet and lack of exercise are major causes which contribute to conditions such as osteoporosis. The World Health Organisation has defined osteoporosis as the second leading health related problem after cardiovascular disease.

Osteoporosis affects more than 200 million women all over the world. It is estimated that more than one in three women in this country over the age of 60 will suffer a broken bone due to osteoporosis.

Most vitamin and mineral supplements will have calcium but now the food industry is adding products such as calcium fortified foods and beverages to the market to try to tackle this growing problem.



Products on the market that are fortified with calcium include **Diarylea**, they say dairylea spread is a good source of calcium which is great for bones and teeth made with natural cheese, milk and butter and no artificial preservatives or colours one 25g serving of dairylea spread provides 1/3 of kids' recommended daily calcium intake.

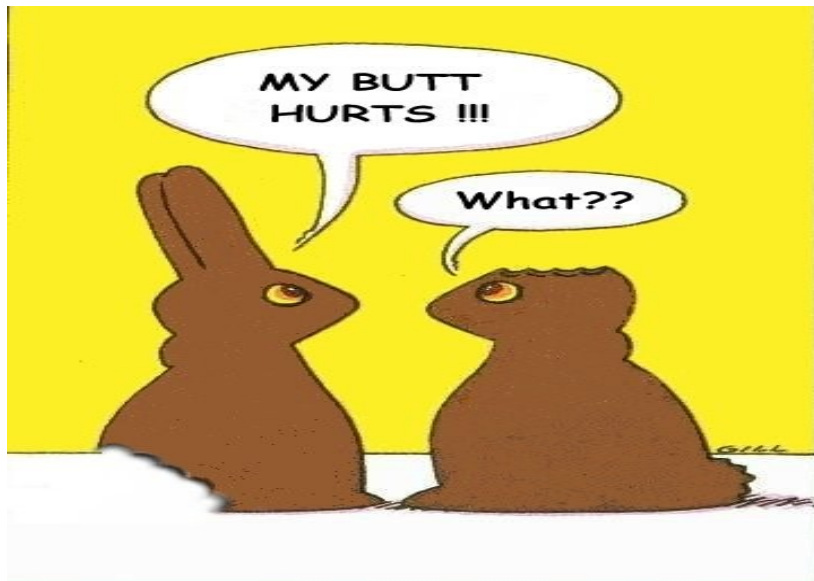
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Cornelius can help.

We at Cornelius can supply DC Calcium carbonate, plus oyster shell and we also offer other ingredients with implications for bone health such as NSSL vitamin D and NSSL isoflavones (NSSL is a Nano technology for solublising usually difficult ingredients) plus Fenchems Solavon isoflavones, which have been shown to increase bone density.

Easter Fun



http://humor.about.com/od/easter/Easter_Humor.htm

Ingredients	Weight(g)	%
Acacia gum *	100	29.48
Water	120	35.36
Sugar	90	26.52
Water	15	4.42
FloraGLO Lutein 10% TAB VG	0.12	0.03
Glucose syrup	14	4.13
Flavour *	0.2	0.06
Total	339.32	100



*Acacia gum supplied by Agrisales Ltd.

*Flavour supplied from Belmay.

Method

Day before: Dissolve the acacia gum in 120ml of cold water.

Leave this to dissolve over night.

The next day scrape off the foam that will have formed on the top of the gum mix.

Heat oven to 40 deg C.

Dissolve FloraGLO Lutein in water.

Add sugar and water to a pan and dissolve.

Place on the hob and add glucose syrup.

Bring to boil (124 degrees C)

Remove from the heat and add to gum mix

This should be mixed together thoroughly.

Pour pastille mix into previously prepared warm starch moulds and leave in oven to dry for 48 hours.

Remove from oven and sugar coat.



The food market is now looking towards making food and drink products which can improve ourselves on the outside as well as on the inside. Danone are launching their cosmetic yoghurt's this year.

The area of overlap between dietary supplement and cosmetics companies has been growing with a category, now estimated by Kline and Co to be worth around US\$1bn on a global basis. Kline calls such products 'nutricosmetics' – but it is not alone in coining a new term to describe the concept. Leatherhead Food International is calling ingestible ingredients with skin benefits "Skigestibles". This is a trend that we will be seeing a lot more of over the coming months.

If there are any questions please feel free to contact us on either of the emails below

This newsletter is brought to you by the Cornelius Group Technical Centre.
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www.cornelius.co.uk

Any feedback would be appreciated.