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NutraNews

DSM Nutritional Products Customer Magazine

Brazilian consensus on DHA recommendations

Nutrient mapping: connecting the dots

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Vitamin E and the liver

www.dsm.com/nutranews

HEALTH · NUTRITION · MATERIALS

Brazilian consensus on DHA recommendations during gestation, lactation and infancy

DHA (docosahexaenoic acid) is an omega-3 fatty acid with proven benefits for health at all stages of life. DHA is critical for infant development, especially in regard to vision and the central nervous system.

It is well known that there is extremely low consumption of adequate DHA sources (fatty fish) in Brazil, and that DHA concentration in breast milk depends on maternal nutritional DHA status.

In order to standardize the recommendations regarding DHA consumption and supplementation during pregnancy, lactation and infancy, DSM sponsored the development of the Consensus. The document was written by distinguished health professionals from the Brazilian Association of Nutrologists – ABRAN (nutrology is a medical specialization in nutrition). It was launched during the ABRAN Congress – a prominent forum of discussions dedicated to health and nutrition.

The conclusions were presented based on strong scientific evidence. They reinforce the view that all pregnant women should receive daily supplementation of DHA (200 mg).

The conclusions also include recommendations on breastfeeding for 24 months and intake of DHA during this period, and recommendations for children who are not breastfed for 24 months. Children older than 24 months should be encouraged to consume direct nutritional sources of DHA. In the case of proven dietary deficiency, supplementation should be considered.

With a portfolio that includes the two main products in the market – *life'sDHA*® and MEG-3®– DSM is the worldwide leader in providing nutritional lipids solutions for fortification of food, beverages, infant formula, baby food and supplements.

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Human Nutrition & Health
Events

Food Ingredients China
April 1–3, Shanghai, China
www.b-for.com/China.html

Supply Side Market place
April 8–9, Orlando, FL, USA
http://marketplace.supplysideshow.com

ExpoFarma
April 15–17, Mexico City, Mexico
http://expofarma.com.mx

Vitafoods
May 5–7, Geneva, Switzerland
www.vitafoods.eu.com

FCE Pharma
May 12–14, São Paulo, Brazil
www.fcepharma.com.br/en

IFT15
June 11–14, Chicago, IL, USA
www.ift.org

Nutrient mapping: connecting the dots

Extending their current partnership, DSM and the University Medical Center Groningen (UMCG) are engaging in new research to determine how nutrient status is connected to phenotypes. The project will help further establish why some people develop chronic illnesses early in life while others remain healthy into old age.

Typically, surveys are used to determine vitamin intake. However, such data are often inconsistent due to inaccurate reporting. A biochemical assessment of vitamin status and intake provides far more realistic references. In this study, participants span three generations and the data collected include anthropometry, blood pressure, lung function, cognition and urine samples. The findings can then be connected to phenotypes such as high blood pressure, type 2 diabetes, non-alcoholic steatohepatitis (NASH), obesity and exposure to air pollution.

This analysis has the potential to lead to faster identification of diseases and will complement research into preventing chronic disorders, making a significant impact on public health globally.

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Deeper into the Pyramid – DSM participates in successful initiative of Tetra Pak Egypt

Tetra Pak Egypt holds workshops for affordable, available, attractive and sustainable liquid food products

In October 2014, Tetra Pak Egypt gathered all juice, milk and cheese producers under one roof to reveal its new Deeper into the Pyramid (DiP) initiative, which aims at inspiring customers with new ideas for product launches that meet the demands of lower-end consumers. During the workshop, an overview of the Egyptian DiP consumer was presented, along with global case studies and Egypt's strategy for DiP.

DSM was invited to share knowledge andexpertise on how to provide safe, healthy and nutritious products at an affordable costfor lower-income consumersin emerging markets.

Sarah Louis, Marketing Manager, Human Nutrition and Health (left), together with Tetra Pak's Amr Youssef (Marketing Manager and GME&A DiP Driver) and Gisele Gurgel (DiP and South Africa Marketing Director)

The event was a great success. It was an exciting opportunity to network, share and develop solutions, and to demonstrate that fortification is affordable.

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DSM once again demonstrates how to reveal the true power of beauty

Cosmetagora, the two-day beauty trade show that was held in France's capital on 13 and 14 January 2015 was a new opportunity for us at DSM to demonstrate how to reveal the true power of beauty. By showcasing our latest sensory and visual modifier product range – VALVANCE™, the global anti-aging REGU®-SCENCE, and the multifunctional polymer TILAMAR® *Fix* A140 – the DSM team had the opportunity to network with leading Beauty and Personal Care professionals and to promote a sensorial world of beauty with a range of novel formulations.

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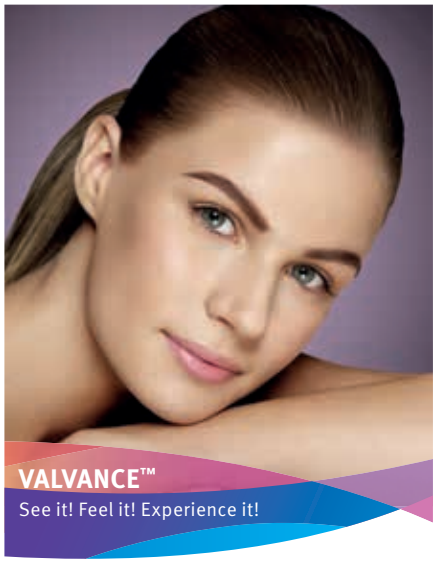

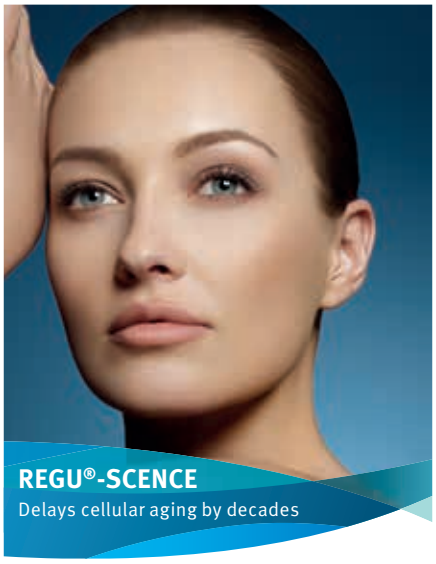

New study results for SYN®-COLL:

Visible signs of photo-aging can be reversed in just four weeks

Skin aging, in particular when induced by chronic UV exposure, leads to degenerative changes in the skin. UV light also increases metalloproteinase activity, which leads collagen to break down at a higher rate than in the case of regular aging. DSM's SYN®-COLL, a dual-action tripeptide, is known for its collagen-boosting properties and its protective powers against collagen degradation.

Recently, DSM explored Chinese women's beauty aspirations and their attitudes toward aging. Our research indicated a need to improve the existing SYN®-COLL peptide to the precise needs of Chinese consumers regarding anti-aging treatment, beyond the treatment of lines and wrinkles.

Taking this as a starting-point, a new *in vivo* study was conducted by DSM on Chinese volunteers. It revealed a reduction of the appearance of lines and wrinkles even when combating the effects of photo-aging. These results, achieved in just one month, are statistically better than a competitive benchmark. New findings also confirm the pore-refining efficacy of SYN®-COLL and its fast action on facial contour shaping.

The outcome of the *in vivo* study once more demonstrated the essential role of extensive research on consumers in creating local solutions that really matter for both consumer and customer!

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Personal Care **Events**

in-cosmetics
May 14–16, Barcelona, Spain
www.in-cosmetics.com

Supplier's Day
May 12–13, Edison, NJ, USA
https://nyscc.org/suppliers-day

Skin tone plays essential role in quest for new beauty care solutions

In 2013, DSM introduced its CORNEOCARE™ platform to signal its commitment to epidermal science. As part of this research program, DSM is focusing on different skin tones in order to offer tailor-made solutions based on particular skin needs.

Two major research projects will enable DSM to combine its current technology leadership in skin moisturization and skin pigmentation with aspects of ethnic differences.

Based on a recent investigation, we created for the first time detailed and continuous color maps of skin hydration and barrier function of the entire face and illustrated these in subjects of four different skin tones. DSM found that darkly pigmented skin does not always have a superior barrier function, and that facial skin hydration is highly complex.

A further research study including Caucasian and dark-skinned African subjects and Africans with albinism has been performed to elucidate the role of melanin in barrier function. The previously reported superiority of barrier function of darkly pigmented skin was not confirmed in our setup. Moreover, our data support the evolutionary hypothesis that pigmentation protects the skin from UV irradiation rather than the hypothesis that skin pigmentation primarily improves skin barrier function. These findings, based on bio-instrumental evaluation and expert grading, are currently under investigation at the biochemical level. We expect additional understanding of barrier function but also inspirations for the development of a next generation of CORNEOCARE™ ingredients.

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Brazil launches Bovigold RumiStar™, our radical innovation in dairy cow nutrition

More milk per kg of feed

In December 2014, DSM gathered more than 100 Brazilian dairy farmers, veterinarians, consultants and representatives from cooperatives in São Paulo to launch Bovigold RumiStar™. The new product is a local solution to increase milk production from corn-based diets. It contains OVN levels of our vitamins, Tortuga special minerals and RONOZYME® RumiStar™, the first pure amylase that improves corn starch digestion in ruminants.

A. Ruy Freire, President DSM Latin America, CEO and President Tortuga, speaking at the launch event

Corn silage and corn grain inclusion rates in the daily rations for cows are on the rise. Corn is often the main energy source in dairy cattle nutrition due to its high availability of supply, energy density and palatability. The proportion of starch from corn fermented in the rumen can vary considerably. Undegraded starch flows into the small intestine, where it is digested by enzymes produced by the cow and delivers glucose. However, the capacity of the small intestine to digest starch is limited.

RONOZYME® RumiStar™ enhances ruminal corn starch degradability in cows fed corn as the main starch source. This increases the availability of oligosaccharides as an energy source for fiber-degrading bacteria in the rumen, improving fiber (NDF) digestibility by up to 10%. This yields up to 3.5 kg more milk per cow per day (see figures below), giving a significant rise in feed-to-milk efficiency that allows maximum profit for the dairy farmer.

At the beginning of 2015, RONOZYME® RumiStar™ was also registered in the EU as a zootechnical additive, being the first feed enzyme for dairy cows.

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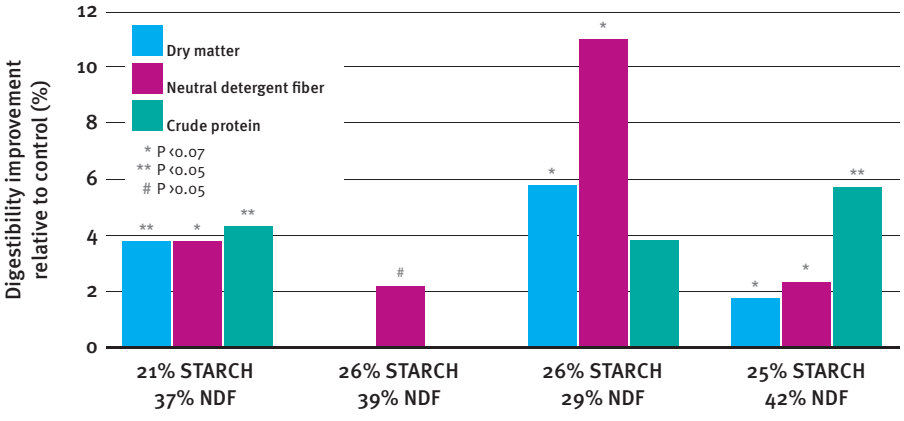
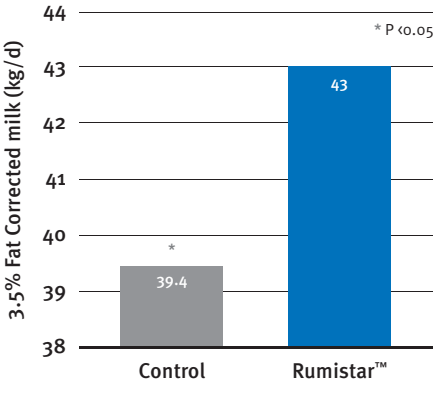


RONOZYME® RumiStar™ improved feed digestibility of corn-based diets in dairy cows*.

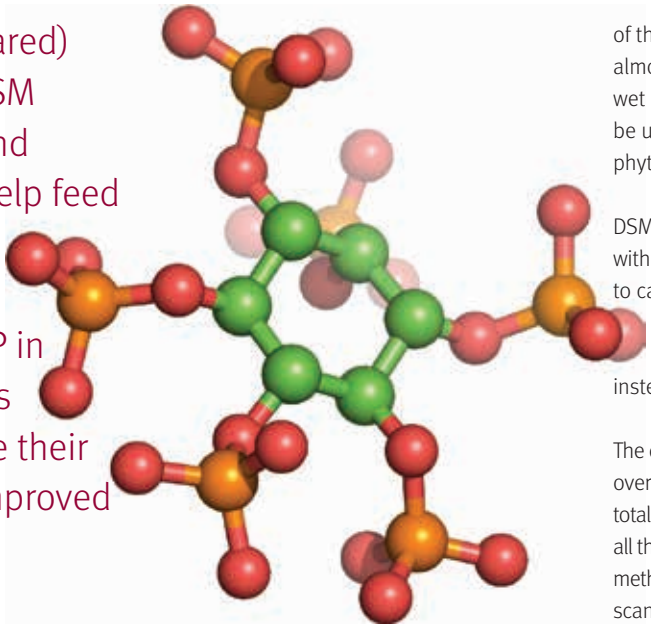


RONOZYME® RumiStar™ improved milk yield in high-producing dairy cows*.

*Sources: Gencoglu et al., 2010; Weiss et al., 2011; Klingerman et al., 2009; Phipps et al., 2009. * Klingermann et al, 2009.*

Rapid phosphorus test for accurate feed formulation

A new NIR (near-infrared) test developed by DSM scientists R. Aureli and P. Guggenbuhl can help feed producers to track changing levels of phytate-P and total-P in their feed ingredients and thereby optimize their use of phytase for improved animal performance.



Phosphorus is the third most expensive component of poultry feeds, after energy and protein. Reliable data on total phosphorus (total-P) and phytate (phytate-P) in major feed ingredients is increasingly relevant for the latest generation of phytase.

Animal nutritionists need an accurate and rapid method of assessing the nutritive values of their feed ingredients. NIR offers almost instant information compared to wet chemistry analysis. Raw materials can be used more effectively and additional phytase administered more accurately.

DSM has developed new calibrations for use with main NIR instruments to allow nutritionists to calculate the amount of total phosphorus and phytate in their diets from measured levels of their incoming raw materials instead of book tables.

The database behind the calibration considered over 500 feed ingredient samples worldwide. total-P and phytate-P levels were determined for all these samples using the wet chemical reference methods. In parallel, all the samples were scanned with an NIR instrument to determine their NIR spectrum. The equation resulted from the combination of the two datasets.

For further information, please contact your local DSM representative.

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Animal Nutrition & Health **Events**

China Feed Expo
April 24–25, Nanjing, China
www.chinafeedexpo.com/index.htm

Pig Feed Quality Conference
April 9–10, Ho Chi Minh City, Vietnam
www.asian-agribiz.com/COE

London Poultry Show
April 22–23, London, Ontario, Canada
www.poultryindustrycouncil.ca/training-and-events/london-poultry-show

International Poultry Meat Congress
April 22–23, Antalya, Turkey
http://poultrymeatcongress.com

Pet Food Forum
April 27–30, Kansas City, MO, USA
www.petfoodforumevents.com/ehome/index.php?eventid=95861&

China Animal Husbandry Expo
May 18–20, Chongqing, China
www.caaa.cn

Vitamin E and the liver

The biological function of vitamin E as a powerful antioxidant is well known, as is the current data on vitamin E intake and status worldwide. However, the dual role of vitamin E in essentiality and beyond – such as the impact of vitamin E in combating fatty liver – is an promising field yet to be explored.

A non-alcoholic fatty liver is frequently associated with obesity, insulin resistance and type 2 diabetes (the prevalence of this condition can reach 76% in obese persons).

Today, there are approximately 1.5 billion obese people worldwide, and more than 300 million have type 2 diabetes. However, a non-alcoholic fatty liver can likewise be observed in 16% to 20% of normal-weight individuals, and it often has no symptoms.

The spectrum of a non-alcoholic fatty liver extends over different stages: from a simple accumulation of fat through non-alcoholic steatohepatitis (NASH) to cirrhosis.

As oxidative stress acts as an activator to initiate damage on a cellular level, leading to a chronic inflammatory response, vitamin E might in this case act in different ways: as an antioxidant appeasing free radicals, or as an anti-inflammatory compound supporting the production of inflammatory mediators.

Download the infographic at *http://www.vitamins inmotion.com/media/infographics.html*

Currently, there is no approved drug for the treatment of a non-alcoholic fatty liver. It has been shown, however, that vitamin E directed at a daily dose of 800 IU improves the liver condition in non-diabetic adults with NASH. Besides this therapeutic effect, studies hold the promise that there may be options to use vitamin E in a preventive mode as well. This potential of vitamin E will need further investigation.

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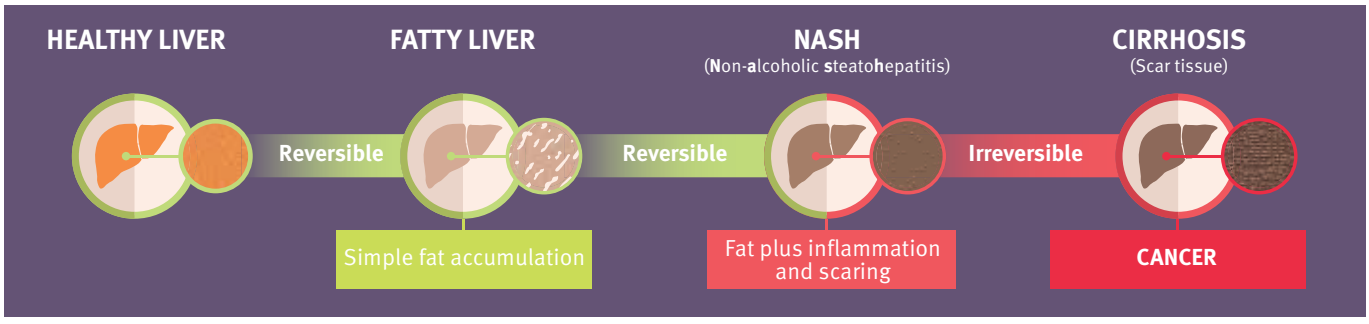

Colophon

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