

DSM Press Release

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MixMe™ micronutrient powder from DSM Nutritional Products: an improved solution to combat iron and zinc deficiency

A new clinical study with MixMe offers hopes of improving the nutritional status of populations whose diet is severely limited. MixMe is a multi-micronutrient powder launched in early 2008 in cooperation with the World Food Programme.

Iron and zinc deficiency are among the most common nutrient deficiencies in the world, and pose an even greater threat to the health of women and children. In the past, attempts have been made to supplement affected populations with high doses of iron. This practice is now discouraged by the World Health Organisation (WHO). This follows findings which suggest that in regions of the world where malaria is endemic, untargeted iron supplementation may increase hospitalizations due to malaria in children. Moreover, untargeted iron supplementation in such regions may also increase the risk of bacteria from the intestine infecting the bloodstream – a co-infection common with malaria. This is due to the action of the excess iron which is not absorbed into the bloodstream.

The failure to absorb iron is in part attributable to the diet available to many of the world's poorest populations, in which whole-grain cereals and legumes figure prominently. These foods contain a naturally occurring anti-nutrient called phytate, which binds minerals, including iron and zinc, and makes them unavailable for absorption by the human body.

Additionally to all the vitamins, the new MixMe provides low doses of a highly absorbable iron and zinc which makes the product suitable for people in malaria-infested areas. The new MixMe formulation used in the study contains a readily bioavailable form of iron (NaFeEDTA) plus an increased vitamin C dose along with a phytase which is active at stomach pH. Phytase is an enzyme that helps to release the digestible nutrients found in grains and oil seeds.

Rob Beudeker, Innovation Program Director, DSM Nutritional Products, comments: "*Trösch et al¹ have shown that MixMe offers iron in a highly bioavailable form. Even when a population's staple diet is high in whole-grain cereals and legumes, essential levels of iron can be made available for digestion by this means.*"

¹ Troesch B, van Stuijvenberg ME, Smuts CM, et al. A micronutrient powder with low doses of highly absorbable iron and zinc reduces iron and zinc deficiency and improves weight-for-age Z scores in South African children. *J. Nutr* (2011), first published ahead of print on 22 December, 2010 as doi: 10.3945/jn.110.129247. This study was a collaborative effort from the Laboratory of Human Nutrition, ETH Zurich and DSM Nutritional Products (SIGHT AND LIFE, Nutrition Improvement Program and Center Human Nutrition & Health), as well as the Nutritional Intervention Research Unit, Medical Research Council, Cape Town, South Africa; the Centre of Excellence in Nutrition, North-West University, Potchefstroom, South Africa; and the Division of Human Nutrition, Wageningen University, Wageningen, the Netherlands. The project was carried out in the context of the partnership between DSM and the UN World Food Programme.

In the study, MixMe was used to fortify the traditional breakfast of maize porridge that is consumed by South African primary school children. After 23 weeks on fortified porridge, the children's mean body iron store among the test group was doubled. The prevalence of iron and zinc deficiency was also strongly reduced.

Owaldo da Costa e Silva, Senior Director Nutrition Improvement Program:
'These results will further help DSM to introduce cutting-edge solutions to improve micronutrient nutrition in certain parts of the globe. It could also be important in the global fight against nutritional anemia, as well as in the eradication of hidden hunger.'

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About the Nutrition Improvement Program (NIP)

The Nutrition Improvement Program of DSM Nutritional Products is dedicated to unlock the human potential by improving the nutritional status of people with micronutrient deficiencies. We support and promote staple food fortification as an effective, affordable tool to reach a large proportion of a population and cooperate closely with organizations and government bodies. The Nutrition Improvement Program also partners with international and local industry to develop new business models and tailor-made sustainable solutions for specific needs.

More information: www.nutritionimprovement.com

About DSM Nutritional Products

DSM Nutritional Products is the world's leading supplier of vitamins, carotenoids and other fine chemicals to the feed, food, pharmaceutical and personal care industries. The business has sales of over EUR 2 billion and a long tradition as a pioneer in the discovery of new products, new formulations and attractive applications for all industry segments. More information at www.dsmnutritionalproducts.com and www.qualityforlife.com

DSM – the Life Sciences and Materials Sciences Company

Royal DSM N.V. creates solutions that nourish, protect and improve performance. Its end markets include human and animal nutrition and health, personal care, pharmaceuticals, automotive, coatings and paint, electrical and electronics, life protection and housing. DSM manages its business with a focus on the triple bottom line of economic performance, environmental quality and social responsibility, which it pursues simultaneously and in parallel. DSM has annual net sales of about €8 billion and employs some 22,700 people worldwide. The company is headquartered in the Netherlands, with locations on five continents. DSM is listed on Euronext Amsterdam. More information: www.dsm.com

For more information:

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