

# Food and Beverages

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## Development of a plant-based dietary supplement to address life-cycle needs of the European female population

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Peri-natal micronutrient supplementation is commonly recommended to optimize maternal-child health outcomes in Europe. However, at no other life stage are women given practical recommendations to address their micronutrient needs. While a healthy diet remains the path of choice for nutrient intake, supplementation is often necessary to ensure adequate micronutrient intake. With the growing preference for non-synthetic ingredients and the increased market for non-animal-based products, this work describes the process followed for the development of a plant-based multiple micronutrient supplement targeted at women at different stages of their life cycle. A list of key nutrients for inclusion was prioritized, based on the existing literature on nutrient needs for women, as well as on their most pressing wellbeing needs. This was followed by the identification and selection of qualified raw ingredient providers. The final line of products included three multiple-micronutrient supplements meeting the following criteria: vegan, gluten-free, lactose-free, and without artificial conservatives. Each product contains specific nutrients targeting the various needs of women in their 20s, 30s and 40s; mainly hydration, skin care and hormonal dynamics, respectively. Microbiological control was carried out three-fold, once by the raw material providers followed by double independent laboratory analysis of the end-product micronutrient supplement. This was then tested for human factor contamination, pesticides, total aerobic microbial count, total yeast count, and total mould count. Emphasis was placed on meeting product standards for the European Union, and specific requirements for the German market in food and pharma. Best practices were observed during the process to achieve multiple quality standard accreditations. In addition, organoleptic properties were adjusted in accordance to the female market demands. The results presented here reach the point of introduction of the newly developed product to the market, with acceptability and effectiveness results to be published at a later date.

### Recent publications

1. Knopf H (2017) Self-medication with vitamins, minerals and food supplements in Germany: Results of nationwide health surveys. *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz* 60(3): 268-276.
2. Frey A, Hoffmann I, Heuer T (2017) Characterization of vitamin and mineral supplement users differentiated according to their motives for using supplements: results of the German National Nutrition Monitoring (NEMONIT). *Public Health Nutrition* 20(12): 2173-2182.
3. Clausen A, Schlueter K (2017) Motives for using food supplements by otherwise healthy adults: historic and current perspectives with special focus on Germany. *Health Behavior and Policy Review*, 4(2): 129-141.
4. Prütz F, Saß A C (2017) Women's health in Germany – a concept for a new health report and preliminary results: Franziska Prütz. *European Journal of Public Health* 27(suppl\_3).
5. Pilz S, Hahn A, Schön C, Wilhelm M, Obeid R (2017) Effect of two different multimicronutrient supplements on vitamin D status in women of childbearing age: a randomized trial. *Nutrients* 9(1): 30.

### Biography

Sara D Garduno-Diaz has a background in Nutrition with a Bachelor's (Honors) degree in Nutrition from the Universidad Veracruzana, Mexico, and a PhD in Food Science and Nutrition from the University of Leeds, United Kingdom. She has worked as Research Fellow for several EU-funded research projects and was awarded research grants from CONACYT (Mexico) and the BBSRC (UK). She was Assistant Professor at the American University of the Middle East (Kuwait) and a Consultant at Your Choice Nutrition, a company which she co-founded. Currently she is Head of Research and Development at ONO Labs in Germany. She is the author of several peer-reviewed publications and books. Her research interests include dietary patterns of migrant populations and their impact on health, as well as the development of novel methods for nourishment and wellbeing. She is a member of the World Public Health Nutrition Association, for whom she is Membership Secretary.

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