

# Wellness Foods & Supplements

The European magazine for active ingredients

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Jungbunzlauer





Photo: SternVitamin GmbH & Co. KG

## Vegan nutrition: Enriched foods prevent nutritional deficiency

**Vegan products are booming, and not just in the industrialised countries. Around the world, demand is rising for plant-based alternatives to meat, sausage and dairy products. For the coming years market research institutes project annual growth rates averaging six to eight percent for meat alternatives. For dairy alternatives they predict twelve percent, for ice cream just under ten percent and for egg substitutes about six percent growth.**

However, doing completely without animal products is not without its health risks, as Dr Sabine Hildebrandt, Head of Research & Development at SternVitamin, explains: "There are micronutrients found primarily in meat, fish, milk and eggs, that a vegan diet supplies less of than a normal mixed diet. This is particularly the case for vitamin B<sub>12</sub>. Intake of iron, zinc and calcium, as well as of vitamin D, vitamin B2 and Omega 3 fatty acids, can also be suboptimal or insufficient."

If there are no animal products on the menu, there is a higher risk of nutritional deficiencies and resulting health issues. For this reason experts advise pregnant women, nursing mothers and children against strict vegan diets.

With a thoughtful combination of plant foods, most vegans succeed in eating a healthy diet. This often includes highly nutritious legumes, nuts or soy products like tofu and tempeh. However, there is still a risk of deficiency, so nutritionists recommend the targeted addition of specific vitamins and minerals. Supplements have their place, but enriched vegan products offer new possibilities.



### Critical nutrients

“Getting enough vitamin B<sub>12</sub> is especially problematic”, reports Dr Hildebrandt. “This is a nutrient that occurs in meaningful amounts only in animal products. It is created by bacteria that live in the gastrointestinal tracts of animals. Currently there is no plant source of B<sub>12</sub>. Even fermented soy and other foods like sauerkraut contain no significant amounts of vitamin B<sub>12</sub>.” Pronounced vitamin B<sub>12</sub> deficiency can cause fatigue, poor concentration, poor memory and dizziness. To prevent this, the German Nutrition Society (DGE) advises all vegans to take vitamin B<sub>12</sub> supplements. With regard to other critical nutrients, they recommend preventing deficiencies by choosing nutrition-rich or enriched foods, or taking nutritional supplements.

The U.S. Food & Drug Administration (FDA) goes a step further and recommends that all best agers (50 and older) take supplements or eat foods enriched with vitamin B<sub>12</sub>. Women of childbearing age are advised to eat foods naturally rich in iron or with added iron.


Iron is present in many plant foods, but in a form that is harder for the body to access than from animal sources. However, eating foods rich in vitamin C at the same time

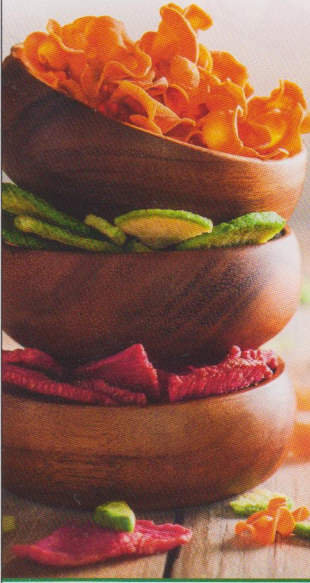


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# NATURAL SNACKING

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improves iron absorption, so vegans need not suffer from low iron, but they should regularly monitor their iron status.

Vegans have to do without the most important source of Omega-3, namely fatty ocean fish. They also don't have the option of supplementing their diet with DHA-rich eggs. Dr Hildebrandt: “In general, vegans have a worse ratio of Omega 6 to Omega 3 fatty acids. A ratio of 5 to 1 is recommended. Vegans usually have a much higher proportion of Omega 6 fatty acids. They should therefore eat oils like rapeseed, linseed and walnut oil; however, these supply only the precursor substance  $\alpha$ -linoleic acid (ALA). It is also advisable to eat enriched foods like margarine with DHA from microalgae, or take supplements.” Omega-3 fatty acids help maintain emotional balance, and people who get ample amounts of them have a lower propensity to depression.

### Vegan eating with extra nutrients

Today many vegan products are enriched with micronutrients in order to ensure proper nutrition. Dr Hildebrandt explains: “The advantage is that simply by eating, the consumer gets the recommended daily amount of all the important amino acids, vitamins, minerals and trace elements. There is no need to take supplements.” This makes it possible to combine healthy enjoyment and convenience in a single product. SternVitamin has developed a micronutrient complex called SternVEGA



Vegan product categories that are often fortified with micronutrients



that is especially designed for enriching vegan foods. This new premix contains nine micronutrients that improve the nutrition profile of vegan products. Along with vitamins B<sub>12</sub>, B<sub>2</sub> and D, it provides the appropriate amounts of iron, zinc, calcium, iodine and selenium. In addition, it contains the amino acid lysin, which occurs in only small amounts in plants. SternVitamin has also developed another premix that supplies important protein building blocks in the form of eight essential amino acids along with vitamin B<sub>6</sub>, sodium, potassium and magnesium.

Both of these ingredient complexes can be used for a wide range of vegan products. One popular category is beverages, from vegan smoothies to nutrient-enriched juices. Baked goods, snacks and cereals can also be upgraded with SternVEGA. Meat and dairy substitutes are another major trend. "Through close collaboration with our sister company Hydrosol, which is very active in the market for plant-based alternatives to meat and dairy products, we have a solid understanding of that market", notes Dr Hildebrandt.

### Applications research ensures optimum effectiveness

Regardless of the specific product category, the choice of raw materials and their precise combination are of key importance in how they behave in the final product. The raw materials themselves must meet the highest requirements in terms of quality and availability. "We have often found that amino acids are too coarse-grained. They can de-mix when combined with smaller-grained substances. So when we use new raw materials we also make sure that the grain size is right for our requirements", explains Dr Hildebrandt.

Interaction is another aspect. The various vitamins and minerals used in foods can react with other ingredients, so it is important to test them in the respective application beforehand. Here, SternVitamin benefits from the networked cooperation within the Stern-Wywiol Gruppe, as Dr Hildebrandt notes: "Our sister companies develop ingredients for many different food categories. Application testing is something we do all the time, and we have access to 16 different specialist laboratories. In our Stern-Technology Center some 80 scientists and technicians work daily on innovations, product improvements and more efficient production methods. This bandwidth is a major advantage, for us and for our customers."

#### About SternVitamin:

SternVitamin GmbH & Co. KG in Ahrensburg near Hamburg, Germany offers full service in micronutrient premixes. Working to customer requirements, the company develops individual vitamin and mineral mixes that also include functional ingredients like amino acids and plant extracts. These nutrient mixes are suitable for enriching foods, beverages and nutritional supplements. As a subsidiary of the independent, owner-operated Stern-Wywiol Gruppe, SternVitamin always has access to the concentrated expertise and modern applications technology of its sister companies. These are Mühlenchemie for flour improvers, DeutscheBack for baking ingredients, Hydrosol for stabilising systems, HERZA Schokolade for functional chocolate pieces and bar production, OlbrichtArom for flavourings, SternEnzym for enzymes (baked goods and confections, alcohol and beer production) and Sternchemie for food lipids (including lecithin, MCT oil, red palm oil and spray-dried coconut milk). Sister company SternMaid works in the contract manufacture of powdered foods and nutritional supplements.

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