BASF
We create chemistry

Flour Fortification

An Investment in the Future

Vitamin A deficiency (VAD) is a public health concern worldwide. BASF is committed to combatting VAD by offering high-quality, reliable vitamin A products for the fortification of flour and other staple foods. BASF's food fortification program helps add vitamin A to staple foods in more than 40 countries. We consider a sufficient supply of vitamin A an investment in the future, since it contributes to healthier societies.

Why Fortify Flour?

Fortification of flour is a method commonly used to ensure supplies of vitamin A to populations who lack sufficient intake of this vitamin in their diet. Because flour is a widely consumed staple around the world, it is an excellent vehicle for addressing nutritional deficiencies. Flour fortification is a cost-effective way to deliver micronutrients to the population.

BASF Product Solutions

BASF has developed a BHT-free vitamin A product specially formulated for flour fortification: Dry Vitamin A Palmitate 250 FP CWD, containing 250,000 IU/g of vitamin A. It has been optimized for homogeneity and stability in corn flour and wheat flour. The stability of Dry Vitamin A Palmitate 250 FP CWD has been documented according to USDA commodity requirements CSB 13.

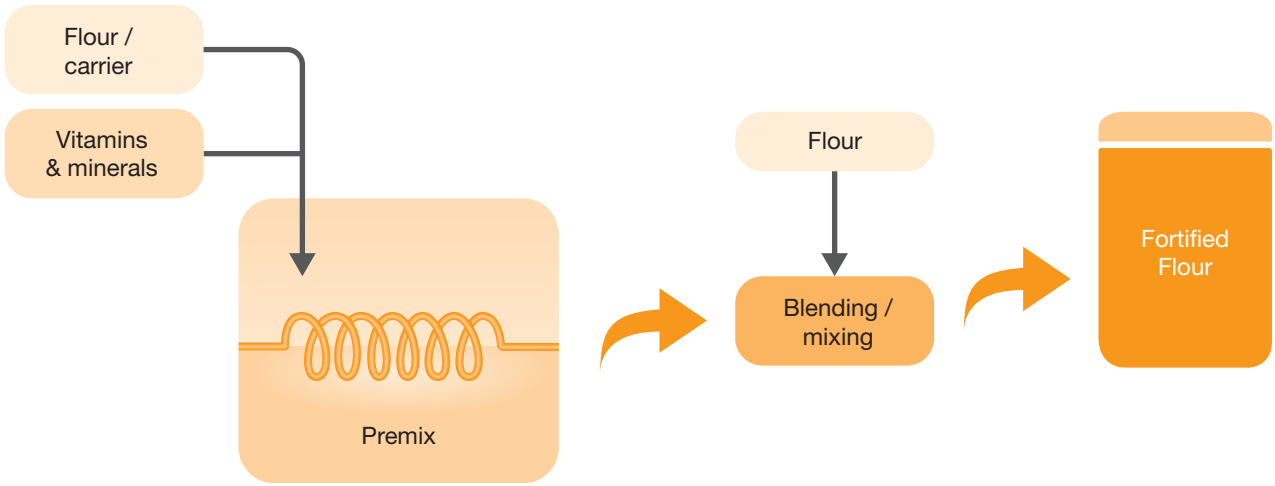
BASF Testing Solution

To test for vitamin A in flour, BASF has developed a semi-quantitative test kit which can screen for the presence of vitamin A in flour at a very low cost.

Flour Fortification Principle

During the flour fortification process, the vitamin A powder is mixed homogenously into a small quantity of flour (along with other vitamins and minerals). This premix is then added to the bulk flour. Depending on the components of this premix, a feeder should be selected that eliminates bridge formation and segregation of components in the feeder. Typically, a continuous high-speed mixer is used to blend flour and premix. With the right mixing tools, this will produce a high-quality mixture with even distribution of vitamin A. Please note that the exact measures necessary in order to avoid segregation depend mainly on the features of the factory in question.

Flour Fortification Process



Stability

Stability is strongly influenced by the particle size of the vitamin A powder. Larger particle size means greater stability, because the total particle surface area is lower in relation to the total weight compared to simple spray-dried products. Optimization of particle size distribution is thus an important quality parameter. BASF's Dry Vitamin A Palmitate 250 FP CWD is a micro-encapsulated vitamin A (beadlet) with optimized particle size to meet stability requirements.

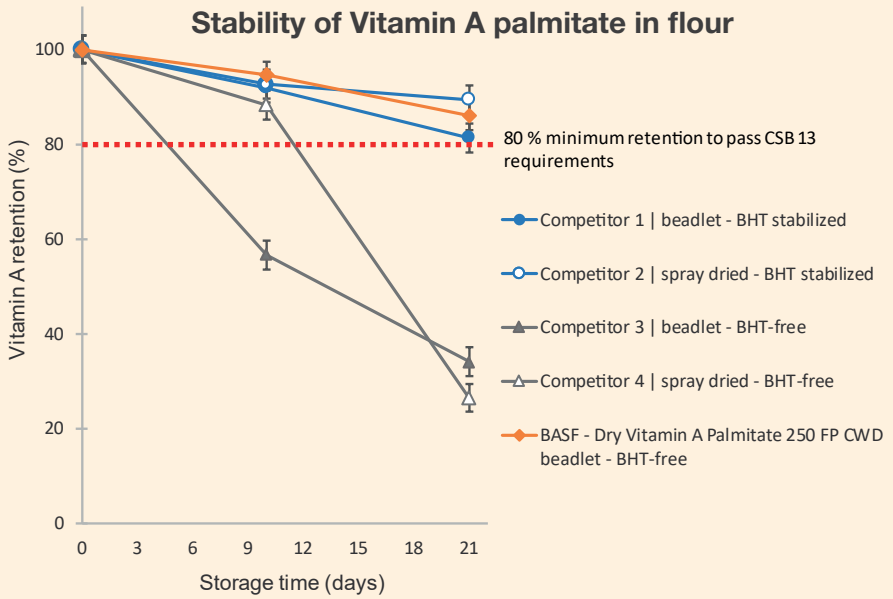


Figure: values are mean ± 3% SD (n=2)
Wheat flour with 14% moisture stored at 45°C in a sealed container, according to USAID Commodities Requirements CSB 13
BASF study No. S-911 / S-868

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