USU Technology Highlight:

HIGH INTENSITY ULTRASOUND TO DELAY PHASE SEPARATION AND OIL MIGRATION IN LIPIDS

High intensity ultrasound (HIU) affects the crystallization behavior of lipids to solve the issues of phase separation and oil migration within edible fats increasing the shelf life of fat-based foods.

PROBLEM

Phase separation and oil migration occur in the production of fats used for food applications including confectionary products. Food companies attempt to control phase separation and oil migration in lipids by changing food processing conditions. Phase separation and oil migration is especially important in fats that have no partially hydrogenated oils and that have low levels of saturation. These fats tend to lose oil over time resulting in a decrease in the shelf life of the product.

SOLUTION

HIU solves phase separation and oil migration in fats. HIU has the following effects:

- Stabilizes semi-solid oil system
- Uniformly distributes crystals without causing phase separation
- Creates small crystals.

BENEFITS

The use of HIU in the food production process deters phase separation and oil migration to extend the shelf life of food products. Crystals in lipid samples treated with HIU remain suspended while crystals not treated with HIU sediment to the bottom. By avoiding or minimizing oil migration and phase separation healthy fats with low contents of saturated fatty acids and no partially hydrogenated fats can be used in food formulations without affecting product quality.

APPLICATIONS

The use of HIU can be applied in the fat industry. Edible fats are used for a myriad of applications including but not limited to confectionery, shortening, margarines, spreads, and baked goods.

CONTACT

Questions about this technology including licensing availability can be directed to:

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DEVELOPMENT STAGE

TRL 3

PATENT STATUS

Non-provisional application

WEBSITE

rgs.usu.edu/techtransfer/ lipids-phase-seperation-delay/

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