Trans fats are a big “no-no” when striving for a healthy diet, but to the naked eye, it is impossible to detect where these naughty little lipids are hiding. Color technology is often used for the detection and quantification of trans fats in foods, which has been important for proper labeling and dietary claims. Utilizing color technology for trans-fat analysis has recently become even more desirable as new[1] FDA regulations push to ban on trans fats altogether.

Current and future efforts towards trans-fat reduction

Trans fats have been significantly reduced in many food products in an effort to improve the overall health of our nation. Recently reported in a *Food Online* article[2], “the FDA estimates that removing trans fats from the food supply will prevent 20,000 heart attacks and 7,000 deaths from heart disease every year.” This has prompted an official decision to remove trans fats from foods altogether by the year 2018. This will mean that all food manufacturers will have to provide supportive evidence to prove that all products are trans fat-free within three years.

The cost of enforcing new policies is estimated in the billions, but the projected savings in healthcare costs register in the hundred billion dollar price range. Eliminating trans fats is an investment in preventive healthcare and is justified by the benefits that such a policy will achieve. Some of the major costs of this investment rely on monitoring the use of trans fats in foods. A zero tolerance policy will require accurate and highly sensitive methods of trans fat detection to ensure compliance. Color technology offers a simple and affordable answer to meet this requirement and is a viable solution for product evaluation.

Using color technology for analysis

Trans fats naturally arise in many dietary fatty acids. One of the most common trans fat additives in food production has occurred in usage of partially hydrogenated vegetable oils (PHVOs)[3]. With public awareness and new regulations on the way, food manufactures are looking for ways to effectively replace PHVOs in food products. Reformulation of these PHVOs requires accurate and effective determination of trans isomers in unsaturated fatty acids[4].

Spectrophotometers utilize color technology to rapidly and successfully identify these compounds by monitoring infrared (IR) light absorption and transmission values in relation to trans fat content. This method of color technology allows for detection and quantification of these elements for effective reformulation purposes or to monitor compliance of food product regulations.

Meeting consumer demands with new oils

As food manufacturers develop new formulations for trans fat dependent foods, food texture and qualitymust also be accounted for in order to meet consumer expectations. There are many food technology challenges[5] that are associated with reformulation. As food manufacturers experiment with oil alternatives, monitoring food quality and appearance becomes even more important.

Color technology is often utilized for quality control in foods to ensure that products meet consumer expectations. Formulation changes often effect appearance and consistency of foods and can alter consumer perception. Color technology monitors both color and consistency in food products and requires minimal preparation for evaluation. Spectrophotometric instrumentation offers the ability to measure an array of various food products that vary in consistency, translucency, and texture. These rugged and portable tools serve many purposes in the food production industry and have become a necessity for meeting regulatory and safety standards, and quality expectations.

Full article with photos available here:

https://www.hunterlab.com/blog/color-food-industry/fda-says-no-to-trans-fats-how-to-use-color-technology-for-compliance/