



Test Kit Technologies, Inc.

Using the VERI-FRY® FFA-350 to Assure Compliance with USDA/FSIS Guidelines for Manufacturing Operations Producing Fried Meats and Meat Products

Problem: The United States Department of Agriculture's Food Safety and Inspection Service's (USDA/FSIS) "Meat and Poultry Inspection Manual" contains a number of guidelines pertaining to deep-fat frying of poultry, meats and meat products. One of these guidelines states that large amounts of sediment, and free fatty acid content in excess of 2% are indications that frying fats are unwholesome and require conditioning or replacement. Is there an easy way producers can monitor this parameter and ensure that they comply with this guideline?

Background: Like most food regulations or regulatory guidelines, the USDA/FSIS's "Meat and Poultry Inspection Manual" was developed to protect the consumer. It provides meat processors with guidelines to ensure the production of safe and wholesome foods. In the sections relating to deep-fat frying, the manual contains details about frying times and temperatures, the use of antioxidants and other processing aids which may be added to the frying oils, cleaning and sanitizing procedures for deep-fat fryers, and guidelines for monitoring oil quality. The oil quality guidelines include references regarding excessive sediment and free fatty acid levels in excess of 2%. Unlike the European regulations for frying oils, which state that out-of-compliance oils (total polar materials levels in excess of 24-27%, depending on the country) must be discarded as they are unfit to produce food for human use, the FSIS guidelines allow operators to filter, treat, or dilute abused oils with fresh oil to reduce the free fatty acid level to less than 2%. The key is being able to monitor degrading oil so that one or more of these corrective actions can be initiated. In reality, the standards many operators employ are more stringent than the FSIS guidelines, but whatever FFA level is used as a standard, the levels must be monitored and adjustments made to improve a degrading oil.

Use of the VERI-FRY® FFA-350 to Monitor Oil Quality On-Line: The VERI-FRY® FFA-350 can be used by production staff (fryer operators or line supervisors) to monitor degrading oil at the line. All the operator needs to do is withdraw a sample or samples of oil from the fryer, add it to the FFA-350 tubes and shake. Allow the reaction products to separate from the oil (bottom layer). The colors that form indicate the % FFA. For more precise measurement, Libra Labs can custom design color cards or reformulate the reaction products in the FFA-350 tube to react more strongly at different FFA levels.

Benefits of Using the VERI-FRY® FFA-350 Test: The VERI-FRY® FFA-350 test reduces reliance on quality control staff, giving production staff a greater "feeling of ownership", freeing quality staff to do other work, and encouraging total quality control, where everyone is involved. Since the colors formed are stable, tubes which operators have questions about can be referred to other staff members. The tubes can also be saved to be examined at a later time, allowing others to gain greater insights into oil degradation phenomena. Lastly, the tests are less expensive, when all factors are considered, than the official titration procedure.