

ABSTRACT

**IDENTIFICATION OF FREE FATTY ACIDS IN USED
COOKING OIL FROM CATFISH VENDORS IN THE NORTH
SURABAYA AREA**

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This study examines the content of free fatty acids (FFA) in used cooking oil utilized by catfish vendors in North Surabaya, a densely populated area with a habit of consuming fried foods. North Surabaya, as part of a densely populated metropolitan city, offers various types of street foods often fried using jelantah. Used cooking oil, frequently reused in the frying process, is prone to degradation that produces *Free Fatty Acid* (FFA). This degradation potentially increases the risk of chronic diseases such as cancer, heart disease, and metabolic disorders. This study aims to measure the FFA levels in used cooking oil through alkalimetric titration according to SNI 7709-2019 standards. Samples were collected from five catfish vendors in North Surabaya, and analysis showed that two out of five vendors used cooking oil that met the FFA standards (<0,3%), while the other three vendors had FFA levels exceeding the standard. Standardization of NaOH solution using oxalic acid as the primary standard and phenolphthalein indicator ensured accurate and consistent titration results. These findings indicate that repeated use of used cooking oil increases the production of free fatty acids, resulting in oil that is unsafe for consumption. This study provides important information for vendors, consumers, and the government to raise awareness about food safety and develop policies that can protect public health from the risks of consuming FFA-contaminated used cooking oil.

Keywords : Used Cooking Oil, *Free Fatty Acid* (FFA), Repeated Frying, SNI 7709-2019.