QUALITY ASSESSMENT OF CRUDE PALM OIL AVAILABLE IN BENIN-CITY, NIGERIA

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ABSTRACT

The degree of oxidative and hydrolytic rancidification and total carotene content are important quality criteria of crude palm oil (CPO). Handling, harvesting, processing and extraction techniques of CPO affect its quality. This study aims at assessing the standard of CPO available in Benin City, Nigeria. Ten samples of CPO were purchased from wholesalers, twelve samples from retailers and a sample from a manufacturer. The peroxide value, free fatty acid (FFA) value, Thiobarbituric acid (TBA) value, total carotene content and density of the CPO samples were assessed according to standard procedures. The results showed that peroxide values ranged from 0.83 to 5.35 meqO_2/kg, FFA values ranged from 6.33% to 21.33%, TBA values ranged from 0.014 to 0.24 mg malonaldehyde/kg, total carotene content ranged from 574.04 to 1523.07 mg/kg and density ranged from 0.9142 to 0.9346 g/cm^3. The peroxide values, TBA values, total carotene content and densities of the CPO samples are within limits recommended by the standard organization of Nigeria (SON). However the FFA values of the CPO samples is lower than SON recommendation. Since a high FFA value is not a health issue but an industrial issue, CPO sold in major markets in Benin City is suitable for domestic use but may require some refinement before they can be used as pharmaceutical excipients.

Keywords: Palm oil, Quality control, Pharmaceutical, Carotene, Tocopherol.