TERMS OF REFERENCE

STUDY PROPOSAL FOR 2023

A STUDY ON CONTAMINANTS IN PALM OIL

A. BACKGROUND

Contamination is one of the many possible risks during food processing. In certain cases, a contaminant would form under certain process to reach the desired product. In others, the source of the contamination comes from contact with certain items, often one that is used to contain or to process the product. The level of danger that each contaminant brings to human health varies due to the frequency of the exposure, the amount ingested, the physical situation of the person, and the route of exposure.

While not all contaminants are harmful, and some does not cause any effect to human health when consumed under certain doses. Environment, packaging methods, processing, or transport are possible causes for contaminations.

There is a risk of contamination to any food products, vegetable oils included. Some of the examples of these unwanted chemicals that could be found inside the commodities are 3-Monochloropropane-1,2-diol Esters and Glycidyl Esters or 3-MCPDE and GE, and mineral oils, namely Mineral Oil Saturated Hydrocarbons (MOSH) and Mineral Oil Aromatic Hydrocarbons (MOAH).

The vegetable oil industry as a whole has the responsibility to make sure that their products are safe for consumption. Having a good understanding of the contaminants is crucial to ensure the well-being of their consumers. While these contaminants are all different in nature, it is important to avoid the exposure of palm oil to these foreign matters altogether. To achieve that, an identification of the process that might alter certain compounds and cause for unwanted contamination is needed.

B. PROBLEM STATEMENT

The existence of contaminants in palm oil products and the potential health problems caused by it has exacerbated the negative image of palm oil. CPOPC, whose members represent more than 80% of the world's production of palm oil, has an important role to ensure that its product is safe for consumption. Hence the study on contaminants, how to mitigate and reduce their amount in palm oil products should be done.

C. OBJECTIVES

This will be a desktop study on 3-MCPDE, GE, MOSH, and MOAH in palm oil. The objectives of the study are:

1. To provide complete literature review on the possible source of contamination of 3-MCPDE, GE, MOSH, and MOAH in palm oil products.
2. To provide complete literature review on the health risk data of 3-MCPDE, GE, MOSH, and MOAH.
3. To assess and recommend the most viable and available technologies for commercial mitigation on 3-MCPDE, GE, MOSH, and MOAH in palm oil.

D. EXPECTED BENEFIT

This study is expected to create balance and common narrative on 3-MCPDE, GE, MOSH, and MOAH on the mitigation and reduction of contaminants in palm oil products.

E. SCOPE OF WORK

This study will be in the form of desktop study, where implementer(s) will conduct a comprehensive literature review related to 3-MCPDE, GE, MOSH, and MOAH in palm oil products.

F. OUTPUT

1. Data on the sources of the contamination of 3-MCPDE, GE, MOSH, and MOAH in the palm oil products.
2. Data on the possible health risks of 3-MCPDE, GE, MOSH, and MOAH.
3. Recommendations on how to mitigate the 3-MCPDE, GE, MOSH, and MOAH in palm oil (including to identify and develop alternatives to minimize the formation and/or contamination).
4. Dissemination of the findings of the study subjected to the recommendation and approval from the Council of Palm Oil Producing Countries (CPOPC).

G. PROJECT DURATION AND TIMELINE

The study is expected to be carried out in six (6) months in 2023 based on the following table:

No	Activities	2023					
		Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
1.	Literature review and assessment						
2.	Data collection and analysis						
3.	Final report and submission						

H. BUDGET

The proposed budget for this study is USD20,000.

I. IMPLEMENTER

The implementer(s) of relevant knowledge and experience from research institutions or individual researchers will be appointed based on the recommendation of the members of the Scientific Committee of CPOPC.