

Abstract

Palm olein (POo) has become an economically essential and versatile vegetable oil used as raw material particularly in the fat industry because of its wide application and potential to be developed for a variety of food products. These are due to great characteristics of POo in oxidative stability, solid content profile, nutritional value, free trans fatty acid and cholesterol, anti-oxidants properties make POo as one of the foremost used oils by food manufacturers. For instance, non-dairy creamers are considered as substitute for dairy creamers where palm olein is added replacing the milkfat. Various parameters are used to assess its quality of POo because this will eventually have influenced food products performance. The study focused on observing the sensory characteristics of non-dairy creamers using different sources of palm olein by conducted hedonic test and physicochemical parameters were analyzed. Quality parameter particularly the metal content such as phosphorus was also deliberated and might contributed to the metallic and oxidize taste and aroma. Due to these effects of physicochemical properties, it has influenced the taste profile and end products quality.

Introduction

The quality of palm olein can be impart the sensory attributes, nutritional content, and overall safety of the end products. Palm olein with good oxidative stability and low levels of free fatty acids and peroxide value will have a longer shelf-life. High quality palm olein should free from contaminants that could pose health risks to consumers as well as product performance. The formulated non-dairy creamer would offer a desirable cream-like flavor and taste. As it is susceptible to deterioration resulting in off-flavors which can be easily detected by consumers, the oxidative stability of the oil that acts as vegetable fat to the product is a very important criterion in formulating canned milk products.

Methodology



Results & Discussion

Figure 1: Sensory evaluation for application (milk tea) by using different sources of palm olein.

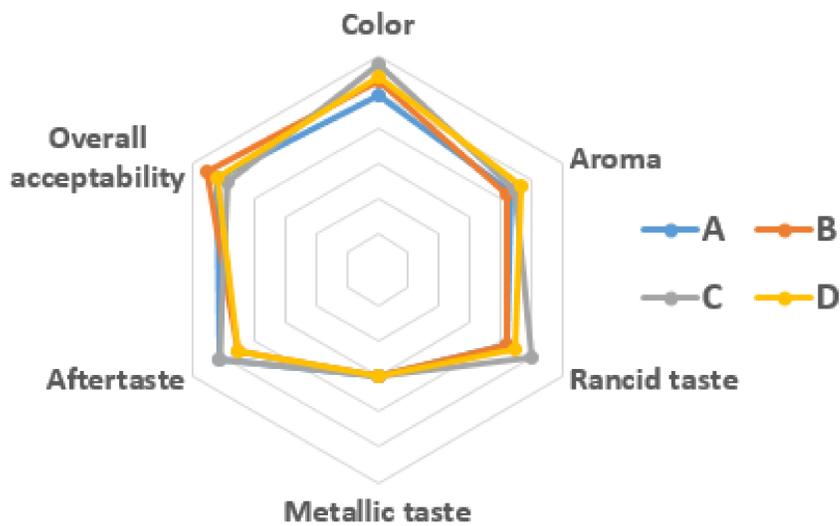
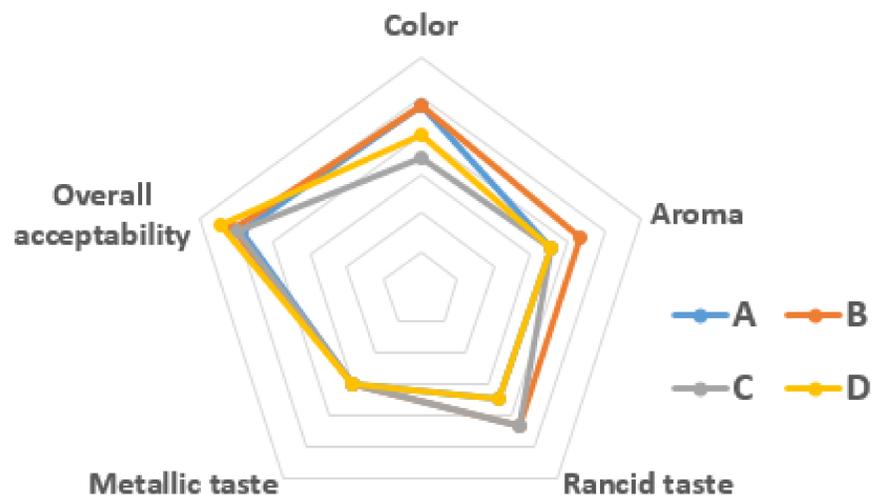


Figure 2: Sensory evaluation (in-heat) for different sources of palm olein.



- According to the result for both sensory evaluation, the data reflects that sample C has highest rating in rancid taste compared to others. There were no significant differences ($P > 0.05$) were observed in the ratings for metallic taste and aroma (off-rancid) by the respondents. There are respondents were commented slightly taste of rancid and metallic.
- The metal content were analyzed such as phosphorus and chloride and two from the samples were detected. Meanwhile, iron and copper were non-detected for all samples.
- The high value of metal content such as phosphorus and chloride can produces the metallic and rancid taste and aroma. Not only that, these properties also influenced the product performance and stability of the products.
- In this study, free fatty acids (FFA) for all samples has lower value from acceptable maximum value < 0.1 . Meanwhile, the peroxide value (PV) showed high maximum value > 1 for all samples. The higher peroxide value leads to greater changes of rancidity which effects sensory in taste of the products whereas lower PV suggests good quality of the oil.

Conclusion

Sensory evaluation conducted illustrates that the effects of metal trace in palm olein can influenced the end products. Thus, the initial quality of palm olein becomes one of the main criteria for a good taste profile.

References

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