

However the values of TBARS found in all PMF products were as high as thrice as that found in the LMF. The observed differences in the result could be attributed to the type of oil used in the frying process. Although, groundnut oil is the standard/recommended oil used in the frying process but producers might have used adulterated oil which will eventually be reflected in the product. This is because the oil used in the cooking of food becomes part of the food (Miheala *et al.*, 2010). Also, it might be that the oil used in the deep frying process of these products have been used repeatedly for frying (which is a normal practice with producers of fried food) which consequently will have tendency of high oxidation (Abriana, *et al.*, 2019).

Sensory analysis are used to evaluate sensory properties that are directly related to consumer understanding of quality (Ghonaim *et al.*, 2020). Sensory characteristics such as appearance, flavor and texture are considered to be the most important determinant factor of consumer acceptability of meat and meat products Ghonaim *et al.*, 2020). The high rating of the LMF by the panelists in most of the sensory parameters assessed might be attributed to the deep frying method used in meatfloss production. This is because deep fat frying of food contributes to the texture and flavour of fried foods (Abriana, *et al.*, 2019). Although it is expected that the PMFs should also be rated high as it is expected/assumed that these products are also deep fried but the reverse was observed. The marked decrease in some of the investigated sensory attributes (especially aroma, flavor and juiciness) in these PMFs might probably be due to the type of oil used by these sampled producers because most of the producers of fried food are culprit in repeated oil usage (using same oil repeatedly in frying). This is because the use of oil many times makes the structure and appearance of fried food less attractive thereby creating an unpleasant taste and smell and consequently the flavour of such fried food will not be preferred (Abriana, *et al.*, 2019). The low rating is also reflected in the overall acceptability of the PMF which might be attributed to the low acceptance of the flavour of these products. This is because the acceptability of meat products depends on their flavor (Ramarathnam and Rubin 1994) because flavour is an important factors that determine consumer's meat buying habits and preferences of meat and meat products (Ghonaim *et al.*, 2020). The low sensory characteristics qualities recorded in PMFs might also be as a result of the high lipid oxidation (even as at the first day of production) recorded in these products. This is because sensorial quality of foods is one of the most important quality parameters affected by lipid oxidation (Morrissey *et al.*, 1998).

The result of the fatty acid profile showed that the percentage of SFA in all the PMF were higher than what is obtained in LMF. The ratio of PUFA/SFA is an indicator of fatty acid quality of meat and meat products. The PUFA/SFA ratio in most of the PMF were lower than 0.4 recommended as the minimum ratio of PUFA/SFA (Simopoulos, 2002) to be found in food with good fatty acid quality. These differences in proportions of saturated and unsaturated fatty acids recorded in these sampled meatfloss from the producers might be due to the differences in the degree of unsaturation of the oil used. This is because frying oils are absorbed by cooked food and so become part of the food (Mihaela *et al.*, 2010). The wide range differences in values of PUFA/SFA ratio in LMF and PMF is not expected because it is assumed that groundnut oil which is mostly used in deep frying of meatfloss is highly unsaturated and it is expected that this will be reflected in the meatfloss produced. However, the reverse is observed in all PMF and this difference might probably be that the oil used in production might have been adulterated through repeated usage (which is a common practice among producers of fried food because repeated use of cooking oil will change the physicochemical properties of the oil (Abriana, *et al.*, 2019).

The rate of development as well as continued existence of bacteria need to be monitored not only to determine the microbiological quality but also to evaluate the consumer welfare of such food products (Tavoschi, *et al.*, 2015). The bacterial quality of the meatfloss under studied varied with the producers. It was also observed that based on the microbiological guidelines of ready-to-eat

food (CFS, 2014), the sampled meatfloss from the producers were of unsatisfactory quality due to their high THC. Furthermore, the heterogenous flora with respect to microbial numbers and composition of the sampled PMF generally had a high counts. The high THC recorded in all the PMF meat floss could be adduced to the high moisture content recorded in these products compared to LMF. This is because moisture content has great influence in the growth and replication of bacteria in foods as it contributes significantly to their microbial flora (Prescott, *et al.*, 2002) However, these counts were lower than the values proposed by ICMSF (1986) who stated that values greater than or equal to 10^6 cfu/g is dangerous and could result to some health problems such as food poisoning and intoxication. The THC obtained in this study was also within the acceptable limit of 5×10^4 - 10^5 cfu/g in case of total viable bacteria as proposed by FDA guideline (2013).

Contamination by pathogenic microorganisms is one of the most important challenges faced by producers of processed meat products. Ready-to-eat (RTE) meats products are especially of great concern because they are most times usually consumed without further cooking and are known to be good growth substrates for microorganisms. The identification of foodborne pathogenic bacteria in food is important both for quality assurance and to detect pathogens within the food supply (Hyun- Joong *et al.*, 2008). These microbial groups are safety indicators, the presence of high counts may indicate possible presence of pathogens (Jay, 2005).

The general hygiene status of food is usually accessed through Enterobacteriaceae counts. The high Enterococcal counts observed in all the PMF as compared to LMF could be as a result of post-processing contamination. This is because most times their presence especially in heat treated food indicates inadequate cooking or post- processing contamination (CFS, 2014). Their presence could also be as a result of inadequate storage and displaying conditions during sale. This corroborates reports by Abdulmajid *et al.* (2014) that there is usually an unsanitary practices during handling, preparation and sale among the vendors of street foods.

Total *Escherichia coli* and Total *Coliform* counts enumeration are usually used as a food-quality structure (Nworu *et al.*, 2021). For instance, elevated counts of *Escherichia coli* and total *Coliform* in foods usually implies lack of hygiene in handling and production operations, insufficient storage and post-process contamination (Akusu *et al.* 2019); while presence of *Staphylococcus aureus* in RTE food is an indication of poor hygiene which is associated with cross contamination occurring during processing and storage or through the contamination of raw ingredients (Akindele and Ibrahim, 2016). The presence and high incidence of *Escherichia coli*, *Staphylococcus aureus* and *Coliform* spp in all PMF indicate that there is relatively lack of some fundamental hygienic process among these producers. This is because the safety of food products on a consumer's plate depends largely on the way they have been produced of which personal hygiene is of utmost importance. These producers are also usually not adequately educated and without formal training in food preparation as common with producers involved in the processing and sale of street vended fried meat products. They thereby lacks knowledge and appreciation of basic food safety (Abdulmajid *et al.* 2014) which is necessary in the hygienic handling of foods (FAO, 1999). Incidentally, all mentioned organisms were also isolated in the LMF however, their presence is slight or almost not present.

Conclusion

The findings from this study revealed that ready-to eat meatfloss sold in Sabo-Mokola axis of Ibadan is low in quality and might be unfit for human consumption because of its low sensorial qualities and high saturated fatty acids. This study has also shown that the microbial quality of meatfloss sold in this region although did not exceed the safety levels in terms of total heterophilic counts but still constitute a significant risk as it contains some foodborne pathogens. This implies that safe food handling practices and processing can improve the food quality, safety as well as the health of both food producers/vendors and consumers in developing

countries. Therefore, the food- regulatory agencies in this region should step up their surveillance and enlightenment programmes on the importance of food hygiene and safety with a view to ensuring that the meat products sold in this area are safe for consumption.

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