

1 **Algae oil as a replacer of animal fats for the production of vegetable-**
2 **based artificial aquatic flavor**

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5 **Outline**

- 6 1. Introduction
7 2. Materials and methods
8 3. Results and discussion
9 4. Conclusion

10 **Abstract**

11 With the popularity of artificial meat, imitation meat spices are being produced in
12 large quantities. The aroma of meat is closely related to its fat, which is heated to create
13 its fragrance. However, with the rise of health and environmental sustainability issues,
14 plant-based diets are in popular. The purpose of this study is to develop aquatic product
15 aroma from plant-based ingredients. We attempted to create plant-based aquatic product
16 flavors by using algae oil, a vegetarian fish oil, in combination with amino acids and
17 glucose in a Maillard reaction to produce models that are similar to aquatic product
18 flavors. The results showed that algae oil has the potential to be used as a lipid source
19 to replace animal fats in the synthesis of grilled fish flavor, generating a model with a
20 flavor similar to that of grilled mackerel. 3-Methylbutanal, 2-Acetyl-1-pyrroline,
21 Nonanal, and 2-Octenal as key volatile compounds. This proves that lipids are the main
22 key to the flavor. In the future, we can use this flavor to make plant-based fish steak,
23 but the flavor is not resistant to storage. It is recommended to produce this flavor before
24 used it to keep the desired good flavor.

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