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Amino Acid Profile and Volatile Flavour Compounds of Raw and Steamed Patin Catfish (*Pangasius hypophthalmus*) and Narrow-barred Spanish Mackerel (*Scomberomorus commerson*)

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Abstract. Fish species and processing methods could affect the volatile flavour composition and amino acid profile of fishery commodity. The objectives of this study were to identify volatile components and amino acid profile of two considered predominant fish species in Indonesia which are freshwater Patin catfish (*Pangasius hypophthalmus*) and marine water fish, Spanish mackerel (*Scomberomorus commerson*). The methods used in this study were to detect volatile compounds using Gas Chromatography/Mass Spectrometry (GC/MS) on fresh and steamed of both species samples (100°C for 30 minutes) and amino acid profile were also analyzed using High Performance Liquid Chromatography (HPLC). The volatile components analysis successfully detects as much as 29 and 59 volatiles compounds in fresh and steamed Patin catfish respectively, while 37 and 102 compounds were detected in fresh and steamed Spanish mackerel samples. Most of detected components derives from hydrocarbons, aldehydes, alcohols and ketone groups which could affected by their chemical composition and resulted from various thermal involved reaction. The amino acids profile identification results showed that glutamic acid was found higher compared to other amino acids standards in both samples. Glutamic acid is non-essential amino acid which is important in umami taste substances.

1. Introduction

With its continuously growing population, Indonesia in the near future will face an increasing foodstuff demand, especially in fishery commodities, considering Indonesia has a vast coastal and ocean area. West Java province has the densest population in Indonesia, thereby developing freshwater and marine water fishery sectors as a source of food will become more important for this province. From 2003 to 2010 fish aquaculture in West Java were increasing from production volume of 230,523 to 622,961 ton [1]. Patin catfish (*Pangasius hypophthalmus*) is one of the strategic targets for aquaculture freshwater fisheries development in Indonesia, aside from dumbo catfish (*Clarias gariepinus*), Nile tilapia (*Oreochromis niloticus*), common carp (*Cyprinus carpio*) and gourami (*Osphronemus goramy*) due to its high value as an export commodities and it is a commonly raised fish species in freshwater aquaculture. Patin catfish production has shown a significant growth in number. Its national production was 403,133 tons in 2014 with average increase as much as 39.90% [2]. On the other side, sea catch production in West Java has reached 180,402.14 tons in 2010. Sea catch commodities that were landed in West Java, generally consists of several groups of fish such as

