

Uncovering the Availability of Products Enriched with Vitamin A in Local Supermarket

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Submission date: 13-May-2019 12:28PM (UTC+0700)

Submission ID: 1129520989

File name: 19-08-16_Buku_Abstrak_Final_NP-SEA-Uncovering.pdf (488.97K)

Word count: 1358

Character count: 7160

Uncovering the Availability of Products Enriched with Vitamin A in Local Supermarket

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Abstract

Products containing vitamin A has appeared in nearly every aisle of the supermarket. It can be food and drink products as well as supplements which contain different amount of vitamin A. Most of food manufacturers around the world recognize that vitamin A provides functional and nutritional properties which could enhance the value of finished products in every consumer category. The amount of vitamin A in some type of food and drink product as well as supplements was uncovered in this study. From short study, it was found that there were two continents produced supplements containing vitamin A in which the highest number of production was provided by America. In addition, the amount of vitamin A fortified in snack was higher than that in instant food, while in the drink product the highest amount of vitamin A was provided in dairy based powder drink.

Keywords: vitamin A, food products, supplement

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1. Introduction

Food cannot be separated from human beings as it provides nutrients for energy and health. Therefore, a wide variety of food products have been produced in order to fulfil the human needs. However, in some products the availability of nutrient is not sufficient to fulfil the daily needs as the public health nutrition problems have been found especially in some developing countries. One of the major problems that is often found is 10 vitamin A deficiency. It has effected around 633 million adolescents in Southeast Asia, 190 million preschool-aged children and 19 million pregnant and lactating women around the world [1]. Vitamin A deficiency has resulted in the subclinical condition, causing the decrease of retinol serum by less than 20 µg/dL. It will then impact on the visual ability and immune system, which in some cases it could be followed by mortality [2].

Following this, most food manufacturers have competed in producing vitamin A fortified products. A wide range of food products including drink products and supplements containing vitamin A has been found in nearly every supermarket in developing countries including Indonesia. Diets of Indonesian people which are mainly based on the poor sources of vitamin A such as rice, legumes and cereals could be attractive and potential effective for

food fortification [1]. Therefore, vitamin A fortified food products are required by developing countries including Indonesia. This study was aimed to uncover food and drink products as well as supplement which contained vitamin A in some local supermarket in Malang, Indonesia.

2. Methodology

This study was a qualitative study in which survey of products enriched with vitamin A was conducted in some supermarket in Malang, Indonesia. It was carried out from the end of July to the beginning of August.

The food products surveyed were grouped in snack and instant food products, while the drink products were grouped in non-dairy based drink, dairy based drink and dairy based powder drink. In addition, survey of supplement was carried out on the internet as it is the most used market media of this product. The data was shown based on the continent of the company.

3. Results and discussion

A number of food products including snack and instant food have been found to contain vitamin A. It can be seen in Fig. 1 which shows that the average of vitamin A fortified in snack was higher than instant

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food, $0.400\% \cdot g^{-1}$ and $0.355\% \cdot g^{-1}$ respectively. The example of instant food products that was observed in the survey were instant noodle, pasta, macaroni and meat based product. Meanwhile, the snack surveyed were kind of biscuit, wafer, and seaweed based products.

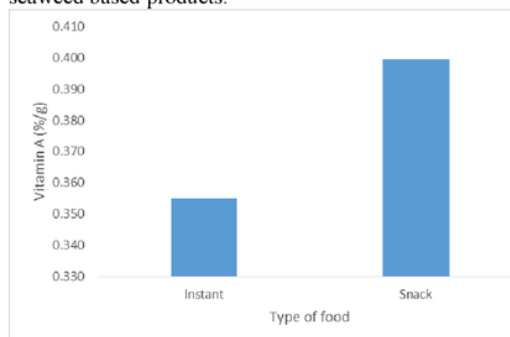


Fig. 1. The average percentage of vitamin A contained in snack and instant food products

Regarding to drink products, the surveyed products were classified in three type of product, which were non-dairy based drink (MND), dairy based drink (MD) and dairy based powder drink (SD). Fig. 2 represents the average percentage of vitamin A contained in the mentioned products. It can be seen that the amount of vitamin A in the non-dairy based drink was higher than that in the dairy based drink, $0.38\% \cdot mL^{-1}$ and $0.235\% \cdot mL^{-1}$. Meanwhile, for the dairy based powder drink the percentage of vitamin A found was the highest, $1.698\% \cdot g^{-1}$.

Besides food and drink products, some supplements have been observed to contain vitamin A. The survey was conducted on the internet by searching for the products providing vitamin A. Fig. 3 shows that there were two continent where the supplements could be readily accessed. Those continent were America and Asia. However, only one product from Asia that could be found during the study and the average of vitamin A contained was 50 % lower than that from America, which was 6 000 IU (International Units). Meanwhile, in the America, there were eight products found with the average of vitamin A 12 500 IU. This shows that the vitamin A provided by supplement company from America is little higher than the daily need, while it is lower in Asia. The World Health Organization recommends that supplements during pregnancy should not exceed 10 000 IU of vitamin A. This is equal to 3 000 μg of retinol equivalents (RE) per day or 25 000 IU (7 500 RE) per week [3]. In addition, the upper

limit of vitamin A regulated by the Food and Nutrition Board of the National Academy of Sciences is 10 000 IU per day [4].

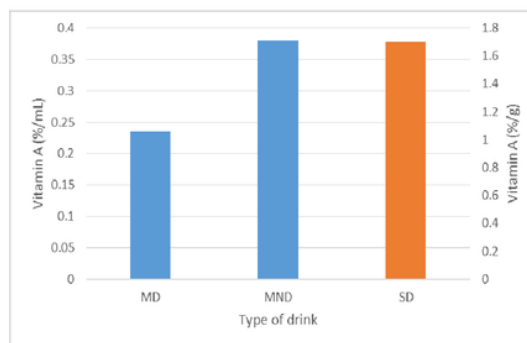


Fig. 2. The average percentage of vitamin A contained in non-dairy based drink (MND), dairy based drink (MD) and dairy based powder drink (SD)

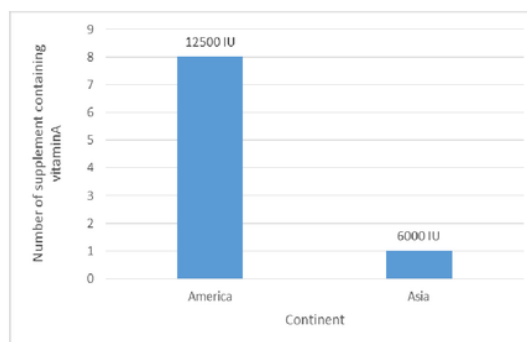


Fig. 3. The continent producing vitamin A supplement

4. Conclusion

Most of food and drink products in the market has been fortified with vitamin A. The highest content of vitamin A was found in the snack and dairy based powder drink. Meanwhile, the supplement produced by America provides higher vitamin A than that in Asia. However, both values are categorised in higher and lower than the recommendation of daily need.

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