

## GIZ334 Food Experimentation

Guest lecture session by Prof. Dr. Wan Rosli Wan Ishak from Universiti Sains Malaysia

on Saturday, 5 June 2021

### FUNCTIONAL FOOD DEVELOPMENT

#### Q&A session

- 1) **Dr. Budi Setiawan\_IPB University:** Regarding the health benefits and food safety aspects, do you suggest that toxicology and animal assay or clinical studies should be done when developing new & innovative functional food products?

**Answer:** The toxicology test must be done before a new functional food product is released. The functional food product should also be applied in study involving human subjects/clinical study that needs ethical clearance, in which the assessment process required the toxicology test. Even though the ingredient is a natural product that commonly consumed in community, when it is going to be developed to a new product, it should be tested for toxicology analysis.

- 2) **Aji Pangestu\_IPB University:** Functional food product has good market potential related to the nutritional benefits or health effects provided by the products. How do we introduce the new product to consumers, while there are many different types of products that propose similar health benefits?

**Answer:** The food claims and labelling are regulated strictly by government. We can use nutritional/health claims as additional points of the product, but it takes a long process for the claims to be approved by the government. The chemical or nutritional analysis of product should be done by accredited laboratory, beside that science-based evidence for supporting the proposed claim should be conducted by a series of continuous studies which involve toxicology analysis, animal assay, as well as clinical study. After the claim is approved, we can use it on our food label to inform the customer regarding the health/nutritional benefits of the product.

- 3) **Kharisma\_IPB University:** Should we do digestibility or bioavailability analysis of functional food products and how important the analysis is?

**Answer:** The digestibility/bioavailability analysis is very important, moreover in our studies that use plant-based food ingredients, which naturally have anti-nutrient components. We should consider proper steps in the processing to eliminate or minimize those anti-nutrient components, thus the nutritional bioavailability of the product could be maximized.

- 4) **Dira Warisanti\_IPB University:** I am interested in developing food products from winter melon because it can be found easily in my hometown and it also has prebiotic function. Because there are several cases of digestive system problems in under-five children, what type of product that potentially can be developed by using winter melon to address this issue?

**Answer:** Thanks for your question. Actually, both functional drink and food (breakfast cereals) fortified with winter melon extracts are the best option.

- 5) **Hasballah\_IPB University:** I would like to ask about the products that have been researched before; how did the consumers respond to the developed products, whether they like it or they still choose the standard products they usually consume?

**Answer:** We have tried many formulations before we do further analysis. Once the product received higher sensory scores from the panellists (acceptable and palatable), then we proceeded with determination of GI and other further refinement of formulation and analyses. If the sensory score is still in the low level, we still needed to re-formulate and change the composition of ingredients and then re-do the sensory evaluation until the score was acceptable.

- 6) **Elmira Fairuz\_IPB University:** When we develop food products, one of the problems that often arise is that these products have a production price that is more expensive than existing similar products. Based on the product development that you have developed, did you find similar obstacles and how did you solve them so that the product can be well received by the consumers? Thank you.

**Answer:** You are right. That is why we always search for the locally-available raw materials and try to find the agricultural by-products which is abundantly available in the relevant governmental agencies or food industry in the sectors of plantation, farming or aquaculture.

- 7) **Dr. Budi Setiawan\_IPB University:** In Indonesia, some food companies sometimes “play the game” of over claim of health benefits of functional food. What about in Malaysia?

**Answer:** Yes, there is similar trend here, but not that obvious because our government is very strict about this over-claimed health benefits. More importantly, our consumers are also very sensitive about the misleading health claims, thus we boycott those products.

- 8) **Aji Pangestu\_IPB University:** We know that there are nutraceutical products that also propose similar health benefit for the consumers; so, can functional food products compete with nutraceutical products in the market? What strategy does USM use to face this challenge?

**Answer:** Actually, the competition between nutraceutical and functional foods does not matter, and we don't face any problem here. The most important thing is based on our strategy, we have to determine for which market segmentation we want to develop/focus our functional foods. Realistically, before developing products, we must strategically discuss with the relevant company/industry about the demand/future market of the product that is going to be developed.

- 9) **Siti Fauziah Nur Hanifa\_IPB University:** Could you please mention what type of products that you've developed by using winter melon? How did the response from the consumers for the products?

**Answer:** we have developed 1) Prebiotic Granola Bars (in the final stage now) and 2) Effervescence of Winter Melon for Diabetes Market (in the early stage of product developmental stage). The response of consumer is acceptable.

- 10) **Fadia Nabila\_IPB University:** The cookies from overripe banana is a fascinating product because of the uniqueness of the ingredient as well as it can help reduce the food waste. How about the consumer acceptance related to this product? Can this product compete with other cookies that have been sold in the market for a long time?

**Answer:** Yes, surprisingly the acceptability level of this product is quite high and it is highly palatable. We are not competing with the existing commercial product yet. However, you can

read this article: Effect of overripe banana in developing high dietary fibre and low glycaemic index cookie. YV Ng, TAT Ismail, WRW Ishak - British Food Journal, 2020.

- 11) **Putri Mulifajar\_IPB University:** Thank you so much for your awesome and comprehensive presentation. I would like to ask what kind of ingredients that you used in winter melon granola bar, because from what I know, granola bar contains many grains which also have benefits for gut health. Does winter melon extract have more benefits than those grains? Thank you.
- Answer:** To avoid bias, we have screened prebiotic properties of major ingredients including commercial prebiotic raw material (inulin). We compared granola bars developed with those grains with and without winter melon extract. The granola bars developed with addition of winter melon extract exhibited prebiotic properties, but not for those grains. In this specific study, the grains that we were using did not/less exhibit prebiotic properties.