

REVIEW ARTICLE

Open Access



Bika Ambon of Indonesia: history, culture, and its contribution to tourism sector

Chairy^{1*}  and Jhanghiz Syahrivar²

Abstract

Indonesia is an archipelago with more than 17,000 islands and more than 300 ethnic groups. Today, the country has 35 provinces, and each province has its own local culture, language, and ethnic food. Medan is the capital of North Sumatra province which is one of the most populated provinces in Indonesia. One of the popular and authentic food souvenirs for tourists who visit Medan is *Bika Ambon*. Arguably, it is one of the most delicate cakes in terms of preparation and taste. The ingredients of *Bika Ambon* are tapioca or sago, wheat flour, sugar, coconut milk, and eggs and added bread yeast for fermentation. *Bika Ambon* has been a magnet for both local and international tourists visiting Medan.

Keywords: *Bika Ambon*, Tourism, Food culture, Halal foods

Introduction

According to United Nations World Tourism Organization (UNWTO) 2018 Tourism Highlights Report, there were a total of 1.32 million global tourist arrivals [1]. Travelers now have many tourist destinations to choose from; hence, many countries, including Indonesia, must compete for their attention. Moreover, the local tourism industry encompasses a variety of tourism products and services offered to the international market. For instance, Medan, one of the biggest cities in Indonesia, is famous for its *Bika Ambon* (Fig. 1). Before it becomes available in many cities in Indonesia, *Bika Ambon* was initially produced by the local people in Medan.

Although *Bika Ambon* has been gradually replaced in popularity by *Bolu Meranti* (another local traditional cake), there are still many people who buy *Bika Ambon* as a souvenir when they visit Medan [2]. Today, *Bika Ambon* is sold not only in Medan but also in many big cities all over Indonesia. The cake is widely sold in the pastry shops, traditional markets, and also online shops. The cake is very popular among local and international tourists because of its unique features which are chewy and soft with a pore like a honeycomb, visible small holes resembling a wasp's nest on its surface (see Fig. 2)

[3]. Moreover, *Bika Ambon* is rich in carbohydrates, fats, and proteins.

In its making, the dough is fermented before roasting. The ingredients used to make *Bika Ambon* are relatively cheap and easy to obtain, which are tapioca or sago, wheat flour, sugar, coconut milk, and eggs and added bread yeast for fermentation. These days, the cake has been introduced to the market with some variants in terms of nutrients and flavors, such as chocolate, vanilla, *pandanus*, strawberry, and durian. One way to improve the nutrient of *Bika Ambon* is by adding *kelop* leaves [4].

In addition to nutrients, the color of *Bika Ambon* also influences its appeal to local and international tourists. One way to improve the appeal of *Bika Ambon* is by adding synthetic dyes in the mixtures so that the resulting cake has an attractive color. However, the use of synthetic dyes that do not conform to the specified dosage will have a negative impact upon consumers' health. Therefore, it is advisable that the synthetic dyes are replaced with natural dyes obtained from natural ingredients, such as yellow pumpkin puree. The yellow pumpkin puree is a yellow pumpkin that is steamed and then crushed [5].

History

The origin of *Bika Ambon* is hazy. Although the name of the cake gives the impression as if it originated from Ambon, the capital of Maluku Province in east Indonesia, in fact the cake is a well-known ethnic food of people in

* Correspondence: chairy@president.ac.id

¹Faculty of Business, President University, Jl. KH Dewantara, Jababeka, Bekasi 17550, Indonesia

Full list of author information is available at the end of the article





Fig. 1 *Bika Ambon* has a yellowish color and many pores on its surface. The origin of *Bika Ambon* is fuzzy, but it is taken as an ethnic food from Medan, North Sumatra. The premium *Bika Ambon* in the picture is sold in a nice carton box and a disposable plastic box as another layer of protection. If it is kept in a refrigerator, it stays good for 3 days. *Bika Ambon* also comes in several shapes (e.g., square, oval, and round) and flavors

Medan, North Sumatra. Local story stipulated that the cake was accidentally made by a Chinese-Indonesian mother who lived on Ambon Street, Medan [6]. It is true, however, that *Bika Ambon* business in Medan was started by Chinese-Indonesian entrepreneurs, such as *Ati* or *Achai*. Based on our interviews with the local people in Medan, they speculated that the cake was brought by Ambonese traders to Medan where it became very popular. However, if that was the case, it is still an enigma as to why the cake was previously unknown to Ambonese until it became a popular ethnic food in Medan.

Perhaps another compelling speculation about the origin of *Bika Ambon* was offered by Christopher Tan who suggested that the word “*Bika*” was a Dutch-loanword [7]. *Bika Ambon*’s internal texture resembles that of a honeycomb and a honeycomb is found in a beehive. The



Fig. 2 A wasp’s nest pattern on *Bika Ambon*’s inner texture. Its inner texture is usually yellowish; meanwhile, the surface of *Bika Ambon* can be a bit brownish and crispy. When eaten, it feels chewy, soft, and sweet. However, when overbaked, it may taste bitter. *Bika Ambon* can come with various flavors (e.g., chocolate, vanilla, and honey), but the one in the picture had an original taste

word “beehive” in Dutch is “*bijenkor*” (pronounced “*bayen-korf*”) and he speculated that this was the origin of the word “*bika*” or “*bingka*.” Therefore, the creation of *Bika Ambon* might have been influenced by the Dutch during their occupation of Indonesia in the 1800s. In fact, the Netherlands is famous for *Stroopwafels* (syrup waffles) that was first made during the eighteenth Century in Gouda, the Netherlands [8]. *Stroopwafels* also resemble a beehive texture.

Originally, *Bika Ambon* was mixed with wine or *tuak*, a traditional beverage of North Sumatra, which made the cake tasty, chewy, and sweet [9]. *Bika Ambon* is usually baked in a brass or copper mold. One could bake *Bika Ambon* in a mold and serve the cake in various sizes or portions. Sometimes baking and serving *Bika Ambon* in a smaller portion is more preferable to local people as it usually produces a softer and fluffier texture. For a chewy and springy texture, *Bika Ambon* is traditionally made with sago flour. Other than sago flour, tapioca flour can be used as a substitute [10].

Although nowadays *Bika Ambon* is available in many big cities in Indonesia, local tourists will not miss the opportunity to buy *Bika Ambon* as a souvenir when they visit Medan, perhaps due to its authentic feel when they buy the cake from the city it originated from. The authentic *Bika Ambon* is available along Mojopahit Street (Fig. 3). There are dozens of *Bika Ambon* producers along this street. They will all claim that they are original or authentic *Bika Ambon* producers. Considering that about 87% of Indonesians are Moslems, most *Bika Ambon* producers in the city attempt to offer *Bika Ambon* as a Halal cake. Today, *Bika Ambon* producers on Mojopahit Street no longer use *tuak* (e.g., wine) so that they can target the Muslim market.



Fig. 3 Mojopahit Street of Medan, North Sumatra, where tourists usually buy *Bika Ambon*. The street was named after a famous ancient empire “*Majapahit*” based in Java (1293–1500). Cars usually park on the left and right sides of the street; hence, traffic congestion is to be expected in this area. There are many *Bika Ambon* sellers in Mojopahit Street but the famous one is Zulaikha’s *Bika Ambon* shop. Visiting Mojopahit Street for local souvenirs is usually included in the local tourist itinerary

Currently, Zulaikha's *Bika Ambon* is considered very popular in Medan. The owner of Zulaikha shop is Hajjah Mariani, a Muslim entrepreneur, who saw that during Muslim Eid Festival, many Muslims were lining up to buy *Bika Ambon* from a non-halal shop. She saw the opportunity of selling *Halal Bika Ambon*. Hajjah Mariani became the first Muslim entrepreneur to sell *Bika Ambon* with several flavors. Previously, *Bika Ambon* was produced and sold by Chinese-Indonesian only, but after Zulaikha entered the market in 2003, both Muslims and non-Muslims buy her products [11]. Zulaikha is considerably successful at least due to two factors: (1) Halal appeal and (2) continuous innovations in flavor. At present, *Bika Ambon* is produced by all local people who have mastered the production techniques. Although it is still made with relatively the same ingredients since its first introduction, *Bika Ambon* can be found with a variety of new flavors besides the original taste. *Bika Ambon*'s innovations thus far are mostly focused on improving its flavor but very little has been done in terms of cake designs and ingredients.

About Medan

Indonesia is an archipelago with more than 17,000 islands and more than 300 ethnic groups. Today, the country has 35 provinces, and each province has its own local culture, language, and ethnic food. One of the most populated provinces in Indonesia is North Sumatra province with Medan as the capital. As a regional government center of North Sumatra, Medan grew into a metropolitan city with a population of more than two million people (Fig. 4). Now the city of Medan is the third largest city in Indonesia after Jakarta and Surabaya. As one of the largest cities in Indonesia, Medan has a high cultural tourism potential to be developed; the city is rich in historical heritage of the past that still exists in the form of historic buildings with customs that are still preserved [12].

Medan city covers an area of 102 mi² (265 km²). The Dutch colonial government admitted Medan as a city in 1886. At the turn of the twenty-first century, the largest portion of the city's population was Batak and about one third of the population was Javanese. In 1873, Medan became a thriving export-oriented agricultural region

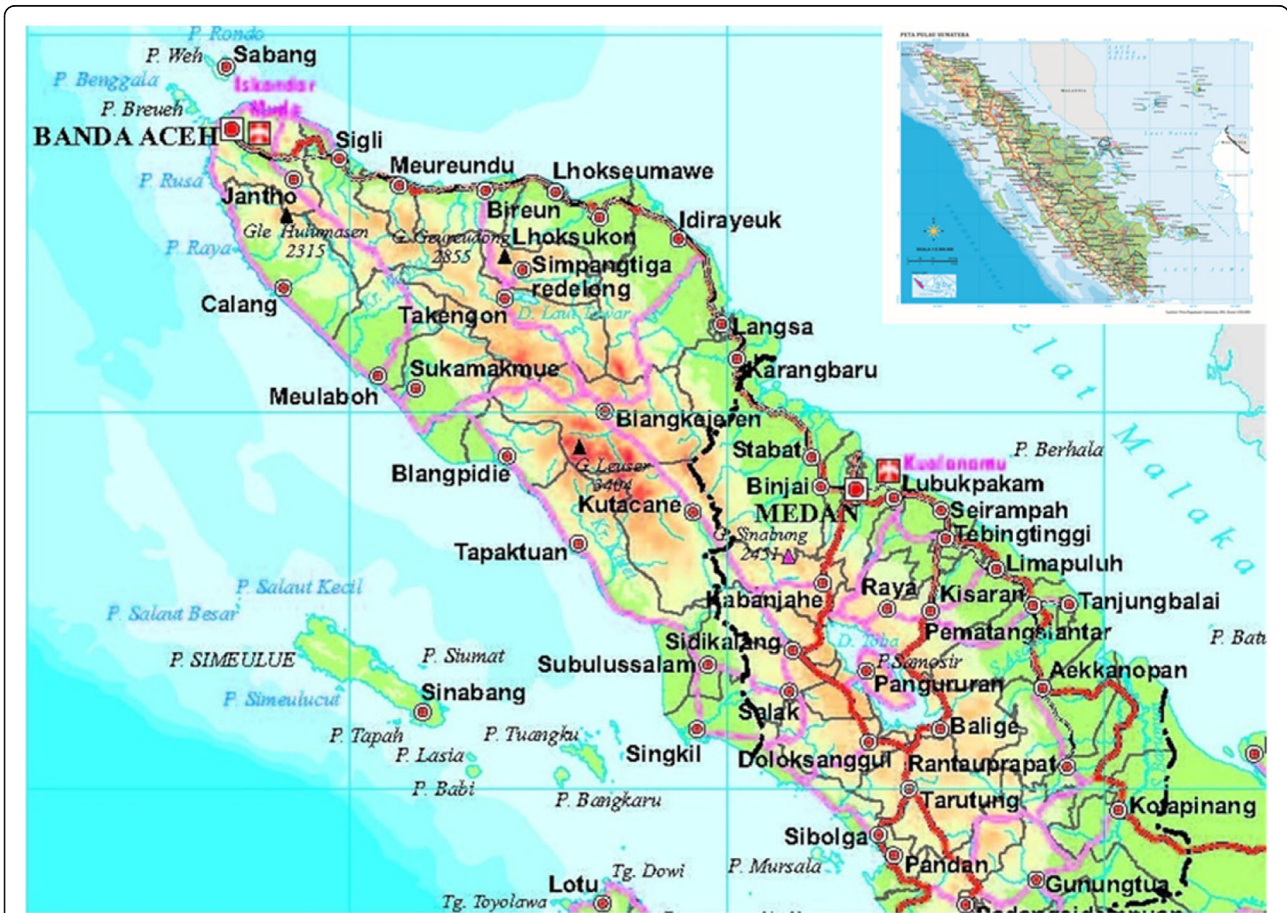


Fig. 4 Medan map. Medan is located in North Sumatra, Indonesia. The city is approximately 265 km² and is the third largest city in terms of population. Currently, its population is more than two million. Source: Geospatial Information Agency of Indonesia (www.big.go.id)

known for such goods as rubber, tea, tobacco, and palm products. The city's light industry produces bricks, tile, and machinery [13].

Medan serves as a gateway to North Sumatra and a commercial as well as an economic hub. The modern metropolis attracts not only shoppers, but also business professionals and entrepreneurs. In its early day, Medan was a trading and maritime town under Islamic Malay leadership. Today, Medan is famous for several tourist spots, such as Toba Lake, Brastagi Highland, and Bahorok Orangutan Rehabilitation Center. Among ethnic food souvenirs, *Bika Ambon* is one of the most popular [14].

Food preparation

Making *Bika Ambon* takes some patience, efforts, and thorough preparations. The following are ingredients of *Bika Ambon* [15]: 340 ml coconut milk, 1/2 tsp. turmeric powder optional, 10 kaffir lime leaves tear the edges to release flavor, 170 g sugar, 170 g tapioca flour, 1/2 tsp. salt, 1 tsp. yeast, and 6 large eggs.

The steps of making *Bika Ambon* are as follows [15]: First, place the coconut milk, turmeric powder, kaffir lime leaves, and sugar in a sauce pan. Next, cook on low heat for about 3 min but do not let the coconut milk boil. After that, remove it from the heat and let it cool down a little bit. Then, add in the yeast and set aside for 15 min until it is foamy. Do not forget to discard the lime leaves after 15 min.

In the meantime, place the tapioca flour, salt, and eggs in a large mixing bowl. Stir to mix and gradually add in the coconut milk and yeast mixture and whisk to make sure the batter is smooth. Cover the batter with plastic wrap. Next, preheat the oven to around 95 F and then turn it off and place the batter inside for 3 h. At the end of 3 h, there will be little bubbles all over the batter which means that the yeast is active.

Preheat the oven to 330 F. Brush the pan (e.g., 20 × 10 × 6 cm loaf pan) with some oil and then line with parchment paper on all sides. The oil helps to keep the paper in place. Give the batter a gentle stir as the tapioca flour tends to settle at the bottom. Pour the batter inside the pan and place it inside the oven (3rd rack from top) and bake for 50 min. After that, move the cake down to the bottom rack and turn on the broiler to low and let the top brown a little bit.

Finally, remove the cake from the oven and set aside for 10 min before removing it from the pan. Remove the cake from the pan by lifting the parchment paper and let it cool down completely on the cooling rack before slicing.

The fermentation time depends on the enzymatic activity of the yeast as well as the ambient temperature. In a hot and humid tropical area, normally it requires 2 h. The longer the fermentation, usually the more bubbly the batter would become. At the same time, the taste of

the *Bika Ambon* would also become bitter coupled with prominent yeasty smell as a result of prolonged alcoholic fermentation. Apart from *pandan* leaves to improve the aroma of *Bika Ambon*, kaffir lime leaves can also be used alongside lemongrass [10]. The fermentation and the mixture of local herbs contribute to the unique taste and texture of *Bika Ambon*.

Food and culture

Food is integral to communicating culture and it may also be used for economic as well as political purposes [16]. Culture, which is the fundamental determinant of human or consumer behavior [17], is generally defined as a set of beliefs, values, material objects, and attitudes practiced, produced, and accepted by members of a community [18]. The preferences for certain foods in different communities are often associated with ethnic behaviors and religious beliefs [19]. Moreover, food is not only a product of culture but also a form of art; traditional or ethnic food, especially, has to be preserved in order to support tourism [20].

Diet cannot be separated from food culture, and the changes in one's diet may affect one's well-being [21]. Since prehistory, people have given meanings to food which later formed the culture surrounding the food, including what kinds of animals or ingredients to prepare, when is the right time to prepare the food, and why the food has to be served [22]. Food culture is a complex topic particularly because it is influenced by socioeconomic, demographic, and cultural factors [23]. It is also strongly influenced by its origin, including its acquisition and processing [24]. Moreover, food culture is perceived as one of the components that make up one's identity [25]. Unfortunately, food culture might be fading away as a result of acculturation [26].

Although the first *Bika Ambon* allegedly consisted of *tuak* or alcoholic drink [10], it was replaced by bread yeast or instant yeast [27], in order to appeal to Muslim majority in the country. Indonesia as the number one Muslim majority country in the world requires that most foods offered to the general public are halal. For this reason, Indonesia, along with Malaysia, Singapore, Thailand, and OIC countries, has established an institution specifically for Halal certifications. However, the lack of standard in Halal certification has been suspected to be the reason why Halal industry does not grow faster despite the exponential increase in demands for Halal products throughout the world [28].

Indonesia's standard for food is highly influenced by Islamic values, and the word *Halal* itself is derived from Arabic which means permissible. For a food to be considered halal, generally speaking, it must not contain pork and alcohol [29]. Therefore, the purpose of Halal certification is not only to attract Muslim customers but

also to assure them in matters of origin and quality of the foods. In general, business owners are in agreement that Halal certification increases their market shares and boosts customers' satisfaction, confidence, and trust [30]. Moreover, Halal is not only appealing to Muslim customers but also non-Muslims who perceived halal products to be better in quality and more hygienic. Non-Muslim customers may support Halal because it ensures that the food producers maintain certain ethical standards (e.g., cleanliness and animal butchery methods) [31].

Based on ethnic characteristics, the people of Medan or Medanese are known to be open, frank, tough, and hardworking people. Based on our interview with a sociologist from one of the biggest universities in Medan, he said that Medanese do not like small talk; they speak aloud but they are honest, brave, and well-adjusted with their new environment. In a way, *Bika Ambon* reflects the characters of Medanese: it is not easy to make and it requires plenty of hard work in the production process. The cake has a strong taste which somewhat corresponds to the brave and tough character of Medanese. Moreover, *Bika Ambon* also experiences some adaptations, especially in terms of ingredients, one of which is that it is currently alcohol-free. Likewise, the emergence *Bika Ambon* with various flavors, such as chocolate and cheese, can be easily accepted by Medanese (and Indonesian in general) even though the original *Bika Ambon* is still preserved until today. This reflects the character of Medanese who are not rigid and who are able to adapt themselves to the dynamic environment.

***Bika Ambon* and its contribution to the tourism sector**

The growth of the tourism sector is significantly driven by attractive and popular tourist destinations. Indonesia is an archipelago with more than 17,000 islands and more than 300 ethnic groups, and it has thousands of tourist destinations. Medan, with its famous Toba Lake, is one of the top ten most visited tourist destinations [32]. Each year, Lake Toba, Medan, is expected to be visited by more than one million foreign tourists [33].

Typically, Indonesian tourists enjoy not only the local panorama but also the local foods. Souvenir business is the second most important aspect in Indonesian tourism. Tourists also buy foods as a souvenir, such as cakes, cookies, and candies, including *Bika Ambon* located on Mojopahit Street in Medan. Tour leaders or guides usually take travelers to this street for *Bika Ambon*. Visiting Mojopahit Street is usually included in the local travel itinerary.

So far, tourists buy *Bika Ambon* in large sizes, usually a size of 20 × 20 cm, packaged in a box and sold for IDR 60,000 or USD 5. Such package is in fact uncomfortable

because it is quite heavy and difficult to carry, especially for long traveling. To make a bigger contribution, *Bika Ambon* needs to be packaged in a size that is more easily carried by tourists. If the 20 × 20 cm cake is cut in the form of ready-to-eat slices, then 30 slices will be obtained at a price of IDR 2000 per slice. This means that with USD 1, tourists can enjoy around 5 slices of *Bika Ambon*, a very reasonable price. *Bika Ambon* producers need to improve the packaging design and make some size adjustment in order to make it more attractive and easier for tourists to carry it with them. With a vacuum packaging technology, *Bika Ambon* can last longer; hence, international tourists can bring it to their home countries without being worried. Aside from beautiful natural scenery, *Bika Ambon* has been a magnet for local as well as international tourists and also a significant contributor to local people, local business, and national economic growth.

Conclusion

Bika Ambon is an authentic souvenir and is a must-buy for local and international tourists who visit Medan, North Sumatra, Indonesia. The cake is unique in terms of preparation and taste. Although the ingredients of *Bika Ambon* can be found easily across Indonesia, it is not easy to prepare the cake. The secret of the taste and delicate texture of *Bika Ambon* lies on the correct fermentation process as well as the right ingredients, such as herbs and spices. Since Muslims represent the majority in Indonesia, *Bika Ambon* has undergone an evolution from a non-halal food to a halal one. Today, most *Bika* are made by halal ingredients only; it is not surprising to see a Halal logo on the package in order to provide some assurance to Muslim consumers. To broaden the market size of *Bika Ambon*, the producers of *Bika Ambon* need to adjust the size of the cake (preferably a smaller size offering) so that it can be easily carried by travelers. *Bika Ambon* producers also need to come up with some attractive and safe packaging designs so that the cake is more appealing, especially to international tourists.

Acknowledgements

The authors would like to thank to all parties who have shared their knowledge and information about *Bika Ambon*.

Authors' contributions

All authors have contributed to the paper and have never submitted the manuscript, in whole or in part, to other journals. All authors read and approved the final manuscript.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Availability of data and materials

All data and materials are presented in the main paper.

Competing interests

The authors declare that they have no competing interests.

Author details

¹Faculty of Business, President University, Jl. KH Dewantara, Jababeka, Bekasi 17550, Indonesia. ²Institute of Marketing and Media, Corvinus University of Budapest, Budapest, Hungary.

Received: 20 January 2019 Accepted: 27 May 2019

Published online: 17 July 2019

References

1. United Nations World Tourism Organization (UNWTO) Tourism Highlights Report. 2018. Available from: <https://www.e-unwto.org/doi/pdf/10.18111/9789284419876>. Cited 2019 April 4
2. Swantari A. Potensi wisata kuliner di Kemang Pratama 1, Bekasi. *MITRA* 2013; 3(2): 1–22. Available from: <http://portal.kopertis3.or.id/handle/123456789/1893>.
3. Diniyah N, Windrati WS, Nafi A and Lstiani PH. Perubahan sifat fisik dan kimiawi kue *Bika Ambon* termodifikasi dengan penambahan tepung mocaf (modified cassava flour). 2013 Available from: https://www.researchgate.net/publication/259744362_Perubahan_Sifat_Fisik_dan_Kimiawi_Kue_Bika_Ambon_Termodifikasi_dengan_Penambahan_Tepung_MOCAF_Modified_Cassava_Flour. Cited on 2018 September 23
4. Wahyuli S, Ismawati R. Pengaruh jumlah kuning telur dan penambahan pure daun kelor (*Moringa Oleifera*) terhadap sifat organoleptik bika ambon. *J Tata Boga*. 2018;7(1):52–62 Available from: <http://jurnalmahasiswa.unesa.ac.id/index.php/jurnal-tata-boga/article/view/22719>.
5. Tristya Zumrotin H, Sugitha IM, Indri Hapsari A, Pengaruh Perbandingan NM. Puree Labu Kuning (*Cucurbita moschata* Ex. Poir) dan Tapioka Terhadap Karakteristik *Bika Ambon*. *Jurnal Ilmu dan Teknologi Pangan (Itepa)*. 2018; 5(2):153–61 Available from: <https://ojs.unud.ac.id/index.php/itepa/article/view/27511>.
6. Sayekti DD. Pengaruh penambahan puree wortel (*daucus carota* L.) dan waktu fermentasi terhadap hasil jadi bika ambon. *J Tata Boga*. 2014;3(1): 131–40 Available from: <http://jurnalmahasiswa.unesa.ac.id/index.php/jurnal-tata-boga/article/view/6648>.
7. Tan C. *Nerdbaker: extraordinary recipes, stories & baking adventures from a true oven Greek*. Singapore: Epigram Books; 2015.
8. <https://www.awesomeamsterdam.com/dutch-foods-you-should-try/>. Cited 2019 April 5
9. Tay, Leslie. Leslie's kuih bingka (*Bika*) Ambon recipe: Everything you need to know. 2018. Available from: <http://eatishootipost.sg/leslies-kuih-bingka-bika-ambon-recipe-everything-need-know/>. Cited 2018 September 24
10. <https://travelling-foodies.com/2015/04/14/bika-ambon/>. Cited 2018 September 24
11. Ghazali EM, Mutum DS, Rashid M, Ahmed JU. Management of shari'ah compliant businesses. Switzerland: Springer; 2019. p. 144–5.
12. Sidabutar YFD, Sirojuzilam, Lubis S, Rujiman. The influence of building quality, environmental conditions of historical building and community participation to cultural tourism in Medan city. *UCIET*. 2018;9(3):259–70. Available from: <https://www.britannica.com/place/Medan>. Cited 2018 October 2
13. <http://www.indonesia-holidays.com/sumatra/medan.htm?cid=ch:OTH:001>. Cited on 2018 September 24
14. <https://whattocooktoday.com/bika-ambon-indonesian-honey-comb-cake.html>. Cited on 2019 April 4
15. Tellström R, Gustafsson IB, Mossberg L. Consuming heritage: the use of local food culture in branding. *Place Branding*. 2006;2(2):130–43.
16. Solomon MR. *Consumer behavior: buying, having, and being*. 15th ed. Harlow: Pearson Education Limited; 2016.
17. Kotler P, Bowen JT, Makens JC, Baloglu S. *Marketing for hospitality and tourism*. 7th ed. New Jersey: Pearson Prentice Hall; 2016.
18. Almerico GM. Food and identity: food studies, cultural, and personal identity. *JBCS*. 2014;8:1–7.
19. Reynolds PC. Food and tourism: towards an understanding of sustainable culture. *J Sustain Tour*. 1993;1(1):48–54.
20. Lipoeto NI, Agus Z, Oenzil F, Masrul M, Wattanapenpaiboon N, Wahlqvist ML. Contemporary Minangkabau food culture in West Sumatra, Indonesia. *Asia Pac J Clin Nutr*. 2001;10(1):10–6.
21. Civitello L. *Cuisine and culture: a history of food and people*. Hoboken: Wiley; 2011.
22. Garnweidner LM, Terragni L, Pettersen KS, Mosdøl A. Perceptions of the host country's food culture among female immigrants from Africa and Asia: aspects relevant for cultural sensitivity in nutrition communication. *J Nutr Educ Behav*. 2012;44(4):335–42.
23. Wahlqvist ML, Lee MS. Regional food culture and development. *APJCN*. 2007;16(S1):2–7.
24. Nygård B, Storstad O. Deglobalization of food markets? Consumer perceptions of safe food: the case of Norway. *Sociol Rural*. 1998;38(1):35–53.
25. Vue W, Wolff C, Goto K. Hmong food helps us remember who we are: perspectives of food culture and health among Hmong women with young children. *J Nutr Educ Behav*. 2011;43(3):199–204.
26. Nimpuno D. *Ayo Membuat Masakan & Kue dari Bahan Halal*. Jakarta: Gramedia Pustaka Utama; 2017.
27. Halim MA, Salleh MM. The possibility of uniformity on halal standards in organization of Islamic countries (OIC) country. *WASJ*. 2012;17(17):6–10.
28. Battour M, Ismail MN. Halal tourism: concepts, practices, challenges and future. *Tour Manag Perspect*. 2016;19:150–4.
29. Abdul M, Ismail H, Mustapha M, Kusuma H. Indonesian small medium enterprises (SMEs) and perceptions on halal food certification. *AJBM*. 2013; 7(16):1492–500.
30. Haque A, Sarwar A, Yasmin F, Tarofder AK, Hossain MA. Non-Muslim consumers' perception toward purchasing halal food products in Malaysia. *JIMA*. 2015;6(1):133–47.
31. Planetware. 15 top-rated tourist attractions in Indonesia. 2018. Available from: <https://www.planetware.com/tourist-attractions/indonesia-ina.htm>. Cited on 2018 September 23
32. BPS. Jumlah Wisman Sumatera Utara Desember 2017 sebesar 27.978 Kunjungan. 2018. Available from: <https://sumut.bps.go.id/presrelease/2018/02/01/544/jumlah-wisman-sumatera-utara-desember-2017-sebesar-27-978-kunjungan.html>. Cited on 2018 September 23

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Ready to submit your research? Choose BMC and benefit from:

- fast, convenient online submission
- thorough peer review by experienced researchers in your field
- rapid publication on acceptance
- support for research data, including large and complex data types
- gold Open Access which fosters wider collaboration and increased citations
- maximum visibility for your research: over 100M website views per year

At BMC, research is always in progress.

Learn more biomedcentral.com/submissions

