



Readiness Level of Bottled Drinking Water Production Facilities in Meeting Good Processed Food Production Requirements in the Aceh and Bogor Regions

Shanty Sarah^{a,1}, Ufaizah Zain^{a,2}

^aBPOM RI, Indonesia

¹shanty@pom.go.id, ²ufaizazain@gmail.com

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ABSTRACT

Bottled drinking water (AMDK) is a food product consumed by all levels of society in Indonesia and produced in large quantities. This widespread consumption has resulted in AMDK being categorized as a high-risk food. To maintain product safety and quality, the government issued several regulations governing producers in producing AMDK products, including the obligation to implement Good Processed Food Production Methods (CPPOB). However, not all AMDK producers have and fulfill the requirements for implementing CPPOB. This research aims to analyze the distribution of AMDK producers and the level of readiness of AMDK production facilities in the Aceh and Bogor regions. This research also aims to map the distribution of AMDK production facilities and compare the CPPOB values in the two regions. The research was carried out using a survey method to collect data regarding the distribution of AMDK producers and the level of readiness of production facilities in the Aceh and Bogor regions. The data collected was then analyzed to create a map of the distribution of AMDK production facilities and calculate and compare CPPOB values in the two regions. The analysis results show that the CPPOB value in the Bogor region is higher (76.56%) than in the Aceh region (50%). This difference is caused by the different scale characteristics of the AMDK production business in the two regions. Several clauses cause the CPPOB value of AMDK production facilities to be D and C, including those related to process control and prevention of cross-contamination, raw materials, packaging, and final products; personnel training; employee facilities, and personnel cleanliness; in-house testing laboratory; as well as building construction and layout.

Keywords: Bottled Drinking Water, GMP, Aceh, Bogor.

Correspondent: Shanty Saraha

Email: shanty@pom.go.id



INTRODUCTION

Bottled drinking water (AMDK, *Air Minum Dalam Kemasan*) is a food product consumed by all levels of society in Indonesia today (Darise, 2016). The shift in trends and a more practical lifestyle has increased the consumption of bottled water every year (Rochimawati, 2012). AMDK products are also produced in large quantities. Based on research, the economic value of AMDK products is IDR. 2.78 trillio. The broad level of consumption of AMDK has resulted in AMDK being categorized as a high-risk food.

AMDK producers are the parties responsible for the food safety of their products. They have a vital role in providing safe and quality drinking water. In order to maintain the safety, quality, and protection of domestic industry, the government has issued several regulations governing manufacturers' production of AMDK products. These regulations include the Indonesian National Standard (SNI) 3553-2015 for mineral water, SNI 6242:2015 for natural mineral water, SNI 6241:2015 for demineralized water, and SNI 7812:2013 for dew drinking water. The obligation to implement SNI is contained in the Ministry of Industry Regulation No. 26 of 2019 (Industry, 2019). AMDK products must also have a distribution permit issued by the POM Agency by implementing CPPOB (Makwa, 2018). The obligation to have a permit to implement CPPOB is contained in the POM Agency regulation

No. 22 of 2021 (RI, 2022). Based on this regulation, processed food producers are required to have a permit to implement CPPOB by 24 (twenty-four) months from the promulgation of the regulation, namely on October 7, 2023. Challenges arise in ensuring that all AMDK production facilities have and meet the requirements for implementing CPPOB. Based on the inspection results, not all AMDK industries have met these requirements. AMDK production facilities that do not meet CPPOB requirements have the potential to produce unsafe products that pose health risks to the community. It is essential to carry out this research to investigate the extent to which AMDK producers are prepared to fulfill CPPOB requirements, focusing on the Aceh and Bogor regions.

Aceh and Bogor were chosen as research locations because they have different geographical characteristics and business actors. Micro-scale businesses dominate business actors in Aceh, while the Bogor area consists of micro, small, medium, and large-scale businesses. This research will analyze the AMDK industry's readiness level to meet CPPOB requirements by comparing the two regions based on the business scale level.

Research related to analysis of the conformity of AMDK products to SNI standards (Aponno, 2020) ; (Mahardini et al., 2020) ; (Musli & De Fretes, 2016) as well as related to the fulfillment of Good Manufacturing Practice (GMP) on the Micro, Small and Medium Enterprises (MSME) scale (Purwantiningrum et al., 2018) have been widely carried out as research topics but there has been no research related to Readiness Levels. Bottled Drinking Water Production Facilities to Meet the Requirements for Good Processed Food Production Methods. For this reason, it is necessary to analyze the level of readiness of the Bottled Drinking Water production facilities to meet the requirements for suitable processed food production methods in the Aceh Province and Bogor Regency areas and the obstacles faced by business actors.

This research aims to analyze the distribution of AMDK producers and the level of readiness of AMDK production facilities in the Aceh and Bogor regions. This was done to compile a map of the distribution of AMDK production facilities and compare the CPPOB values in the Aceh and Bogor regions. The results of this analysis will likely provide suggestions to producers, regulators, and local governments on how to make improvements and ensure compliance with established safety and quality standards.

METHOD

The research methodology uses a qualitative approach to analyze the readiness of production facilities to meet CPPOB requirements with research locations by the Technical Implementation Unit (UPT) catchment area in Aceh and Bogor (RI, 2021), namely:

- 1) POM Headquarters in Banda Aceh, namely Banda Aceh City, West Aceh Regency, Aceh Besar Regency, Aceh Jaya Regency, Aceh Tamiang Regency, East Aceh Regency, North Aceh Regency, Bireuen Regency, Pidie Regency, Pidie Jaya Regency, Langsa City, Lhokseumawe City, Sabang City
- 2) POM centers in Bogor, namely Bogor Regency, Bogor City, and Depok City

The data source comes from secondary data from routine inspection results and within the framework of certification in 2021 – 2023. CPPOB implementation mapping is assessed based on inspection results using BPOM's CPPOB implementation assessment form. Based on this form, producers will receive a rating with results A (Very Good), B (Good), C (poor), and D (Poor). The company complies with CPPOB regulations if it gets ratings A and B and does not meet CPPOB regulations if it gets ratings C and D. Specifically for AMDK products, BPOM has also issued Technical Guidelines (Code of Practice) for Supervision of Production and Distribution of Bottled Drinking Water

(AMDK) which are published in 2022. This technical guideline is used by BPOM supervision in carrying out supervision at AMDK production facilities (BPOM RI, 2022a).

The analysis was carried out by looking at the map of the distribution of AMDK producers in Aceh and Bogor, the producers' readiness level in fulfilling the CPPOB requirements in each region, and the business scale (Government, 2021). The criteria for business scale are divided into Micro Business, Small Business, Medium Business, and Big business.

RESULTS AND DISCUSSION

Distribution profile of AMDK producers

AMDK producers for the Aceh and Bogor regions are mostly producers with a micro business scale, namely 62 (61%), followed by small businesses at 18%, large businesses at 13%, and middle-class businesses at 9% (Figure 1). When compared in each region, the Aceh region is 100% micro-enterprise spread across several Aceh regions, including Aceh Besar Regency, Pidie Regency, North Aceh Regency, and Banda Aceh City. The AMDK business has become one of the choices of business actors due to refill drinking water depot business actors who wish to change their business to bottled drinking water, Islamic boarding school groups that already have their communities, and the existence of Gampong-Owned Enterprises (BUMG) that receive budget funds. Villages are created by the central government every year (CAPA, 2014) so that villages can be self-sufficient and productive in having income/income for the village. The convenience provided by LSpro Banda Aceh in issuing SNI AMDK certificates has also contributed to micro businesses engaged in AMDK production.

The Bogor region comprises 38% micro businesses, 28% small businesses, 14% medium businesses, and 20% large businesses with locations mainly in Bogor Regency (Figure 1). Bogor Regency is an area that has many springs that come from the mountains. Water that comes from the mountains is considered purer and cleaner. Apart from that, Bogor Regency also has adequate infrastructure, such as roads and other logistics connectivity. Logistics connectivity and easy access help AMDK companies carry out their business activities smoothly.

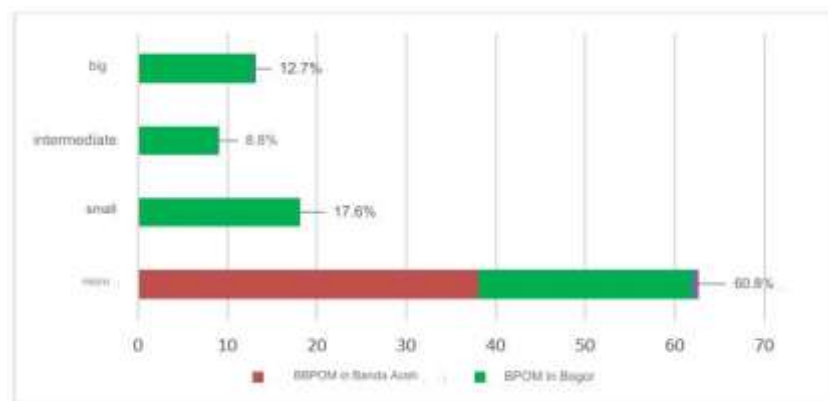


Figure 1. Distribution of AMDK facilities in the BBPOM Aceh and BPOM Bogor areas

AMDK Producer Readiness Level meets CPPOB requirements

Table 1. Value of CPPOB implementation

CPPOB value	Percent
Bad (D)	22.5
Less (C)	10.8
Good (B)	28.4
Very Good (A)	38.2
Total	100.0

Based on analysis of combined data between the Aceh and Bogor regions, the results showed that the majority of AMDK producers, amounting to 68.6%, had fulfilled the CPPOB requirements (Table 1), where 38.2% had an A grade and 28.4% had a B grade. Around 33.3 % still need to meet the CPPOB requirements, with details of 10.8% with a C grade and 22.5% with a D grade.

If we analyze the data in more detail, 50% of companies in the Aceh region have fulfilled the CPPOB requirements, of which 15.79% have an A grade and 34.21% have a B (Figure 2). 50% of AMDK companies still need to fulfill the CPPOB provisions, of which 42.11% have a D grade and 7.89% have a C. The level of readiness of AMDK production facilities is balanced between companies that have fulfilled the CPPOB provisions and companies that have not fulfilled the CPPOB provisions because not all business actors are committed to complying. CPPOB provisions include raw water testing, availability of an internal testing laboratory, and incomplete inclusion of product information on packaging.

The readiness level to meet the CPPOB requirements for the Bogor area has mostly met the provisions, namely 76.56%, of which 51.56% has a value of A and 25% has a value of B. 23.44% still need to meet the provisions of the CPPOB, where 12.5% have a value of C and 10.94% graded D (Figure 2). Most AMDK companies in the Bogor area have complied with CPPOB regulations, possibly due to the diverse business scale of the AMDK industry. Fulfilling the requirements of both SNI and implementing CPPOB requires resources and commitment from the company. Large and medium-scale companies have better resources, including personnel, infrastructure, and capital, which enables companies to invest in equipment and good quality assurance systems. Medium and large companies also meet government requirements as part of their commitment to maintaining their brand image and consumer loyalty. Based on research (Erwanto, 2005), confidence in product quality is a factor that can influence the decision to purchase an AMDK brand in addition to availability.

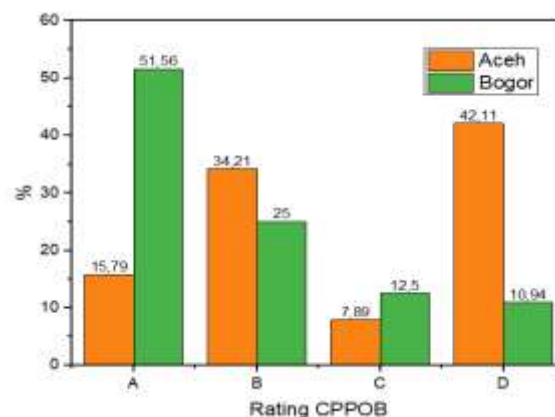


Figure 2. Value of CPPOB implementation in the Aceh and Bogor regions

The level of readiness to fulfill CPPOB is compared to the industrial scale per region

Table 2. Value of CPPOB implementation in the Aceh region

Scale enterprises	CPPOB Value (%)			
	A	B	C	D
Micro	15.7	34.21	7.89	42.11

Micro-scale businesses dominate the AMDK production business in Aceh. Based on the results of certification inspections/audits, only 50% of the 38 AMDK production facilities are ready to implement CPPOB (Table 2). Meanwhile, the rest still need to be ready to implement CPPOB. The factor that causes the CPPOB C and D values is the absence or non-functioning of an internal testing laboratory so that testing of final products and raw materials is carried out only a few days/production.

Obstacles in running an internal testing laboratory include the limited number of testing laboratory analysts, limited costs for purchasing laboratory equipment, and chemical reagents/microbiological media. The next factor that contributes to the CPPOB value is that equipment such as pH meters, and TDS has not been calibrated; this is due to the absence of a calibration laboratory in the Aceh area, and if they have to calibrate the laboratory equipment, these AMDK business actors must send it outside Aceh at sufficient cost. Expensive. Another factor is that the final product's test results must meet the requirements. To overcome these factors, it is necessary to guide AMDK business actors. This guidance for AMDK business actors is coordinated with LSPro, which issues SNI AMDK certificates.

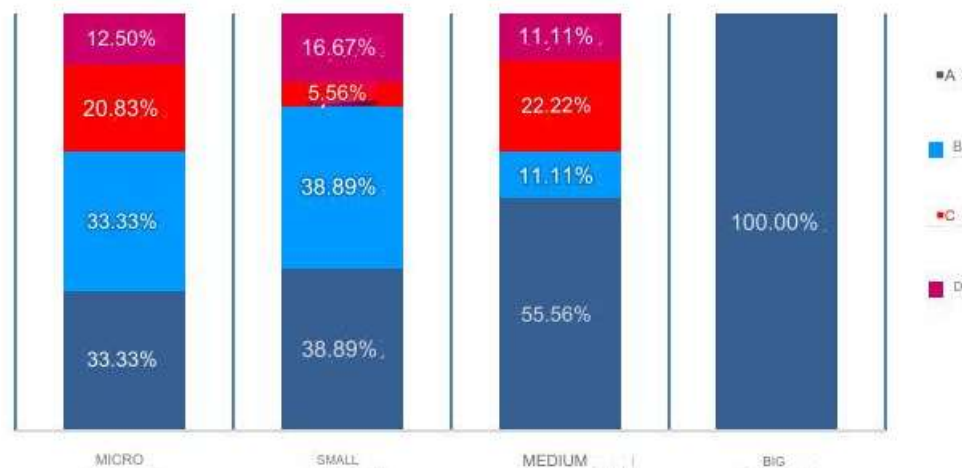


Figure 3. Value of CPPOB implementation in the Bogor area

66.66% of the micro-scale for the Bogor area has complied with CPPOB regulations (Figure 3). Small-scale businesses meet CPPOB requirements of 77.78%. Medium-scale businesses meet CPPOB regulations at 66.67%, and large-scale businesses meet CPPOB regulations at 100%. Micro, small, and medium-scale businesses in the Bogor area have almost the same percentage of compliance with CPPOB regulations. This shows that the readiness value of micro, small, and medium-scale industries to fulfill CPPOB provisions is almost equal. CPPOB development in the Bogor area can be focused on businesses of these scales. The POM Agency has assisted micro, small, and medium business actors since 2019 in supporting economic development (Rosalina & Rosydah, 2022).

Identify obstacles to fulfilling CPPOB requirements.

The suitability assessment for CPPOB compliance refers to the CPPOB implementation assessment form published by BPOM. The form consists of 25 clauses, namely:

- Commitment of the person in charge
- Production Facilities Environment (outside or external area)
- Building Construction and Layout (walls, floors, ceilings, doors, windows and piping)
- Processing Area
- Water, Ice, Gas, and Energy (Electricity, Fuel)
- Ventilation and Air Quality
- Lighting
- Waste Management and Drainage
- Equipment
- Sanitation Program (Cleaning and Disinfection)
- Management of Purchased Goods and Services
- Raw Materials, Food Additives, Auxiliary Materials, Packaging and Final Products

- m. Process Control and prevention of cross-contamination
- n. Inappropriate Product Handling
- o. Internal Testing Laboratory
- p. Pest Control
- q. Employee Facilities and Personnel Cleanliness
- r. Personnel Training
- s. Packaging
- t. Control of Non-Food Chemicals
- u. Traceability and Recall System
- v. Storage of Raw Materials, Food Additives, Auxiliary Materials, Packaging and Final Products
- w. Product Loading into Vehicles
- x. Product Information
- y. Food Safety Emergency Response

Based on the results of the analysis of industries that do not yet comply with CPPOB provisions, six clauses are the biggest obstacles in fulfilling CPPOB, namely clauses regarding process control and prevention of cross-contamination, Raw Materials, Packaging and Final Products; Personnel Training; Employee Facilities and Personnel Cleanliness; in-house testing laboratory, and Building Construction and Layout. Some of these clauses are also in line with research from (Hasnan et al., 2022), which states that clauses related to sanitation design and facilities, personnel cleanliness, and lack of training are several points of obstacles in fulfilling Good Manufacturing Practice at the MSME business scale.

CONCLUSION

Based on research results analyzing the distribution of AMDK producers and the level of readiness of AMDK production facilities in the Aceh and Bogor regions, it is known that for AMDK production facilities in the Bogor region, the CPPOB value in the Bogor region is higher (76.56%) compared to the Aceh region (50%), p. This is due to differences in the characteristics of the scale of AMDK production businesses between business actors in the Aceh region and business actors in the Bogor region. Some of the causes of the CPPOB value of AMDK production facilities being D and C, namely the lack of commitment of business actors in complying with the CPPOB clauses, with most clauses not being complied with for process control and prevention of cross-contamination, Raw Materials, Packaging, and Final Products; Personnel Training; Employee Facilities, and Personnel Hygiene, Internal Testing Laboratory and Building Construction and Layout.

REFERENCES

- Aponno, Y. L. C. (2020). *Peredaran Air Minum dalam Kemasan (AMDK) yang Tidak Memenuhi Standar Ditinjau dari Undang-Undang Nomor 7 Tahun 2014 tentang Perdagangan dan Undang-Undang Nomor 20 Tahun 2014 tentang Standardisasi dan Penilaian Kesesuaian*.
- CAPA. (2014). *Analisis Pengelolaan Dana Desa Dalam Pemberdayaan Ekonomi Masyarakat Melalui Badan Usaha Milik Gampong Di Gampong Capa Paloh Kecamatan Padang Tiji Kabupaten Pidie*. https://d1wqtxts1xzle7.cloudfront.net/76527558/161403028-libre.pdf?1639719127=&response-content-disposition=inline%3B+filename%3DAnalisis_Pengelolaan_Dana_Des_dalam_Pem.pdf&Expires=1714804668&Signature=N6pCYp4cmhLnMJrsCuvPdV7PtX50VXQGeh1Jmv4YQ2WKum6yPL3r
- Darise, F. (2016). Teknologi Pemrosesan Air Minum Dalam Kemasan (Amdk) 220 Ml Merek æGCâ€(Studi Kasus Di Pt. Buana Lembah Nusantara, Gorontalo). *Jurnal Technopreneur (JTech)*, 4(1), 52–56.

- Erwanto. (2005). *Analisis Sensitivitas Harga Dan Loyalitas Konsumen Terhadap Air Minum Dalam Kemasan (AMDK) Di Kota Bogor*. <https://repository.ipb.ac.id/bitstream/handle/123456789/12250/A05erw.pdf%3Bjsessionid=329FC752E9DA26056987A5E4DBCE462C?sequence=2>
- Hasnan, N. Z. N., Basha, R. K., Amin, N. A. M., Ramli, S. H. M., Tang, J. Y. H., & Ab Aziz, N. (2022). Analysis of the most frequent nonconformance aspects related to Good Manufacturing Practices (GMP) among small and medium enterprises (SMEs) in the food industry and their main factors. *Food Control*, 141, 109205.
- Mahardini, T., Hubeis, M., & Hardjomidjojo, H. (2020). Evaluasi Penerapan Sistem Manajemen Mutu Pangan Industri Kecil Menengah Air Minum dalam Kemasan (Studi pada LSPRO X). *Indonesian Journal of Industrial Research*, 37(2), 117–123.
- Makwa, J. (2018). *Pengawasan terhadap Izin Edar Produk Air Minum dalam kemasan (AMDK) di Kawasan Sigli Menurut Perspektif Manajemen Syari'ah*. UIN Ar-Raniry Banda Aceh.
- Musli, V., & De Fretes, R. (2016). Analisis kesesuaian parameter kualitas air minum dalam kemasan yang dijual di kota ambon dengan Standar Nasional Indonesia (SNI). *Arika*, 10(1), 57–74.
- Pemerintah, P. (2021). *Peraturan Pemerintah Republik Indonesia Nomor 07 Tahun 2021 tentang Kemudahan, Pelindungan, dan Pemberdayaan Koperasi dan Usaha Mikro, Kecil, dan Menengah (Issue 086507)*. Peraturan.Bpk.Go.Id. <https://peraturan.bpk.go.id/Details/161837/pp-no-7-tahun-2021>
- Perindustrian, K. (2019). *Berita Negara*. <https://peraturan.go.id/id/permenperin-no-26-tahun-2019#:~:text=Peraturan Menteri Perindustrian Nomor 26,Air Minum Embun Secara Wajib>
- Purwantiningrum, I., Widyastuty, W., Christian, J., & Sari, N. (2018). Assessment of good manufacturing practice for small scale food industry in Malang region, East Java, Indonesia. *IOP Conference Series: Earth and Environmental Science*, 131(1), 12028.
- RI, B. (2021). *Peraturan Badan Pengawas Obat Dan Makanan Nomor 23 Tahun 2021 Tentang Perubahan atas Peraturan Badan Pengawas Obat dan Makanan Nomor 22 Tahun 2020 Tentang Organisasi Dan Tata Kerja Unit Pelaksanaan Teknis Di Lingkungan Badan Pengawas Obat Dan Makanan*. Bpo.
- RI, B. (2022). *Pedoman Teknis (Code of Practice) Pengawasan Produksi dan Peredaran Air Minum Dalam Kemasan (AMDK)*.
- Rochimawati. (2012). *Konsumsi Air Minum Dalam Kemasan Meningkat*. News.Solopos.Com. <https://news.solopos.com/konsumsi-air-minum-dalam-kemasan-meningkat-359963>
- Rosalina, A. I., & Rosydah, R. (2022). Badan POM Mendukung Perkembangan Ekonomi Melalui Pembinaan UMKM Pangan. *Jurnal Bisnis Dan Manajemen West Science*, 1(01), 12–26.