Vol. 7, No. 2, February 2026
E-ISSN:2723 – 6692
P-ISSN:2723– 6595
http://jiss.publikasiindonesia.id/

Identification of Airborne Flora Before and After Activities in the Libraryand Classrooms of the Faculty of Medicine, Yarsi University, and a Review From an Islamic Perspective

Maitsa Hasna Kamalah*, Ike Irmawati Purbo Astuti, Titiek Djannatun
Universitas YARSI, Indonesia
Email: maitsahasna07@gmail.com*, ike.2110@gmail.com, titiek.djannatun@yarsi.ac.id

KEYWORDS
Indoor air quality, air flora, microorganisms, classrooms, library.

ABSTRACT
Libraries and classrooms are indoor environments with high usage intensity, making Indoor Air Quality (IAQ) crucial for the health and comfort of occupants. Indoor air flora is influenced by various environmental factors, including human activities, occupant density, temperature, humidity, lighting, and ventilation. Airborne microorganisms can act as vectors for pathogens that impact health; therefore, monitoring air flora before and after activities is essential. This study employed a descriptive quantitative–qualitative approach. A total of 20 air samples were collected from the library and classrooms using the settle plate method with Nutrient Agar media, both before and after activities. Samples were incubated at 37°C for 24–48 hours, after which bacterial colonies were counted (CFU) and identified based on colony morphology and Gram staining. The results showed an increase in airborne colonies after activities, particularly in classrooms, with the highest count observed in Class 10A. The library exhibited relatively fewer colonies, remaining below the standard IAQ threshold of 700 CFU/m³. Microbial identification revealed that Gram-negative Cocci dominated in classrooms, while Gram-positive Cocci were more prevalent in the library. These results indicate that human activities contribute significantly to the increase in airborne microorganisms. In conclusion, high occupancy rates and activity levels in classrooms lead to higher microbial loads, whereas libraries maintain lower counts. Human activity directly affects the concentration of indoor air microorganisms. To support a healthy and comfortable learning environment, effective hygiene management and optimal ventilation systems are essential for maintaining good Indoor Air Quality.

INTRODUCTION

The environment in which humans are active plays an important role in influencing their health (Jomova et al., 2025; Singh et al., 2023; Zhang et al., 2023; Zhong et al., 2022). Libraries and classrooms are locations frequently visited by students of the Faculty of Medicine. Indoor environmental conditions profoundly affect individual well-being, as people spend approximately 90% of their time indoors (Van Tran et al., 2020). One of the main factors

contributing to human productivity, well-being, and health is Indoor Air Quality (IAQ) (Hayleeyesus & Manaye, 2014). Several elements determine air quality, including physical parameters, chemical emissions, and biological contamination (Slezakova et al., 2012).

Indoor Air Quality (IAQ) significantly influences various health problems such as respiratory disorders, cardiovascular diseases, and allergic reactions (Vardoulakis et al., 2020). The presence of bacteria in indoor air is caused by several factors, including light, temperature, humidity, occupant numbers, and air circulation systems (Rachmatantri et al., 2015). Research by Lv et al. (2016) shows that certain bacteria thrive better in environments with high temperatures and low humidity, while fungi grow faster under high-humidity conditions.

Indoor Air Quality (IAQ) in libraries is influenced by factors such as building design, ventilation systems, visitor density, and internal pollutant sources. Building design aspects—including configuration, dimensions, and materials used—significantly affect air quality. Library user activities such as reading and studying also influence air quality, particularly through interactions with books, documents, and paper that can release particulates, especially in older or poorly maintained collections. Biological contaminants, including fungi and bacteria, are often found when air circulation is inadequate or humidity levels are high (Abulude & Ademilua, 2024).

Classrooms typically have much higher occupancy levels than other indoor environments, with densities up to four times greater than office buildings. Optimal Indoor Air Quality (IAQ) in classrooms is critical because it affects health, performance, alertness, concentration, and comfort. Moreover, the risk of cross-contamination in classrooms is generally higher compared to other indoor spaces, increasing the likelihood of disease transmission (Sadrizadeh et al., 2022).

Air often serves as a medium for diverse bacterial pathogens such as Streptococcus pneumoniae, Streptococcus pyogenes, Mycoplasma pneumoniae, Haemophilus influenzae, Klebsiella pneumoniae, Pseudomonas aeruginosa, and Mycobacteriaceae (Siebielec et al., 2020). According to the World Health Organization (2018), exposure to poor indoor air quality causes approximately 3.8 million deaths annually. This highlights the importance of identifying airborne flora, especially in locations frequently occupied by many individuals, such as libraries and classrooms. Monitoring air flora before and after activities provides insights into the microbiological dynamics of indoor air and serves as a basis for preventing airborne diseases.

Research on airborne flora has been conducted in various settings, including workplaces, educational institutions, and healthcare facilities. Swandi (2021) reported that poorly ventilated workspaces contained between 9 and 43 bacterial colonies, while well-ventilated spaces showed lower colony counts ranging from 9 to 33.33. These findings indicate that ventilation design has a significant impact on air quality. Similarly, Rachmatantri et al. (2015) noted that bacteria grow more rapidly in rooms with inadequate air circulation. This emphasizes the importance of identifying air flora in libraries and classrooms to prevent adverse health outcomes.

Islam teaches that all of Allah's creations—both visible and invisible—contain wisdom and serve as sources of reflection for humankind. One of the signs of Allah's power is the existence of very small creatures (Hidayati et al., 2023). Microorganisms present in the air, such as bacteria and fungi, combine with fine atmospheric particles to form bioaerosols (Chen et al.,

2020). Indoor exposure to pathogenic microorganisms can cause respiratory problems, allergies, infections, and toxic effects (Chawla et al., 2023). Although microscopic, these organisms have profound effects on human health. The Qur'an affirms this in Surah Al-Baqarah (2:26), where Allah SWT declares that He does not hesitate to present an example, even as small as a mosquito or smaller, as a reminder of His greatness:

اِنَّ اللّٰهَ لَا يَسْتَحْيٖٓ اَنْ يَّضْرِبَ مَثَلًا مَّا بَعُوْضَةً فَمَا فَوْقَهَاۗ فَاَمَّا الَّذِيْنَ اٰمَنُوْا فَيَعْلَمُوْنَ اَنَّهُ الْحَقُّ مِنْ رَّبِّهِمْۚ

Meaning:

"Indeed, Allah does not hesitate to make a parable in the form of a mosquito or something smaller than that. As for the believers, they know that it is the truth of their Lord..." (QS. Al-Baqarah/2:26) (Ministry of Religion of the Republic of Indonesia, 2019).

Awareness of the importance of these microorganisms requires humans to take care of the environment more responsibly. Maintaining cleanliness plays an important role in preventing the occurrence of various types of diseases and creating comfort in daily activities. In addition, a clean environment also contributes to mental health because it provides a calm and organized atmosphere (Widianti et al., 2025). In Surah Al-A'raf verse 31, Allah SWT says:

The Prophet (peace and blessings of Allaah be upon him) said: "O Messenger of Allaah (peace and blessings of Allaah be upon him), I am the Messenger of Allaah (peace and blessings of Allaah be upon him).

Meaning:

"O sons and descendants of Adam, wear your beautiful clothes in every mosque and eat and drink, but do not overdo it. Indeed, He does not like people who are excessive" (QS. Al-A'raf /7:31) (Ministry of Religion of the Republic of Indonesia, 2019).

QS. Al-A'raf verse 31 shows that maintaining cleanliness is part of faith which has an important role in supporting physical and mental health. Cleanliness creates a neat and comfortable environment, so that it is able to improve overall well-being, both in individual and social life (Widianti et al., 2025). The importance of cleanliness is also strengthened in the teachings of the Prophet Muhammad PBUH through various hadiths, as narrated in the following hadith:

It was narrated from Abu Hurayrah (may Allah be pleased with him) that he said: "Purify yourselves as much as you can, for Allaah is the son of Islam upon the cleanness of the earth, and He will not enter Paradise except a clean tree."

Meaning:

A hadith received from Abu Hurairah, "Cleanse everything as much as you can. Indeed, Allah Ta'ala built this Islam on the basis of cleanliness and will not enter Paradise except for everyone who is clean" (HR. at-Tabrani).

In line with these verses and hadiths, we as Muslims have an obligation to maintain cleanliness, both in ourselves and the surrounding environment. Especially as a student of the Faculty of Medicine, awareness of the importance of a clean and healthy environment is part of a scientific and moral responsibility. Therefore, this study aims to analyze the air flora before and after activities in the classroom and library of the Faculty of Medicine, YARSI University. Indoor air quality greatly affects the health and comfort of the academic community. Thus, understanding the change in the concentration of microorganisms in the air is important as a

basis for creating an optimal learning environment and in accordance with health principles and Islamic teachings.

METHOD

This study employed a descriptive method with both quantitative and qualitative approaches to describe the number and types of airborne flora colonies before and after activities in the library and classrooms of the Faculty of Medicine, YARSI University. The research was observational, using a passive sampling method (settle plate), followed by incubation at 37°C for 24–48 hours. The study population consisted of airborne flora present at the research sites, while the sample size was determined using the Slovin formula with a 5% margin of error, resulting in 20 samples selected purposively based on location, time, and day. The collected data included colony counts (CFU/m³) and microorganism identification through colony morphology observation and Gram staining.

The measurement of colony numbers was conducted using the Standard Plate Count (SPC) method, while Gram staining involved fixation, application of crystal violet and lugol, alcohol decolorization, and counterstaining with safranin. The research instruments included Nutrient Agar media, sterile Petri dishes, microscopes, labels, and incubators. Data analysis was carried out descriptively (univariate) to describe the characteristics of individual variables, such as the number and types of airborne flora based on location and observation time. The results were analyzed to examine changes in colony counts before and after activities, as well as variations in microorganisms categorized as Gram-positive and Gram-negative.

The research flow included the preparation of tools and materials, data collection, incubation, colony identification, analysis, and reporting. The study schedule encompassed several stages: proposal preparation, proposal examination, data collection, data processing and analysis, report writing, and thesis defense.

RESULTS AND DISCUSSIONS

The calculation of bacterial colonies was carried out using the total cell count method to calculate the total colonies of aerial flora growing on the Nutrient Agar Plate (NAP) media. This procedure involves planting the bacteria in Nutrient Agar Plate (NAP) media, followed by incubation for 48 hours at 37°C. The growing colonies are then counted, and the results are expressed in the Colony Forming Unit (CFU). The value of CFU per cubic meter of air (CFU/m³) is then calculated using the Omeliansky formula, namely:

N=(5a x 10^4)/bt

Table 1. Data on the Number of Colonies of Aerial Flora in the Classroom

Rooms	Before(CFU/m³)	After (CFU/m3)
Class 10A	6 CFU	50 CFU
Class 9A	1 CFU	6 CFU
Class 7B	0 CFU	1 CFU
Class 6B	3 CFU	3 CFU

Source: Primary data, 2026

Data in Table 1 show the results of measuring the number of airborne flora colonies (CFU/m³) in four classrooms of the Faculty of Medicine, YARSI University, both before and after activities. The most significant increase was observed in Classroom 10A, where the number of colonies rose from 6 before activity to 50 after activity. This finding indicates that the number of individuals in the room is directly proportional to the increase in airborne flora colonies. In contrast, different results were found in Classroom 6B, where there was no significant increase in the number of airborne microorganisms after activity. This may be attributed to regular cleaning conducted immediately after learning sessions.

The results of this study are consistent with the research conducted by Fithri et al. (2016), which reported that the number of airborne microorganisms in classrooms is strongly influenced by human activities and environmental conditions. Their study demonstrated that classrooms with higher individual mobility and activity levels are more likely to experience increased numbers of airborne bacteria and fungi. Similarly, Fitria et al. (2008) emphasized that air humidity and ventilation quality play vital roles in controlling microbial presence in classroom air. The greater the number of individuals in a room, the higher the likelihood of microbial contamination from human bioaerosols and classroom activities.

The results also showed that the number of airborne flora colonies in the library rooms of the Faculty of Medicine, YARSI University, was relatively low both before and after activities. In the Eastern Library, point 1 increased from 0 to 1 CFU and point 2 from 0 to 4 CFU. On the second floor of the Public Library, point 1 increased from 0 to 1 CFU, while point 2 remained at 1 CFU. On the third floor, point 1 rose from 0 to 2 CFU and point 2 from 2 to 3 CFU. Despite these slight increases, the CFU/m³ values remain well below the standard threshold for air quality (700 CFU/m³), as stipulated in Minister of Health Regulation No. 48 of 2016. These findings align with the research of Sohilauw et al. (2023), which noted that stable room temperature and adequate lighting can inhibit microbial growth, maintaining low colony numbers even under relatively high humidity and active visitor presence.

From an Islamic perspective, microorganisms represent Allah's perfect yet minute creations, reflecting both His greatness and the limits of human understanding of His creation. Human activities in public spaces such as libraries and classrooms can influence air quality; therefore, maintaining environmental and personal cleanliness is of great importance. The principle of taharah emphasizes physical hygiene, including ablution (wudu), which directly reduces the spread of microorganisms through body parts frequently exposed to the environment, such as the hands, face, and feet. Cleanliness not only safeguards health but also enhances comfort and productivity for space users. Islam encourages its followers to use reason by observing and studying Allah's creations as a means of acquiring knowledge, strengthening faith, and fulfilling their responsibilities as khalifah (stewards) on earth.

Research on airborne flora in libraries and classrooms exemplifies this principle. Beyond its scientific significance, it reflects concern for health, environmental balance, and appreciation of Allah's creation for the benefit of humankind. Thus, this research aligns with Islamic teachings that emphasize cleanliness, observation, and the pursuit of knowledge for the welfare of society.

Identification of Air Flora Before and After Activities in the Library and Classroom of the Faculty of Medicine, YARSI University and a Review in an Islamic View

Microorganisms, including the aerial flora consisting of bacteria and fungi known as bioaerosols, are seen in Islam as one of the tangible proofs of the majesty and power of Allah SWT over all His creations, as mentioned in the parable in the Qur'an Baqarah verse 26 which reads:

Indeed, Allaah does not believe in the Messenger of Allaah (peace and blessings of Allaah be upon him) and does not believe in the Messenger of Allaah (peace and blessings of Allaah be upon him). The disbelievers will not be able to do anything about it, and they will not be able to do anything about it, and they will not be able to do anything about it.

It means: "*Indeed, Allah does not hesitate to make the parable of a mosquito or something smaller than that. As for the believers, they know that it is the truth of their Lord. But the disbelievers said, "What does Allah mean by this parable?" With that (parable) many people He has misled. With that, too, many people were instructed by Him. However, there is no one who leads Him astray with it, except the wicked*" (Qur'an. Al-Baqarah/2:26) (Ministry of Religion of the Republic of Indonesia, 2019).

The phrase "*famaa fauqohaa"* in the verse refers to something smaller than a mosquito, both physically and meaningfully, while the mosquito itself is described as a small creature that seems insignificant. The existence of these invisible creatures has a major impact on human health, which can trigger respiratory disorders, allergic reactions, and microbial infections. Awareness of these potential risks requires every Muslim to carry out the responsibility of maintaining the cleanliness and health of the environment, a fundamental principle in Islamic teachings.Activities in the library and classrooms of the Faculty of Medicine, YARSI University are an important part of the implementation of the Islamic command to seek knowledge (*thalabul ilmi*), which is an obligation. However, the high density and human interaction in such rooms increases the risk of cross-contamination and the spread of bioaerosols, especially in environments with suboptimal air circulation. In line with the recommendation to maintain personal and environmental hygiene as part of faith, efforts to maintain air quality in these academic places are a manifestation of scientific, moral, and religious responsibility to create a healthy and comfortable learning environment. Islam encourages humans to use reason in observing and researching natural phenomena as part of an effort to understand the signs of the greatness of Allah SWT. The command to make such observations is affirmed in the words of Allah SWT:

The Prophet (peace and blessings of Allaah be upon him) said: "O Messenger of Allaah (peace and blessings of Allaah be upon him) and I am the Messenger of Allaah (peace and blessings of Allaah be upon him)."

Meaning: "*Say, "Look at what is in the heavens and on the earth!" The signs (of Allah's greatness) and the warnings (to avoid the punishment of Allah) are of no use to the disbelievers*" (QS. Yunus/10:101) (Ministry of Religion of the Republic of Indonesia, 2019).

This verse emphasizes that the activity of observation and research on the creation of Allah SWT, including microorganisms in the air, is part of Allah's command to humans to make

optimal use of reason. Scientific research not only aims to obtain data and knowledge, but also becomes a means to increase awareness of the greatness of Allah SWT and strengthen faith.

Medicine and Islam have the same view in terms of the identification of the air flora before and after activities in the classroom and library of the faculty of medicine of YARSI University. Microorganisms are seen as the creation of Allah SWT that shows His perfection even though they are very small. Activities in the study room such as conversation, breathing, and student movement have the potential to affect air quality and the presence of microorganisms. Islam emphasizes the importance of maintaining cleanliness as part of faith and encourages humans to research natural phenomena as a form of utilization of reason and responsibility as caliphs on earth. All stages of this research, from sampling to laboratory analysis, are carried out in accordance with the principles of Islamic law.

CONCLUSION

Based on the results of the research on the Identification of Air Flora Before and After Activities in the Library and Classroom of the Faculty of Medicine, YARSI University, as well as its review from an Islamic perspective, the following conclusions can be drawn: The number of airborne flora before activities varied across rooms. Classrooms had higher numbers of airborne microorganisms compared to libraries, with the highest count recorded in Class 10A, while several library sampling points showed sterile conditions. There was an increase in the number of airborne flora after activities at most observation points, with the most significant rise occurring in Class 10A, whereas libraries experienced a much smaller increase. The colonies of airborne flora were dominated by Gram-negative Coccus and Gram-positive Coccus bacteria, with smaller proportions of Gram-positive and Gram-negative bacilli. The most commonly observed colony morphologies were white to yellowish-white, rounded in shape, and with smooth textures.

The teachings of Islam correspond with medical science in viewing microorganisms as creations of Allah SWT that reflect His perfection, despite their minuscule size. Islam emphasizes that maintaining clean air and a healthy environment is part of the principle of taharah (purification) and the prohibition against causing harm. Efforts to preserve air quality in classrooms and libraries are consistent with the objectives of shariah in safeguarding health (hifz an-nafs) and in supporting the pursuit of knowledge within a safe and wholesome environment.

REFERENCES

Abulude, F.O. dan Ademilua, S.O. (2024), “Enhancing Indoor Air Quality in Library Environments: Strategies and Recommendations”, Global Journal of Materials Science and Engineering, Vol. 6 No. 2, doi: 10.36266/GJMSE/162.

Chawla, H., Anand, P., Garg, K., Bhagat, N., Varmani, S.G., Bansal, T., McBain, A.J., et al. (2023), “A comprehensive review of microbial contamination in the indoor environment: sources, sampling, health risks, and mitigation strategies”, Frontiers in Public Health, Frontiers Media SA, Vol. 11, doi: 10.3389/fpubh.2023.1285393.

Chen, X., Kumari, D. dan Achal, V. (2020), “A review on airborne microbes: The characteristics of sources, pathogenicity and geography”, Atmosphere, MDPI AG, 1 September, doi: 10.3390/ATMOS11090919.

Fithri, N.K., Handayani, P. dan Vionalita, G. (2016), "Faktor-Faktor Yang Berpengaruh Dengan Jumlah Mikroorganisme Udara Dalam Ruang Kelas Lantai 8 Universitas Esa Unggul", Forum Ilmiah Indonesia, Vol. 13.

Fitria, L., Wulandari, R.A., Hermawati, E. dan Susana, D. (2008), "Kualitas Udara Dalam Ruang Perpustakaan Universitas 'X' Ditinjau Dari Kualitas Biologi, Fisik, dan Kimiawi", Makara, Vol. 12.

Hayleeyesus, S.F. dan Manaye, A.M. (2014), "Microbiological quality of indoor air in University libraries", Asian Pacific Journal of Tropical Biomedicine, Asian Pacific Tropical Biomedicine Press, Vol. 4, pp. S312–S317, doi: 10.12980/APJTB.4.2014C807.

Hidayati, F., Indah, E., Dewi, P. dan Maulina, C. (2023), "Mikroorganisme Dalam Perspektif Islam: 'Keajaiban Kecil Dalam Ciptaan Allah'", Journal Islamic Education, Vol. 1 No. 4, p. 438.

Jomova, K., Alomar, S. Y., Nepovimova, E., Kuca, K., & Valko, M. (2025). Heavy metals: toxicity and human health effects. *Archives of Toxicology*, *99*(1), 153–209.

Lv, Y., Wang, C., Yuan, W., Wei, S., Gao, J., Wang, B. dan Song, F. (2016), "Actual Measurement and Analysis on Microbial Contamination in Central Air Conditioning System at a Venue in Dalian, China", Procedia Engineering, Vol. 146, Elsevier Ltd, pp. 147–154, doi: 10.1016/j.proeng.2016.06.365.

Rachmatantri, I., Mochtar, H. dan Huboyo, H.S. (2015), "Pengaruh Penggunaan Ventilasi (Ac Dan Non-ac) Terhadap Keberadaan Mikroorganisme Udara Di Ruang Perpustakaan (Studi Kasus:perpustakaan Teknik Lingkungan Dan Perpustakaan Biologi Fakultas Mipa Universitas Diponegoro Semarang)", Vol. 4, pp. 1–13.

Sadrizadeh, S., Yao, R., Yuan, F., Awbi, H., Bahnfleth, W., Bi, Y., Cao, G., et al. (2022), "Indoor air quality and health in schools: A critical review for developing the roadmap for the future school environment", Journal of Building Engineering, Elsevier Ltd, Vol. 57, doi: 10.1016/j.jobe.2022.104908.

Siebielec, S., Woźniak, M., Gałązka, A. dan Siebielec, G. (2020), "Microorganisms As Indoor And Outdoor Air Biological Pollution", Postępy Mikrobiologii - Advancements of Microbiology, Walter de Gruyter GmbH, Vol. 59 No. 2, pp. 115–127, doi: 10.21307/pm-2020.59.2.009.

Singh, S., Sarma, D. K., Verma, V., Nagpal, R., & Kumar, M. (2023). From cells to environment: exploring the interplay between factors shaping bone health and disease. *Medicina*, *59*(9), 1546.

Slezakova, K., Morais, S. dan Carmo Pereir, M. do. (2012), "Indoor Air Pollutants: Relevant Aspects and Health Impacts", Environmental Health - Emerging Issues and Practice, InTech, doi: 10.5772/30364.

Sohilauw, D.S.S., Kaliky, M.F. dan Tuharea, F. (2023), "Kualitas Fisik Dan Bakteriologi Udara Dalam Ruang Terhadap Gangguan Kesehatan Di Dinas Perpustakaan Dan Kearsipan Provinsi Maluku", The Journal General Health and Pharmaceutical Sciences Research, Sekolah Tinggi Ilmu Kesehatan Kesetiakawanan Sosial Indonesia, Vol. 1 No. 4, pp. 84–94, doi: 10.57213/tjghpsr.v1i4.146.

Swandi, F. (2021), "Analisis Kandungan Jumlah Bakteri Di Udara Dalam Ruang Kerja Institusi Pendidikan X di Kota Padang", Universitas Andalas.

Van Tran, V., Park, D. dan Lee, Y.C. (2020), "Indoor air pollution, related human diseases, and recent trends in the control and improvement of indoor air quality", International Journal of Environmental Research and Public Health, MDPI AG, 2 April, doi: 10.3390/ijerph17082927.

Vardoulakis, S., Giagloglou, E., Steinle, S., Davis, A., Sleeuwenhoek, A., Galea, K.S., Dixon, K., et al. (2020), "Indoor exposure to selected air pollutants in the home environment: A

systematic review", International Journal of Environmental Research and Public Health, MDPI AG, 1 December, doi: 10.3390/ijerph17238972.

World Health Organization. (2018), Burden of Disease from Household Air Pollution for 2016 Summary of Results.

Widianti, A., Galib, M. and Abubakar, A. (2025), "Konsep Kesehatan Fisik dan Mental Perspektif Al-Qur'an dalam Konteks Kehidupan Modern", Jurnal Alwatzikhoebillah : Kajian Islam, Pendidikan, Ekonomi, Humaniora, Vol. 11 No. 1, pp. 307–316, doi: 10.37567/alwatzikhoebillah.v11i1.3485.

Zhang, K., Ma, Y., Luo, Y., Song, Y., Xiong, G., Ma, Y., Sun, X., & Kan, C. (2023). Metabolic diseases and healthy aging: identifying environmental and behavioral risk factors and promoting public health. *Frontiers in Public Health*, *11*, 1253506.

Zhong, J., Liu, W., Niu, B., Lin, X., & Deng, Y. (2022). Role of built environments on physical activity and health promotion: a review and policy insights. *Frontiers in Public Health*, *10*, 950348.