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Analysis of Comparative Advantages and Export Potential of Indonesian Green Tea in the International Market

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ABSTRACT: *Green tea is an export commodity produced by Indonesia. This commodity is produced from tea plantations in Indonesia. Currently, the value and volume of green tea exports are still lower than those of black tea. Therefore, it is necessary to study the comparative advantage and potential export for green tea in the international market. The novelty in this research is combining the comparative advantages and export potential of green tea which has not been researched previously. This study aims to analyze the comparative advantage and potential export of Indonesian green tea in the international market. The data used is Indonesian green tea export from 2006 to 2023. The data sources are UN Comtrade and the Central Statistics Agency. This study used the revealed comparative advantage (RCA) method, the trade specialization index, export product dynamic (EPD) method and X model. The results obtained indicate that the comparative advantage of green tea in the international market is relatively weak, as evidenced by the RCA value of less than 1. The trade specialization index is positive. A positive trade index indicates that Indonesia is classified as a green tea exporter. The weakening of Indonesia's comparative advantage in green tea has not impacted its position in the international market. The position of green tea in international trade based on export product dynamics is still in the rising star position, which means that Indonesian green tea is still in a profitable position. Based on the X model, Indonesian green tea still has the potential to be developed in the international market.*

Keywords: *comparative advantage; export product dynamic; green tea; trade specialization index*

1. INTRODUCTION

The types of tea that are exported from Indonesia are black tea, oolong tea, and green tea. Black tea is a type of tea that has undergone fermentation, oolong tea is a type of tea that has undergone semi-fermentation, while green tea is a type of tea that has not undergone fermentation. Green tea has the advantage of being rich in antioxidant compounds that are beneficial to health.

Currently, green tea is not very popular in Indonesia and its production is not very large. Over the past five years, from 2019 to 2023, the volume of green tea exports has remained lower than the volume of black tea exports. In 2019, the volume of green tea exports was 6,443 tons, then declined sharply to 2,656 tons in 2023. Black tea export volume also declined, but not as significantly as green tea. In 2019, black tea export volume was 36,368 tons, then declined to 33,315 tons in 2023 (Badan Pusat Statstik, 2024). Therefore, it is necessary to conduct a comparative advantage analysis and potential export for developing the Indonesian green tea market. Comparative advantage analysis and the potential to export green tea in the international market are important to understand the performance of Indonesian green tea trade in the international market.

Sirait et al., (2025), Surya (2023) and also Simalongo et al., (2023) in their research stated that Indonesian tea commodities at the international level have a comparative advantage with an RCA value more than 1. The study only examined black tea and did not examine Indonesian green tea. Therefore, it is necessary to analyze comparative advantages and analyze export potential.

The novelty in this research is combining the comparative advantages and export potential of green tea which has not been researched previously. This study aims to analyze the comparative advantage of Indonesian green tea in the international market and analyze potential export Indonesia green tea.

2. MATERIALS AND METHODS

The tea that is the object of this research is green tea with HS code 090220. The types and sources of data used in this study are shown in Table 1.

Revealed Comparative Advantage (RCA)

RCA is often used to measure the comparative advantage of a commodity produced by a country (Pasolonk et al., 2023). In this study, RCA uses data on a country's green tea export value, the total global green tea export value, the total export value of a country's commodities, and the total export value of all global commodities. The equation for calculating RCA is (Nahdudin et al., 2025):

$$\text{RCA}= \frac{X_{ij}/X_j}{X_{iw}/X_w} \quad (1)$$

Where X_{ij} is export value of commodity i to country j, X_j is total export value of country j, X_{iw} is world export value of commodity i, and X_w is total value of world exports.

Table 1. Type and source data

Type Data	Source
Indonesian and global tea exports	(United Nations, 2023)
Total world trade	(World Bank, 2023)
Indonesian exports and imports	(Badan Pusat Statistik, 2008;2010;2012;2013; 2014;2016;2017; 2019;2020;2021;2022; 2023; 2024; 2025)

Source: Data processed, 2025

Trade Specialization Index

The trade specialization index in this study is used to assess whether Indonesia is a green tea exporter or importer. The trade specialization index is determined based on

the comparison between the value of Indonesian green tea exports and the value of Indonesian green tea imports. The trade specialization index is expressed as (Nursodik et al., 2022):

$$\frac{(X_{ij} - M_{ij})}{(X_{ij} + M_{ij})} \quad (2)$$

Where X_{ijt} is export value of commodity i in year t, M_{ijt} is import value of commodity i in year t.

Export Product Dynamics (EPD)

EPD is used to analyze the position of a commodity produced by a country for export to another country. The EPD consists of an X-axis and a Y-axis. The X-axis represents export growth, while the Y-axis represents market attractiveness. The EPD is expressed in the following equation (Akbar & Widyastutik, 2022) :

X Axis :

$$\frac{\sum_{t=1}^{t}\left(\frac{Xij}{Wij}\right)_t \text{ x } 100\% - \sum_{t=1}^{t}\left(\frac{Xij}{Wij}\right)_{t-1} \text{ x } 100\%}{T} \quad (3)$$

Y Axis :

$$\frac{\sum_{t=1}^{t}\left(\frac{Xaj}{Waj}\right)_t \text{ x } 100\% - \sum_{t=1}^{t}\left(\frac{Xaj}{Waj}\right)_{t-1} \text{ x } 100\%}{T} \quad (4)$$

Where X_{ij} is export value of commodity i to country j, W_{ij} is world export value of commodity i to country j, X_{aj} is total value of exports to country j, W_{aj} is total value of world exports to country j, T is number of years of analysis and t is year.

3. RESULTS AND DISCUSSION

In general, the export value of green tea from Indonesia is not too high, below 15 million US$. The value of green tea exports increased significantly from 2018 to 2020 compared to the previous year. After 2020, the value of green tea exports declined, reaching 4,40 million US$ in 2023. Export value green tea and total export commodity Indonesia and the world can be seen in Table 2.

Table 2. Export value of green tea (in million US$)

Year	Export value of Indonesian Green Tea	World Green Tea Export Value	Total Indonesian Exports	Total World Exports
2023	4.40	1,017.88	258,774.40	23,930,000.00
2022	8.12	1,149.74	291,904.30	25,020,000.00
2021	9.48	1,166.39	231,609.50	22,410,000.00
2020	14.79	1,000.14	163,191.80	17,740,000.00
2019	11.57	1,092.98	167,683.00	19,100,000.00
2018	10.28	1,006.85	180,012.70	19,640,000.00
2017	3.46	881.80	168,828.20	17,830,000.00
2016	4.54	791.16	144,433.50	16,130,000.00
2015	8.84	712.62	150,252.50	16,650,000.00
2014	1.75	681.19	175,980.00	19,100,000.00
2013	2.27	644.32	182,551.80	19,060,000.00
2012	3.10	539.52	190,044.60	18,610,000.00
2011	2.55	517.28	203,616.70	18,430,000.00
2010	4.46	426.82	157,779.10	15,380,000.00
2009	5.63	356.46	116,490.40	12,650,000.00
2008	4.90	380.76	137,020.40	16,270,000.00
2007	4.43	349.68	113,993.10	14,110,000.00
2006	1.50	308.43	100,798.10	12,200,000.00

Source: (United Nations, 2023);(World Bank, 2023);(Badan Pusat Statistik, 2006-2025)

Indonesia's commodity exports from 2006 to 2012 tended to experience a significant increase. The 2013-2016 period showed a trend that was the opposite of the previous year. The total value of Indonesian commodity exports declined significantly, reaching US$144 million in 2016 (Badan Pusat Statistik, 2006 - 2017).

From 2017 to 2020, the total value of Indonesian commodity exports tended to remain constant at US$160 million - US$180 million. From 2021 to 2023, there was another increase compared to the previous period. This increase could be said to be significant, even exceeding US$200 million. (Badan Pusat Statistik, 2017-2025). Annual fluctuations in tea export values are normal. Many factors contribute to annual fluctuations in tea export values. These include production, global tea prices, weather, and several other factors. The global value of green tea exports has continued to increase significantly from 2006 to 2023 especially the largest tea producing country in the world (China and Sri Lanka). China and Sri Lanka have a long history of tea production. Their geographic location and long history make them the world's largest tea producers. Tea commodities have become the leading export commodities of these two countries.

The export value of green tea from China, Sri Lanka tends to increase. The value of green tea exports from China and Sri Lanka has tended to increase from 2020 to 2023. China's green tea exports ranged from US$ 500 million to US$ 600 million. Sri Lanka also experienced an increase. Indonesia's green tea exports tended to decline from 2020 to 2023. In 2020, Indonesia's green tea exports were US$ 14 million, and then declined sharply, reaching US$ 4 million by 2023 (United Nations, 2023). This is in stark contrast to the decline in Indonesian green tea exports, even though total global green tea exports show an increasing trend, Indonesian green tea exports have actually decreased. This phenomenon indicates that improvements are needed regarding Indonesian green tea. These improvements are crucial to prevent green tea from losing out to black tea. Maximizing potential of Indonesian green tea will bring significant benefits. Increasing green tea exports will increase state revenue.

Revealed Comparative Advantage (RCA)

The comparative advantage of green tea from 2006 to 2023 tended to fluctuate. The average comparative advantage of Indonesian green tea from 2006 to 2023 weakened, with an average RCA value of 0.90 (less than 1). An RCA value greater than 1 indicates a strong comparative advantage, while a value less than 1 indicates a weak comparative advantage (Andriani et al., 2025).

This study differs from the study by Jannati et al., (2020), which stated that Indonesian tea's comparative advantage was strong based on an RCA value of 2.8. Another study by Sapto et al., (2024) stated that Indonesian tea had a strong comparative advantage with an average RCA value of 2.29. The difference in this research is due to the different research objects. Both studies examined tea in general, including black and green tea, while this study specifically examined green tea.

This weakening of green tea's comparative advantage indicates that green tea from other countries is more popular than Indonesian tea in the international market. This weakening of its comparative advantage has various implications, particularly for the country's foreign exchange reserves. This is a problem that requires serious attention. The green tea export market is actually quite large.

Countries like China and Japan are potential markets for green tea. Indonesia's

climate and geography are conducive to tea cultivation. With favorable climate and geography, the potential of tea, especially green tea, should be maximized. The comparative advantage of Indonesian green tea, based on revealed comparative advantage indicators, is shown in Table 3.

Table 3. Revealed comparative advantage (RCA) Indonesian green tea

Year	Indonesian Green Tea Export Value (Million US$)	World Green Tea Export Value (Million US$)	Total Indonesian Exports (Million US$)	Total World Exports (Million US$)	RCA
2023	4.40	1,017.88	258,774.40	23,930,000.00	0.40
2022	8.12	1,149.74	291,904.30	25,020,000.00	0.61
2021	9.48	1,166.39	231,609.50	22,410,000.00	0.79
2020	14.79	1,000.14	163,191.80	17,740,000.00	1.61
2019	11.57	1,092.98	167,683.00	19,100,000.00	1.21
2018	10.28	1,006.85	180,012.70	19,640,000.00	1.11
2017	3.46	881.80	168,828.20	17,830,000.00	0.41
2016	4.54	791.16	144,433.50	16,130,000.00	0.64
2015	8.84	712.62	150,252.50	16,650,000.00	1.37
2014	1.75	681.19	175,980.00	19,100,000.00	0.28
2013	2.27	644.32	182,551.80	19,060,000.00	0.37
2012	3.10	539.52	190,044.60	18,610,000.00	0.56
2011	2.55	517.28	203,616.70	18,430,000.00	0.45
2010	4.46	426.82	157,779.10	15,380,000.00	1.02
2009	5.63	356.46	116,490.40	12,650,000.00	1.72
2008	4.90	380.76	137,020.40	16,270,000.00	1.53
2007	4.43	349.68	113,993.10	14,110,000.00	1.57
2006	1.50	308.43	100,798.10	12,200,000.00	0.59
Average	5.89	723.56	174,179.82	18,014,444.44	0.90

Source: Data processed, 2025

Another impact of the weakening comparative advantage of green tea is a decline in farmer incomes. Indonesian green tea exports are also produced from smallholder plantations owned by domestic farmers. When Indonesian green tea cannot compete, domestic tea farmers face a decline in income. This decline in income impacts farmers' welfare. Another negative impact of this weak comparative advantage is that domestic producers are increasingly less interested in producing green tea.

Trade Specialization Index

The trade specialization index indicates whether a country is an exporter or importer. Indonesia's green tea trade specialization index changes annually. The trade specialization index value from 2006 to 2023 was 0.026. This value indicates that Indonesia is classified as a green tea exporting country. A country is considered an exporter if the trade specialization index value is positive (between 0 and 1), and a country is considered an importer if the trade specialization index value is negative (between 0 and -1) (Febrina et al., 2024).

The results of this study are consistent with other studies. Indonesia can be considered a green tea exporting country to Poland, Germany, Taipei, Pakistan, and Malaysia (Yafi & Adyanti, 2024). Other studies have also found similar results. Based on the trade specialization ratio, Indonesia can be considered a tea exporting country to Southeast Asia (Nursodik et al., 2022). Although categorized as a green tea exporting country, the value and volume of

green tea exports are still lower than those of black tea. This is understandable because black tea is the most popular type of tea and is in high demand by the majority of Indonesians. Most of Indonesia's tea plantations are processed into black tea. Indonesia's green tea trade specialization index can be seen in Table 4.

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Table 4. Indonesia's green tea trade specialization index

Year	Indonesian Green Tea Exports (Million US$)	Indonesian Green Tea Imports (Million US$)	Trade Specialization Index
2023	4.40	7.48	-0.26
2022	8.84	7.01	0.12
2021	4.54	5.27	-0.07
2020	3.46	5.38	-0.22
2019	10.28	8.21	0.11
2018	11.57	6.09	0.31
2017	14.79	5.76	0.44
2016	9.48	8.15	0.08
2015	8.12	6.08	0.14
2014	1.75	3.67	-0.35
2013	2.27	7.49	-0.53
2012	3.10	9.31	-0.50
2011	2.55	5.87	-0.39
2010	4.46	1.77	0.43
2009	5.63	2.66	0.36
2008	4.90	2.16	0.39
2007	4.43	2.07	0.36
2006	1.50	1.35	0.05
Average	5.895	5.321	0.026

Source: Data processed, 2025

Export Product Dynamics

In international trade, Indonesian green tea is in a rising star position. This position is based on the calculation of a positive export share (X-axis) of 2.915 and a positive product share (Y-axis) of 3.087. This indicates that Indonesia remains in a favorable position amidst the weakening comparative advantage of green tea in the international market. This position could become unfavorable if policies supporting improvements in the quality and quantity of green tea are not implemented. Export product dynamics are in Table 5.

To assess the potential for developing Indonesian green tea exports, the X model can be used. The X model is essentially a combination of RCA and EPD to determine the export potential of a commodity. The X model contains four categories of export potential for a commodity: optimistic, potential, less potential, and no potential. Based on the X model, it can be seen that Indonesian green tea has the potential to develop in the international market. This means that although the comparative advantage of Indonesian green tea is weakening, there is potential for improvement in the future. This position indicates that Indonesian green tea is experiencing growing demand. Currently, Chinese green tea dominates the international market. The X model for Indonesian green tea is shown in Table 6.

Table 5. Export product dynamic

Share of Country's Export (X)	Share Of Product (Y)	
	Rising / Dinamis (+)	Falling / Stagnan (-)
Rising / Competitive (+)	Optimal Rising Star	Vulnerable Falling star
Falling / Non Competitive (-)	Weakness Lost opportunity	Restructuring Retreat

Source:(Budiarto & Pratita, 2022)

Table 6. X model for Indonesian green tea

EPD	RCA >1	RCA <1
Rising star	Optimistic	Potential
Lost opportunity	Potential	Less potential
Fallings star	Potential	Less potential
Retreat	Less potential	Non-potential

Source: (Simamora & Nadapdap, 2021)

In Indonesia, green tea is a less popular commodity than black tea. Furthermore, tea in Indonesia is less economically valuable than palm oil, cocoa, or coffee. Palm oil is a commercial plantation crop that can be used as cooking oil, industrial oil, and biodiesel (Purwanto et al., 2023). Cocoa is a commodity that is processed into chocolate, a favorite food for most people. Coffee has a strong brand image among the public. Coffee has now become a part of people's lifestyles.

Green tea is less popular than black tea, which is understandable. Black tea has a longer history than green tea. Initially, tea plantations in Indonesia were intended for the export market, requiring tea with a longer shelf life. Therefore, tea plantations in Indonesia were processed into black tea because this type of tea has a relatively longer shelf life than green tea.

Another reason is the characteristics of green tea itself. In general, people prefer to drink tea mixed with sugar. Black tea has a strong flavor and aroma, so its original flavor is not easily lost when mixed with sugar. Another reason is that black tea is more economical than green tea. Green tea tends to be more expensive than black tea. Tea is not a primary need for many people, and people prefer cheaper tea.

Furthermore, in Indonesia, black tea is deeply ingrained in people's memories. This makes it more popular than green tea. This contrasts sharply with other countries. For example, in Japan, green tea is much more popular than black tea. The culture of drinking green tea has been passed down from generation to generation in that country.

The comparative advantage of Indonesian green tea is influenced by the value of Indonesian tea exports internationally. The value of Indonesian green tea exports on the international market is not particularly high compared to other countries such as China and Sri Lanka. Besides export value, climate factors also play a role. Currently, the increasingly unpredictable climate poses a threat to tea. Extreme rainfall and extreme heat hamper the sustainability of tea plants. Excessive rainfall damages tea plants, and excessive heat can hinder optimal growth.

An external factor contributing to the weakening of green tea's comparative advantage is the strict regulations on tea exports in the international market. Currently, importing countries set very high quality standards for tea commodities entering their countries. This complicates green tea export procedures. This obstacle is most felt by small-scale tea farmers. Small-scale tea farmers generally have limitations or weaknesses in cultivation and post-harvest technology. This constraint results in the quality of the tea produced not meeting international quality standards.

The distribution of tea plantations in Indonesia is uneven. As many as 67% of Indonesia's tea plantations are concentrated in West Java Province. This uneven distribution of tea plantations is one reason why tea production in Indonesia, including

green tea, remains lower than in other countries such as China and Sri Lanka. Other regions besides West Java Province also have potential for tea plantations, but are underutilized. The area of tea plantations has also decreased from 2014 to 2023. This decline in tea plantation area has impacted low tea production in Indonesia, including green tea.

This uneven distribution of tea plantations is exacerbated by a decline in the area of Indonesian tea plantations. From 2015 to 2024, the area of tea plantations decreased at an annual rate of 1.75%. Furthermore, the growth of the area of mature plants decreased by 1.68% annually (Kementerian Pertanian, 2024). The decrease in the area of mature plants will impact tea production, including green tea. This is because not all tea plants on plantations are productive plants.

To strengthen the comparative advantage of Indonesian green tea, intensification is necessary. This is crucial because increasing through extensification is difficult both on the island of Java and outside Java. In Kalimantan and Sumatra, the majority of plantation land is oil palm, while in Sulawesi, much of it is already occupied by cocoa. This intensification effort is already evident in the revitalization of tea plantations. This revitalization has not been implemented extensively across all regions, but concrete steps have been taken to increase production, thus increasing export value and green tea's comparative advantage in the international market. The goal of this revitalization is to replace tea plants that have passed their productive period with new ones, thereby increasing productivity.

Beyond productivity, green tea quality certification is crucial. Countries in Europe and America have very strict requirements regarding imported food ingredients. Quality certification will facilitate Indonesian green tea entry into the EU and US markets. Domestically, specific quality standards for green tea exist, regulated in SNI 3945:2016, which details the quality standards for green tea. SNI aims to increase production efficiency, quality, and the comparative advantage of tea at the local and international levels (Rahmawati et al., 2024).

Several teas produced in Indonesia have received internationally recognized certifications. These include Rainforest Alliance, Hazard Analysis Critical Control Point (HACCP), and ISO certification. Rainforest Alliance certification is awarded to agricultural commodities, certifying that they are produced with attention to environmental, social, and economic sustainability. This certification facilitates entry into international markets, particularly in Europe and the United States. In addition to Rainforest Alliance certification, Indonesian tea commodities also receive HACCP certification. HACCP certification guarantees product safety (Mafaza & Kumalasari, 2023). HACCP identifies potential hazards and how to prevent and control them (Rochman et al., 2020). This certificate demonstrates that Indonesian green tea is free from hazardous contaminants, including physical, chemical, and microbiological contaminants. This certification serves as a quality assurance that facilitates the entry of Indonesian tea into other countries.

Another consideration to increase green tea's comparative advantage is improving supply chain efficiency. Supply chain operation reference (SCOR) analysis is generally used to analyze supply chain efficiency. SCOR is a framework that can be used to analyze supply chain performance. The results can be used to improve supply chain efficiency (Safitri et al., 2025).

Another effort to increase the export value and comparative advantage of green tea is research. This research aims to produce new tea plant seeds that are more resistant to pests and plant diseases and offer higher

productivity. Several superior tea seed varieties that have been produced include the Gambung clone, the TRI clone, Tambi 1, Tambi 2, and several other superior seeds. These tea seeds have proven to have superior productivity and resistance to pests and plant diseases.

4. CONCLUSION AND RECOMMENDATIONS

Green tea's comparative advantage tends to be weak in the international market. The average RCA value for Indonesian green tea from 2006 to 2023 was 0.90. Indonesia is classified as a green tea exporting country because its trade specialization index has a positive value (0.026). In international trade, Indonesian green tea remains a rising star (profitable) and has potential for growth. To increase the comparative advantage of green tea, it is necessary to focus on improving quality through quality certification and revitalizing tea plantations.

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REFERENCES

Akbar, F. M., & Widyastutik. (2022). Analysis of Competitiveness, Dynamics, and Determinants of Main Commodity Export Demand from Indonesia to United Kingdom. *Jurnal Ekonomi Dan Kebijakan Pembangunan*, *11*(2), 108–131. https://doi.org/10.29244/jekp.11.2.2022.108-131

Andriani, N. S., Rachmina, D., & Utami, A. D. (2025). Dynamics of Indonesia's Competitiveness and Factors Affecting Coffee Exports in The China Market . *Jurnal Manajemen Dan Agribisnis*, *22*(2), 185. https://doi.org/10.17358/jma.22.2.185

Badan Pusat statistik. (2016). Perkembangan Ekspor Dan Impor Indonesia Desember 2016. In *Berita Resmi Statistik No. 06/01/Th. XIX, 15 Januari 2016 PERKEMBANGAN* (Issue 06).

Badan Pusat Statistik. (2008). Perkembangan Ekspor Dan Impor Indonesia Desember 2007. *Berita Resmi Statistik No. 07/02/Th. XI, 1 Februari 2008*, *31*, 1–14.

Badan Pusat Statistik. (2010). Perkembangan Ekspor Dan Impor Indonesia Desember 2009. In *Berita Resmi Statistik No. 07/02/Th. XIII, 1 Februari 2010* (Vol. 2009, Issue 31).

Badan Pusat Statistik. (2012). Perkembangan Ekspor Dan Impor Indonesia Desember 2011. In *Berita Resmi Statistik No. 08/02/Th. XV, 1 Februari 2012* (Issue 31).

Badan Pusat Statistik. (2013). Perkembangan Ekspor Dan Impor Indonesia Desember 2012. In *Berita Resmi Statistik No. 09/02/Th. XVI, 1 Februari 2013* (Issue 06).

Badan Pusat Statistik. (2014). Perkembangan Ekspor dan Impor Januari 2014. In *Berita resmi statistik No. 19/03/Th. XVII, 3 Maret 2014* (Issue 19).

Badan Pusat Statistik. (2017). Perkembangan Ekspor Dan Impor Indonesia Desember 2016. *Berita Resmi Statistik No. 06/01/Th.XX, 16 Januari 2017*, *06*, 1–16.

Badan Pusat Statistik. (2019). Statistik Perkembangan Ekspor dan Impor Indonesia Januari 2018. In *Perkembangan Ekspor dan Impor Indonesia Desember 2018 No. 05/01/Th.XXII, 15 Januari 2019* (Issue 71). www.bps.go.id/pressrelease/2020/02/17/1675/ekspor-januari-2020-mencapai-

us-13-41-miliar-dan-impor-januari-2020-sebesar-us-14-28-miliar.html.

Badan Pusat Statistik. (2021). Statistik Perkembangan Ekspor dan Impor Indonesia Desember 2020. In *Perkembangan Ekspor dan Impor Indonesia Desember 2020 No. 05/01/Th.XXIV, 15 januari 2021* (Issue 71). www.bps.go.id/pressrelease/2021/01/15/1818/ekspor-desember-2020-mencapai-us-16-54-miliar-dan-impor-november-2020-senilai-us-14-44-miliar.html.

Badan Pusat Statistik. (2022). Perkembangan Ekspor dan Impor Indonesia, Desember 2021. In *Berita Resmi Statistik No.05/01/Th.XXV, 17 Januari 2022* (Issue 05).

Badan Pusat Statistik. (2023). Perkembangan Ekspor dan Impor Indonesia Desember 2022. In *Berita Resmi Statistik No. 30/04/Th. XXII, 15 April 2019* (Issue 64).

Badan Pusat Statistik. (2024). Perkembangan Ekspor Impor Desember 2023. In *Berita Resmi Statistik No.06/01/Th.XXVII, 15 Januari 2024: Vol. No. 06/01/* (Issue 06).

Badan Pusat Statistik. (2025). Perkembangan Ekspor dan Impor Indonesia 2025. In *Berita Resmi Statistik No. 30/04/Th. XXII, 15 April 2019* (Issue 64).

Badan Pusat Statstik. (2024). *Statistik Teh Indonesia 2023* (Vol. 17).

Budiarto, R., & Pratita, D. G. (2022). Citrus Export Performances of Southeast Asian Countries: A Comparative Analysis. *Jurnal Teknotan*, *16*(1), 7. https://doi.org/10.24198/jt.vol16n1.2

Febrina, L., Muhammad Aryo Fachrezi, Ayudana Kezia Pasaribu, Syavira Nayla Shaumy, Novia Miftakhul Qisthi, Roby Andika, & Rasidin Karo Karo Sitepu. (2024). Analisis Keterbukaan dan Kinerja Pertanian di Indonesia. *Jurnal Ekonomi Bisnis Dan Manajemen*, *2*(3), 69–79. https://doi.org/10.59024/jise.v2i3.758

Jannati, F., Marsudi, E., & Fauzi, T. (2020). Analisis Daya Saing Ekspor Teh Indonesia dan Teh Vietnam di Pasar Dunia. *Jurnal Ilmiah Mahasiswa Pertanian*, *5*(1), 181–190.

Kementerian Pertanian. (2024). *Outlook Teh 2024*. Pusat Data dan Sistem Informasi Pertanian Sekretariat Jenderal Kementerian Pertanian.

Mafaza, A., & Kumalasari, I. D. (2023). Analisis Penerapan Hazard Analysis Critical Control Point (HACCP) Pada Proses Produksi Oriflakes Di PT Serelia Prima Nutrisia, Yogyakarta. *Agroindustrial Technology Journal*, *7*(3), 66–75.

Nahdudin, N., Rahmanta, R., & Lindawati, L. (2025). Analysis of Tea Competitiveness and Factors Affecting Tea Competitiveness of North Sumatra Province, Indonesia in the Malaysian Market. *Agro Bali : Agricultural Journal*, *8*(1), 32–45. https://doi.org/10.37637/ab.v8i1.2142

Nursodik, H., Imam Santoso, S., & Nurfadillah, S. (2022). Competitiveness of Indonesian Tea Export in Southeast Asia Markets. *SOCA: Jurnal Sosial, Ekonomi Pertanian*, *16*(1), 1. https://doi.org/10.24843/soca.2022.v16.i01.p01

Pasolonk, B. L. H., Juniar, J. M., Maharani, M., Raviqois, R. R., & Adelia, R. P. (2023). Daya Saing Indonesia Dalam Ekspor Kopi Dunia. *SENTRI: Jurnal Riset Ilmiah*, *2*(3), 624–632. https://doi.org/10.55681/sentri.v2i3.599

Purwanto, C. V., Wagiman, & Jumeri. (2023). Pengaruh Penambahan Abu Tandan Kosong Kelapa Sawit Pada Produksi Biogas Dari Limbah Cair Kelapa Sawit. *Agroindustrial Technology Journal*, *7*(3), 66–75.

Rahmawati, R., Satya Pratiwi, Y., Aristina Sanjaya, Y., & Amalia, T. (2024). Characterization of A Mixed Tea Formulation of Mangosteen Peel, Cinnamon, and Clovers. *Agroindustrial Technology Journal*, *8*(1), 43–59. https://doi.org/10.21111/atj.v8i1.11139

Rochman, S. F., Nurmaydha, A., & Pratama, G. R. (2020). Penerapan Sistem hazard Analysis Critical Control Point (HACC) Pada Industri Roti. *Journal Agroindustri Technology*, *04*(01), 1–12.

Safitri, K. N., Fole, A., Aini, N., & Negara, P. P. S. (2025). Strategies for Enhancing Supply Chain Efficiency in the Agricultural Sector Through the Implementation of the SCOR Racetrack Method. *Agroindustrial Technology Journal*, *9*(1), 90–100. https://doi.org/10.21111/atj.v9i1.14299

Sapto, Marwanti, S., Hastuti, D., & Fachriyani, H. . (2024). Analisis Daya Saing Ekspor Teh Indonesia di Pasar Asia Tenggara Tahun 2012-2021. *Agricultural Sosioeconomic Empowerment and Agribusiness Journal*, *3*(1), 57–65. https://jurnal.uns.ac.id/agrisema/article/view/87516

Simalongo, M., Fadil, C., & Imaningsih, N. (2023). Analisis Daya Saing Ekspor Teh Indonesia Di Pasar Global Tahun 2017-2021. *Jurnal Ilmiah Wahana Pendidikan*, *9*(September), 458–464.

Simamora, L., & Nadapdap, H. J. (2021). Daya Saing dan Potensi Ekspor Melati Putih Segar (Jasminum sambaac) Indonesia. *Jurnal Agrica*, *14*(2), 183–194. https://doi.org/10.31289/agrica.v14i2.5048

Sirait, J. H. E., Widayatsari, A., & Sidabalok, S. (2025). Analisis Daya saing Ekspor Teh Hitam Indonesia Di Pasar Internasional Tahun 2014-2023. *Jurnal Ilmu Pengetahuan Sosial*, *12*(5), 1957.

Surya, S. A. (2023). Analisis Daya Saing dan Faktor yang Mempengaruhi Ekspor Teh di Pasar Internasional. *Determinasi: Jurnal Penelitian Ekonomi Manajemen Dan Akuntansi*, *1*(3), 19–29. https://jsr.lib.ums.ac.id/index.php/determinasi/article/view/62

United Nations. (2023). *Trade Data*. https://comtradeplus.un.org/TradeFlow?Frequency=A&Flows=X&CommodityCodes=TOTAL&Partners=0&Reporters=all&period=2024&AggregateBy=none&BreakdownMode=plus

World Bank. (2023). *Merchandise Exports*. https://data.worldbank.org/indicator/TX.VAL.MRCH.CD.WT?end=2024&start=2006

Yafi, M. A., & Adyanti, A. S. (2024). Kinerja Daya Saing Teh Hijau Indonesia Di Pasar Internasional. *SEPA: Jurnal Sosial Ekonomi Pertanian Dan Agribisnis*, *21*(2), 289. https://doi.org/10.20961/sepa.v21i2.84185