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Traditional literature review: investigation of rhodamine b on street foods and sauce products in Indonesia

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ABSTRACT

Food is one of the most important basic human needs for growth and development. Generally, the types of food cater to tastes and look attractive. To make it look attractive and have good taste is usually added with food additives. The food products with the most coloring added are street foods, red sauces, and rainbow cakes that children love. Rhodamine B is a prohibited coloring agent and is not present in food because, for a long time, it will cause liver damage, tumors, and cancer. Therefore, an article review was conducted to determine the levels and methods that can be used to analyze Rhodamine B from several research journals that have been conducted. The literature review method uses the following keywords or terms and strategies: "analysis" AND "rhodamine B" AND "food" OR "chili sauce" for searches on PubMed and Science Direct, while Google Scholar uses the keywords "Analysis, Rhodamine B, makanan, Sauce." And the inclusion criteria used were: (1) research articles in the form of journals published in the last ten years (2010-2020), using both English and Indonesian, full text; (2) Articles that discuss the analysis of Rhodamine B in snack foods and sauces located in Indonesia; (3) proved to be positive for Rhodamine B. The results of the reviewed articles showed that there was still Rhodamine B content in snack foods and sauces used by traders. The analytical methods used for identification were TLC, color detection with wool yarn, Rhodamine B Rapit-test Kit, UV-Vis spectrophotometer, and Gravimetry. The highest levels of Rhodamine B were found at 194 ppm in tomato sauce. The review of articles that have been conducted shows that there is still Rhodamine B found in snack foods and sauces by traders, which can be harmful to health in the long and short term.
Keywords: Rhodamine B, Street Food, Sauce, Review

INTRODUCTION

Food is one of the most important basic needs in human life. These additional ingredients include dyes, preservatives, flavoring and aroma, antioxidants, thickeners, and sweeteners (Winarno & Rahayu, 1994). Gardjito et al. (2006) said that food products with the most added dyes were snacks, red sauce, and colorful cakes, which were very popular with schoolchildren. However, some use food dyes that do not get distribution permits from the BPOM (Food and Drug Supervisory Agency) and do not infrequently use synthetic dyes, usually used as textile dyes (Pamungkas & Nopiyanti, 2014).

Observations by BPOM in 2011 at 866 schools showed that out of 3,925 samples examined, 40 (1.20%) samples contained Rhodamine B. According to BPOM, food poisoning cases took up the most space, scoring 66.7. Chemical contamination of food is one of the causes of food poisoning (Paratmanitya & Veriani, 2016). The results showed that the biggest snack finding was Rhodamine B. The results of *takjil* supervision carried out by BPOM in 2015, out of 680 samples that did not meet the requirements, showed that in detail, 285 samples were positive for Rhodamine B. found to contain Rhodamine B.

Through Minister of Health Regulation (Permenkes) No.239/Menkes/Per/V/85, the Indonesian government stipulates 30 dangerous dyes, one of which is Rhodamine B. Rhodamine B is a synthetic dye used in the textile industry. Rhodamine B can be carcinogenic and promotes the growth of cancer cells if used continuously (AlHamedi et al., 2009). Health problems from consuming Rhodamine B long-term are cancer due to its carcinogenic properties, impaired liver function, and physiological disorders of the body (Helmawati, 2018). If exposed to large amounts of Rhodamine B, acute symptoms of Rhodamine B poisoning will occur quickly (Yuliarti, 2007).

Efforts to determine the content of Rhodamine B in the snacks and sauces used by traders can be analyzed using several methods. Based on journal research, Thin Layer Chromatography (TLC),

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Ultraviolet-visible Spectrophotometry, color detection with woolen yarn, and Rhodamine B Rapid Test are the most widely used methods snacks and sauces used by traders as well as analytical methods used by researchers to identify Rhodamine B content.

RESEARCH METHOD

Research Design

The research design uses a traditional literature review. A traditional literature review is a process for gathering information or sources about a specific subject. It can be acquired from various sources, including books, periodicals, the internet, and other writing works. Siswanto (2010) revealed that a traditional literature review is a review that needs to be more systematic, a review method (study) in which the process of gathering facts and synthesis techniques does not follow the standard procedures of a systematic review. The reviewed literature contains descriptions of theories, findings, and other research materials obtained as reference material to serve as the basis for research activities. A literature review is done by reading, understanding, criticizing, and reviewing literature from various sources.

Article Search Strategy

The reference data used in this review were obtained from journals where previous research had been carried out regarding the analysis of the content of Rhodamine B. In the data collection process, searches were carried out using the help of search engines like Google Scholar, the online journal provider site Indonesian Scientific Journal. Databases (ISJD), PubMed, and Science Direct. A literature search was carried out with the keywords "analysis, Rhodamine B, food, sauce" on a Google Scholar search, "Rhodamine B" on the Indonesian Scientific Journal Database (ISJD), on PubMed "Analysis" AND Rhodamine B" AND "Food" OR "Chile sauce" and in Science Direct with the keywords "Analysis OR Detection AND Rhodamine B AND Food OR Chili sauce." Primary data were obtained from national journals which focused on research locations in Indonesia. The selected journals are also oriented to the article first to see the feasibility of the article to be reviewed.

Inclusion and Exclusion Criteria

The inclusion criteria used for this review include: (1) Research articles in the form of journals published in the last ten years (2010-2020), using both English and Indonesian, full text; (2) Articles discussing the analysis of Rhodamine B in snack foods and sauces located in Indonesia; (3) Proven positive for containing Rhodamine B. As for the exclusion criteria in this review, namely: (1) Research articles discussing Rhodamine B with samples other than snack foods and sauces and not located in Indonesia; (2) Research articles that only discuss method validation or the development of methods suitable for Rhodamine B analysis; (3) Research articles where full text is not available; (4) Research with negative results contains Rhodamine B.

RESULT AND DISCUSSION

Article Search

The search results for articles or journals obtained follow the criteria identified from the database, namely 515 articles. Obtained from the PubMed database as many as 33 articles, from the Science Direct database as 31 articles, then Google Scholar as many as 412 articles, and from the Indonesian Scientific Journal Database (ISJD) online journal provider site as many as 39 articles. A total of 495 articles were excluded from the search because they did not meet the inclusion criteria; namely, the full text of the article was not available, the year of publication was more than the last ten years, there was no Rhodamine B, in the form of a thesis or scientific paper, the sample was not in the form of snacks or sauces and did not meet the eligibility criteria. Articles are discussion articles that need to be completed and clarified. A total of 20 articles, according to the inclusion criteria and the eligibility criteria of the articles, were obtained for review of research characteristics.

The characteristics of the research articles used in this traditional literature review include the author and the year of publication, the title of the journal, the place where the sample was taken or the site where the research was carried out, the sample used, and the origin of the article. The literature used has been adjusted to the inclusion criteria, where the journals used in this article review have a span of the last ten years (2010-2020), analyzed Rhodamine B contained in food and sauces from various places

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and oriented articles to see the feasibility of the article to be reviewed. The characteristics of the articles in this review can be seen in Table I.

Table I. Article characteristic.

No	Article Titles, Author, and Publication Year	Sample
1	Analysis of rhodamin b dye on skewer meatball sauce circulating in several elementary schools in Manado City (Muzdhalifah et al., 2019).	Sauce
2	Analysis of rhodamin b dyes in skewer meatball sauce circulating in the Sam Ratulangi University Manado campus (Longdong et al., 2017).	Sauce
3	Identification of rhodamin b in confectionery circulating in Jambi city (Andriani et al., 2015).	Snack Foods
4	Identification of rhodamin b in sambal sauce circulating in traditional and modern markets in Denpasar city (Laksimita et al., 2018).	Chili Sauce
5	Descriptive study of prohibited additives in market snacks at the Bandar Lampung city market (Nuraini & Nurminha, 2020).	Snack Foods
6	Analysis of non-food grade red dyes in school children's snacks using paper chromatography and UV-Visible Spectrophotometry methods (Asworo, 2019).	Snack Foods
7	Identification of rhodamin b in locally produced chili sauce sold in several traditional markets in Makassar city (Widarti & Djasang, 2019).	Local Chili Sauce
8	Analysis of rhodamine b content in tomato sauce (Solanum lycopersicum Linn.) circulating in several traditional markets in Kendari city (Triantari et al., 2020).	Tomato Sauce
9	Analysis of dangerous dyes in school children's snacks circulating Tasikmalaya (Tuslinah & Aprilia, 2018).	Snack Foods
10	Identification of hazardous food additives (rhodamin b and borak) in snacks in the environment of Kartini street, East Tegal district, Tegal city (Chikmah & Maulida, 2019).	Snack Foods
11	Determination of rhodamine b in cosmetics and food by using UV Visible Spectrophotometry and TLC (Hasanah et al., 2011).	Foods and cosmetics
12	Identification and determination of rhodamine b levels in colored cakes at Anatasari market, Banjarmasin city (Sari, 2015).	Pink cake
13	Qualitative analysis of rhodamin b on ku cakes circulating in traditional markets, Sleman regency, Yogyakarta (Fatimah et al., 2016).	"Kue Ku"
14	Analysis of rhodamin b dyes in snacks marketed in the school environment (Tjiptaningdyah & Bambang Sigit Sucahyo, 2016).	Snack Foods
15	Identification and determination of rhodamine b levels in pink cake snacks circulating in the city of Manado (Yamlean, 2011).	Snack Foods, Pink Cake
16	Identifying rhodamine b coloring substance in snacks marketed in traditional markets of Bandar Lampung city (Permatasari et al., 2014).	Pink Snack Foods
17	Content of dangerous food additives in snacks for elementary school children in Bantul regency (Paratmanitya & Veriani, 2016).	Snack Foods
18	Analysis of red dyes in children's snacks sold in elementary schools in the municipality of East Jakarta (Nisma et al., 2018).	Pink Foods and beverages
19	Identification of rhodamine b in arum manis sold at SD INPRES PAI 2 Makassar by Paper Chromatography (Asrina & Tombang, 2018).	Cotton Candy
20	Analysis of rhodamine b dyes on red cotton sugar sold in Mataram city in 2013 (Andayani & Adisaputra, 2013).	Red Cotton Candy

Of the 20 articles above, the most widely used sampling locations were traditional markets, namely nine articles or 45%. The markets that were used as sampling locations came from various cities in Indonesia, including; traditional and modern markets in Denpasar, markets in Bandar Lampung, traditional markets in Makassar, traditional markets in Kendari, Bandung traditional markets, Antasari markets in Banjarmasin, traditional markets in Sleman district, markets in Manado, and traditional

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markets in Bandar Lampung. Then elementary school with seven articles or 35%, other environments (15%), and the campus environment (5%). Widarti & Djasang (2019) revealed that traditional public markets sell many food products and sauces. All groups of people can purchase that.

Snack food is the most widely used sample in research. Of the 20 articles used, 15 articles used snacks at 75%, and five others used sauce at 25%. Street food is also a risk to health because of unhygienic handling, which allows snack food to be contaminated with toxic microbes and the use of food additives (BTP) that are not permitted (Anonymous, 2005).

Method of Analysis

The method used from the 20 journals obtained was that not all journals carried out the qualitative analysis and then continued quantitative analysis; some journals only carried out qualitative identification and did not carry out quantitative analysis, and vice versa. The qualitative analysis method used can be seen in Table II.

Table II. Qualitative Analysis.

No	Article Titles, Author, and Publication Year	Qualitative Methods	Descriptions
1.	Analysis of rhodamin b dye on skewer meatball sauce circulating in several elementary schools in Manado City (Muzdhalifah et al., 2019).	Thin Layer Chromatography (TLC)	Using the eluent ethyl acetate: methanol: Ammonia (4:1:1). Then calculate the sample Rf value and compare the sample Rf value with the comparator.
2.	Analysis of rhodamin b dyes in skewer meatball sauce circulating in the Sam Ratulangi University Manado campus (Longdong et al., 2017).	-	Not doing a qualitative test.
3.	Identification of rhodamin b in confectionery circulating in Jambi city (Andriani et al., 2015).	Thin Layer Chromatography (TLC)	Using n-butanol eluent: glacial acetic acid (6:4).
4.	Identification of rhodamin b in sambal sauce circulating in traditional and modern markets in Denpasar city (Laksimita et al., 2018).	Color detection with wool yarn	The principle of dye withdrawal into fat-free woolen yarn. Positive results are marked in red and cannot be washed off by water.
5.	Descriptive study of prohibited additives in market snacks at the Bandar Lampung city market (Nuraini & Nurminha, 2020).	Rapid Test Kit Rhodamine B	Observe the color change that occurs after dropping the reagent.
6.	Analysis of non-food grade red dyes in school children's snacks using paper chromatography and UV-Visible Spectrophotometry methods (Asworo, 2019).	Paper Chromatography	Using two types of solvents, namely a mixture of Ethyl Methyl Ketone: Acetone: Aquadest with a ratio of 70:30:30 and a mixture of NaCl in Ethanol (2 grams of NaCl in 100 ml of ethanol).
7.	Identification of rhodamin b in locally produced chili sauce sold in several traditional markets in Makassar city (Widarti & Djasang, 2019).	Paper Chromatography	Comparing the price of sample Rf and standard Rf. Eluent mixture of butanol;acetic acid;water (4:1:2).

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8.	Analysis of rhodamine b content in tomato sauce (Solanum lycopersicum Linn.) circulating in several traditional markets in Kendari city (Triantari et al., 2020).	Color detection with wool yarn	The principle of dye withdrawal into fat-free woolen yarn. Positive results are marked in red and cannot be washed off by water.
9.	Analysis of dangerous dyes in school children's snacks circulating Tasikmalaya (Tuslinah & Aprilia, 2018).	Thin Layer Chromatography (TLC)	Using the eluent Butanol: Ethanol: Water (25:20:25).
10.	Identification of hazardous food additives (rhodamin b and borak) in snacks in the environment of Kartini street, East Tegal district, Tegal city (Chikmah & Maulida, 2019).	Rapid Test Kit Rhodamine B	Using reagents that are inserted into the sample. If the mixture's color turns purple, the material tested positive contains the red synthetic dye Rhodamine B.
11.	Determination of rhodamine b in cosmetics and food by using UV Visible Spectrophotometry and TLC (Hasanah et al., 2011).	Thin Layer Chromatography (TLC)	The mobile phase is ethyl acetate: methanol: (ammonium: water = 3:7) with a ratio of 15:3:3, then viewed with a 366 nm UV lamp.
12.	Identification and determination of rhodamine b levels in colored cakes at Anatasari market, Banjarmasin city (Sari, 2015).	Thin Layer Chromatography (TLC)	The mobile phase was n butanol: ethyl acetate: ammonia (10:4:5), then detected using a 254 nm and 366 nm UV lamp.
13.	Qualitative analysis of rhodamin b on ku cakes circulating in traditional markets, Sleman regency, Yogyakarta (Fatimah et al., 2016).	Thin Layer Chromatography (TLC)	The eluent was made with a mixture of n-butanol: ethanol: and aquadest (20:12:5).
14.	Analysis of rhodamin b dyes in snacks marketed in the school environment (Tjiptaningdyah & Bambang Sigit Sucahyo, 2016).	Thin Layer Chromatography (TLC)	Compare the Rf sample prices with standards seen first under UV lamps of 254 nm and 366 nm.
15.	Identification and determination of rhodamine b levels in pink cake snacks circulating in the city of Manado (Yamlean, 2011).	-	Not doing a qualitative test.
16.	Identifying rhodamine b coloring substance in snacks marketed in traditional markets of Bandar Lampung city (Permatasari et al., 2014).	Paper Chromatography	With eluent solution (n butanol: ethyl acetate: ammonia = 10:4:5).
17.	Content of dangerous food additives in snacks for elementary school children in Bantul regency (Paratmanitya & Veriani, 2016).	Rapid Test Kit Rhodamine B	Observe the color change after dropping the reagent, carried out two times.
18.	Analysis of red dyes in children's snacks sold in elementary schools in the municipality of East Jakarta (Nisma et al., 2018).	Paper Chromatography	Using three kinds of eluents, namely 1.) 2% NaCl solution in 50% ethanol, 2.) methyl ethyl ketone: acetone: acetic acid (7:3:3), 3.) n-butanol: glacial acetic acid: water (40:20:24).

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19.	Identification of rhodamine b in arum manis sold at SD INPRES PAI 2 Makassar by Paper Chromatography (Asrina & Tombang, 2018).	Paper Chromatography	The color that occurs is observed; the eluent used is a mixture of ethanol: butanol: and aqua dest (4:5:5).
20.	Analysis of rhodamine b dyes on red cotton sugar sold in Mataram city in 2013 (Andayani & Adisaputra, 2013).	Rapid Test Kit Rhodamine B	Observe the color change that occurs after dropping the reagent.

From Table II, 7 articles use TLC; the stationary and mobile phases can be different. The choice was based on the physical and chemical properties of Rhodamine B, which is soluble in water and produces red fluorescence (Fatimah et al., 2016). Paper chromatography is the 2nd most used method in research, namely five articles using this method or 25%. Paper chromatography has the same principle as TLC, namely the technique of analyzing the separation of mixed chemical compounds based on 2 phases, namely the stationary phase and the mobile phase.

A total of 4 articles, or 20%, carried out a qualitative test using the Rhodamine B Rapid-test kit. The analysis was carried out for the Rhodamine B Test kit by observing the color change after the reagent was dropped. Research conducted by Nuraini & Nurminha (2020) was carried out by observing the color change after the sample was dripped with a reagent.

Test the color with wool yarn in 2 articles or 10%, namely research conducted by Laksimita et al. (2018); Triantari et al. (2020). For qualitative analysis, color detection using wool yarn has the principle of withdrawing the dye into the fat-free wool thread in an acidic environment by heating, then dissolving or dissolving the color by an alkaline will occur. Positive results are marked with a red color which cannot be washed off by water (Laksimita et al., 2018).

Finally, two articles used UV-Vis spectrophotometry or 10%. Hasanah et al. (2011) research was carried out by observing the shape of the spectrum of the standard solution with the sample and then compared with the theoretical wavelength. The maximum wavelength search was carried out in the 400-700 nm range.

Not doing a qualitative test, there are two articles or 10%. The qualitative test was conducted to find the Rhodamine B dye in the tested sample. A quantitative test will then follow this to determine how much Rhodamine B levels are obtained (Julyana, 2013). The journals that carry out quantitative tests can be seen in Table III below.

Table III. Quantitative Analysis.

No	Article Titles, Author, and Publication Year	Quantitative Methods	Descriptions
1.	Analysis of rhodamin b dye on skewer meatball sauce circulating in several elementary schools in Manado City (Muzdhalifah et al., 2019).	UV-Vis Spectrophotometry	The determination of the maximum wavelength is carried out in the 400-800 nm wavelength range. With the results obtained, namely the maximum wavelength of 554 nm.
2.	Analysis of rhodamin b dyes in skewer meatball sauce circulating in the Sam Ratulangi University Manado campus (Longdong et al., 2017).	UV-Vis Spectrophotometry	Measurement at a maximum wavelength of 557 nm.
3.	Identification of rhodamin b in confectionery circulating in Jambi city (Andriani et al., 2015).	UV-Vis Spectrophotometry	The determination of the maximum wavelength in the 400-800 nm. The maximum wavelength yield is 554 nm.

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4.	Identification of rhodamin b in sambal sauce circulating in traditional and modern markets in Denpasar city (Laksimita et al., 2018).	-	Not doing quantitative tests.
5.	Descriptive study of prohibited additives in market snacks at the Bandar Lampung city market (Nuraini & Nurminha, 2020).	-	Not doing quantitative tests.
6.	Analysis of non-food grade red dyes in school children's snacks using paper chromatography and UV-Visible Spectrophotometry methods (Asworo, 2019).	UV-Vis Spectrophotometry	Maximum wavelength determination of 500 – 650 nm. The results obtained are 554 nm.
7.	Identification of rhodamin b in locally produced chili sauce sold in several traditional markets in Makassar city (Widarti & Djasang, 2019).	-	Not doing quantitative tests.
8.	Analysis of rhodamine b content in tomato sauce (Solanum lycopersicum Linn.) circulating in several traditional markets in Kendari city (Triantari et al., 2020).	Gravimetry	Measurements using wool yarn, where the levels of dyes can be determined by calculating the difference in the weight of the wool yarn before and after treatment.
9.	Analysis of dangerous dyes in school children's snacks circulating Tasikmalaya (Tuslinah & Aprilia, 2018).	-	Not doing quantitative tests.
10.	Identification of hazardous food additives (rhodamin b and borak) in snacks in the environment of Kartini street, East Tegal district, Tegal city (Chikmah & Maulida, 2019).	-	Not doing quantitative tests.
11.	Determination of rhodamine b in cosmetics and food by using UV Visible Spectrophotometry and TLC (Hasanah et al., 2011).	-	Not doing quantitative tests.
12.	Identification and determination of rhodamine b levels in colored cakes at Anatasari market, Banjarmasin city (Sari, 2015).	UV-Vis Spectrophotometry	Maximum wavelength determination 400 – 800 nm. The results obtained are 544 nm.
13.	Qualitative analysis of rhodamin b on ku cakes circulating in traditional markets, Sleman regency, Yogyakarta (Fatimah et al., 2016).	-	Not doing quantitative tests.
14.	Analysis of rhodamin b dyes in snacks marketed in the school environment (Tjiptaningdyah & Bambang Sigit Sucahyo, 2016).	UV-Vis Spectrophotometry	Measured on impact at a wavelength of 500 nm – 600 nm.
15.	Identification and determination of rhodamine b levels in pink cake snacks circulating in the city of Manado (Yamlean, 2011).	UV-Vis Spectrophotometry	Determination of Rhodamine B levels at a wavelength of 538 nm.

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16.	Identifying rhodamine b coloring substance in snacks marketed in traditional markets of Bandar Lampung city (Permatasari et al., 2014).	UV-Vis Spectrophotometry	Measurements were made with a wavelength of 500 nm – 600 nm.
17.	Content of dangerous food additives in snacks for elementary school children in Bantul regency (Paratmanitya & Veriani, 2016).	-	Not doing quantitative tests.
18.	Analysis of red dyes in children's snacks sold in elementary schools in the municipality of East Jakarta (Nisma et al., 2018).	-	Not doing quantitative tests.
19.	Identification of rhodamine b in arum manis sold at SD INPRES PAI 2 Makassar by Paper Chromatography (Asrina & Tombang, 2018).	-	Not doing quantitative tests.
20.	Analysis of rhodamine b dyes on red cotton sugar sold in Mataram city in 2013 (Andayani & Adisaputra, 2013).	-	Not doing quantitative tests.

Table III above, out of 20 articles, only nine articles conducted quantitative tests (45%), and 11 other articles only carried out qualitative tests (55%) (Table II). The most widely used quantitative test based on Table III above is UV-Vis spectrophotometry. Of the nine articles that carried out quantitative tests, 8 used the UV-Vis spectrophotometry method (90%), and one other used Gravimetry (10%).

Analysis Result

The results of the identification and analysis of the 20 journals can be seen in Table IV below.

Table IV. Analysis Result.

No	Article Titles, Author, and Publication Year	Quantity and Sample Code	Analysis Methods	Analysis results
1.	Analysis of rhodamin b dye on skewer meatball sauce circulating in several elementary schools in Manado City (Muzdhalifah et al., 2019).	12 sauce samples (code A 1-3, B 1-3, C 1-3, D 1-3)	Thin Layer Chromatography (TLC) and UV-Vis Spectrophotometry	Qualitatively using TLC obtained, five identified samples.
2.	Analysis of rhodamin b dyes in skewer meatball sauce circulating in the Sam Ratulangi University Manado campus (Longdong et al., 2017).	Six samples of sauce (code P1-P6)	UV-Vis Spectrophotometry	The study's results proved that using Rhodamine B, the skewered meatball sauce was positive.
3.	Identification of rhodamin b in confectionery circulating in Jambi city (Andriani et al., 2015).	9 samples of snack food, (code A-I)	Thin Layer Chromatography (TLC) and UV-Vis Spectrophotometry	Six samples are positive for Rhodamine B.
4.	Identification of rhodamin b in sambal sauce circulating in traditional and modern markets in Denpasar city (Laksimita et al., 2018).	12 samples of chili sauce (code A-L)	Color detection with wool yarn	Qualitative results show two positive samples.

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5.	Descriptive study of prohibited additives in market snacks at the Bandar Lampung city market (Nuraini & Nurminha, 2020).	14 samples of snack foods	Rapid Test Kit Rhodamine B	The results showed that two samples (16.67%) were positive for Rhodamine B.
6.	Analysis of non-food grade red dyes in school children's snacks using paper chromatography and UV-Visible Spectrophotometry methods (Asworo, 2019).	Ten samples of street food (code 1-10)	Paper Chromatography and UV-Vis Spectrophotometry	The qualitative test yielded two positive samples.
7.	Identification of rhodamin b in locally produced chili sauce sold in several traditional markets in Makassar city (Widarti & Djasang, 2019).	6 samples of chili sauce	Paper Chromatography	Based on the results of the identification of one positive.
8.	Analysis of rhodamine b content in tomato sauce (Solanum lycopersicum Linn.) circulating in several traditional markets in Kendari city (Triantari et al., 2020).	Ten samples of tomato sauce (code PK 1, PK 2, BM 1, BM 2, SL 1, SL 2, PA 1, PA 2, PB 1, PB 2.)	Color detection with wool yarn and Gravimetry	The qualitative test shows that two samples are positive.
9.	Analysis of dangerous dyes in school children's snacks circulating Tasikmalaya (Tuslinah & Aprilia, 2018).	30 food and beverage samples (code 1-30)	Thin Layer Chromatography (TLC)	The qualitative test shows the results of 22 food samples. There are two positive samples.
10.	Identification of hazardous food additives (rhodamin b and borak) in snacks in the environment of Kartini street, East Tegal district, Tegal city (Chikmah & Maulida, 2019).	Nine samples of snack foods	Rapid Test Kit Rhodamine B	The results showed that there were 3 Rhodamine B (33.3%).
11.	Determination of rhodamine b in cosmetics and food by using UV Visible Spectrophotometry and TLC (Hasanah et al., 2011).	15 samples of snack foods, namely shrimp paste (A-H) and Crackers (A-G)	Thin Layer Chromatography (TLC) and UV-Vis Spectrophotometry	Eight samples showed positive results.
12.	Identification and determination of rhodamine b levels in colored cakes at Anatasari market, Banjarmasin city (Sari, 2015).	Six cake samples (code A, B, C, D, E, and F)	Thin Layer Chromatography (TLC) and UV-Vis Spectrophotometry	TLC identification results obtained one positive sample.
13.	Qualitative analysis of rhodamin b on ku cakes circulating in traditional markets, Sleman regency, Yogyakarta (Fatimah et al., 2016).	Twenty-six samples of "Kue Ku."	Thin Layer Chromatography (TLC)	There are four samples.

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14.	Analysis of rhodamin b dyes in snacks marketed in the school environment (Tjiptaningdyah & Bambang Sigit Sucahyo, 2016).	20 samples of red-colored street food (code 1-20)	Paper Chromatography and UV-Vis Spectrophotometry	Identification of 6 samples gave pink/red stains and yellow fluorescence under 254 nm UV light
15.	Identification and determination of rhodamine b levels in pink cake snacks circulating in the city of Manado (Yamlean, 2011).	16 samples of steamed sponge cakes in 4 markets.	UV-Vis Spectrophotometry	Sponge cake samples from several sellers were positive.
16.	Identifying rhodamine b coloring substance in snacks marketed in traditional markets of Bandar Lampung city (Permatasari et al., 2014).	Thirty food samples from 2 different markets.	Thin Layer Chromatography (TLC) and UV-Vis Spectrophotometry	Fifteen samples were positive for Rhodamine B.
17.	Content of dangerous food additives in snacks for elementary school children in Bantul regency (Paratmanitya & Veriani, 2016).	15 samples of snack foods	Rapid Test Kit Rhodamine B	There were seven samples of snacks that tested positive.
18.	Analysis of red dyes in children's snacks sold in elementary schools in the municipality of East Jakarta (Nisma et al., 2018).	27 samples of snacks and drinks (code 1-27)	Paper Chromatography and UV-Vis Spectrophotometry	The results of 3 positive samples contained Rhodamine B.
19.	Identification of rhodamine b in arum manis sold at SD INPRES PAI 2 Makassar by Paper Chromatography (Asrina & Tombang, 2018).	Cotton candy	Paper Chromatography	Cotton candy research results
20.	Analysis of rhodamine b dyes on red cotton sugar sold in Mataram city in 2013 (Andayani & Adisaputra, 2013).	9 cotton candy with code (A – I)	Rapid Test Kit Rhodamine B	The research results obtained three positive samples.

Based on Table IV, it can be seen that there were still many samples that tested positive for containing Rhodamine B. The total number of all samples containing Rhodamine B was 84 or 30% of the 282 samples tested. The highest levels were found in samples with code SL 1, in tomato sauce of 194 ppm. Research for each article gives different results. These variations are thought to be caused by differences in the research areas' characteristics and the snack food samples taken. Of course, the differences in the testing methods used. However, these studies consistently show that the street food circulating so far has yet to be completely free from harmful chemical contamination. This certainly needs to get serious further attention and handling from the authorities because the impact caused by consuming these hazardous chemicals is very detrimental (Paratmanitya & Veriani, 2016).

The discovery of the use of Rhodamin B itself is still a lot going on in the field. According to a 2011 BPOM survey conducted in 866 schools from 30 cities in Indonesia, snacks for school children that do not meet quality and safety standards contain prohibited food additives such as rhodamine B, Borax, and Formalin. Tests of school children's snack food samples conducted by BPOM in 2011 showed that out of 3,925 samples of school children's snack food products consisting of ice, red drinks, jelly, snacks, and red snacks, there were 40 (1.02%) samples containing rhodamine B. The results of takjil monitoring in 2015 out of 7,806 samples found that 7,126 samples (91.29%) met the requirements and 680 samples (8.71%) did not meet the requirements. The surveillance results show that the textile dye rhodamine B is food's most widely abused hazardous substance. In detail, 285 food samples were found to contain Rhodamin B, 211 food samples contained Formalin, 162 food samples contained Borax, and five food samples contained Methanyl Yellow.

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Based on the results of a literature search that has been done, it is known that Rhodamine B is still widely used as a food coloring. Rhodamine B is a toxic synthetic dye that harms human health. Artificial dyes can cause health problems if they exceed predetermined limits, such as causing tumors, hyperactivity in children, allergies, and can cause inflammation of the mucous membranes of the nose, back pain, and vomiting (Yuliarti, 2007). Additionally, despite its modest toxicity, ingestion in large doses or over time results in cumulative side effects, including liver diseases, poisoning, and irritation of the digestive tract, skin, eyes, and respiratory tract. Long-term usage of rhodamine B can result in cancer because it is carcinogenic. Mice and rats were used in subcutaneous injection and oral rhodamine B toxicity tests. When subcutaneously injected into rats, rhodamine B can be carcinogenic and result in local sarcomas (Merck Index, 2006).

Using Rhodamine B for a long time can lead to impaired liver function and cancer. However, when exposed to large amounts of Rhodamine B, acute symptoms of Rhodamine B poisoning will occur quickly (Yamlean, 2011). According to the Regulation of the Minister of Health of the Republic of Indonesia No.1168/MENKES/PER/X/1999 (Kemenkes RI, 1999); Regulation of the Minister of Health of the Republic of Indonesia No. 239/Menkes/Per/V/1985 (Kemenkes RI, 1985); that Rhodamine B is a food additive that is prohibited from being used in food, but abuse of Rhodamine B dyes in food is still common, as proven by several studies (Utami & Suhendi, 2009).

CONCLUSION

Based on research on tracing the content of Rhodamine B in snacks and sauces, it was found that the snacks sold and the sauces used by traders still contain Rhodamine B. The analytical methods that can be used to identify the content of Rhodamine B in snacks and sauces are TLC, color detection with wool yarn, Rapid-test Kit Rhodamine B, UV-Vis Spectorophometric, and Gravimetry. All samples containing Rhodamin B totaled 84 samples or 30% of the 282 samples tested, where the highest levels were found in samples with code SL 1, namely in tomato sauce of 194 ppm.

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