

Chemical and Microbiology Analysis of Salted Anchovies (*Stolephorus sp.*) in East Denpasar Traditional Market

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Abstract

Jengki anchovies are one of the raw food ingredients that are preserved using salt. Salting is done to reduce the water content in the fish so that bacteria cannot live and develop. This study aims to determine the chemical and microbiological contamination of salted anchovies in East Denpasar Traditional Market. This research is a descriptive study using survey and experimental methods in the laboratory. Based on data from the Department of Industry and Trade in Denpasar, there are 7 traditional markets in East Denpasar. The number of samples studied was 43 samples from 75 existing populations. The parameters of this research were formaldehyde, moisture content, TPC, *E. coli*, and organoleptic. The results showed that none of the 43 samples contained formalin. The results of the water content test were obtained that all samples met the SNI 8273: 2016 requirements. From the results of the TPC test, 35 samples met the requirements and 8 samples exceeded the limits set by SNI 8273: 2016, namely the maximum limit of TPC contamination, namely 1.0×10^5 colonies/gram. The *E. coli* test results from 43 samples met the SNI 8273: 2016 requirements, namely the maximum limit of *E. coli* contamination <3.6 APM / gram. From the results of the organoleptic test on appearance, smell, taste, texture, fungus, and overall acceptance, all assessments were significantly different, with the characteristics of a dull to clean bright appearance, specific to the type, specific odor but less strong, salty taste and a less specific type, dry solid texture too dense less dry.

Keywords: Jengki anchovies, Formalin, Total Plate Count, *E.coli*

1. Introduction

Food safety can be determined by the presence or absence of contamination from indigestible materials such as plastics, metals, or materials that can interfere with human digestion. Chemical contaminants come from hazardous chemical substances that cannot be used as food ingredients such as formaldehyde and pesticides as well as restricted food additives such as ascorbic acid, lactic, citrate, nitrate, and other food additives. Microbiological hazards come from the presence of pathogenic bacteria and toxins that are generated in foodstuffs. Healthy food is one of the factors that play a role in health, healthy food is needed by the human body. One of the ways to improve the quality of human resources is determined by the quality of food consumed.

Jengki anchovies are one of the foods that use a natural preservative in the form of salt. Salting the spoilage process can be inhibited so that the fish can be stored longer as well as its ability to inhibit bacterial growth and the activity of enzymes that cause putrefaction in the fish's body. Fish that have died decompose very quickly compared to beef, fruit, or vegetables [1].

2. Material and Methods

2.1 Place and time of research

The research was conducted at the Laboratory of the Faculty of Agriculture, Warmadewa University, and Denpasar Veterinary Center. This research was conducted from March 2020 to June 2020.

2.2 Research Material

2.2.1 Tool

Plastic bags for storing samples, Durham tubes, Petri dishes, desiccators, test tubes, 1 ml, 2 ml, 5 ml, 10 ml pipettes, media bottles, scissors, tweezers, inoculation needles, stomacher, bunsen burners, pH meter, analytical scale, drying oven, clamp pliers, magnetic stirrer, tube shaker (vortex), incubator, water bath, autoclave, sterile cabinet (clean bench), refrigerator, freezer, volumetric pipette, colony counter), and needle inoculation.

2.2.2 Ingredient

Jengki anchovies from 7 Traditional Markets, 0.5% phenylhydrazine solution, 5% sodium nitroprusside solution, 10% natrium hydroxide ocean, 37 Wt.% Purity formaldehyde standard (Cat PS-2031), distilled water, BPW (Buffered Pepton Water) 0.1%, BGLBB (Brilliant GreenLactose Bile Broth), LSTB (Lauryl Sulfate Tryptose Broth), ECB (Escherichia Coli Broth), L-EMBA (Levine Eosin Methylene Blue Agar) MR-VP (Methyl Red-Voges Proskauer), PCA (Plate Count Agar) KCB (Koser Citrate Broth), SCA (Simmons Citrate Agar), Kovac Reagent, Voges-Proskauer Reagent (VP), BPW 0.1% (Buffered Pepton Water 0.1%) potassium chromate (K_2CrO_4) 5%, and $AgNO_3$ 0.1 N, physiological salts of 0.85% NaCl.

2.3 Research Design

This type of research is descriptive research. The survey was conducted based on the existing population. The population is the whole unit of analysis that has general observable characteristics that will be the research target. This research uses survey and experimental methods in the laboratory.

The method used in sampling was the survey method with a simple random sampling technique, namely the technique of obtaining samples directly carried out in the sampling unit. The sampling technique was carried out once for each of the salted jengki fish traders randomly at 7 traditional markets in East Denpasar District at 14:00 WITA with samples of salted anchovy jengki. A sample of 1 ounce of traders will be taken then put into a plastic container and the analysis will be carried out on the same day as the sampling. This aims to avoid changes in terms of physical, chemical, and microbiological conditions.

Based on the Slovin Formula, which is the determination of the minimum number of samples to be studied with a set margin of error of 10% (90% confidence level), the calculations are as follows:

$$n = \frac{N}{(1+(N \times e^2))}$$

Where n is the sample, N is the population and “e” is the margin of error (10%). With the Slovin formula, the minimum number of samples to be studied is 43 samples from 75 existing populations.

2.4 Research Implementation

The stages of this research consisted of surveys of anchovy salted fish traders to obtain research-related data, sampling randomly selected anchovy salted fish traders for sampling, analysis of samples in the laboratory which included: formalin analysis, moisture content, *Escherichia coli* bacteria, and Total Plate Count (TPC) as well as sensory.

2.5 Data Analysis

From the research data obtained, a descriptive analysis was carried out. The descriptive analysis carried out refers to SNI 8273-2016 concerning the quality and safety requirements of salted fish. From the results of this analysis, it is known that the safety level of the anchovies salted fish sold in East Denpasar Traditional Market in terms of chemical analysis and microbial contamination.

3. Results and Discussion

3.1 Formalin

The identification of formaldehyde was carried out qualitatively on samples of salted anchovies circulating in traditional markets in East Denpasar. The results showed that 43 samples of salted anchovies contain negative formalin.

According to [2], formalin is one of the prohibited additives for food. The use of formaldehyde in food is prohibited because it can have adverse effects on health. Previously researched the formaldehyde content of anchovies salted fish circulating in the Traditional Market of Denpasar City, the results showed that there were 7 samples or about 29.2% positive for formaldehyde out of 24 total samples of salted anchovies. identified from the Traditional Market of Denpasar City. In the results of this study, no samples of salted anchovies contain formaldehyde, this shows that there is already an awareness of the anchovies salted fish processors not to use formaldehyde as a preservative in food. The results of the formalin test can be seen in Table 1.

Table 1
Results of Testing the Formalin Levels in Salted Anchovy Jengki Circulating in East Denpasar Traditional Markets

No	Market Name	Sample Code	Test Result	Information
1	Yadnya Market	PT1	negative	MS
2	Yadnya Market	PT2	negative	MS
3	Yadnya Market	PT3	negative	MS
4	Yadnya Market	PT4	negative	MS
5	Gunung Sari Market	PT5	negative	MS
6	Gunung Sari Market	PT6	negative	MS
7	Gunung Sari Market	PT7	negative	MS
8	Gunung Sari Market	PT8	negative	MS
9	Gunung Sari Market	PT9	negative	MS
10	Gunung Sari Market	PT10	negative	MS
11	Gunung Sari Market	PT11	negative	MS
12	Kertha Sari Village Market	PT12	negative	MS
13	Kertha Sari Village Market	PT13	negative	MS
14	Kertha Sari Village Market	PT14	negative	MS
15	Tamba Market	PT15	negative	MS
16	Tamba Market	PT16	negative	MS
17	Tamba Market	PT17	negative	MS

18	Tamba Market	PT18	negative	MS
19	Tamba Market	PT19	negative	MS
20	Tamba Market	PT20	negative	MS
21	Tamba Market	PT21	negative	MS
22	Tamba Market	PT22	negative	MS
23	Tamba Market	PT23	negative	MS
24	Kerta Waringin Market	PT24	negative	MS
25	Kerta Waringin Market	PT25	negative	MS
26	Kerta Waringin Market	PT26	negative	MS
27	Kerta Waringin Market	PT27	negative	MS
28	Kerta Waringin Market	PT28	negative	MS
29	Kerta Waringin Market	PT29	negative	MS
30	Kerta Waringin Market	PT30	negative	MS
31	Kerta Waringin Market	PT31	negative	MS
32	Kerta Waringin Market	PT32	negative	MS
33	Kerta Waringin Market	PT33	negative	MS
34	Kerta Waringin Market	PT34	negative	MS
35	Kerta Waringin Market	PT35	negative	MS
36	Penatih Market	PT36	negative	MS
37	Penatih Market	PT37	negative	MS
38	Penatih Market	PT38	negative	MS
39	Penatih Market	PT39	negative	MS
40	Penatih Market	PT40	negative	MS
41	Tanjung Bungkak Market	PT41	negative	MS
42	Tanjung Bungkak Market	PT42	negative	MS
43	Tanjung Bungkak Market	PT43	negative	MS

Information : TMS (Not Eligible), MS (qualify)

3.2 Total Plate Count (TPC)

Based on the research results, the total microbes of salted anchovies were 7.0×10^1 to 1.3×10^7 colonies/ g. Based on SNI 8273-2016, the maximum total microbial content is 1.0×10^5 , this shows that there are samples of salted anchovies that do not meet the SNI can be seen in Table 2.

Table 2
TPC Test Results on Anchovies and Jengki Salted Fish Circulating in East Denpasar Traditional Market

No	Market Name	Sample Code	Test Result	Information
1	Yadnya Market	PT1	1.4×10^4	MS
2	Yadnya Market	PT2	1.4×10^3	MS
3	Yadnya Market	PT3	5.9×10^3	MS
4	Yadnya Market	PT4	5.4×10^3	MS
5	Gunung Sari Market	PT5	5.7×10^2	MS
6	Gunung Sari Market	PT6	2.3×10^3	MS
7	Gunung Sari Market	PT7	1.2×10^2	MS
8	Gunung Sari Market	PT8	1.6×10^3	MS
9	Gunung Sari Market	PT9	8.7×10^2	MS
10	Gunung Sari Market	PT10	2.9×10^3	MS
11	Gunung Sari Market	PT11	4.4×10^3	MS
12	Kertha Sari Village Market	PT12	6.6×10^3	MS
13	Kertha Sari Village Market	PT13	3.4×10^2	MS
14	Kertha Sari Village Market	PT14	2.4×10^5	TMS

15	Tamba Market	PT15	1.8×10^2	MS
16	Tamba Market	PT16	7.0×10^1	MS
17	Tamba Market	PT17	9.0×10^2	MS
18	Tamba Market	PT18	1.8×10^4	MS
19	Tamba Market	PT19	9.7×10^2	MS
20	Tamba Market	PT20	1.5×10^4	MS
21	Tamba Market	PT21	2.7×10^4	MS
22	Tamba Market	PT22	6.0×10^2	MS
23	Tamba Market	PT23	9.6×10^4	MS
24	Kerta Waringin Market	PT24	1.9×10^3	MS
25	Kerta Waringin Market	PT25	9.6×10^3	MS
26	Kerta Waringin Market	PT26	7.8×10^2	MS
27	Kerta Waringin Market	PT27	1.3×10^3	MS
28	Kerta Waringin Market	PT28	5.6×10^5	TMS
29	Kerta Waringin Market	PT29	5.6×10^3	MS
30	Kerta Waringin Market	PT30	3.6×10^3	MS
31	Kerta Waringin Market	PT31	2.6×10^6	TMS
32	Kerta Waringin Market	PT32	8.5×10^3	MS
33	Kerta Waringin Market	PT33	8.4×10^2	MS
34	Kerta Waringin Market	PT34	8.8×10^2	MS
35	Kerta Waringin Market	PT35	2.0×10^5	TMS
36	Penatih Market	PT36	2.2×10^5	TMS
37	Penatih Market	PT37	2.4×10^4	MS
38	Penatih Market	PT38	1.5×10^5	TMS
39	Penatih Market	PT39	3.4×10^5	TMS
40	Penatih Market	PT40	2.6×10^2	MS
41	Tanjung Bungkak Market	PT41	3.7×10^4	MS
42	Tanjung Bungkak Market	PT42	4.1×10^4	MS
43	Tanjung Bungkak Market	PT43	1.3×10^7	TMS

Information : TMS (Not Eligible), MS (qualify)

Based on Table 2, the results of the Total Plate Count (TPC) test on 43 samples of salted fish, there are as many as 8 samples of salted anchovies that do not meet the Indonesian National Standard. According to [3], the water content in food ingredients affects the resistance of foodstuffs to microbial attack which is expressed as a_w , namely the amount of free water that can be used by microorganisms for their growth. High water content is thought to result in high total bacteria in these foodstuffs. The microorganisms that are thought to be able to grow on anchovies are halophilic bacteria because mold, yeast, and bacteria require high a_w values for their growth.

3.3 *Escherichia coli*

The presence of *E. coli* bacteria is an indicator of food safety. *E. coli* bacteria are a group of bacteria in the form of rods, gram-negative. These bacteria are used as an indicator of the presence of pollution from animal and human waste and indicate poor sanitation of water and food or processed products. Based on Table 3 the results of testing for *E. coli* bacteria in salted anchovies, all samples do not contain *E. coli*. This is by SNI 8273-2016 *E. coli* contamination, namely <3.6 APM / g. The absence of *E. coli* in the anchovies salted fish samples sold by traders in traditional markets is thought to be due to the processing of salted anchovy fish and hygienic places of sale, and the equipment used is free from bacteria so that bacterial growth can be prevented. The presence or absence of *Escherichia coli* bacteria in anchovies can be caused by several factors, including conditions that do not support the growth of *Escherichia coli* bacteria [4].

Table 3

Testing results of e. Coli on salted anchovy jengki circulating in East Denpasar traditional market

No	Market Name	Sample Code	Test Result	Information
1	Yadnya Market	PT1	<3.6	MS
2	Yadnya Market	PT2	<3.6	MS
3	Yadnya Market	PT3	<3.6	MS
4	Yadnya Market	PT4	<3.6	MS
5	Gunung Sari Market	PT5	<3.6	MS
6	Gunung Sari Market	PT6	<3.6	MS
7	Gunung Sari Market	PT7	<3.6	MS
8	Gunung Sari Market	PT8	<3.6	MS
9	Gunung Sari Market	PT9	<3.6	MS
10	Gunung Sari Market	PT10	<3.6	MS
11	Gunung Sari Market	PT11	<3.6	MS
12	Gunung Sari Market	PT12	<3.6	MS
13	Gunung Sari Market	PT13	<3.6	MS
14	Gunung Sari Market	PT14	<3.6	MS
15	Tamba Market	PT15	<3.6	MS
16	Tamba Market	PT16	<3.6	MS
17	Tamba Market	PT17	<3.6	MS
18	Tamba Market	PT18	<3.6	MS
19	Tamba Market	PT19	<3.6	MS
20	Tamba Market	PT20	<3.6	MS
21	Tamba Market	PT21	<3.6	MS
22	Tamba Market	PT22	<3.6	MS
23	Tamba Market	PT23	<3.6	MS
24	Waringin Market	PT24	<3.6	MS
25	Waringin Market	PT25	<3.6	MS
26	Waringin Market	PT26	<3.6	MS
27	Waringin Market	PT27	<3.6	MS
28	Waringin Market	PT28	<3.6	MS
29	Waringin Market	PT29	<3.6	MS
30	Waringin Market	PT30	<3.6	MS
31	Waringin Market	PT31	<3.6	MS
32	Waringin Market	PT32	<3.6	MS
33	Waringin Market	PT33	<3.6	MS
34	Waringin Market	PT34	<3.6	MS
35	Waringin Market	PT35	<3.6	MS
36	Penatih Market	PT36	<3.6	MS
37	Penatih Market	PT37	<3.6	MS
38	Penatih Market	PT38	<3.6	MS
39	Penatih Market	PT39	<3.6	MS
40	Penatih Market	PT40	<3.6	MS
41	Tanjung Bungkak Market	PT41	<3.6	MS
42	Tanjung Bungkak Market	PT42	<3.6	MS
43	Tanjung Bungkak Market	PT43	<3.6	MS

3.4 Water Content

Based on the results of the research, the water content of the salted jengki fish samples circulating in traditional markets in East Denpasar meets SNI 8273-2016, namely a maximum of 40%. From the test results, it was found that the sample moisture content was in the range 15.346% - 23.044% in Table 4 and Figure 1.

Table 4
Results of Testing the Water Content in Salted Anchovies Jengki Circulating in East Denpasar Traditional Market

No	Market Name	Sample Code	Information
			Test result
1	Yadnya Market	PT1	17.23 MS
2	Yadnya Market	PT2	17.30 MS
3	Yadnya Market	PT3	15.34 MS
4	Yadnya Market	PT4	15.82
	Gunung Sari Market	PT5	15.77 MS
6	Gunung Sari Market	PT6	16.90 MS
7	Gunung Sari Market	PT7	18.38 MS
8	Gunung Sari Market	PT8	16.24 MS
9	Gunung Sari Market	PT9	16.34 MS
10	Gunung Sari Market	PT10	16.72 MS
11	Gunung Sari Market	PT11	23.04 MS
12	Kertha Sari Village Market	PT12	17.24 MS
13	Kertha Sari Village Market	PT13	15.83 MS
14	Kertha Sari Village Market	PT14	16.47 MS
15	Tamba Market	PT15	17.52 MS
16	Tamba Market	PT16	15.53 MS
17	Tamba Market	PT17	18.00 MS
18	Tamba Market	PT18	17.59 MS
19	Tamba Market	PT19	19.92 MS
20	Tamba Market	PT20	18.01 MS
21	Tamba Market	PT21	17.29 MS
22	Tamba Market	PT22	16.17 MS
23	Tamba Market	PT23	16.60 MS
24	Kerta Waringin Market	PT24	17.24 MS
25	Kerta Waringin Market	PT25	16.85 MS
26	Kerta Waringin Market	PT26	18.98 MS
27	Kerta Waringin Market	PT27	17.03 MS
28	Kerta Waringin Market	PT28	17.11 MS
29	Kerta Waringin Market	Market	17.63 MS
30	Kerta Waringin Market	PT30	15.83 MS
31	Kerta Waringin Market	PT31	16.33 MS
32	Kerta Waringin Market	PT32	15.43 MS
33	Kerta Waringin Market	PT33	17.12 MS
34	Kerta Waringin Market	PT34	17.14 MS
35	Kerta Waringin Market	PT35	17.71 MS
36	Penatih Market	PT36	17.46 MS
37	Penatih Market	PT37	16.93 MS
38	Penatih Market	PT38	15.99 MS
39	Penatih Market	PT39	16.30 MS
40	Penatih Market	PT40	19.25 MS
41	Tanjung Bungkak Market	PT41	15.84 MS
42	Tanjung Bungkak Market	PT42	15.87 MS
43	Tanjung Bungkak Market	PT43	18.09 MS

Information : TMS (Not Eligible), MS (qualify)

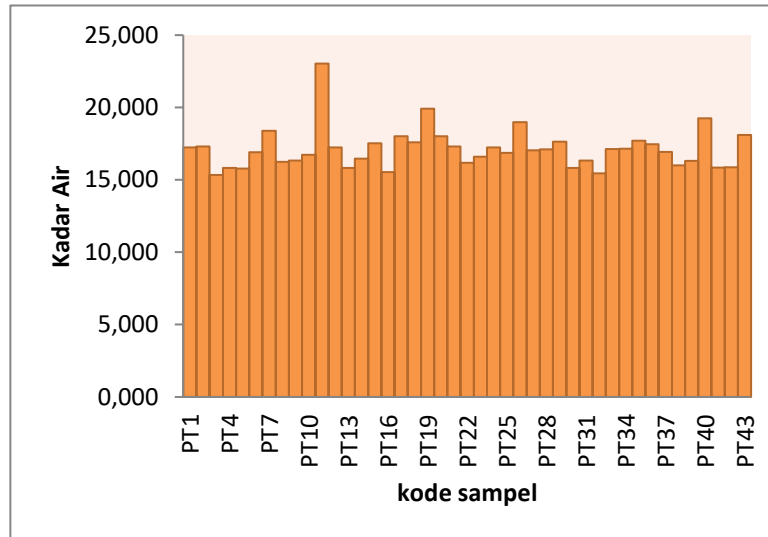


Figure 1

The water content of samples in salted anchovy jengki circulating in East Denpasar Traditional Market

The water content is influenced by the salt content during the processing of salted fish. The higher the salt content, the lower the water content in the material, this is because salt has hygroscopic properties so that it can absorb water contained in fish [5]. From the research results, the sample of salted anchovies has a water content that meets the predetermined standards. This shows that post-processing such as marketing and storage is appropriate. During storage, the anchovies are not placed in open conditions because the salt contained in the anchovies can absorb air vapor in the surrounding environment and cause high water content in the product. High water content can affect the number of microorganisms in salted fish.

3.5 Sensory Assessment

The samples of salted anchovy anchovies circulating in traditional markets in East Denpasar were also subjected to organoleptic testing with variables of appearance, smell, taste, texture, and mushroom test results can be seen in Table 5.

The organoleptic assessment aims to determine the panelist's assessment of the anchovies salted fish sample subjectively. Based on the assessment of appearance, the samples of salted anchovies received an assessment of their appearance from being dull to clean, bright, specific to species. The highest value with the sample code PT13 with a value of 8.33 is in the range 7-9. With clean specification criteria, bright to very bright, specific to type. The assessment of the dull anchovy salted fish was about 41.86% of the total sample. Anchovies salted fish that look dull is thought to be due to the unclean processing process and the presence of fungi that cause the fish to look unclean.

Based on the assessment of the smell of salted anchovies, it can be seen that the average results show a specific odor but less strong, the highest value is the sample code PT16 with a value of 8.60, which is in the range 7-9 With the criteria for the type specification is less strong to the specific type is strong. According to [6], the aroma of anchovies is the result of the activity of breaking down macromolecular compounds (proteins and fats) in fish into volatile compounds [7].

Table 5
Organoleptic Test Results (Appearance, Smell, Taste, Texture and Mushroom Presence) on Salted Jengki Anchovies Circulating in East Denpasar Traditional Market

Sample Code	Appearance	Smell	Taste	Texture	Mushrooms
PT1	5.67 ijkl	8.20 ab	8.33 ab	8.60 a	9.00 a
PT2	7.00 bcdef	7.27 cde	7.27 defg	7.67 bcd	9.00 a
PT3	6.87 cdefg	7.27 cde	7.00 fg	7.13 bcdef	5.80 bc
PT4	7.80 Ab	7.00 e	7.53 cdefg	6.87 def	7.93 ab
PT5	7.67 abc	7.00 e	7.13 efg	7.13 bcdef	5.80 bc
PT6	5.67 ijkl	7.80 bcde	7.13 efg	7.40 bcde	6.87 abc
PT7	7.80 ab	7.40 cde	7.40 cdefg	7.53 bcd	9.00 a
PT8	5.67 ijkl	7.13 de	7.27 defg	7.80 bc	6.87 abc
PT9	5.80 hijkl	7.40 cde	7.27 defg	7.00 cdef	9.00 a
PT10	6.47 efghi	8.20 ab	7.53 cdefg	7.00 cdef	8.47 a
PT11	7.00 bcdef	7.27 cde	7.13 efg	7.80 bc	6.87 abc
PT12	5.13 l	8.33 ab	7.13 efg	7.13 bcdef	9.00 a
PT13	8.33 a	7.27 cde	7.27 defg	7.40 bcde	9.00 a
PT14	7.53 bcd	7.27 cde	7.67 bcdef	7.67 bcd	9.00 a
PT15	6.87 cdefg	7.13 de	7.53 cdefg	7.53 bcd	9.00 a
PT16	5.53 jkl	8.60 a	7.80 abcde	7.00 cdef	9.00 a
PT17	5.67 ijkl	7.93 abcd	7.93 abcd	7.00 cdef	9.00 a
PT18	6.60 efgh	7.67 bcde	7.00 fg	7.27 bcdef	9.00 a
PT19	5.27 kl	7.67 bcde	7.80 abcde	7.80 bc	9.00 a
PT20	5.27 kl	7.67 bcde	8.07 abc	7.00 cdef	7.40 ab
PT21	5.27 kl	7.93 abcd	7.80 abcde	7.00 cdef	9.00 a
PT22	6.87 cdefg	7.93 abcd	7.53 cdefg	7.00 cdef	9.00 a
PT23	6.07 ghijk	8.07 abc	7.53 cdefg	7.53 bcd	9.00 a
PT24	5.40 jkl	7.40 cde	8.33 ab	6.60 ef	6.87 abc
PT25	5.13 l	7.80 bcde	7.00 fg	6.47 f	6.87 abc
PT26	6.87 cdefg	7.27 cde	7.40 cdefg	7.67 bcd	9.00 a
PT27	7.27 bcde	7.80 bcde	7.80 abcde	7.13 bcdef	9.00 a
PT28	5.67 ijkl	8.20 ab	7.80 abcde	7.00 cdef	6.87 abc
PT29	7.00 bcdef	7.00 e	7.40 cdefg	7.93 ab	9.00 a
PT30	7.53 bcd	7.67 bcde	7.27 defg	7.27 bcdef	6.87 abc
PT31	6.60 efgh	7.27 cde	7.53 cdefg	7.13 bcdef	4.73 c
PT32	6.87 cdefg	7.80 bcde	7.40 cdefg	7.53 bcd	5.80 bc
PT33	6.60 efgh	7.27 cde	7.40 cdefg	6.87 def	9.00 a
PT34	5.67 ijkl	7.93 abcd	7.40 cdefg	6.87 def	9.00 a
PT35	5.40 jkl	8.47 ab	7.93 abcd	7.80 bc	6.87 abc
PT36	5.27 kl	7.80 bcde	8.47 a	7.40 bcde	6.87 abc
PT37	5.67 ijkl	8.20 ab	7.93 abcd	7.27 bcdef	9.00 a
PT38	6.73 defg	7.67 bcde	8.07 abc	7.13 bcdef	6.87 abc
PT39	6.20 fghij	7.67 bcde	7.40 cdefg	7.00 cdef	9.00 a
PT40	5.80 hijkl	8.33 ab	6.87 g	7.53 bcd	9.00 a
PT41	6.73 defg	8.33 ab	7.40 cdefg	7.93 ab	9.00 a
PT42	6.87 cdefg	8.07 abc	8.07 abc	7.53 bcd	5.80 bc
PT43	6.20 fghij	8.20 ab	7.27 defg	7.13 bcdef	5.8 bc

Note: The average value followed by the same letter in the same column is not significantly different at the Duncan test level of 5%

The assessment of the texture of the anchovies was obtained from dry to less dry solids. The highest value with the sample code PT1 with a value of 8.60, which is in the range 7-9. With the criteria of being solid, less dry to dry. The texture of the anchovies is influenced by the water content in the fish. This is by the opinion of [5] which states that fish muscles and cells will be bound due to the release of water content in the fish body after drying and osmosis dehydration processes.

Based on the assessment by the panelists, from 43 samples of salted anchovies circulating in the East Denpasar Traditional Market, there are 55.81% of the samples that do not appear to be contaminated with mushrooms. For the assessment of mushrooms, namely values 1 and 9 with the criteria for number 1 there is no fungus and number 9 there is no fungus. According to [8], the greatest damage to salted anchovies is caused by insects, amounting to 66.67%, while those caused by fungi are 26.98%. The ease with which the salted anchovy fish is damaged by the fungus makes this product vulnerable to health hazards. if during storage it allows for mold growth, it will be damaged by these molds and will continue to increase with increasing storage time.

4. Conclusion

Research shows that 43 samples do not contain formalin. water content obtained by all samples met the requirements of SNI 8273: 2016. The results of the TPC test showed that 35 samples met the requirements and 8 samples exceeded the limits set by SNI 8273: 2016, namely the maximum limit of TPC contamination, namely 1.0×10^5 colonies/gram. E. coli testing from 43 samples fulfilled the SNI 8273: 2016 requirements, namely the maximum limit of E. coli contamination <3.6 APM / gram. From the results of the organoleptic test on appearance, smell, taste, texture, fungus, and overall acceptance, all assessments were significantly different, with the characteristics of a dull to bright clean appearance, specific to the type, specific odor but less strong, salty taste and a less specific type, dry solid texture too dense less dry.

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