



## **HAZARD ANALYSIS CRITICAL CONTROL POINT (HACCP) ON RUJAK ULEK TRADERS IN BANDAR KHALIPAH VILLAGE, DELI SERDANG DISTRICT IN 2024**

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### **Abstract**

Based on the website of the Centre for Food and Drug Policy Analysis, in Indonesia in 2023 there were 1772 incidents due to food poisoning. North Sumatra Province is the fifth highest case in Indonesia in the scope of the region due to food poisoning. Good implementation should be applied in the HACCP food management quality system. Making rujak ulek from production to the final stage to consumers allows the fruit to be contaminated with pollutants because the fruit contains almost 100% water so it is easily damaged. This study aims to identify hazards related to the process of making rujak ulek in Bandar Khalipah Village, Deli Serdang Regency in 2024. This research is qualitative type with descriptive observational method using HACCP approach. The total sample used was 32 rujak ulek traders specifically on Jalan Pasar 7, Bandar Khalipah Village. This study uses research instruments in the form of interview guidelines, observation forms and stationery. The results showed that most of the rujak ulek traders have not fulfilled Personal Hygiene, Place/Sanitation Facilities, Processing/Serving of Good Food according to the Indonesian Minister of Health No. 942/Menkes/SK/VII/2003. Based on hazard identification there are 2 potential hazards and critical control points there are 4 processes identified in the process of making rujak ulek. There are researcher recommendations for rujak ulek traders related to personal hygiene and place/sanitation infrastructure and it is recommended to develop a HACCP system.

**Keywords:** Food, Hazard Analysis Critical Control Point, Rujak Ulek

### **Introduction**

In principle, humans need and consume food that is delicious, healthy, nutritious, free from contaminants and easily absorbed and digested by the body. In addition, food has the benefit of repairing and maintaining old body tissues, as a regulator of the body's metabolic processes. Food can also be influenced by environmental factors which include physical factors, namely light, humidity, temperature, soil, water, air. Biological factors are microorganisms, animals, humans, plants. Therefore, the food/beverage to be consumed must be maintained and its quality and quantity guaranteed.

There are 31 agents including toxins, parasites, viruses, bacteria and other chemicals that cause food-borne diseases. Every year people consume contaminated food that causes illness totalling 600 million people or almost 1 in 10 people in the world. Of that, 420,000 people die, including 125,000 children less than 5 years old.

According to the website of the Centre for Food and Drug Policy Analysis, there were 1772 incidents of food poisoning in Indonesia in 2023. North Sumatra Province has the fifth highest case in Indonesia within the scope of the region due to food poisoning.

Implementation properly should have been implemented in the HACCP food management quality system. (Sandika et al., 2019) said that food safety and health that focus on hazards directly can be through the HACCP approach to assist planning and operations. In controlling health risks related to food products and as an analysis system, many institutions now choose the HACCP system (Hasibuan et al., 2020).

The making of rujak ulek is categorised as simple, but when starting from production to the final stage to consumers, it is possible that the fruit can be contaminated with pollutants, because the fruit contains almost 100% water so that this food is easily damaged. Due to microbial activity, fruit is very easy to rot and peeled fruit is very prone to contamination by microorganisms (Sofyan, 2018). For example, foodstuffs such as fruit are delivered to the point of sale, allowing contact with bacteria. Furthermore, washing fruit using non-flowing water with a place that is used repeatedly. Then, fruit that has been peeled and cut is placed in an open container which can result in contaminating the fruit with disease-causing bacteria, especially when the sales position is on the side of the road. From the initial survey conducted by researchers, most of the places selling rujak ulek in Bandar Khalipah Village are open containers.

So, from this, the formulation of the problem drawn by the researcher is to identify hazards (hazards) related to the process of making rujak ulek in Bandar Khalipah Village, Deli Serdang Regency in 2024. Therefore, researchers feel it is important and necessary to conduct research to find out the overview of the application of HACCP by rujak ulek traders in Bandar Khalipah Village.

## **Method**

This research is a qualitative type with a descriptive observational method using the HACCP approach which means explaining or describing the application of HACCP in Bandar Khalipah Village to rujak ulek traders in making food. The total sample used was 32 people aimed at rujak ulek traders specifically located on Jalan Pasar 7, Bandar Khalipah Village. This study uses research instruments in the form of interview guidelines, observation forms and stationery.

## **Results**

The results showed that most traders rujak ulek still do not meet the Personal Hygiene, facilities/sanitation, processing/presentation of Good Food . it is regulated in KEPMENKES RI No. 942 / Menkes / SK / VII / 2003. Based on hazard identification (Hazard) there are 2 potential hazards, namely in terms of biological and physical and in the critical control point there are 4 processes identified in the process of making Rujak ulek, namely the washing, stripping/cutting and laying stages, making spices and packaging.

**Table 1. Age distribution and education**

Characteristics	n	%
Ages		
26-45	14	43,8
>45	18	56,3
Education		
SD	4	12,5
SMP	13	40,6
SMA	15	46,9
Total	32	100

The results of Table 1, that the largest number of respondents was the age group > 45 years, totalling 18 people (56.3%), the age group 26-45 years, totalling 14 people (43.8%). Furthermore, the education category that the most respondents were at the high school level of 15 people (46.9%) and the least education was the elementary level of 4 people (12.5%).

### A. Interview Results on the Knowledge Level of Rujak Ulek Traders

**Table 2. Level Of Knowledge Of Traders**

Knowledge	n	%
<b>About Hazard</b>		
Knowing	-	-
Not Knowing	32	100
<b>Mencuci Tangan</b>		
Good	12	37,5
Less Good	20	63,5
<b>Use Of Water In Washing Tools/Materials</b>		
Good	9	28,1
Less Good	23	71,9
<b>Container Benefits</b>		
Good	18	56,3
Less Good	14	43,8
<b>Food Presentation</b>		
Good	12	37,5
Less Good	20	62,5
<b>Total</b>	<b>32</b>	<b>100</b>

From the results of table 2, it is known that knowledge about hazards (hazards) that all 32 respondents (100%) do not know, washing hands is less good, namely 20 people (63.5%), the use of water in washing tools / materials is categorised as less good, amounting to 23 people (71.9%), about the benefits of containers is categorised as good, amounting to 18 people (56.3%), about the presentation of food is categorised as less good amounting to 20 people (62.5%).

### B. Observation Results

**Table 3. Observations on Personal Hygiene, sanitation facilities, food processing / presentation at Rujak Ulek traders**

Observation Results	n	%
<b>Personal Hygiene</b>		
Good	5	15,6
Less Good	27	84,4
<b>Sanitation Facilities / Places</b>		
Good	1	31,1
Less Good	31	96,9
<b>Food Processing / Serving</b>		

Good	9	28,1
Less Good	23	71,9
<b>Total</b>	<b>32</b>	<b>100</b>

Based on the results of observations by researchers on 32 rujak ulek traders in Bandar Khalipah Village presented in table 3 that, the level of personal hygiene is less good as many as 27 people (84.4%), sanitation facilities / places are less good as many as 31 people (96.9%), food processing / serving are less good as 23 people (71.9%).

**Table 4. Identification Of Hazards In Making Rujak Ulek**

Hazard Identification	Potential Hazards	Description
1 Fruit Washing	Biology	Water contamination from washing fruit with repeatedly used storage water Contamination of hands, because traders do not use gloves
	Physical	Dust pollutants, smoke, insect vector due to activities carried out in the open roadside
	Chemistry	Nothing
2 Stripping Cutting, Fruit Laying	Biology	Contamination of traders ' hands Fruit cutting places that are not very clean Fruit containers that have been cut are only open nets
	Physical	Dust pollutants, smoke, insect vector due to activities carried out in the open roadside
	Chemistry	Nothing
3 Making Spices Ulek	Biology	The mill is used repeatedly without rinsing the water first, and only covered using a cover not tight after use Less clean seasoning grinding Area
	Physical	Dust pollutants, smoke, insect vector due to activities carried out in the open roadside
	Chemistry	Nothing
4 Packaging	Biology	Contamination of traders ' hands by not using gloves
	Physical	Dust pollutants, smoke, insect vector due to activities carried out in the open roadside
	Chemistry	Nothing

The results of Table 4, show that based on the identification of hazards there are 4 identifications obtained, namely the process of washing fruit, stripping/cutting/laying fruit, making spices and fruit packaging. It is identified based on potential hazards i.e. biological, physical and chemical. In making rujak ulek, there are 2 potential dangers, namely biological potential and physical potential.

**Table 5. Critical limits set on the CCP**

Types Of Hazards	CCP	Critical Limits
Physical hazards in the form of dust fumes and insects that can spread bacteria	At the stage of washing, stripping, cutting, laying, seasoning making, packaging	Use of sealed containers, curtain / protective steling glass.
Biological hazards in the form of contamination of processed food by contamination of the hands of traders and water	At the stage of washing, stripping, cutting, laying, seasoning making, packaging	Using protective hygiene traders such as headgear, gloves, and masks the availability of running water.

The results of table 5, the set critical limits based on the results of the Critical Control Point are Use of sealed containers, curtain / protective steling glass and Using protective hygiene traders such as headgear, gloves, and masks the availability of running water.

## **Dicussion**

### **Observation Results**

#### **1. Personal Hygiene**

Based on table 3, researchers in 32 traders found that 27 respondents were categorised with poor personal hygiene. And 5 respondents have been categorised with good personal hygiene, which can be seen in terms of washing hands before processing ulek salad, using clean and appropriate tools / containers in serving food, and also seen from the neat and clean clothes of traders. Meanwhile, 27 traders are categorised as less good.

This is not in accordance with the fact that the food handlers must meet the requirements in accordance with the Indonesian Minister of Health No. 942 / Menkes / SK / VII / 2003 in chapter II article 2, namely; using headgear and aprons, always paying attention to the cleanliness of nails, hair, hands as well as clothing, washing hands with soap when handling drinks / food and not having infectious diseases.

Food handlers must maintain their personal hygiene. Safe and healthy food is obtained from the personal hygiene of good traders. Every trader must pay attention to keeping their clothes clean and neat and wash their hands before processing the food. In Bandar Khalipah Village, out of 32 rujak ulek traders, 5 have met the requirements and 27 others have not met the requirements in accordance with the Indonesian Minister of Health Decree No. 942/Menkes/SK/VII/2003.

#### **2. Sanitation Facilities/Places**

Judging from table 3, it was found that 31 respondents were categorised as having poor sanitation/place facilities and 1 respondent was categorised as good. Based on the results of the researcher's observations, it can be seen that the location of the rujak ulek sales place is near the edge of the highway with a selling place that does not have a steling glass cover as a protection from contamination of smoke pollutants, dust, and other contaminants. Then seen from the washing place that has no running water and only a barrel with water used repeatedly and the amount is limited, the trash can used by traders is only a plastic without a lid and is near the food processing location.

Garbage bins should be covered and lined with plastic so as not to invite disease vectors such as flies and create odours. Flies are disease vectors that carry bacteria on their legs and bodies. This causes food that is infested with flies to be contaminated. Also, the presence of flies can look unclean and disturb the comfort.

Trader infrastructure must be created and adjusted to protect the food sold from contamination (Kepmenkes No. 942/Menkes/SK/VII/2002 chapter V article 12). The intended infrastructure is to fulfil health requirements such as the availability of clean water, there is a storage area for food tools / materials, a place to wash food ingredients / tools, a trash can and a place that is easy to clean. Food that is sold means that the food must.

It can be seen that the sanitation facilities of rujak ulek traders who trade in Bandar Khalipah Village have not fulfilled the Indonesian Minister of Health Decree No. 942 / Menkes / SK / VII / 2003 concerning sanitary hygiene requirements.

### **3. Food Processing/Serving**

From the results of table 3, 23 respondents were categorised as poor in processing/serving food. This can be seen from traders who do not use gloves and the water used to wash hands is used repeatedly.

Based on research (Sandika & Mulasari, 2019) washing hands before handling food is an important thing to do. Although it looks like an easy activity and is often ignored, it has been proven to be effective in preventing food contamination, washing hands using soap and then rinsing can remove microorganisms in the hands because rubbing soap which is then flowed with water can drain substances that contain microbes. If the trader's hands are not clean and then come into contact with food, it can contaminate the food because the microorganisms in the hands are transferred to the food.

The results of the researchers' observations, traders in serving food did not use gloves, and put the fruit that had been cut in open jarring-netting containers so that it could result in pollutants because the sales location was near the roadside, traders who served food must pay attention to the equipment used was clean and in good condition, and pay attention to food so as not to be contaminated either directly or indirectly, and traders always maintain personal hygiene as well (Sabarguna, 2015) This is not in accordance with the Indonesian Minister of Health No. 942 / Menkes / SK / VII / 2003 that serving food must avoid pollution, closed and clean which aims to prevent contamination. 942/Menkes/SK/VII/2003 that serving food must avoid pollution, closed and clean which aims to prevent contamination.

#### **Identification of Critical Control Points in the Making of Rujak Ulek**

Judging from the Critical Control Point Identification, there are 4 processes that have Critical Control Points, namely:

1. Fruit washing process. In this process there is a potential hazard because it uses storage water used repeatedly. Traders come into direct contact with the fruit without using gloves, which can cause the fruit to be contaminated with bacteria. Then, the washing place is located in an open space, which is located next to the highway, it causes a lot of smoke and dust from vehicles passing by and there are insects flies.
2. Peeling, cutting, and laying fruit. In this process, there are also potential hazards due to the open space and insect vectors because the fruit peel waste is located close to the sales area and is contaminated by road pollution because the fruit is placed in open mesh containers.
3. Preparation of seasoning. This process is also carried out in an open space and is potentially exposed to pollution and vector insects. Seasoning grinding tools are used repeatedly without rinsing with clean water before reuse, which can lead to significant bacterial growth.
4. Packaging, In this packaging process, traders do not use gloves and come into direct contact with the fruit. This causes the fruit to be contaminated with bacteria coming from the hands of the trader as well as the packaging process in an open place directly adjacent to the nets.

#### **The critical limit set at the Critical Control Point**

There are recommendations submitted by researchers to traders rujak ulek in the village of Bandar Khalipah, among others

- a. Recommendations related to Trader hygiene To avoid contamination or unwanted contamination, it is recommended that traders use head coverings as a protector of processed food from hair, masks and gloves so that food is not contaminated.
- b. Recommended places / facilities It is recommended to traders to modify the place to sell using closed carts / stelling or having protective glassfg to prevent pollution due to pollutants and microorganisms and in the process of processing Rujak ulek food using clean running water. In

addition, the fruit peel bins are not placed too close to the place of making Rujak ulek so as not to invite fly vectors to contaminate food.

## Conclusion

During the stage of the process of making Rujak ulek starting from washing, stripping, cutting, laying, seasoning, packaging, there are 2 types of potential hazards, namely biological and physical hazards. This is viewed in terms of biological, physical, and chemical hazards. From the identification of Critical Control Point, that there are 4 processes that have a Critical Control Point, namely; washing, stripping, cutting, laying, making spices, packaging In producing healthy and safe products for consumption, it is recommended to develop an HACCP system related to personal hygiene of traders and recommendations on infrastructure and sanitation.

## References

- [1] Hasibuan, N. E., Azka, A., & Rohaini, A. E. (2020). Penerapan Hazard Analysis Critical Control Point (Haccp) Tuna (*Thunnus Sp.*) Loin Beku Di Pt. Tridaya Eramina Bahari. *Aurelia Journal*, 2(1), 53.
- [2] Irwan, J., Virginia, A., Gerti, D., Fidelia, J., Reynaldo, K., & Adi, Y. W. (2019). *Penerapan Hazard Analysis Critical Control Point ( HACCP ) pada Produksi Penerapan Hazard Analysis Critical Control Point ( HACCP ) pada Produksi Brownies UMKM 3 Sekawan Cake and Bakery*. May.
- [3] J., Wahyuni, S., Yuliana, L., Purba, F., Balikpapan, U., & Makanan, P. (2023). *Analisis Penerapan Hazard Analysis And Critical Control Point ( Haccp ) Pada Produksi Makanan Di Cv Nikmat*. 9(1).
- [4] Pratidina, G. E., Santoso, H., & Prastawa, H. (2018). Perancangan Sistem Hazard Analysis Critical Control Point (HACCP) dan Sistem Jaminan Halal di UD Kerupuk Ikan Tenggiri Dua Ikan Jepara. *Industrial Engineering Online Journal*, 7(4).
- [5] Sandika, Y., Asti Mulasari, S., Kesehatan Masyarakat, F., & Ahmad Dahlan Yogyakarta, U. (2019). Hubungan antara Higiene Sanitasi Pedagang dengan Keberadaan Bakteri *Escherichia Coli* pada Milkshake. *Jurnal Fakultas Kesehatan Masyarakat*, 13(1), 30–36.
- [6] Sari, L., Nugroho, S. D., & Yuliati, N. (2022). Penerapan Hazard Analysis Critical Control Point pada Proses Produksi Udang Cooked Peeled Tail On Di PT. X. *Technomedia Journal*, 7(3), 381–398.
- [7] T., & Kristiningrum, E. (2019). Pengembangan Desain Sistem Keamanan Pangan Menggunakan Hazard Analysis Critical Control Point (Haccp) Pada Ukm Produsen Nugget Ikan. *Jurnal Standardisasi*, 21(1), 1.
- [8] Sofyan, A. (2018). Upaya Peningkatan Mutu Produk Rujak Buah (Lotis) Pedagang Kaki Lima Di Pabelan Kartasura. *Warta LPM*, 21(2), 40–48.
- [9] Sulemi, S. (2022). *Hazard Analysis Critical Control Point ( Haccp ) Pada Pedagang Es Tebu Di Jalan Datuk Setia Maharaja Pekanbaru Tahun 2020 terkontaminasi oleh bakteri patogen . Salah satu daerah yang ada di pekanbaru khususnya di Jalan*. 1(1), 55–75.
- [10] Azlia, W., & Sari, R. A. (2015). *Penerapan Sistem Hazard Analysis Critical Control Point ( Haccp ) Pada Proses*. 167, 86–95.