

The Microbiological Study: Blowing on the Hot Food

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Abstract. Background: Blew hot food and drink before eaten has become the culture in the community, especially when the mothers feed their baby. Although their purpose is to prevent the food and drink to be more cool down before eaten, but another side the treatment blow food can have the effect of the movement of the micro-organisms that exist in the mouth to the food and drink that they blown. The food is one of the best facilities in the growth of microorganisms that can be a place of diseases because the food contaminated by microorganisms that comes from the mouth of the human, there are many microbes and influenced by the health of the body. Purpose: to know the difference between the number of microorganisms on the hot food that is blown and not blown. Method: Experimental research Completely Randomized Design with 2 treatments, there are blown and not blown samples. The calculation of the number of microbes directly using the tool of a colony counter. Result: there is a significant difference ($p \leq 0.05$) between blown and not blown samples, the number of microbes in the blown samples greater than not blown samples. Conclusion: there is a significant difference in the number of microorganisms between the blown and not blown.

Key Words: *Blow the hot food, microorganisms, microbiology*

1. Background

Eating and drinking is a primary human activity to be able to do the daily work. There is a habit that occurred in the community, namely they blow hot food or drinks before consumption. It is provided in a preliminary study conducted on 30 students of UNIDA Gontor found 86.67% blowing hot food and drinks before being consumed.

According to microbiological perspective, food is the best media for the development of several types of microorganisms.¹ And the mouth is one of the many contain microorganisms that can be released through the air from the mouth with the blowing or sneezing and coughing.³ Air from mouth that contains microorganisms can be bound and dissolved in the food and beverages that blown. Although not all microorganisms harmful to humanity, some microorganisms can cause disease or produce toxins in the foods that can cause poisoning and disease.² The mouth is also one of the entrance of microorganisms into the human body through the food diet.³

This study aims to find out whether there is a difference in the number of and count the number of microorganisms in the hot food and drink that have been blown and not blown

2. Method

2.1, *Design place and time*

The design of this study is an experimental study using a completely randomized design (CRD) with two treatments, namely P1 which treated with blown air from the mouth for 15 seconds; P2 is a media that is not blown only opened for 15 seconds. This research was carried out in the Laboratory of Nutrition Microbiology, Faculty of Health, University of Darussalam Gontor.

2.2. The Procedures

The material used in this study is to use media NA (Nutrients Agar). The first stage is to make the media samples NA for two groups, each made *duplo*. The next phase of the Media NA ready for the given preferential treatment P1 blown for 15 seconds and P2 not blown (only opened for 15 seconds). The third phase of the incubation microorganisms during 12-24 hours in the incubator at a temperature 37°C. The final stage of the count the number of microorganisms by using the *total colony counter*.

2.3 Counting of Microorganisms

The calculation of the number of microorganisms using the calculation of the *Total plate Count* using the tool of *colony counter*. The calculation of the number of colonies of microorganisms aimed to determine the amount of germs in groups in the media that was blown and not blown.

3. The Results

The results of the calculation of the number of colonies of microorganisms contained in the Petri dish media NA after 12 and 24-hour observation there are in the table below:

Table 1. Number of Microorganisms P1 and P 2

Observation media	12 hours observation	24 hours observation	P*
P1 (blown)	130 colonies	137 colonies	0,001
P2(not blown)	13 colonies	21 colonies	

*t test

Table 1, it shows that the number of the colony on the media NA blown greater than not blown either at 12 hours or 24 hours. And statistical test results using the *unpaired t-test*, there was a significant difference ($p < 0.05$) the number of colonies between NA media blown and not blown.

The results of the calculation of the number of colonies and statistical test found that blew the hot food and drinks can increase the number of microorganisms in the food that to be eaten, because each of the air out from the mouth contains many oral micro-organisms that will integrate with food and drink that was blown. Microorganisms that contaminate the food causes the food changes, like chemical change and microbiological change so the food cannot be eaten or even toxic.⁴

Oral cavity is a place for the growth of bacteria when the immune system of the body decreases, bacteria oral cavity which is not harmful can be changed to pathogens that can cause infection.⁵ On the surface of the teeth that is not clean, bleeding gums, or salivary gland there are no less than 100 million bacteria per millimeter.⁶ If the health of the oral cavity did not kept, then the remaining food in the mouth of the cavity left behind can cause the growth of bacteria, because some pieces of food are a good nutrition for bacteria,¹ if the mouth shall be filled with bacteria that will contaminate the food and drink exposed to the air that comes out of the mouth.

The oral Microbiome is a collection of (colony) microorganisms that live in the mouth, including bacteria, viruses and fungi.⁷ The surface of the oral cavity contains many microbiome. Caries dentist is a disease that is common in the mouth because the colonization of microorganisms. Caries dentist occur because the layer growth caused by *streptococcus mutans* and other *Streptococcus* species on the surface of the teeth. Bacteria such as *Streptococcus mutans* is one that infects the oral cavity causing caries dentist. The oral cavity is a member of the body has many of the colonies of micro-organisms.⁸ *Staphylococcus Aureus* is a bacteria that can produce *enterotoxin* that could contaminated the food source. The venom produced can damage the wall of the small intestine and cause the secretion of intestinal network.⁸ So it can be very dangerous if a mother has caries dentist to feed her baby with blow food before given to the baby.

4. Conclusion

There is a significant differences in the number of microorganisms in hot food that was blown and not blown. The number of microorganisms on the hot food that is blown greater than not blown.

5. References

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