

I. INTRODUCTION

1.1 Background

"Dadih" is one of the traditional fermented milk foods in Indonesia that originates from West Sumatra. Dadih has the potential as a functional food source of natural probiotics, and its processing uses naturally fermented buffalo milk in bamboo for 2x24 hours. The natural fermentation process involves various types of microorganisms found on the surface of the bamboo.

As a functional food, the milk fat in dadih will transform into fatty acids, which can lower the serum cholesterol level through emulsification in the blood. Meanwhile, the milk protein itself in the form of casein, which is often labeled as an allergen trigger, can be hydrolyzed into amino acids that are more easily absorbed by the body through fermentation. There are many advantages to dadih compared to its raw material, as dadih is a natural food made from fresh milk that is not cooked. Dadih still contains various minerals, vitamins (A, B2, B12), as well as indigenous enzymes and milk probiotics (Czermak 1993, Nurmiati 2007).

The function of probiotics is basically to support digestive health. Some of the recognized benefits include improving lactose digestion, reducing diarrhea, and, most importantly, reducing the enzymes that trigger colon cancer and stimulating the immune system (Henkenjohann and Muermann, 1998). In addition, they can be an alternative solution for certain diseases such as cancer, coronary heart disease, Alzheimer's, diabetes, neurodermatitis, autism, irritable bowel syndrome, and even Down syndrome (Brudnak, 2003). Pato (2003) also reported that consuming dadih or products containing lactic acid bacteria has the potential to prevent colon cancer.

Various types of fermented foods generally contain lactic acid. High-quality dadih is white in color, has a soft texture resembling yogurt, and has a characteristic sour milk aroma (Nurmiati, 2006). Meanwhile, milk contains protein in the form of casein, which is often labeled as an allergen trigger. After undergoing the fermentation process, it will transform into amino acids that are

more easily absorbed by the body. There are many advantages to *dadih* compared to its raw material, as *dadih* is a natural food made from fresh milk that is not cooked (Nurmiati, 2007).

According to Pato (2003), consuming *dadih* or products containing lactic acid bacteria (BAL) from *dadih* may prevent colon cancer. This is possibly due to the ability of BAL in *dadih* to reduce and inhibit mutagenicity caused by food. The mechanism of the antimutagenic effect occurs because of the interaction between mutagens or carcinogens and the peptidoglycan present in the cell wall of BAL in *dadih*. Mutagens and carcinogens influenced by these bacteria will be excreted through feces and urine.

In addition, the community believes that *dadih* can cure diseases such as fever, lack of appetite, and improve fertility (Sisriyenni and Zurriyati 2004). *Dadih* contains BAL that is potentially a probiotic, living microorganisms that attach to the intestinal wall and are beneficial to the life and health of the host (Salminen et al. 1999). BAL has a beneficial effect on health because the produced metabolites can inhibit pathogenic bacteria, lower cholesterol, have antimutagenic, anticarcinogenic, and anti-vaginitis properties, improve the immune system, prevent production, and produce vitamin B and bacteriocins (Pato 2003; Suryono 2003; Sari 2007). According to Rusfidra (2006), BAL and its derivatives can prevent various diseases such as preventing enteric pathogenic bacteria, lowering cholesterol levels in the blood, preventing colon cancer, antimutagenic, anticarcinogenic, and improving the body's immune system. In addition, *dadih* is suspected to be effective as an antivaginitis.

Probiotics are live microbes attached to the gut wall that are beneficial to the health of their host. The term probiotic refers to a food supplement containing live microbes that benefit the host by improving the microbial balance in the gut. Several studies have been conducted to isolate probiotic bacteria. Suyanto and Takarina in Khotimah and Kusnadi (2013) stated that probiotics consisting of cultures of *Bacillus* sp. and *Nitrobacter* sp. Both Lactic Acid Bacteria (LAB) can be utilized in the manufacture of fermented beverages, which are drinks that contain live microbes and provide beneficial effects for humans by improving the

balance of digestive microbes. The application of probiotics is very important and at present research studies on probiotics are being vigorously conducted.

Due to the many benefits and importance of dadih as a functional food, and now that it is rarely found and needs to be preserved, research is needed to observe the natural microflora in dadih.

1.2 Problem Formulation

Based on the background above, the research questions can be formulated as follows::

1. What is the presence of natural microflora (bacteria, yeast, molds) in dadih products from market in Solok?
2. What is the proportion of fermentative bacteria (acidifiers and protein hydrolyzers) in dadih products from markets in Solok?
3. Belonging to group lactic/acetate acid bacteria present and analyze the in vitro potential of fermentative bacteria in dadih products from markets in Solok?
4. What is the presence of pathogenic bacteria in dadih products from market in solok?

1.3 Research Objective

Based on the above problem formulation, the objectives of this research are:

1. To determine the percentage of natural microflora (bacteria, yeast, mold) in dadih products from markets in Solok
2. To calculate the proportional presence of fermentative bacteria (acidifiers) in dadih products from markets in Solok.
3. To identify the type of bacteria (lactic acid/acetate) in dadih products and analyze the in vitro potential of fermentative bacteria from markets in Solok
4. To determine the presence of pathogenic bacteria in dadih product from markets in Solok?

1.4 Benefits of the research

This research can be useful in providing information about the types of microbes in dadih, obtaining potential bacterial isolates in dadih fermentation so as to improve dadih production. This research can serve as a reference for future research on fermented food such as dadih. The results of this research are expected to provide scientific information to the community for the benefit of dadih as a functional food that contains probiotics

