Abstract - Cow milk is a kind of nutritious food that is easy to be contaminated by bacteria. The classic cow milk preservatives methods are heating and cooling in order to get rid of milk spoilage by milk pathogenic microorganisms for safety of consumer. Some of food-borne pathogenic bacteria in milk have extraordinary ability to survive, grow, and proliferate in these classic preservation methods. Based on that reason, a new choice of milk preservation method by using the natural edible antibiotic might be an alternative way to solve this problem.

Three local herbs; *Chrysanthemum indicum*, *Centella asiatica*, and *Andrographis paniculata*, are chosen in this study for their antibacterial activity on bacteria in cow milk. All of the herbs are extracted by soaking the dried ones in 95% ethanol, getting the liquid part only, dried it in water bath until it becomes slurry, and diluted it for 10 mg/ml in 95% ethanol. The extracted herbs are then added to cow milk.

*Chrysanthemum indicum*, *Centella asiatica*, and *Andrographis paniculata* contain many bioactive compounds that have antibacterial activity. *C. indicum* has flavonoid that can kill *Escherichia coli* and *Staphylococcus aureus*, *C. asiatica* contains triterpenoid acids for the most bioactive compound inside that can kill *Staphylococcus aureus*, *Escherichia coli*, and *Salmonella*, and andrographolide is the main contain of *A. Paniculata* that can kill so many bacteria. All of the three herbs extract also can reduce the amount of *Lysteria monocytogenes* and *Bacillus cereus* in milk.

Many lower-middle class communities in Indonesia take advantage from cow milk as their income source. The small traders put value added to cow milk by process the cow milk in sachet and then sell it to family or children as end customers. The processing costs will be cheaper if the traders can process in many sachets, but the barrier is the short shelf life because undesirable bacteria infect the milk. Some traders face lost because of this short shelf life. The advantage of this treatment for cow milk is to extend its shelf life as an inventory, thus can minimize the processing costs. Aim of this study is to compare the effectiveness of antibacterial activity among these three herbs and extend the shelf life and decrease the production cost of cow milk.

Keywords - *Andrographis paniculata*, antibiotic, *Centella asiatica*, *Chrysanthemum indicum*, cow milk, herbs, shelf life

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