THE EFFECT OF COOKING METHODS TO THE EXISTENCE OF 
Bacillus sp. SPORES IN BEEF

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ABSTRACT

The aim of this research was to determine the existence of Bacillus sp. spores in beef after being given the cooking methods. This research used posttest-only control group design by using four treatments and five repetitions. This research used 50 grams of beef obtained from traditional market in Sedati, Sidoarjo and given 1 ml of Bacillus sp. spore solution according to 0.5 McFarland standards. The kind of treatments were steaming, grilling, frying, and using autoclave. The result showed that cooking method by steaming, grilling, and frying could not kill Bacillus sp. spores in beef. This was proven by the growth of Bacillus sp. colonies in Nutrient Agar (NA) taken aseptically from the beef sample after being treated. The characteristic were large size, flat, uneven edges, and give a distinctive smell of sour smell, also showed rod-shaped and spores form in the microscopic examination by spore staining test. Nonetheless, the cooking method by using autoclave could kill Bacillus sp. spores in beef. This was proven by there were no Bacillus sp. growth in Nutrient Agar (NA). Based on those results, it could be concluded that autoclave is effective to kill Bacillus sp. spores in beef because autoclave is using high temperature and high pressure. The results were analyzed by Chi Square test with SPSS version 20 for Windows.

Keywords: cooking method, Bacillus sp. spores, beef