

**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