Sowvakon Tuanted 2008: Effect of Thermal and pH Inactivation on Spores of *Bacillus cereus* and *Clostridium sporogenes* in Boiled Bamboo Shoots in Plastic Bag. Master of Science (Microbiology), Major Field: Microbiology, Department of Microbiology. Thesis Advisor: Associate Professor Kooranee Tuitemwong, Ph.D. 120 pages.

The objective of this study was to investigate combination effects of heating and pH on the inactivation of *Bacillus cereus* and *Clostridium sporogenes* spores in boiled Gamble bamboo shoots, *Thysostachys siamensis*, in plastic bags commonly practiced in Kanjanaburi province. Decimal reduction time (D) and thermal death time (TDT) values were determined from bamboo shoots treated by pH adjustment with acid (A), core temperature (CT90/95^{o}C), diameter of the shoots (Small 1.8-2.4 cm., and Big 2.9-3.5 cm.) and with low (10^{4} /ml) and high (10^{8} /ml) spore loads. Small diameter bamboo shoots had a shorter core temperature come up time than the bigger size. Citric acid at 0.3% by weight could adjust the pH of the shoots to acidic condition, lower than 4.5. *Bacillus cerues* and *Clostridium sporogenes* spores tended to decrease greater with the combination of heat and acid adjustment than those with only heat treatment. The D and TDT values of *Bacillus cerues* spores of S-A-CT90 and S-A-CT95 bamboo shoot were 7.66±0.58 and 62.66±2.08 min and 6.17±0.76 and 50±5.29 min for 90 and 95 ^{o}C, respectively. The growth of microorganisms was undetectable after incubation of the product at 37 ^{o}C and 55 ^{o}C for 2 and 1 week, respectively. The recommendation to produce safe boiled bamboo shoots (5D) was adjusting the pH with 0.3% citric acid and placed in boiling water for not less than 40 min to get the core temperature of 90 ^{o}C or higher.

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