肉糜的电位水杀菌工艺与机理 Electrolyzed Potential Water Sterilizing Technics and Mechanism on Pork Stuffing

任占冬 朱玉婵 刘晔 张智勇 张奇

武汉工业学院

关键词： 酸性氧化电位水 碱性还原电位水 肉糜 杀菌工艺 杀菌机理

摘 要： 研究了4种单独杀菌工艺和2种组合杀菌工艺。结果表明，在肉水质量比为1∶4时，酸性氧化电位水表面处理工艺对肉糜的杀灭对数值为2.72lg CFU/g，酸性氧化电位水表面处理+碱性还原电位水混合处理的杀菌对数值为3.14lg CFU/g。随着酸性氧化电位水用量增加，2种工艺的杀菌效果均提高；酸性氧化电位水和肉糜接触1min后氧化电位值迅速由1132mV降至935mV，有效氯由78.60mg/L降至47.35mg/L。另外，酸性氧化电位水对肉糜有很好的抑菌作用。通过研究酸性氧化电位水、碱性还原电位水、HCl、NaOH和NaClO对大肠杆菌和枯草杆菌黑色变种芽孢悬液的杀菌效果表明，酸性氧化电位水杀菌效率最高，电位水中有效的杀菌因素是有效氯和氧化还原电位值。 Four kinds of single sterilizing technics and two kinds of combined sterilizing technics were investigated for inactivating bacteria in the pork stuffing by electrolyzed oxidizing water (EOW) and electrolyzed reductive water (ERW). When the weight ratio of pork to EOW is 1∶4 before stuffing preparation, the reduction of bacteria population in pork stuffing reaches 2.72lg CFU/g by process of EOW surface sterilizing, and 3.14lg CFU/g by process of EOW surface sterilizing combined with (ERW) mix sterilizing, respectively. With increase in the weight ratio of pork to EOW, the sterilizing effect can be improved. In addition, the value of oxidation reductive potential (ORP) and available chlorine content (ACC) quickly decline in the contacting process between EOW and pork stuffing. And the ORP value decreased from 1132mV to 935mV and the ACC value decreased from 78.60mg/L to 47.35mg/L after 1 min. The results also show that EOW has a good restraining effect on bacteria in the pork stuffing. At last, the sterilizing effect of EOW, ERW, HCl, NaOH and NaClO on Escherichia coli and Bacillus subtilis var. niger were all studied, which demonstrates that EOW has the best sterilizing effect and the most effect sterilizing factor is ACC and ORP.

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