真空包装冷却猪肉低剂量辐照后的理化和感官特性变化

Changes in physicochemical and sensory characteristics of vacuum-packaged chilled pork irradiated at low-dose gamma ray

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中文摘要：

研究真空包装冷却猪肉经保鲜液处理或未经保鲜液处理，再分别经0 kGy、0.5 kGy、1 kGy和2 kGy低剂量辐照后的理化和感官特性变化，进而确定最佳的辐照处理方式以延长冷却猪肉的货架期。结果表明：经2 kGy辐照的真空包装冷却猪肉在(3±1)℃下贮存21 d时，TVB-N值、TBARS值和汁液流失率分别为20.17 mg/(100 g)、0.347 mg/kg、9.69%；而同样条件下，冷却猪肉首先用保鲜液处理，再经2 kGy辐照，其TVB-N值、TBARS值和汁液流失率分别为17.43 mg/(100 g)、0.237 mg/kg和9.18%。试验说明保鲜液处理可以在一定程度上提高辐照效果。在本试验设定的辐照剂量范围内，随着辐照剂量的增加，冷却猪肉的色泽逐渐变红，当辐照剂量达到2 kGy时，冷却猪肉的色泽达到最佳的鲜红状态，而且在贮存过程中鲜红色泽始终保持稳定，但其TBA值比对照组高($\alpha<0.05$)，不过大大小于1.0 mg/kg的脂肪氧化酸败临界范围值。冷却猪肉经过保鲜液处理+真空包装+2 kGy剂量辐照+冷藏，可以最大程度地延长冷却猪肉的货架期。

英文摘要：

The effects of chilled pork treated with or without preservative solution, irradiation dose (0, 0.5, 1.0 and 2.0 kGy) on the physicochemical and sensory characteristics of vacuum-packaged chilled pork stored at (3±1)℃ for 21 days were studied, in order to determine the best method of irradiation to extend shelf life of chilled pork. The results show: the values of TVB-N, TBARS and drop loss of vacuum-packaged chilled pork treated with preservative solutions and 2.0 kGy irradiation were 20.17 mg·(100 g)$^{-1}$, 0.347 mg·kg^{-1} and 9.69%, respectively and that of the same condition but untreated with preservative solutions were 17.43 mg·(100 g)$^{-1}$, 0.237 mg·kg^{-1} and 9.18%, respectively. The color of chilled pork in our experiment was changed redder as the X-ray dose increased, and it became the bright red when the X-ray was 2 kGy. This chilled pork color is stable in the storage-life, but its TBA value is higher than that of the compared group($\alpha<0.05$), still far smaller than critical value of 1.0 mg·kg^{-1} spoilage of oxidized fat. The best method that can extremely extend shelf life of chilled pork is that the samples are treated with preservation solution, vacuum-package, 2.0 kGy irradiation and refrigeration.

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