

## 冷却牦牛分割肉酶嫩化技术研究

### Tenderizing technology for chilled cut yak meat by fermentation

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中文摘要:

牦牛肉色泽鲜红, 风味纯正, 营养丰富, 但肌纤维较粗, 易出现“冷收缩”现象, 使质地坚硬, 嫩度下降。为提高冷却牦牛肉的嫩度, 改善肉质, 该研究将木瓜蛋白酶用于冷却牦牛分割肉嫩化, 通过 $L_9(3^4)$ 正交试验选择出最佳嫩化工艺参数, 即酶浓度9 mg/kg, 处理温度15℃, 处理时间3 h。采用注射嫩化法, 真空包装、急速冷却后在0~4℃条件下贮藏。结果表明, 木瓜蛋白酶可明显提高肉的嫩度, 使剪切力值(48.44 N/cm<sup>2</sup>、肌纤维直径(8.03 μm)、失水率(5.91%)下降, 口感改善, 对冷却肉的贮藏性无影响(0~4℃, 9 d), 操作方法简单, 成本低, 适合工厂化生产, 实用性强。

英文摘要:

Yak meat characterized by its bright red color and luster, its purity of flavor and its rich nutrition. Yet its muscle fibre is very thick, and “cold shrink” phenomenon makes its texture hard, and the degree of tenderness is lower. In order to improve both the tenderness of chilled cut yak meat and its quality, the present study applied a tenderizing treatment to chilled cut yak meat with papain. Using  $L_9(3^4)$  orthogonal experiment design, a series of the best tenderization technical parameters were selected: the concentration of papain is 9 mg/kg, the reaction temperature is 15℃, the reaction time is 3 h. After tenderizing, vacuum packaging and quick chilling, meat is preserved at 0~4℃. The results showed that papain can decrease the shearing force (48.44 N/cm<sup>2</sup>), the diameter of muscle fiber(8.03 μm), and the rate of water loss(5.91%). It also improves the taste and does not affect its shelf life(0~4℃, 9 d). These processes are simple and inexpensive and can be applied to industrialized production.

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