

Effect of marinating temperatures on physical changes of traditionally marinated beef satay.

ABSTRACT

The effects of marination on weight gain was studied by seasoning tender block cuts of beef chuck in satay marinades at two temperatures to emulate household practices of marination process. Marinating at 4C gave a higher total weight gain, 17.05% compared to only 7.74% for marination at 25C. The weight gain reached its maximum after 2 h, and thereafter stabilized. The two models describing the weight gain as a function of marinating time, $y = 3\ln x + 12.5$ and $y = 13.5x^{0.15}$, had a R² of 0.825 and 0.797, respectively. In predicting meat tenderness using the Warner-Bratzler shear force values, a strong positive correlation with the cooking loss ($P < 0.01$) and a negative correlation with the weight gain ($P < 0.05$) illustrated the importance of cooking loss or water enhancement in affecting tenderness of cooked beef.

Keyword: Marinating; Weight gain; Cooking loss; WBSF; Temperature; Beef satay.