# 面条复合改良剂用量的响应面法优化 Optimization of Improvers for Noodles Production Using Response Surface Methodology

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关键词： 瓜尔豆胶 磷酸酯淀粉 三聚磷酸钠 面条 响应面法

摘 要： 选取瓜尔豆胶、磷酸酯淀粉及三聚磷酸钠为自变量，面条弹性和韧性为响应值，采用 Box-Behnken 设计的方法，研究各自变量及其交互作用对面条弹性和韧性的影响。利用响应面分析方法模拟得到弹性和韧性二次多项式回归方程的预测模型，确定面条改良剂的最佳添加量（质量分数）为：瓜尔豆胶0.70 %，磷酸酯淀粉5.50%，三聚磷酸钠0.15%，此时面条的韧性为790.71 g?mm，弹性为38.18 g。 The effects of noodle improvers, composed of guar gum, starch phosphate ester, and trimeric sodium phosphate, on the toughness and springiness of the noodle were investigated with response surface methodology. The mathematical model was obtained and the optimum ratio of noodle improvers was: guar gum 0.7%, starch phosphate ester 5.50%, trimeric sodium phosphate 0.15%. Under these conditions, the toughness and springiness of the noodle were 790.71g?mm and 38.18 g, respectively.

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