

生物化学工程与技术

## 高密度二氧化碳技术对牛奶杀菌效果动力学分析

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摘要

关键词 [高密度二氧化碳技术](#) [牛奶](#) [杀菌效果](#) [动力学分析](#)

分类号

## Inactivation kinetics of total bacteria counts in milk exposed to dense phase carbon dioxide

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### Abstract

Inactivation kinetics of total bacteria counts in the milk exposed to dense phase carbon dioxide (DPCD) was investigated. Stronger inactivation of total bacteria counts was achieved at higher pressure and exposure time ( $p < 0.05$ ). Treatment temperature had synergistic effects with pressure and exposure time on the inactivation of total bacteria counts, and  $\lg(N/N_0)$  significantly decreased when increasing the temperature ( $p < 0.05$ ). The maximum reduction was 5.082-log at 30 MPa and 50°C for 70 min. The survival curves of total bacteria counts in the milk against pressure or temperature were fitted by the Weibull model with high regression coefficients, and model parameters,  $a$  value (scale factor) and  $b$  value (shape factor) changed regularly with increasing pressure or temperature.

**Key words** [dense phase carbon dioxide](#) [milk](#) [inactivation](#) [kinetic analysis](#)

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