

传递现象

## 葡萄酒胶发酵中的内热源和传热特性

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摘要

葡萄酒发酵过程放热量大, 控温发酵是高品质葡萄酒酿造中的一项主要技术措施。对葡萄酒发酵过程的放热特性进行了实验研究, 首先在没有加入温控的情况下, 进行红葡萄酒胶的自然发酵实验, 得到其产生热量的变化关系, 即确定发酵过程中变化的内热源项。然后进行控温发酵实验, 考虑其发酵内热源项, 进行了非稳态传热分析, 获得了发酵过程中温度分布的表达式, 并对发酵过程中温度分布进行了数值计算, 与实验结果吻合较好。

关键词

[发酵](#) [内热源](#) [非稳态传热](#)

分类号

## Inner heat source and heat transfer in wine fermentation

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### Abstract

Wine fermentation has a large amount of heat release in the fermentation course. One of the most important measures is to control the temperature effectively to get high quality wine. In this study, an experimental study of the heat characteristics in wine fermentation was made. Firstly, wild fermentation without temperature control was observed, and the heat release of wine fermentation was investigated. This heat release was defined as the inner heat source of wine fermentation. Then, the experiment with temperature control was made. With the consideration of the inner heat source investigated formerly, the unsteady heat transfer was analyzed, and the expression of temperature distributions for wine fermentation was obtained. The results from computer calculation agreed with the experimental results.

### Key words

[fermentation](#) [inner heat source](#) [unsteady heat transfer](#)

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