

菜心真空预冷效果的试验研究

Effect of vacuum precooling for flowering Chinese cabbage

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中文摘要:

为进一步探讨叶菜真空预冷效果, 采用实际生产使用的真空预冷设备对菜心进行小批量的真空预冷试验, 考察了预冷过程中菜心的质量损失、温度随时间的变化情况及相互关系, 以及真空预冷对菜心品质的影响。结果表明: 小批量(120 kg/次)菜心真空预冷过程只需15 min, 平均质量损失率为2.3%; 冷却阶段的质量损失随预冷时间延长、物料温度降低而增大; 菜心茎、叶冷却速度有明显差异, 冷却均匀性稍差; 经真空预冷处理后贮藏的菜心呼吸强度明显减弱, 外观品质下降缓慢, 贮藏寿命延长, 维生素C含量有所减少。菜心对真空预冷有良好的适应性。

英文摘要:

A vacuum pre-cooling installation applied in practice was used to study the vacuum pre-cooling process of flowering Chinese cabbage on small batch. An on-line computer measuring system was particularly developed for the test. The variation of mass loss ratio, the temperature of cabbage with precooling time, and the effect of vacuum precooling on its storage quality were investigated. The results showed that the time required for vacuum precooling process on small batch was about 15 minutes, and the mass loss increased with precooling time increase and cabbage temperature decrease during the cooling process, and there were different cooling rates between the stems and leaves of the plants. After the treatment of vacuum precooling, the respiration rate reduced significantly, and the apparent quality declined slowly, with a longer storage life, about 2.3% loss in mass and a bit loss in Vitamin C. Flowering Chinese cabbage was adaptable to the cooling treatment of vacuum precooling.

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