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纳他霉素复合涂膜剂对葡萄保鲜效果的影响

Effects of natamycin coating compounds on fresh-keeping of grape during storage

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中文摘要:

为了探讨不同浓度的纳他霉素复合壳聚糖涂膜处理对葡萄果实采后的保鲜效果及其作用机制,该文以“红地球”葡萄为试材,在0℃冷藏条件下,分别用蒸馏水(CK1)、1%壳聚糖(CK2)、0.20%、0.40%、0.60%的纳他霉素复合1%壳聚糖对采后果实进行了涂膜处理,并定期对各项生理生化指标进行了测定。结果表明:纳他霉素复合壳聚糖涂膜剂能显著抑制红地球葡萄的腐烂率,与对照(CK1、CK2)相比,处理组果实的总酚含量能维持在较高的水平。不同浓度的纳他霉素壳聚糖复合涂膜液均能增强果实苯丙氨酸解氨酶(PAL)的活性,抑制多酚氧化酶(PPO)活性和丙二醛(MDA)的含量的上升,同时提高果实超氧化物歧化酶(SOD)、过氧化物酶(POD)的活性。其中,0.40%的纳他霉素壳聚糖复合保鲜液对葡萄果实的保鲜效果最佳,在0℃条件下冷藏120d后,果实的腐烂率仅为8.52%。同时,该复合涂膜剂能通过调控葡萄果实的呼吸作用等过程明显延缓采后果实的衰老,延长果实的贮藏时间。该文为葡萄保鲜提供新方法。

英文摘要:

In order to investigate the physiological mechanisms of natamycin combined with chitosan coating compounds on fresh-keeping of red-globe grape, 1% chitosan combined with 0.20%, 0.40%, 0.60% concentration of natamycin respectively was used to be coated on red-globe grape, which was compared with untreated control and the sample was coated with 1% chitosan in cool storage conditions. The results showed that the decay rate of the grapes in the treatment groups reduced. Coating fusion liquid with different concentration of natamycin and 1% chitosan could increase the activity of the phenylalanine ammonia-lyase (PAL) and the MDA contents, with the polyphenol oxidase (PPO) activities of red-globe grape restrained. Meanwhile, the activities of superoxide dismutase (SOD) and peroxidase (POD) increased. Coating fusion liquid with 0.40% natamycin and 1% chitosan had better effect on the storage of the red-globe grape, and the decay rate is only 8.52% after 120 days in cool storage. Meantime, the compounds maintained the low activities of respiratory intensity, delayed the senescence and softening of fruit, and prolonged the storage time of the red-grape fruit. This paper provides a new method for fresh-keeping of grape.

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