EFFECT OF POLYAMINES ON POSTHARVEST LEMON QUALITY

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ABSTRACT

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Inexpensive treatments that improve the shelf life of stored lemons and reduce economic loss are needed. The efficacy of polyamines compared to GA$_3$ combined with 2,4-D to maintain lemon fruit quality was quantified. Fruit from three orchards were treated by submersion in spermidine or spermine (100 mg·L$^{-1}$) for 2 or 6 mins. All fruit were waxed [Stay Fresh 705 with Imazilil (IMZ), Freshguard 2000 ppm]. Control fruit were treated with wax + IMZ or wax + IMZ + GA$_3$ (50 ppm) + 2,4-D (225 ppm). After 8 weeks of storage (12 °C), percent juice, total soluble solids and total acidity of spermine-treated fruit were equal to fruit treated with GA$_3$ + 2,4-D. Fruit treated with spermidine (6 mins), spermine (2 mins), or GA$_3$ + 2,4-D had equal weight loss over 8 weeks. All treatments had equally low decay for 8 weeks; all polyamine-treated fruit had less decay at week 10. With the exception of not delaying peel or button color development, fruit treated with spermine for 2 mins were equal in all quality parameters to GA$_3$ + 2,4-D-treated fruit. Spermine could prove a cost-effective alternative to 2,4-D.