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有孔および無孔ポリエチレン包装によるハウス栽培 ‘刀根早生’ 果実の軟化抑制技術の開発

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Inhibition of Fruit Softening in Forcing-cultured ‘Tonewase’ Japanese Persimmon by Packaging in Perforated and Non-perforated Polyethylene Bags.

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摘 要

有孔ポリ包装によるハウス栽培 ‘刀根早生’ 果実のCTSD法による脱渋処理後の軟化抑制技術の実用化を目的として、有孔と密封包装の比較を行うとともに、有孔包装の適正な開孔率と包装による蒸散抑制が必要な工程および期間について検討した。

1. 無包装果実では、収穫後エチレン生成の増加に伴い多数の軟化果実が発生した。有孔、密封のいずれの包装区でもエチレン生成および軟化果実の発生が抑制された。その抑制効果は、有孔ポリ袋区よりも密封区で、密封区でもポリ袋の厚さが厚いほど大きかった。

2. 包装後、果実の脱渋進行は、有孔区や針孔区では無包装区と同様に脱渋処理後3日にほぼ完了していたが、密封区では脱渋処理後7日でも渋味が残存した。

3. 収穫後6時間以上無包装期間があると、有孔ポリ包装による軟化抑制効果を著しく損なうこと

から、収穫直後から消費に至るまで一貫したポリ包装の実施が推奨される。

Summary

To establish an optimum postharvest handling technique to reduce loss during transportation and marketing due to softening of CTSD (Constant Temperature and Short Duration) -treated forcing-cultured 'Tonewase' Japanese persimmon (*Diospyros kaki* Thunb.), the effect of packaging in polyethylene bags was studied.

1. Whether perforated or not, packaging of 'Tonewase' persimmons in polyethylene bags significantly suppressed fruit softening and weight loss. Fruit maintained their firmness longest in non-perforated bag with 0.1mm thick film. The difference in the shelf-life between perforated and non-perforated bags was within several days.

2. A slight induction of ethylene production was observed at the end of the CO₂ treatment. The rate of ethylene production in unpackaged (control) fruit increased immediately after the end of the CO₂ treatment, and resulted in rapid softening; fruit packaged in perforated or pin-holed polyethylene bags evolved a trace level of ethylene without a significant change in softening for 10 days.

3. Astringency in the fruit packaged in perforated or pin-holed polyethylene bags was completely removed within 3 days after CO₂ treatment, whereas a significant level of soluble tannin remained in the fruit sealed in the non-perforated polyethylene bag 7 days after CO₂ treatment.

4. Because a 6-hr delay in packaging in perforated polyethylene bag after harvest eliminated the beneficial effects of the packaging, we recommend that fruit be packaged immediately after harvest to maximize the shelf-life of 'Tonewase' fruit.

Key Words : fruit softening, packaging, persimmon, removal of astringency, shelf-life.

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