J.Japan. Soc. Hort. Sci. 81:11-18. 2012.

Relationships between Surface Blushing and Qualitative Components of Japanese Apricot (*Prunus mume* Sieb. et Zucc.) 'Nanko' Fruit

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Abstruct

The relationships between surface blushing and the content of qualitative components of the Japanese apricot 'Nanko' fruit were investigated. Brightly blushed fruit covering over 25% of its surface had higher levels of citric acid, phenolics, and antioxidant activity in its flesh than non-blushed fruit. Shading apricot fruit from ultraviolet (UV) light for about 3 weeks before harvest produced a clear decrease in surface blushing, phenolic content, and antioxidant activity. UV-B irradiation for 12 h to the inner canopy fruit 10 days before harvest resulted in blushing and increased the antioxidant activity. These results showed that brightly blushed fruit was rich in phenolics and antioxidant activity and that UV light played an important role in blushing, phenolic content, and antioxidant activity in the Japanese apricot 'Nanko' fruit. When fruit shaded from sunlight was exposed to sunlight for about 3 weeks before harvest by cutting off the shoot with leaves around the fruit to increase UV irradiation, surface blushing was caused, and the phenolic content and antioxidant activity in flesh were increased. On the other hand, placing reflecting films under the outer canopy for 40 days had no effect on the development of the bright red color.

ウメ‘南高’果実の果実表面の紅色着色と品質成分および抗酸化能との関係を調査した．果実表面の25%以上鮮明に紅色を帯びた果実は，紅色を帯びていない果実に比べて果皮を含む果肉のクエン酸含量，ポリフェノール含量，抗酸化能が高かった．収穫前の3週間程度果実への紫外光を遮断すると紅色がほとんど発現せず，ポリフェノール含量，抗酸化能は大幅に低下した．また，収穫10日前にUV-Bを12時間樹冠内部の果実に照射すると紅色が発現し，抗酸化能が高まった．これらのことから，紅色着色したウメ‘南高’果実はポリフェノール含量が多く，抗酸化能が大きいことが明らかとなり，果実の紅色着色やポリフェノール量には紫外光が重要な働きをすることが明らかとなった．紫外光を含む光環境改善のため，果実周辺の枝葉を切除して3週間程度日光を当てると，紅色着色，ポリフェノール含量，抗酸化能が増加した．一方，樹冠外周部下に反射マルチを敷設して40日間反射光を当てても鮮明には着色しなかった．

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[a] 現在：経営支援課