

Research on Preventing Sunburn Damages on the Cladodes of Pitaya by Shading Treatments

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Abstract

With the aim of preventing the sunburn damages on the cladodes of red-fleshed 'Da Hong' pitaya, the effect of two shade net (65% black shade net and 35% white shade net) on the cladodes temperature, sunburn level and fruit quality was studied. This experiment was conducted with 60 cm wide shade nets to create the 'partial day shading', and no shading as a control. The results indicated 65% black shade net could significantly reduce surface temperature and total sunburn percentage of cladodes. In answering how these sunburn damages on cladode affected fruit qualities, we compared the fruit's qualities between different cladodes damage level. The result suggested that the higher sunburn damage level will significantly reduce the fruit weight and total soluble solids content, and with no effects on total titratable acidity and pulp percentage. There were no significant different of the fruit qualities on normal cladodes (without sunburn symptom) between different shading treatments. The findings of this study showed the partial day shading environment creating by 60 cm wide shade net could reduce sunburn damages on cladodes and bring a better fruit quality.

Keywords: Pitaya · Cladodes · Temperature · Solar radiation · Sunburn · Shade net · Fruit quality

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