

## **Use of a Fan and Pad Evaporative Cooling System Made of Shading Nets in Indoor Pepper Production**

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### **Abstract**

A fan and pad evaporative cooling system based on sprinklers and black shading nets was evaluated during the 2007/8 growing season (third season) in a greenhouse planted with pepper at the Zohar Research Station in Sodom Valley. A cooling system made of four nets, which were tightly bound together with the weave facing outward to slow the falling water and increase the cooling efficiency, was installed in the greenhouse. In this experiment, pepper plants (cultivars Celica, 7187, Copla, Sairus, 35131 and 117) were transplanted in the greenhouse on 15 August 2007. Pole trellising was used. Harvesting began on 25 November 2007. There was significant early-ripening of export-quality fruit under the conditions prevailing in Sodom Valley. The red cultivars, Celica, 7187 and Sairus, yielded 2.4 kg/m<sup>2</sup> of export-quality fruit in November and December. The yellow, early-ripening cultivar 117 yielded 3.5 kg/m<sup>2</sup> of export-quality fruit. Of the red cultivars, cv. Copla excelled in the production of fruit that was suitable for export even after a storage period. The quality of the fruit produced by cv. Sairus was particularly low, with an overall quality score of 0.5 as compared to the other red cultivars. The yellow cultivar 117 scored very well in terms of fruit quality following storage. The transplanting date used in this study was particularly early (15 August), as compared to the standard local practice. Local pepper crops are generally transplanted into walk-in tunnels during the first and second weeks of September, with the first harvest taking place in late December or early January. These results indicate the potential that a fan and pad evaporative cooling system made of sprinklers and nets holds for those interested in early transplanting in Sodom Valley and marketing fruit beginning in November, as is standard for the central Arava.