

Hanging Baskets of Petunias Increase Revenue in High Tunnel Tomato Production

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Abstract

High tunnels offer a vertical production environment that is often not fully utilized by vegetable growers in the Northeast U.S. Hanging baskets of petunias (*Petunia* × *hybrid* ‘Shock Wave’) were grown above an in-ground tomato crop (*Solanum lycopersicon* ‘BHN 589’) in a 445.9 m² high tunnel in 2010 for evaluation of impact on Photosynthetic Active Radiation (PAR), yield in the tomato understory, and economic performance. Baskets were hung in two blocks of densities of 1.5 square meters per basket (high density) and 3 square meters per basket (low density). A 44.6 m² portion of the tunnel was left without baskets as a control. Tomatoes grown without any baskets overhead (control) gave a mean yield of 11.17 kg per plant compared to 10.97 kg per plant for those with a low density of baskets and 11.34 kg per plant under the high density; differences were not significant. The baskets received an average price of \$8.09 at wholesale auction, netting \$3.50/basket. Hanging petunia baskets would give a net return of \$525 per 445.9 m² tunnel at the low density or \$1,050 at the high density. PAR was measured ($\mu\text{mol m}^{-2} \text{s}^{-1}$) with a quantum meter from one random flagged location under the baskets in each block, as well as the control, and outside of the high tunnel, weekly. Season long PAR values were not significantly different, although the differences between treatments increased over time, with high density baskets reducing PAR compared to low density and control blocks. Thus the production of hanging baskets above a tomato crop increased the net return of the tunnel without negatively affecting tomato yield. However, the potential spread of insects and diseases between the flowers and vegetables make this a high risk endeavor for commercial vegetable growers.