

# Early-season strawberry tested in high elevation conditions

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In response to increased awareness generated by the expanding local foods movement, demand for fresh strawberries has increased throughout the United States. The fresh market strawberry industry in the U.S. flourishes in California and Florida -- states with ideal weather conditions and long growing seasons. Even with challenging growing conditions, small-scale strawberry production operations succeed in other areas of the country, particularly near urban areas where local produce commands premium prices at market.

Ideal growing conditions for strawberries occur when temperatures are 20-26°C. Suboptimal temperatures (less than 20°C) slow the growth and development of both the strawberry plant and fruit, whereas superoptimal temperatures (above 35°C) cause the strawberry plant to stop growing altogether. Coastal regions in southern California provide growers with ideal conditions from spring to fall, while growers in central Florida benefit from mild conditions throughout the winter. New research from scientists at Utah State University may provide strawberry producers in other parts of the country with methods to extend [growing seasons](#) in less-than-perfect climates.

Daniel Rowley, Brent L. Black, Dillon Feuz, and Dan Drost researched the use of high tunnels to extend the strawberry season in the Intermountain West region of the United States. According to the scientists, conditions in the high-elevation valleys of the Intermountain West are particularly challenging for strawberry production, where early spring temperatures are suboptimal and transition rapidly to summer

temperatures that are typically superoptimal. The researchers investigated the use of high tunnels to extend the season for June-bearing strawberries in Utah. The report was published in *HortScience*.

The research design included a fall-planted annual hill system and vertical growing systems in two different orientations. Optimum planting dates for each system were determined by transplanting 'Chandler' [strawberry](#) plugs at 2-week intervals over 10 weeks. A field planting experiment was added in the second year of the study. Strawberries grown in high tunnels began production 4 to 5 weeks before outdoor production, with higher total seasonal production. Results showed that, over two seasons, the optimum planting dates were approximately the first week of September.

"Both out-of-season yields and greater total seasonal production contributed to the economic benefits of the tunnel system", said Black. "The production window for the in-ground high tunnel planting was approximately 4 weeks earlier than the field-grown plants and increased profitability by \$13/m<sup>2</sup> of tunnel area. With the increased total yields, and with the early yields sold at a 50% price premium, a 4.3 m x 29.3-m high tunnel using the in-ground production system would generate an additional \$2,770 in revenue compared with field production."

The researchers added that, after accounting for the costs of building and managing the high tunnel, and the additional cost of harvesting the fruit, the net income increase would be \$1,658 for a 4.3 x 29.3-m area, or \$13.16/m<sup>2</sup>. "This research supports the use of high tunnels as an effective and economical system for extending the growing season for strawberries in the Intermountain West region in the [United States](#)", Black concluded.

**More information:** [hortsci.ashspublications.org/c ... /abstract/45/10/1464](http://hortsci.ashspublications.org/c.../abstract/45/10/1464)

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