

Effective season extension technologies identified for strawberry production

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Fruit growers in the U.S. Intermountain West (the region including the states of Montana, Utah, Idaho, Wyoming, and Colorado) are faced with challenges that include decreased agricultural land availability, harsh climatic conditions, and significant competition from both domestic production and imports. In order to keep fruit production viable in the region, growers need to adopt strategies that minimize these challenges. The authors of a new report have identified production technologies that can extend the growing season for strawberry crops and result in higher net incomes for growers.

Tiffany Maughan, Kynda Curtis, Brent Black and Daniel Drost, scientists from Utah State University, designed a study to find ways for strawberry producers to extend the growing season and meet consumer demand for locally grown fruit. The team's research study was published in the March 2015 issue of *HortScience*. "The production window for field-grown strawberries in the northern Intermountain West extends from late May to early July," noted corresponding author Kynda Curtis. "As a result of climatic challenges, year-round fresh fruit production is often cost-prohibitive and requires use of additional technology. Using season extension methods to combat [climatic conditions](#) may be effective, but generally increases production costs."

During the study, the scientists evaluated three season extension methods: high tunnel, low tunnel, and supplemental heating, and applied an economic evaluation of the costs and returns to each of the three methods. They collected data across three years of trials on annual hill

strawberry production systems at the Utah State University Greenville Research Farm. "We developed costs and returns for one high tunnel production system and then compared with a high tunnel plus low tunnel system and an in-ground supplemental heating with a high tunnel plus low tunnel system," Curtis explained. Strawberry cultivars Seascape and Chandler were compared during the study.

"Overall, the three season extension methods increased yields and advanced the season, and, therefore, [net income](#) to strawberry production in the Intermountain West region," the authors said. "Our results showed that the high tunnel only system is a profitable method of producing strawberries in the region when sold through direct market outlets with an estimated net income per 29 m high tunnel of \$1943.57. Price premiums of \$3.30/kg for fruit harvested before the typical strawberry season contribute significantly to this profitability."

Results of the economic evaluation showed that the addition of low tunnels to a high tunnel was profitable for "Seascape" but not "Chandler". The authors said that the use of a high tunnel plus low tunnel combination may be justified, depending on cultivar and year.

Analyses also indicated that adding low tunnels and supplemental heating at both 7 degrees Celsius and 15 degrees Celsius could further increase net income, although the increase varied by cultivar.

"The study found that season extension technologies can successfully increase net returns to strawberry production through early and increased yields, when strawberries are sold primarily through local direct markets," the researchers wrote. "Evaluating the returns to each system will assist growers in making informed decisions regarding investment in higher-input systems."

More information: The complete study and abstract are available on

the ASHS *HortScience* electronic journal website:
[hortsci.ashspublications.org/c ... nt/50/3/395.abstract](http://hortsci.ashspublications.org/content/50/3/395.abstract)

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