High Tunnel Production of Organic Strawberry: Effects of Fertilization Management on Three Cultivars.

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Background:

High tunnel production is gaining in popularity in Eastern Canada to extend the harvesting season until October, increase yield, limit pathogen damage, and improve the quality of fruit and vegetables. However, very little research has been conducted to evaluate the season extension benefits and profitability offered by high tunnels for organic fruits. Actually, the fresh market for organic fruits is dominated by the United States in states such as California where ideal growing conditions occur during a long period of the year.

Project Overview:

Hence, the purpose of this study was to develop an organic growing system under high tunnels for day-neutral strawberry cultivars. To test the effect of fertilization and soil management on different cultivars, a split-plot experiment in four replicates was performed at Les Fraises de l'Île d'Orléans (St-Laurent d'Orléans, QC). Specifically, the effects of two fertilization regimes combined with two organic growing medium (main plots: 1- organic liquid fertilisation with an organic growing media; 2- organic solid and liquid fertilisation with an organic growing media; 3- conventional nutrient solution with an organic growing media; 4- conventional nutrient solution with a conventional growing media) and three cultivars (sub-plots; Seascape, Charlotte et Monterey) on soil mineral content, plant growth, yield and fruit quality were determined. Plants were transplanted in 3-liter containers, and watered with a drip irrigation system.

Conclusions:

Fertilization and growing media treatments had, in general, no significant effect on the total yield and fruit size. The harvesting period under high tunnels was extended by 4 weeks compared to the field crop. Under the organic and conventional regimes, the productivity of Seascape was 40% higher than Charlotte. Fruit dry matter of Charlotte was, however, lower under the organic regime compared to the conventional control. Results will also be discussed in term of nutrient availability as well as the profitability of this alternative growing system for organic strawberry.

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