


**"Ohio Strawberries at Thanksgiving and Christmas:
Extending Harvest from 6 weeks to 6 Months in Ohio Using
Climate Modification Strategies**

Southwest Ohio Specialty Crops School
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Brad Bergefurd, Horticulture Specialist
OSU South Centers
Dr. Chieri Kubota
Professor – OSU Controlled Environment
Agriculture

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Ohio is a Traditional Matted Row Production State

Been a very good system for generations of farmers & made lots of \$
~ Harvest Memorial Day to July 20th

Researchers and farmers are adopting protected culture, plasticulture strawberry techniques, market extension techniques (floating row covers, low & high tunnels and greenhouses) to extend the marketing season



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Strawberry Fruiting Habits

- *June-bearing- initiate flowers under short day conditions in the fall.
- *The flowers open the following spring and produce fruit for about a 4 to 6 week period in Ohio June to July.
- *Everbearing initiate flowers under long day conditions and generally produce a crop in the spring with a more substantial crop in the summer and fall.

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Strawberry Fruiting Habits

Day-Neutral strawberries produce flowers regardless of day length, as long as temperatures are between 40 and 85° F (Hancock and Handley, 1998).

In many production systems, Day-Neutral and everbearing strawberries show similar production patterns and these names are sometimes used interchangeably

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Strawberry Fruiting Habits

- *The easiest way to extend the strawberry harvest season is through variety selection .
- *In Ohio most of the strawberry cultivars grown are June-bearing
- *In Ohio June-bearers form flower buds during the short days of fall, and these buds complete their development and bloom the following spring.

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Profits Influenced by # viable blossoms



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Day Neutral Strawberry

With the recent release of new day neutral cultivars, we have the potential of providing fresh strawberries for 4 to 6 months instead of 1 month for short day-length varieties.

Although day neutrals have been considered best for cooler climates, success is being observed from the Carolinas into Canada.

The best production systems are still a work in progress.

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Strawberry Fruiting Habits

*Day-neutral strawberries differ from June-bearing in that they flower and fruit continuously when temperatures are moderate because they are insensitive to day length.

*Most day-neutrals grow well in the temperature range 40°F and 85°F. Temperatures lower or higher than these limits will cause the plants to slow or stop flowering and growing.

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Day Neutral Strawberry

Day-neutrals are sensitive to extreme heat, our hot summers may be a limiting factor.

Overhead irrigation can be used to cool the plants during high heat periods.

Harvest should start one to two weeks ahead of short day-length strawberries.

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Day Neutral Strawberry

*Day-neutrals prefer the same soil and sites as June bearing cultivars.

*Can plant in early spring, at the same time as June-bearing cultivars.

*Can be planted in plasticulture system.

*Raised beds provide higher spring soil temperatures and better drainage, allowing faster establishment and earlier harvest.

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In Season Double Cropping of Day Neutrals

The previous year's fall planting will provide an early spring crop.
Harvest should start one to two weeks ahead of short day-length strawberries.
Manage through spring harvest same as plasticulture crop.
Renovation is required to get a summer and fall crop.

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Summer/Fall Production Mid July through November 1 (cooler summers best)

To renovate, mow, clip or cut off excess plant debris as soon as short day-length crop (matted row) starts to produce.

Continue to N fertigate according to weekly petiole sap analysis results.

Note: SEASCAPE does not respond as well as ALBION or SAN ANDREAS to renovation.

While the short day-length plants are producing, the renovated plants are rejuvenating and will be producing 3 to 4 weeks later after the short day-length and matted row varieties are finished.

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Renovation of San Andreas begins immediately after final harvest 6/20



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Moderate day-neutral San Andreas variety harvest begins 7/15/15



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How can we make more \$? High tunnel? Greenhouse?

Troughs?
Gutters?
Table tops?



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Fresh Ohio Strawberries at Thanksgiving and Christmas?

*Dr. Chieri Kubota, Mark Kroggel (HCS Dept.) and Brad Bergefurd (Extension) are conducting research at both the Piketon and Columbus OSU campuses thanks to the support from the Ohio Department of Agriculture Specialty Crop Block Grant.

*Goal is to increase Ohio fresh strawberry production during higher market price periods using a new substrate-based table-top production system within high tunnel and greenhouse.

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A soilless substrate-based production system

*This soilless substrate-based production system has been adopted by growers in countries such as Australia, Belgium, Japan, Korea and the Netherlands and other Northern European where it is used widely.

*The system was recently introduced in strawberry production in California and Ontario, Canada in order to mitigate issues of soil-borne disease, drought, as well as labor shortages.

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*Growing gutters were placed on the table-top system within a 1536 sq. ft. research high tunnel located on the Piketon campus July and August.

*Clean substrate cubes (growing media), that eliminates the need for soil fumigants, was used allowing for more highly managed irrigation, nutrient delivery as well as discharge for improved yield and quality.



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Meteor Growing Systems



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Growing Gutters

- Made of top-quality strip steel and protected by multiple layers of coating.
- Depending on your situation, we can roll form growing gutters on site or deliver them from our factory in individual parts.



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Drain Trays

The drain water is collected in drain channels in the gutter and in an end drain tray at the end of the gutter. Meteor Systems has a drain tray to fit every type of gutter. These trays are attached to the gutters with a watertight seal.



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*Bare-root Chandler and Camarosa cultivars were obtained in June and grown as plugs with substrate. Plugs were conditioned for flower bud initiation in August and planted on September 15th.



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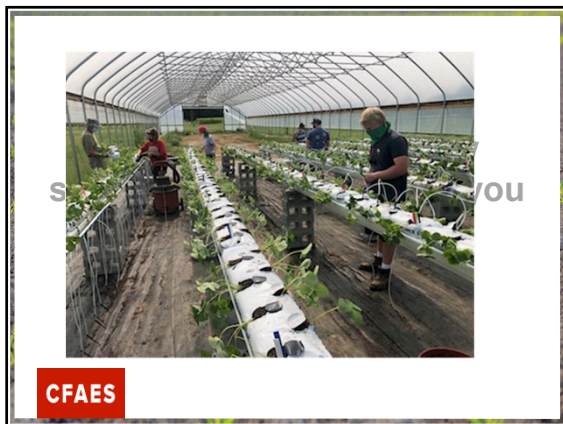
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*Harvested and collected growth data the week of Christmas, plants were renovated and freeze blankets applied to provide overwintering protection.

*Spring harvest is expected beginning in April and ending in June.

*This new high-tunnel system looks promising stay tuned.

*THANKS USDA/ OHIO Specialty Crop Block Grant for funding



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*THANKS USDA/ Ohio Specialty Crop Block Grant for funding this research.

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**Full research reports,
assistance and production
information**

<p>Dr. Chieri Kubota Professor - Controlled Environment Agriculture kubota.10@osu.edu http://u.osu.edu/cepptlab/ https://www.facebook.com/CEPP TLAB (614) 292-3175</p>	<p>Brad Bergefurd Horticulture Educator OSU South Centers 1864 Shyville Road Piketon, Ohio 45661 1-800-860-7232 ext 136 Bergefurd.1@osu.edu www.southcenters.osu.edu</p>
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ANY QUESTIONS?



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