

Organic Raspberry Production Under High Tunnels

Posted on [May 23, 2022](#) by [ONOrganic](#)

Excerpt from original post in the Ontario Berry Grower newsletter in May, 2014 by Eric Hanson – Department of Horticulture/Michigan State University.

We started a project in 2009 to develop production recommendations for organic raspberry and sweet cherry production under high tunnels. The cherry work is headed by Greg Lang. Others involved in the project are John Biernbaum, Dan Brainard and Adam Montri (Horticulture), Rufus Isaacs and Matt Grieshop (Entomology), Annemiek Schilder (Plant, Soil and Microbial Science) and Vicki Morrone (Community Sustainability). The work is being conducted on the MSU campus in a 1.1 acre range of nine 26 x 200 foot interconnected tunnels (Haygrove Tunnels Ltd.) on a Spinks sandy loam soil. Three bays each are devoted to raspberries, sweet cherries, and mixed plantings of raspberries and sweet cherries. The raspberry bays were planted in 2010, each with a row of the varieties Himbo Top, Joan J and Polka. Tunnels are covered each year with Luminence THB poly from May through October.

Initial efforts in raspberries targeted fertility management approaches. We compared early spring applications of dairy manure-based compost and McGeary Organics 8-1-1 fertilizer, each applied at two rates. Products were incorporated in the row before planting in 2010, and applied to the surface in 2011 and 2012. Incorporated compost caused some salt damage to the raspberries. However, soil salt levels had declined to background levels by the following spring, indicating that tunnel soils can be easily leached by off-season precipitation when tunnels are uncovered during the winter. Both compost and fertilizer appeared to supply adequate nitrogen early in the season, but leaf levels were marginally deficient later in the season. Once the tunnel plastic is installed in May, the soil profile begins drying out except under the trickle irrigation line. Nutrient materials on the soil surface dry out and contribute little available N late in the season. Potassium and sulfur levels were also deficient after three years. In 2013, we began supplementing solid nutrient sources by fertigating weekly during the growing season with liquid fish (2-2-0). This worked well and did not result in emitter plugging.

Berry yields in 2011 and 2012 were unaffected by fertilization treatments, but varieties differed in 2011 and 2012 (Table 1). ‘Joan J’ was the highest yielding in 2011, and ‘Himbo Top’ was the most productive in 2012. Varieties produced statistically similar yields in 2013. Overall yields have been lower than typical for conventional raspberries under tunnels, which can exceed 18,000 lb per acre. Several factors likely limited yields. Nutrient deficiencies and insect pests likely reduced yields to some degree. The 2012 season was very hot and yields may have been reduced by heat stress. The 2013 season was cooler. Plants began fruiting in early August, but volumes diminished by mid-September even though temperatures appeared ideal.

Variety	2011	2012	2013
Himbo Top	9,000b	7,500a	7,200
Joan J	11,500a	6,800b	6,700
Polka	9,500b	6,600b	6,200

Table 1. Organic raspberry yields (lb/acre) in high tunnels, East Lansing, MI.

The most important insect pests have been spotted winged drosophila (SWD) and spider mites. All fruit need to be harvested as they ripen and fruit that are over-ripe and drop must also be collected and discarded. Overripe or dropped fruit serve as breeding sites.

Costs and potential returns have been compiled in a spreadsheet (hansone@msu.edu to request a copy). Capital investments to establish one acre of raspberries under tunnels were paid off in the second year. Annual net profit after year 1 was estimated to be about \$12,000.



Organic raspberry production under high tunnels.



Himbo Top

Joan J

Polka

Three types of raspberries in the project: Himbo Top, Joan J and Polka.

This entry was posted in [Crops, organic](#) and tagged [Crops](#), [Fruit](#), [organic](#). Bookmark the [permalink](#).

ONOrganic

Blog at WordPress.com.