

# Undercover Research: Growing Sweet Cherries Under High Tunnels in Michigan

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## High Tunnel Cherries

Tunnels are expensive and alter many production factors; the economics are more favorable when tunnels improve multiple factors (i.e., more than covers for cracking!)



## Multibay (3-Season) Tunnels



Probably most suitable for growers:

- with non-ideal growing conditions
- whose clientele value local/regional or organic produce (i.e., farm markets, pick-your-own operations, or premium retailers)
- who can provide intensive management

# Tunnel Management Objectives for Sweet Cherry Production?

Increased protection from:

- rain-induced fruit cracking
- rain-disseminated diseases
- spring frosts?
- wind damage to fruit
- altered early/late ripening
- harvest in any weather
- reduced chemical inputs
- bird protection



# MSU Tunnel Cherry Project

## Clarksville (CHES)

Three connected 8.6 x 49 m (28 x 160 ft) tunnels were established in 2005 in the middle of an existing high density sweet cherry orchard (planted in 2000)



## Southwest (SWMREC)

Four connected 7.4 x 62 m (24 x 200 ft) tunnels; duplicate new research plots, + / - tunnels, planted in 2005



- Luminance polyethylene: transmits 88% PAR, 43% IR, partially screens UVA and UVB light

## At CHES: Tunnels Established over Rainier, Lapins, and Sweetheart on Gisela 5 and 6



# SWMREC Tunnels - Whorled Axe (548 trees/acre)

Red: Skeena/Gi5  
Blush: Rainier/Gi5  
+ 42 Test Varieties



“Purpose-Built Tree Canopies”

MSU Tree Fruit  
Research 

## Tunnel Orchard Floor Management

Black woven polypropylene weed barrier:

- control weeds without herbicides
- reduce host plants for bacteria or insects
- conserve soil moisture
- warm soil for earlier root activity in spring
- absorb heat for re-radiation in spring
- serve as a barrier for soil-emerging insects
- 2007-08 Extenday or Sun-Up applied after fruit set

← Tree row weed barrier,  
grass tractor alley (CHES)