

High Tunnel Night Temperature Research

Comparisons of Temperatures under Clear Polyethylene and Infrared Blocking Coverings for High Tunnels

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“High tunnels are passively vented, unheated greenhouse style-structures used for soil based crop culture, typically with a single layer of polyethylene greenhouse covering. The high tunnel increases growing degree day accumulation in a crop by increasing daytime temperatures, particularly on sunny days. However, high tunnels may not offer any temperature protection at night, and often cool to below ambient temperatures on clear nights.”

“The accumulation of heat units in high tunnels can be attributed to gains of over 10 degrees F during daylight hours; however the drop below ambient temperatures, perilously near freezing during clear nights, increases the risk for commercial production of tender fruits and vegetables.”

http://www.hort.cornell.edu/hightunnel/about/research/general/plastic_comparisons_reid.pdf

“At night, the transparency of the polyethylene to infrared radiation allows the tunnel temperature to plummet to levels below the outside” (Albright et al., 1985).

<http://www.hort.cornell.edu/hightunnel/about/research.htm>

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