MSU Agriculture Innovation Day

Focus on Fruit and Vegetable Technologies

Precision Management of **Tree Fruit Orchards**

Using technology to modify plant growth / manage the growing environment

Overhead Misting

Overhead misting can delay tree growth 3 to 10 days which may increase the chances of avoiding frost damage on sensitive green tissue and bloom.

Bloom delay is maximized by beginning mist-cooling prior to budbreak, but misting is eff ective even when started as late as ½" green.

More frequent misting is needed at higher temperatures to provide more cooling.

Computer-control based on air temperature and relative humidity helps to minimize water use and maximize evaporative cooling.

Overhead misting can be used to cool apples and increase red blush development.

With the addition of extra nozzles and an injection system, the system could be used to apply growth regulators or pesticides.

Wind Machines

Wind machines can potentially increase temperatures in orchard by up to 4 °F

Wind machine are most eff ective when relatively calm because chances for an inversion layer are greater. Inversion tower temperature readings are invaluable for detecting an inversion layer.