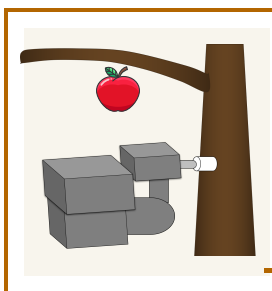




Dendrometers in the apple industry in Washington

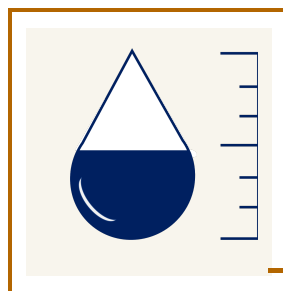
FIVE FACTS



What is a dendrometer?

A sensor that continuously records and logs changes in fruit or stem diameter.

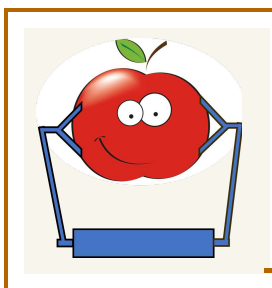
It is like an automatic caliper connected to a logger.



How can be **used** in an orchard?

- Irrigation Management
- Deficit Irrigation
- Fruit Growth Forecasting

Types of contact dendrometers

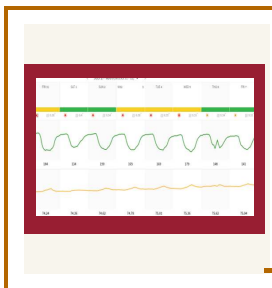


- **Band** dendrometers are expandable collars placed around the trunk and measure circumference.
- **Point** dendrometer contact one point of the trunk or two points on a fruit and measure changes in diameter.



Challenges

- Relatively underutilized for apple production.
- Need better defined thresholds for variety, rootstock, and environment



- **Data** are presented as curves. Detect small changes in the order of **microns**
- Show the **expansion and shrinkage** of the trunk of a tree
- The change in diameter of a fruit



Source:

- Webinar "[The role of dendrometers for irrigation management in apple](#)"
- Fernández, J. E., & Cuevas, M. V. (2010). [Irrigation scheduling from stem diameter variations: a review](#). [Agricultural and Forest Meteorology](#), 150(2), 135-151.

