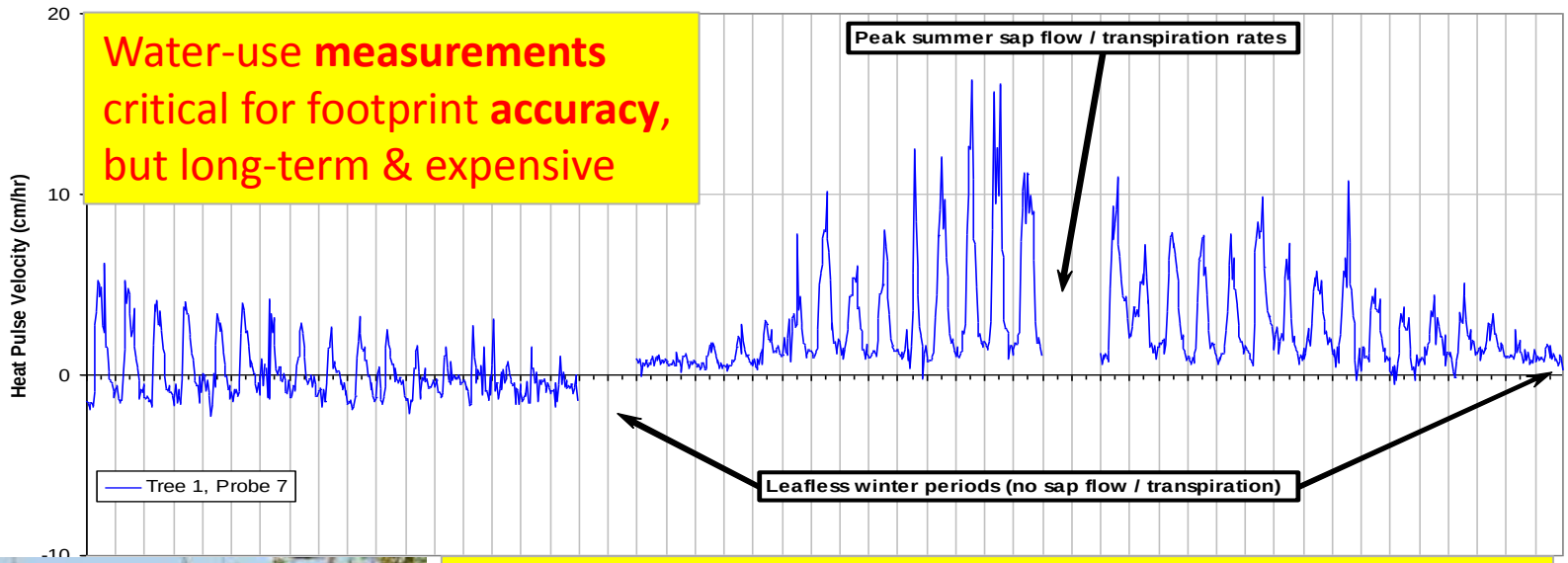
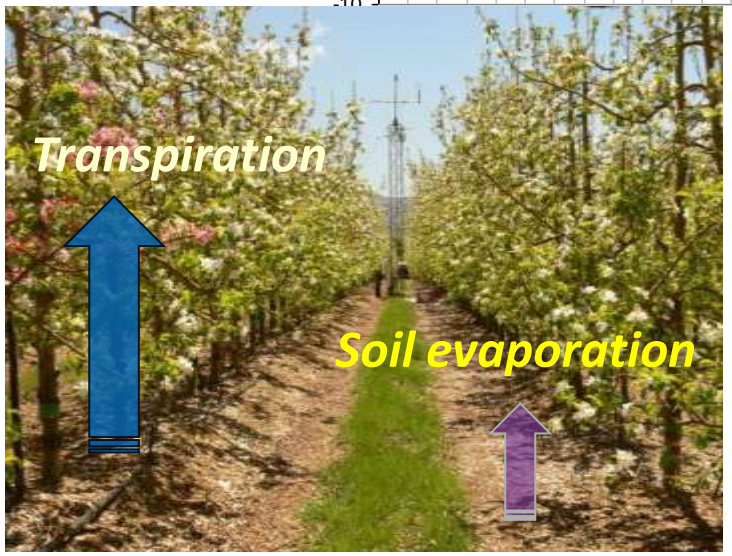
Fruit Tree Water-use (WRC) and water footprints (CSIR) - Gush & Dzikiti

Crop water-use (evapotranspiration) contributes 98% of water footprint
2008/09 Season Apples: 36 liters of water/apple, 2009/10 28 liters/apple (better yields between seasons)

WATER RESEARCH COMMISSION

Water-use **measurements** critical for footprint **accuracy**, but long-term & expensive





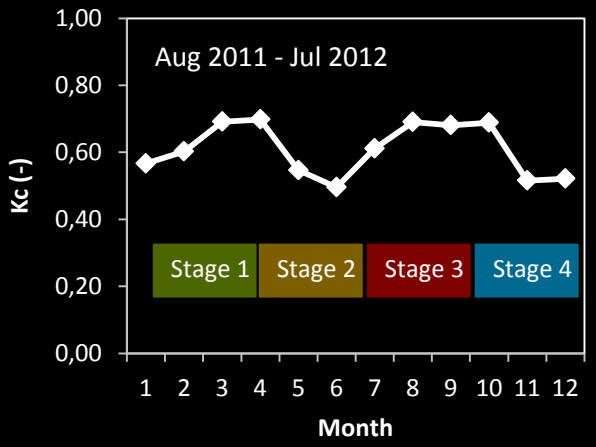
Water-use modeling relies on **measurements**

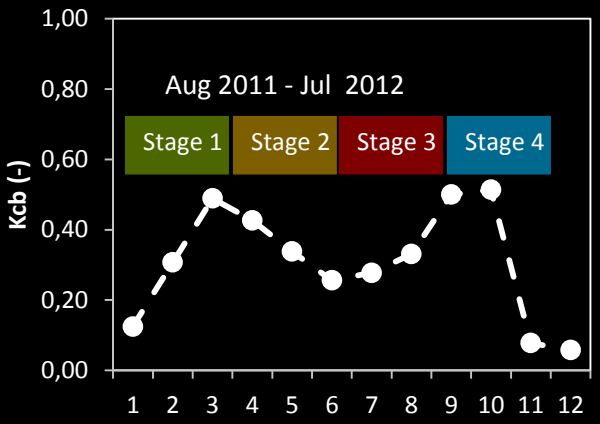
- Required to scale up the micromet. measurements of total evaporation from a few days to many seasons;
- At least two seasons of ***detailed water use data*** required to calculate the water footprints,
- ***Measurement & modeling*** of apples & nectarines done
- Produced crop coefficients for application on farms
- Potential application for irrigation scheduling in orchards using readily available weather data

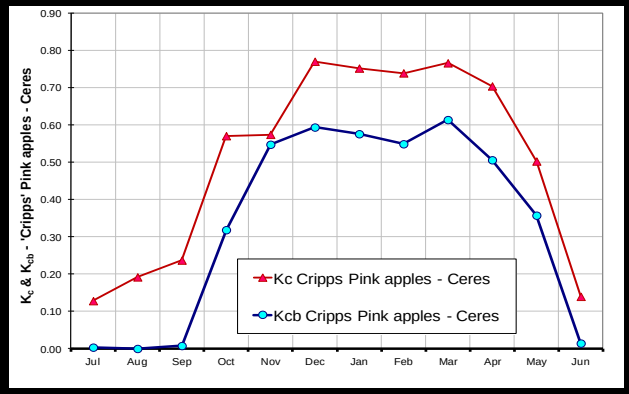
Water footprints

Crop coefficients are unique to each fruit tree species, and when applied correctly they can:

- assist in scheduling irrigation accurately
- help minimise water footprint
- Improve on-farm water-use efficiency







Stage 1: Vegetative & fruit growth phase (full irrigation)

Stage 2: Maturity stage & harvesting close at end of stage 2 (irrigation gradually reduced)

Stage 3: Post harvest stage (irrigation gradually resumed for carbohydrate build up)

Stage 4: Senescence (irrigation is gradually reduced and stopped end of April)