



Nursery Cooperative MANAGEMENT ALERT 2012 - 01

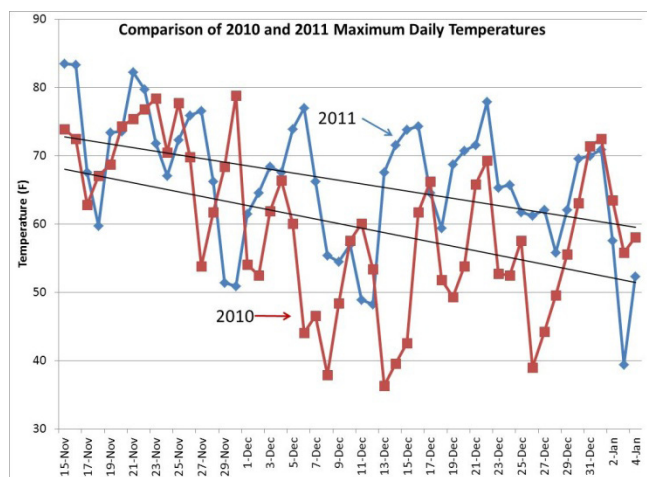
BE ALERT TO POSSIBLE FREEZE INJURY CONDITIONS THIS WINTER

The temperatures so far this winter season warrant a Management Alert that freeze sensitive seedlots may experience freeze injury. We have already seen one confirmed case of seedling mortality this winter caused by rapid temperature drops.

Typical freeze injury in the winter is caused by seedling deacclimation that occurs when seedlings that have been acclimated to cold weather are subjected to a “period” of warm night/day temperatures followed by a rapid temperature drop in when a cold front moves through the area. Also, the amount of accumulated chilling hours can also impact the potential injury to freeze.

The accumulated chilling hours for a central coastal plain location shows that from November 15, 2011, until January 4, 2012, there were 279 hours accumulated. This compares to the 550 hours for the same location and time period last year. Accumulation of chill hours is correlated with freeze tolerance in seedlings. In any one year, seedlings with more accumulated chilling hours are more tolerant of freeze injury than seedlings in the same year with less chilling hours. It needs to be emphasized again that there is no “magical” number of chill hours above which freeze injury will not occur.

The average maximum temperature this past December was almost 12°F warmer than in December, 2010. This trend reduces chilling hours and also increases the probability that freeze injury may occur to freeze sensitive seedlings when cold fronts causing a rapid temperature drop pass through the region.



Keep Alert:

1. Be aware of future warm nights and days followed by temperatures dropping rapidly into the lowers 20's or teens.
2. Monitor your soil moisture during warm nights and days and irrigate a couple days before the temperature drop below 25°F. Moisture in the soil will help to insulate the seedling roots.
3. Following a possible freeze injury event, monitor seedlings by outplanting at the nursery 10 -20 seedlings from any families you consider freeze sensitive. Keep these seedlings until at least June of next year. This will provide an indication of whether seedlings shipped from this same family may have freeze injury from your customers.
4. Following a possible freeze injury event, plant 5 – 10 seedlings from freeze sensitive families in 1-gallon pots and keep in a warm location. After 7 days, gently scrape the bark 1" above and below the root collar to check for freeze injured brown tissue.