

Nothing But Green Tomatoes?
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Lately many callers have asked why they don't have any ripe tomatoes yet, while other gardeners report that they have lots of tomatoes. Peppers too are lagging in their development. Weather issues affect our gardens in much the same way it does crops. Growing degree days are a measure of temperature and plant growth development. Plant development is dictated by a concept known as growing degree-days (GDD). GDDs are accumulated for most crops starting on March 1st. To calculate daily GDD subtract 50 from the average daily temperature. This assumes that plant growth does not take place when the average daily temperature is less than 50 degrees Fahrenheit. Some crops have different formulas. Growing degree-days are important in disease and pest development too, for instance, if the weather stays cool insect and diseases are likely to not be as big of a problem in comparison to hot years.

It is not surprising that tomatoes are slow to ripen this year. First they are behind in development and depending on which cultivar was used will determine where your crop is at developmentally. Tomatoes require a growth regulator called ethylene to initiate ripening of the fruit. This is why we can harvest commercial tomatoes in the green mature stage and transport them green. Botanically tomatoes are ripe at this stage. A treatment of ethylene is given to them and the ripening process is completed. However, these tomatoes never have the flavor or texture that vine ripening does.

Can we force tomatoes to ripen at this point? Once the fruit starts to change color we can harvest them and they will continue to ripen. Placing tomatoes on your windowsill or in paper bags will help to concentrate ethylene gas. This in turn will cause them to ripen fully. In the event of frost, gardeners should harvest any fruit that has started to change color and protect your vines by watering and covering.

Watering the vines protects by utilizing the heat of fusion. This occurs when the water freezes and heat is released into the plant protecting it from frost damage. Covering plants holds in heat from the ground throughout the night. Frost is a funny thing; looking at the crops that were affected earlier this month you can see how hills, valleys, trees, buildings and many other factors influence frost. In order for a frost to be a "killing frost" the temperature must fall below the plants tolerance level for a certain length of time. Tomatoes being a warm season plant have a low tolerance level, which is why we protect them during frost warnings.

Basically, our tomatoes need heat to complete their life cycle. Both the home gardener and commercial growers are looking for heat to ensure a crop this year. Yields will be reduced and some growers may not even get a crop. For gardeners, hopefully the weather will shape up a little so that we can enjoy some vine-ripened tomatoes for eating and canning.

Feel free to call on me with any questions or comments about this topic or any other horticultural topic by calling 605-394-2188 or e-mailing me at ricky.abrahamson@sdstate.edu.