

Can you explain the concept behind cold conditioning of strawberries? It seems complicated and I don't understand why it would be so important to pay so much attention to it.

The cold conditioning to which you refer is an essential part of growing and producing strawberries in California. This cold conditioning is defined as being the cumulative period, measured in number of hours or days below a certain temperature that is needed to produce the internal changes in the strawberry plant that result in the normal sequence of growth following winter dormancy. In strawberries, the time accumulated at temperatures between 28 and 45 degrees Fahrenheit are considered to be effective and are counted as towards chill requirement.

Chill requirement in California strawberry is actually made up of two stages. One stage is what the plant accumulates in the field before being harvested, and the other is accumulation of chill after harvest and the plant is in storage. There is a difference between the two. In-field chill takes place when the plant is still in the soil, out in the open and still has all its leaves. Supplemental chill takes place after harvest of the plant and occurs in a constant near freezing temperature, in the dark and the plant has none to very few leaves left.

So what strawberry growers need to do is strike the right balance between vigor and vegetative growth and fruiting. If there is too little vigor the plant is of reduced fitness and does not have a capacity to produce a large amount number of fruit, whereas a plant with large amounts of vegetative growth will have its fruiting ability compromised, since it is dedicating too many resources in the production of leaves, crowns and runners.

Additionally, accumulation of chill in the strawberry transplant makes it stronger and better able to survive the stress of harvest and subsequent transplant. Harvest of transplants means their leaves are cut off, they are ripped from the ground, tumbled in a drum and exposed to drying out in the open air. So, while in theory it is possible to grow good productive plants from transplants that are short of the recommended chill requirement, in practice, namely a commercial operation, plants lacking in supplemental chill requirement will not do well and some will probably not survive transplanting.