

Abstract:

Models for predicting blueberry mass and firmness losses during distribution through supply chains were developed from storage studies. The models were then applied to each link in a typical supply chain for fresh produce. The initial mass and firmness at harvest and the time and temperature in the field were the values used for calculating the loss percentages for the first link. Inputs to subsequent links were the outputs from the previous links. Models and calculations were made in a computerized spreadsheet (Microsoft Excel). A noteworthy result of the model is the visibility of rapid mass losses when simulating short times at high temperature at an open dock and in a car. Also, the rapid initial decrease in mass and firmness indicates the importance of reducing delays before cooling. Finding the horizontal distance between the two curves shows the benefit of low temperatures. Similar models are being developed for other crops.