

**Title** Changes in the citrus market and production technology  
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### **Abstract**

In 240 years, the Florida citrus industry has expanded to over 320,000 hectares of groves producing primarily fruit for processing into juice. In the last 30 years foreign competition, freezes and pathogen induced tree loss tremendously impacted the Florida citrus industry. Freeze avoidance propelled a southern industry shift, so that over 70% of the hectare are located on heterogeneous soils south of Orlando. Concurrent with the industries geographical shift in the last 30 years, the value of fruit destined for the juice market decreased 68%. The decrease in pounds solids value in conjunction with variable tree size and age has reduced profit margins and impacted grove operations. Variability in tree size and age as a result of tristeza and soil variability continue to be problems. Hard ware and management software technologies to cope with tree variability are being developed and implemented. Variable rate technology (VRT), using real time or geographic information system (GIS) are currently being used to optimize fertilizer and crop protection applications. However, VRT is being utilized more on pesticide management than nutrition management. Materials savings from VRT on pesticide applications ranged from 0.5 to 25%. External variables can negatively vary the performance of VRT. The decision information systems for Florida citrus (DISC) was developed to allow more efficient management of fungicide efficacy, alternate crop bearing and load. Stimulation and reduction of floral bud initiation can be controlled through applications of urea and gibberellic acid (GA), respectively. Urea and GA effectiveness is related to the time of floral bud initiation and differentiation. Floral bud initiation and differentiation has been modeled to improve GA and urea efficacy. In addition to floral bud initiation, fruit growth is being modeled to improve pest management. These management options are expected to aid in reducing materials necessary, application cost, and stabilizing fruit supply.