Efficient, high density fruit orchards require size-controlled trees with crown structures that can support production of quality fruit. Vigorous and branched vegetative growth can create a dense, shaded environment in tree crowns that may increase pest populations and adversely affect fruit quality. To avoid adverse effects, fruit tree size and crown characteristics have been managed with genetic and cultural techniques such as size-controlling scion and rootstock and by pruning and training. Plant hormone relations may differ among size-controlling genotypes and the effects of cultural techniques on endogenous hormone concentrations and growth in different genotypes will be discussed.