GENETIC TRANSFORMATION OF AVOCADO A-70

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An important advantage for using genetic transformation to improve perennial fruit trees is that a single horticultural trait can be altered, without significantly affecting the phenotype of the cultivar. Embryogenic avocado cultures have been transformed with different gene constructs in order to address different breeding objectives. Avocado has been transformed with genes for different pathogenesis-related proteins, including chitinase, glucanase and antifungal protein, and the first greenhouse planting of transgenic plants containing the gene for AFP has been established. As part of a strategy for controlling avocado sunblotch disease, embryogenic cultures have been transformed with the pac1 ribonuclease gene from yeast. In order to control fruit ripening and extend the shelf life of avocado fruit, embryogenic cultures have been transformed with the gene for SAM hydrolase, a bacterial gene that mediates the breakdown of S-adenosylmethionine (SAM), a precursor of ethylene, a phytohormone that triggers the ripening response of avocado fruit.