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On the Cover: There are 7,500 or so apple (*Malus* × *domestica*) cultivars in the world currently. Although the fruit have much longer shelf life than other pome fruit, such as quince and pear, even so there is a marked difference in the storage ability among cultivars. The main factor that determines the postharvest quality of fruit is the rate of softening of the fruit during storage and on shelf. It has been well known that ethylene induces the softening by regulating expression of cell wall-modifying enzymes. This study has indicated that the fruit-specific ACC synthase gene *MdACS3a* is expressed prior to the large increase in the expression of another ACC synthase gene, *MdACS1*, suggesting that *MdACS3a* may be involved in the transition to system 2 ethylene synthesis in ripening fruit. In addition, evidence is presented that suggests the presence of allelic variants of *MdACS3a* that are nonfunctional and may contribute to variation in ethylene production and shelf life in apple cultivars. The fruit was provided by Tomoko Akada (Apple Research Center, Aomori, Japan). Cover image by Hiroshi Yagihashi. (See Wang et al., pp. 391–399.)

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