

Title Comparative fruit colouration in watermelon and tomato
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Abstract

The characteristic red pigmentation of watermelon and tomato fruits is determined by accumulation of the carotenoid pigment lycopene and this phenotype is polyphyletic. Since several carotenoids are known to have health promoting activity, and watermelon can be a significant source of lycopene and other carotenoids, it is important to understand the genetic basis of watermelon fruit-specific carotenoid biosynthesis. Unlike tomato, very little is known about the regulation of carotenoid biosynthesis during fruit development in watermelon, a non-climacteric fruit. We have HPLC analyzed the carotenoids of red, yellow and orange watermelons and compared their carotenoid patterns with those of known fruit colour mutants of tomato. Interestingly, we could detect tomato mutant equivalents to most watermelon fruit colour phenotypes, including *r*, *og*, *B* and *t*.