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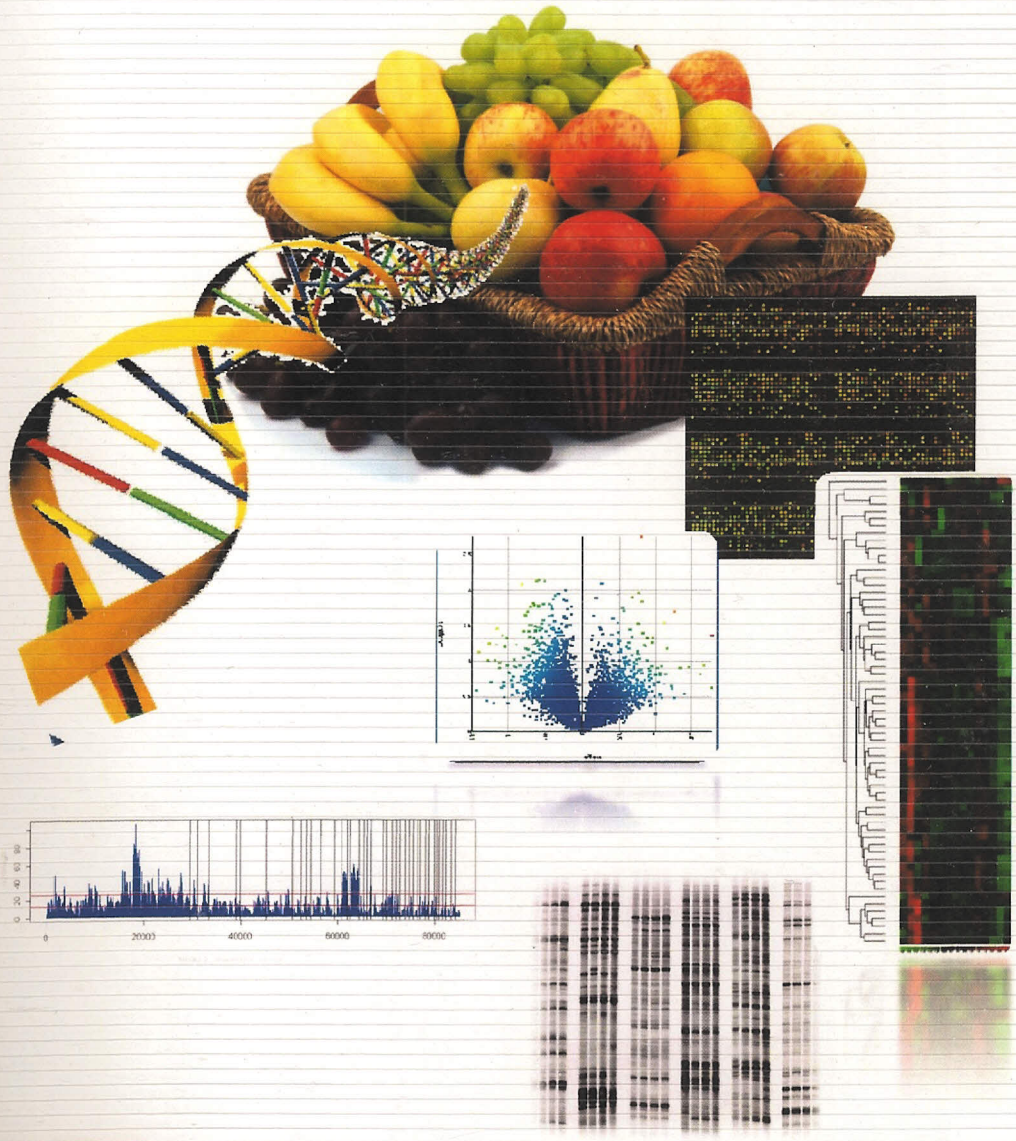
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GENOMICS AND BIOTECHNOLOGY OF FRUIT QUALITY: RECENT ADVANCES

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GENETIC AND MOLECULAR DIVERSITY OF FRUIT TRAITS IN MELON

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Melon is an important horticultural crop across wide areas of the world. Different uses and diverse consumption habits lead to the wide diversity of fruit types - sweet and non-sweet melon types- and to a large morphological variation in fruit characteristics. Thus, interestingly, both climacteric and non-climacteric fruit ripening exist in melon. We investigated the genetic variation of the melon species using a large collection of accessions maintained at INRA and studied the genetic control of fruit traits. In order to shed light on the molecular processes underlying fruit ripening in melon, several genes involved in the ripening process were identified by sequence homology to tomato or Arabidopsis and were mapped on the melon genome. A reverse genetic approach was used to assign a functional role to these genes in melon. EMS mutants obtained from a climacteric melon of the Charentais type were selected by TILLING. Phenotyping of the mutants is ongoing. Using an EcoTILLING approach, we are investigating the allelic diversity of the genes, available within a melon collection.