

Mariana Mota
DCEB - Horticultura/CEER
Instituto Superior de Agronomia

**FRUIT BREEDING – BACKGROUND, GOALS AND MAIN APPROACHES
(Part I of II)**

Abstract

Breeding involves the creation of new cultivars. Breeding fruit species requires specific approaches, as these species are perennial and have, in each growth cycle, different phenological and physiological stages, that are dependant of many factors, including climate conditions. Fruit species are in general highly heterozygotic, which increases variability. Main aims in fruit breeding relate to the creation of cultivars with improved characteristics as yield, quality, precocity or novel effect, tolerance to salinity, acidity, drought and diseases and pests. The most common methods to create new genotypes are the crossing, identification of natural mutations or induced mutagenesis (physical or chemically) and, more recently, the methods related to tissue culture. In this text, crossing and use of mutations are focused. Crossing is the most common method and is responsible for the vast majority of improved genotypes, both in scions and in rootstocks. The use of mutations, occurring naturally or induced, is also very common, but have the disadvantage of raising modifications that are not always desirable or, when desirable, are not always stable. Thus, it is necessary to verify the stability of the mutation after the vegetative propagation, in order to validate this breeding method.