

**Title** The risks of success in quality vegetable markets: Possible genetic erosion in Marmande tomatoes (*Solanum lycopersicum* L.) and consumer dissatisfaction

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### **Abstract**

Following consumer complaints about the quality of modern varieties of tomato, landraces have strengthened their quality markets. In Spain, two tomato landraces, 'Montserrat' and 'Pera Girona', are grown in contiguous areas and have different market niches. We used amplified fragment length polymorphism (AFLP) to characterize 13 accessions of Montserrat, 14 accessions of Pera Girona, and 4 control varieties. We found a narrow genetic base for 'Montserrat' and 'Pera Girona' (8.5% of polymorphic loci) and no differences between the landraces. We studied agronomical and sensory traits to determine why the two landraces continue to have separate market niches. We found high variability among accessions within each landrace and overlapping among accessions of both landraces for all traits except fruit morphology. Consumers probably came to associate the organoleptic quality of these landraces with their external traits, but due to spontaneous crossings and introgressions these relations have been lost. Selection within landraces will be necessary to reestablish the link between morphology and sensory value and to consolidate these quality markets.