

Practice Abstract

Application of panel and consumer test to foster berry breeding

Breeding research aims to develop innovative cultivars that meet the needs of both buyers and consumers. Sensory science provides tools to define the sensory profiles of cultivars and to identify the preference drivers that influence consumer choices and satisfaction.

The H2020 project BreedingValue developed specific sensory kits to support a consumer-driven approach to blueberry, raspberry, and strawberry breeding. **Shared lexicons to describe berry sensory traits in seven languages**, enabling both local dissemination and harmonized standards for scientific comparison were created (raspberry and blueberry lexicon: <https://www.mdpi.com/2077-0472/13/2/314>; strawberry lexicon will be published). Based on this shared lexicon, IBE-CNR developed a **sensory toolkit** combining evaluations from both expert panels and everyday consumers, and provided training to several berry breeding organisations to apply this toolkit.

Specific protocols were developed to train sensory panel judges in evaluating smell, taste, flavor, and texture attributes. These trained panels were then used to define

detailed sensory profiles of the genotypes proposed by breeders, using Descriptive Analysis (DA) along with dynamic testing methods such as Temporal Dominance of Sensations (TDS) and Time Intensity (TI). Panel evaluations helped identify the most promising genotypes for further consumer testing.

Further **protocols** were developed for **consumer tests**. During these tests, rapid sensory methods were applied to assess consumer satisfaction and identify key preference drivers.

This sensory toolkit proved effective in providing berry breeders, farmers and retailers with valuable insights into the market potential of new cultivars. In case of any questions, Giulia Maria Daniele (giuliamaria.daniele@ibe.cnr.it) and Marta Cianciabella (marta.cianciabella@ibe.cnr.it), both CNR-IBR can be contacted..